

| Gene      | logFC            | adj.P.Val             | DEG  | Pathway* |
|-----------|------------------|-----------------------|------|----------|
| -         | -                | -                     | -    | -        |
| ADIPOQ    | 11.2799984945786 | 0.000237620653586152  | down | Pathway  |
| LEP       | -11.04162666931  | 0.0000116557440237734 | down | Pathway  |
| -         | -                | -                     | -    | -        |
| CIDEA     | 10.9237113376168 | 0.000047501407051521  | down | Pathway  |
| TUSC5     | -10.892530578022 | 0.0000407286167700333 | down | NA       |
| -         | -                | -                     | -    | -        |
| C14orf180 | 10.3951166446475 | 0.0000207215494866922 | down | NA       |
| -         | -                | -                     | -    | -        |
| ADH1B     | 10.0348847231457 | 0.0000727757884061152 | down | Pathway  |
| -         | -                | -                     | -    | -        |
| CIDEA     | 9.81501533065702 | 0.0000643485145994096 | down | Pathway  |
| -         | -                | -                     | -    | -        |
| MRAP      | 9.48287652297978 | 4.09983852314949E-06  | down | Pathway  |
| FABP4     | -9.4629221134978 | 0.0000343880181021525 | down | Pathway  |
| GLYAT     | -9.3383563752576 | 4.93078487897174E-06  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| GPD1      | 9.16483851105949 | 9.35003131715643E-06  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| AQP7      | 9.04760103210204 | 0.0000338376108967206 | down | Pathway  |
| -         | -                | -                     | -    | -        |
| PLIN4     | 8.68200463307713 | 9.54545132091244E-06  | down | NA       |
| -         | -                | -                     | -    | -        |
| MYOC      | 8.59979985474771 | 0.000026490529190438  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| SAA1      | 8.58181891294256 | 2.81821035777139E-06  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| RBP4      | 8.49687879812433 | 0.0000292644696970919 | down | Pathway  |
| -         | -                | -                     | -    | -        |
| CA4       | 8.49176095763971 | 0.000014088441156621  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| PLIN1     | 8.41598880305268 | 0.0000148509983906441 | down | Pathway  |
| CD300LG   | -8.3915670816539 | 0.0000867662331740805 | down | NA       |
| PCK1      | -8.361689120799  | 0.000336144586198737  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| PPP1R1A   | 8.34613891837922 | 0.0000256185428275925 | down | Pathway  |
| -         | -                | -                     | -    | -        |
| HEPACAM   | 8.12409196617378 | 7.89799979427237E-06  | down | NA       |
| -         | -                | -                     | -    | -        |
| TRDN      | 7.91719798164115 | 0.000193689291524232  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| LGALS12   | 7.88060073973149 | 0.00005852044257214   | down | Pathway  |
| -         | -                | -                     | -    | -        |
| TIMP4     | 7.85491625848605 | 7.81149829611418E-06  | down | Pathway  |
| -         | -                | -                     | -    | -        |
| APOB      | 7.78831691146445 | 0.000035799033508745  | down | Pathway  |

|          |                  |                       |      |  |         |
|----------|------------------|-----------------------|------|--|---------|
|          | -                |                       |      |  |         |
| TMEM132C | 7.75689081133308 | 0.0000539430429661821 | down |  | NA      |
|          | -                |                       |      |  |         |
| SLC7A10  | 7.71233467254346 | 0.0000276807225929861 | down |  | Pathway |
|          | -                |                       |      |  |         |
| HSPB7    | 7.70166949287452 | 2.81821035777139E-06  | down |  | Pathway |
|          | -                |                       |      |  |         |
| ADRA1A   | 7.68893525290817 | 4.93078487897174E-06  | down |  | Pathway |
|          | -                |                       |      |  |         |
| SLC19A3  | 7.67870954509574 | 0.0000317201556733218 | down |  | Pathway |
|          | -                |                       |      |  |         |
| ALDH1L1  | 7.65644003152199 | 0.0000136429042467373 | down |  | Pathway |
|          | -                |                       |      |  |         |
| CHRD1    | 7.63492251896158 | 0.0000111856259866863 | down |  | Pathway |
| LIPE     | -7.6021268005524 | 9.06819054236689E-06  | down |  | Pathway |
|          | -                |                       |      |  |         |
| SCARA5   | 7.55797087194618 | 0.000053782526435052  | down |  | NA      |
|          | -                |                       |      |  |         |
| PLA2G2A  | 7.52870009022432 | 0.000260191438164158  | down |  | Pathway |
|          | -                |                       |      |  |         |
| PCOLCE2  | 7.48802416424739 | 4.93078487897174E-06  | down |  | NA      |
|          | -                |                       |      |  |         |
| C12orf39 | 7.41335210397584 | 0.000969962540091329  | down |  | NA      |
|          | -                |                       |      |  |         |
| HBA2     | 7.35652021202049 | 0.0000138892049247438 | down |  | Pathway |
|          | -                |                       |      |  |         |
| DEFB132  | 7.33465563420126 | 0.000286324374916553  | down |  | NA      |
| C19orf80 | -7.229904995647  | 6.64655070757393E-06  | down |  | NA      |
|          | -                |                       |      |  |         |
| TNMD     | 7.21905152294525 | 0.0000154285478081755 | down |  | Pathway |
|          | -                |                       |      |  |         |
| KLB      | 7.17262497335337 | 0.000467178037277391  | down |  | Pathway |
|          | -                |                       |      |  |         |
| HBB      | 7.13031291421792 | 0.0000136527038725634 | down |  | Pathway |
|          | -                |                       |      |  |         |
| LHCGR    | 7.11106383434347 | 5.57848613541443E-06  | down |  | Pathway |
|          | -                |                       |      |  |         |
| FRMD1    | 7.05576665608617 | 0.0000483036379967917 | down |  | NA      |
|          | -                |                       |      |  |         |
| G0S2     | 6.98343738057125 | 4.87087154292548E-06  | down |  | Pathway |
|          | -                |                       |      |  |         |
| CD36     | 6.96248418130756 | 0.0000253346585062879 | down |  | Pathway |
|          | -                |                       |      |  |         |
| AADAC    | 6.95341075588744 | 0.000644903205574493  | down |  | Pathway |
|          | -                |                       |      |  |         |
| HBA1     | 6.93541623219882 | 0.0000231355064402411 | down |  | Pathway |

|             |                  |                       |      |         |  |
|-------------|------------------|-----------------------|------|---------|--|
|             | -                |                       |      |         |  |
| SGCG        | 6.89600023604883 | 0.0000276380671060869 | down | Pathway |  |
|             | -                |                       |      |         |  |
| GLP2R       | 6.85677035912559 | 0.0000035134961308845 | down | Pathway |  |
|             | -                |                       |      |         |  |
| HSPB6       | 6.81741042521839 | 0.0000108446700708311 | down | Pathway |  |
|             | -                |                       |      |         |  |
| SAA2        | 6.74908718204407 | 0.0000496954027098307 | down | Pathway |  |
|             | -                |                       |      |         |  |
| TRHDE       | 6.73574957145066 | 0.0000785780320716064 | down | Pathway |  |
|             | -                |                       |      |         |  |
| AKR1C2      | 6.69409644957238 | 6.97446154261324E-06  | down | Pathway |  |
|             | -                |                       |      |         |  |
| LPL         | 6.68534489773007 | 0.0000130933903747851 | down | Pathway |  |
|             | -                |                       |      |         |  |
| CSN1S1      | 6.61339162163147 | 0.0000035100225008365 | down | Pathway |  |
|             | -                |                       |      |         |  |
| ACVR1C      | 6.57482246037446 | 0.0000486314964949464 | down | Pathway |  |
|             | -                |                       |      |         |  |
| ACADL       | 6.56964579966812 | 0.000861267488020354  | down | Pathway |  |
| RP1-302G2.5 | -6.5694022325165 | 2.81821035777139E-06  | down | NA      |  |
|             | -                |                       |      |         |  |
| ADH1A       | 6.56022667449111 | 0.0000231355064402411 | down | Pathway |  |
|             | -                |                       |      |         |  |
| THRSP       | 6.54891149059753 | 0.00274707467455701   | down | Pathway |  |
|             | -                |                       |      |         |  |
| CPA1        | 6.52777781376075 | 7.68521024514109E-06  | down | Pathway |  |
| ADH1C       | -6.504056065898  | 0.000035273576192804  | down | Pathway |  |
|             | -                |                       |      |         |  |
| LBP         | 6.43700257141555 | 0.0000606073407913894 | down | Pathway |  |
|             | -                |                       |      |         |  |
| CFD         | 6.40257266997557 | 0.000107098315490048  | down | NA      |  |
|             | -                |                       |      |         |  |
| PI16        | 6.36924449234117 | 0.000166776688431061  | down | Pathway |  |
|             | -                |                       |      |         |  |
| AQPEP       | 6.31070459343645 | 0.0000333215231415449 | down | NA      |  |
|             | -                |                       |      |         |  |
| KCNB1       | 6.29510590119429 | 8.41402063974025E-06  | down | Pathway |  |
|             | -                |                       |      |         |  |
| FHL1        | 6.28826939180485 | 3.43545566418516E-06  | down | Pathway |  |
|             | -                |                       |      |         |  |
| ATP1A2      | 6.24817336209922 | 0.0000281834185229659 | down | Pathway |  |
|             | -                |                       |      |         |  |
| EPB42       | 6.23084003974254 | 3.46935980267288E-06  | down | Pathway |  |
|             | -                |                       |      |         |  |
| ABCA8       | 6.22752696528936 | 9.40865569656448E-06  | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| FXYD1    | 6.22283948732946 | 0.0000804534278010506 | down | Pathway |  |
|          | -                |                       |      |         |  |
| NNAT     | 6.21130609655285 | 0.00362554039333159   | down | Pathway |  |
|          | -                |                       |      |         |  |
| GYG2     | 6.21042313518195 | 0.0000539241510291624 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CES1     | 6.20019151235811 | 0.0000439434001789324 | down | Pathway |  |
|          | -                |                       |      |         |  |
| PCDH9    | 6.14018855505827 | 4.19222087788146E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| S100B    | 6.13031499886417 | 0.000574338703708593  | down | Pathway |  |
|          | -                |                       |      |         |  |
| IRX6     | 6.08699641304794 | 0.0000546581306106511 | down | NA      |  |
|          | -                |                       |      |         |  |
| DGAT2    | 6.08525752949882 | 0.0000138892049247438 | down | Pathway |  |
|          | -                |                       |      |         |  |
| C6       | 6.04795347045673 | 0.000790526835161806  | down | Pathway |  |
|          | -                |                       |      |         |  |
| HP       | 6.03239459981034 | 0.00316977218857638   | down | Pathway |  |
|          | -                |                       |      |         |  |
| FGFBP2   | 6.01516274980477 | 0.0000216825353897115 | down | NA      |  |
|          | -                |                       |      |         |  |
| CDH20    | 6.00120843351918 | 0.000050846170747786  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PRRT4    | 5.99543861891853 | 0.0000950283437031099 | down | NA      |  |
|          | -                |                       |      |         |  |
| CDO1     | 5.99162353208315 | 0.0000208276182863052 | down | Pathway |  |
|          | -                |                       |      |         |  |
| KIAA1239 | 5.98645509596242 | 0.0000838494407218363 | down | NA      |  |
|          | -                |                       |      |         |  |
| PLXNA4   | 5.98625381324915 | 2.81821035777139E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| NECAB1   | 5.96674789312811 | 0.000403474561536482  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CLEC3B   | 5.93955152451728 | 0.0000043740272661602 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ITIH5    | 5.93017942364147 | 3.46935980267288E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| TMEM100  | 5.89863018393158 | 0.0000256658752137784 | down | Pathway |  |
|          | -                |                       |      |         |  |
| SLC2A4   | 5.88620463454955 | 0.0000683419627159911 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CLEC4G   | 5.86368013399247 | 0.000123180519229478  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MLXIPL   | 5.83615725473236 | 0.000153027504055082  | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| LYVE1    | 5.79629678092306 | 0.0000183329851889496 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CNTFR    | 5.79214714357932 | 0.0000710861640679176 | down | Pathway |  |
|          | -                |                       |      |         |  |
| TMC2     | 5.77919501124227 | 6.94705115187937E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| AOC3     | 5.73333098190958 | 4.87087154292548E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PRG4     | 5.71557200922911 | 0.000931600112341234  | down | NA      |  |
|          | -                |                       |      |         |  |
| SDPR     | 5.66891802046878 | 4.09983852314949E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| ANO3     | 5.65413954502693 | 0.000104447813318692  | down | Pathway |  |
|          | -                |                       |      |         |  |
| NPY5R    | 5.65138499639375 | 0.00142304010132895   | down | Pathway |  |
|          | -                |                       |      |         |  |
| NLGN1    | 5.64663402009522 | 0.0000143427643652586 | down | Pathway |  |
|          | -                |                       |      |         |  |
| VIT      | 5.63529327980966 | 0.0000138892049247438 | down | Pathway |  |
|          | -                |                       |      |         |  |
| SLC25A18 | 5.62251045634725 | 0.000589908254731518  | down | Pathway |  |
| CALB2    | -5.6004799572688 | 0.000231776048398995  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PTPRQ    | 5.55792365440674 | 0.000350006354206234  | down | Pathway |  |
| DPT      | -5.5505834094039 | 0.0000657083374773792 | down | Pathway |  |
|          | -                |                       |      |         |  |
| RERGL    | 5.54812509569477 | 0.000181968093700162  | down | NA      |  |
| SLC16A7  | -5.5243368209878 | 0.0000838494407218363 | down | Pathway |  |
| GPAM     | -5.4970091966537 | 7.81149829611418E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| HSD17B13 | 5.47561697751682 | 0.0000174267445510039 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ANGPTL5  | 5.42104162415191 | 0.0000300655359075657 | down | NA      |  |
|          | -                |                       |      |         |  |
| BTNL9    | 5.41269247874485 | 0.0000415862988437535 | down | NA      |  |
|          | -                |                       |      |         |  |
| NAT8L    | 5.38602529007275 | 0.00118459136238005   | down | Pathway |  |
|          | -                |                       |      |         |  |
| MAOA     | 5.37333476692732 | 9.54160563038411E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ABCD2    | 5.36928399810394 | 0.000082096864667323  | down | Pathway |  |
|          | -                |                       |      |         |  |
| C1QTNF9  | 5.36432131152871 | 6.64655070757393E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| ANGPTL1  | 5.36141589861936 | 0.0000216013010133142 | down | NA      |  |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| MASP1   | 5.35848273482595 | 0.0000776285145144357 | down | Pathway |  |
| TF      | -5.3570756995815 | 0.000159632659495863  | down | Pathway |  |
|         | -                |                       |      |         |  |
| AKR1C1  | 5.35022234436963 | 0.0000148509983906441 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PFKFB1  | 5.34656824572607 | 0.0000127212743298798 | down | Pathway |  |
| SHISA3  | -5.3233117720389 | 0.0000105415976727814 | down | Pathway |  |
|         | -                |                       |      |         |  |
| EYS     | 5.31544341521218 | 0.000287680835523724  | down | Pathway |  |
| AGXT    | -5.3023745900857 | 2.81821035777139E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CMA1    | 5.29446730293529 | 0.000615223146382208  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CRYAB   | 5.28535890423489 | 0.0000274499364663672 | down | Pathway |  |
|         | -                |                       |      |         |  |
| CASQ2   | 5.28364250830396 | 0.0000852629833450245 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PLAC9   | 5.27548817796761 | 0.0000540795957791983 | down | NA      |  |
|         | -                |                       |      |         |  |
| GRIN2B  | 5.27180374698126 | 0.000348079392491984  | down | Pathway |  |
|         | -                |                       |      |         |  |
| TNNT3   | 5.26911612491664 | 0.000544691369367457  | down | Pathway |  |
|         | -                |                       |      |         |  |
| ANGPTL4 | 5.21267393681027 | 6.28823464173383E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| KCNIP2  | 5.19920706047672 | 0.0000135579150977941 | down | Pathway |  |
|         | -                |                       |      |         |  |
| GPC3    | 5.19087047785838 | 0.0000596138417871747 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PDE3B   | 5.18714712908329 | 0.000345803265669088  | down | Pathway |  |
|         | -                |                       |      |         |  |
| SORBS1  | 5.16681019433352 | 0.0000035100225008365 | down | Pathway |  |
|         | -                |                       |      |         |  |
| NMUR1   | 5.16291090954816 | 6.28823464173383E-06  | down | Pathway |  |
| LRRN4CL | -5.0960477306019 | 0.0000197702668193731 | down | NA      |  |
|         | -                |                       |      |         |  |
| KCNA4   | 5.08634667382832 | 0.000118806257223279  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CLDN2   | 5.06143832093782 | 0.0000197273938950305 | down | Pathway |  |
|         | -                |                       |      |         |  |
| GPX3    | 5.06139966425636 | 0.0000363555584077947 | down | Pathway |  |
|         | -                |                       |      |         |  |
| C7      | 5.05808616192662 | 0.0012221591731031    | down | NA      |  |
|         | -                |                       |      |         |  |
| SLC4A4  | 5.05230508714062 | 0.0000300655359075657 | down | Pathway |  |

|            |                  |                       |      |         |  |
|------------|------------------|-----------------------|------|---------|--|
|            | -                |                       |      |         |  |
| RXRG       | 5.04595553331751 | 0.000145928809403184  | down | Pathway |  |
|            | -                |                       |      |         |  |
| SLC29A4    | 5.03621671966199 | 6.86538373931544E-06  | down | Pathway |  |
|            | -                |                       |      |         |  |
| SCN4A      | 5.03334332874219 | 0.0000546802942568236 | down | Pathway |  |
|            | -                |                       |      |         |  |
| BMP5       | 5.03068356456753 | 0.000132942602781429  | down | Pathway |  |
|            | -                |                       |      |         |  |
| FCER2      | 5.00225589922485 | 0.00170874121676437   | down | Pathway |  |
|            | -                |                       |      |         |  |
| DMRT2      | 4.98040493530196 | 0.00106915086935269   | down | Pathway |  |
| RBP7       | -4.9751811610409 | 0.0000143427643652586 | down | Pathway |  |
| NPR3       | -4.9709691783695 | 0.000251905287744471  | down | Pathway |  |
|            | -                |                       |      |         |  |
| ADRB1      | 4.96780638738935 | 0.0000356687838731038 | down | Pathway |  |
|            | -                |                       |      |         |  |
| ASPA       | 4.95588510267213 | 0.0000151140255854889 | down | Pathway |  |
|            | -                |                       |      |         |  |
| AC131097.4 | 4.95419498887348 | 0.000591030766927739  | down | NA      |  |
|            | -                |                       |      |         |  |
| ANGPT1     | 4.95190272751288 | 6.64655070757393E-06  | down | Pathway |  |
|            | -                |                       |      |         |  |
| PPARG      | 4.93081938788796 | 0.000115299872397173  | down | Pathway |  |
|            | -                |                       |      |         |  |
| NAALAD2    | 4.92958608966029 | 0.00110812514122035   | down | NA      |  |
|            | -                |                       |      |         |  |
| GHR        | 4.90852944072827 | 0.000568722138742832  | down | Pathway |  |
|            | -                |                       |      |         |  |
| SYN2       | 4.90782149531593 | 0.000162681118293746  | down | Pathway |  |
|            | -                |                       |      |         |  |
| SLC14A2    | 4.89521964251252 | 0.0000302660001749592 | down | NA      |  |
|            | -                |                       |      |         |  |
| ANGPTL7    | 4.87337384447628 | 0.000753962027795544  | down | Pathway |  |
|            | -                |                       |      |         |  |
| SCGN       | 4.86656312248055 | 0.0000256185428275925 | down | Pathway |  |
|            | -                |                       |      |         |  |
| CCDC3      | 4.85656284089692 | 0.0000035100225008365 | down | Pathway |  |
| SCEL       | -4.832319642538  | 0.00801423985618286   | down | Pathway |  |
|            | -                |                       |      |         |  |
| HPSE2      | 4.82087851483714 | 0.000145021548110666  | down | Pathway |  |
|            | -                |                       |      |         |  |
| AOX1       | 4.80799101739722 | 0.0000216825353897115 | down | Pathway |  |
|            | -                |                       |      |         |  |
| ANGPT4     | 4.80278724577424 | 0.0000559870939467668 | down | Pathway |  |
| BCHE       | -4.8026786730482 | 0.000286164054547944  | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| SOD3     | 4.79692529271791 | 9.35003131715643E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| NTRK2    | 4.79587682368983 | 0.000174685514057309  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CKMT2    | 4.79258170577608 | 0.0000599824438302514 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CLDN5    | 4.78319476742042 | 0.0000035100225008365 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CAV1     | 4.78128094441621 | 4.09983852314949E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SFRP1    | 4.76831666191754 | 0.0000540795957791983 | down | Pathway |  |
|          | -                |                       |      |         |  |
| DNASE1L3 | 4.76548699624983 | 0.00090945726120555   | down | Pathway |  |
| CRHBP    | -4.7508475115544 | 0.000471013104407419  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TSLP     | 4.74926907813875 | 0.0000300655359075657 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ZBTB16   | 4.74703213518503 | 0.00392715490930315   | down | Pathway |  |
|          | -                |                       |      |         |  |
| MARC1    | 4.74654075460485 | 0.0000903371821431127 | down | NA      |  |
|          | -                |                       |      |         |  |
| MAP1LC3C | 4.73119620545657 | 0.0000231355064402411 | down | Pathway |  |
|          | -                |                       |      |         |  |
| PLCXD3   | 4.72720798648349 | 0.000719977459913792  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TMEM37   | 4.72577514878088 | 0.0000922735054215946 | down | Pathway |  |
|          | -                |                       |      |         |  |
| HRASLS5  | 4.72395839821317 | 0.000140674677925602  | down | NA      |  |
|          | -                |                       |      |         |  |
| TNXB     | 4.72158564039523 | 0.0000408366581746066 | down | Pathway |  |
|          | -                |                       |      |         |  |
| HRCT1    | 4.71923307981687 | 0.0000852629833450245 | down | NA      |  |
| MEOX2    | -4.7105923847279 | 9.40865569656448E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| HHIP     | 4.69893025503394 | 0.000442845218508403  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TSPAN8   | 4.69050830972325 | 0.00218930866629397   | down | Pathway |  |
|          | -                |                       |      |         |  |
| ITGA7    | 4.68486411242365 | 9.40570684581767E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PRKAR2B  | 4.67609544419828 | 0.0000705182148924997 | down | Pathway |  |
|          | -                |                       |      |         |  |
| NPR1     | 4.67484613808943 | 0.0000746099172986083 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ELANE    | 4.67479756796384 | 0.0000167341009768103 | down | Pathway |  |
| FIGF     | -4.6642775561754 | 4.47749536812041E-06  | down | NA      |  |



|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| GYS2    | 4.64336046316919 | 0.00115836595329297   | down | Pathway |  |
|         | -                |                       |      |         |  |
| GRIA1   | 4.63352735184862 | 0.00221847159308067   | down | Pathway |  |
|         | -                |                       |      |         |  |
| TACR1   | 4.63259389477629 | 0.000336027226324442  | down | Pathway |  |
|         | -                |                       |      |         |  |
| SLC22A3 | 4.63071484546116 | 0.0000256779395398172 | down | Pathway |  |
|         | -                |                       |      |         |  |
| SLC1A7  | 4.61773838281641 | 0.0000727757884061152 | down | Pathway |  |
|         | -                |                       |      |         |  |
| HIF3A   | 4.60931540706125 | 0.00177737088492446   | down | Pathway |  |
|         | -                |                       |      |         |  |
| CAV2    | 4.60740408793919 | 0.0000035100225008365 | down | Pathway |  |
| IL33    | -4.6057480995729 | 0.0000216812107614539 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PPP1R1B | 4.59413807866562 | 0.00177497231862233   | down | Pathway |  |
| FAM107A | -4.5727325905125 | 0.000214593620021976  | down | Pathway |  |
|         | -                |                       |      |         |  |
| FCN2    | 4.57272468160267 | 0.00626296663035763   | down | Pathway |  |
|         | -                |                       |      |         |  |
| FMO2    | 4.56276252430863 | 0.000503557897516188  | down | Pathway |  |
|         | -                |                       |      |         |  |
| APOD    | 4.55434387938808 | 0.000053782526435052  | down | Pathway |  |
|         | -                |                       |      |         |  |
| RDH5    | 4.54850251643279 | 4.93078487897174E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| HCAR2   | 4.54182863025332 | 0.0000581124054029902 | down | Pathway |  |
|         | -                |                       |      |         |  |
| MYOM1   | 4.53728004985574 | 0.0000118863962808334 | down | Pathway |  |
|         | -                |                       |      |         |  |
| BHMT2   | 4.53172530501595 | 4.42708939954965E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| GABRA2  | 4.53086216620513 | 0.00131486752518726   | down | Pathway |  |
|         | -                |                       |      |         |  |
| KLF15   | 4.52402504300866 | 0.000493412706639896  | down | Pathway |  |
|         | -                |                       |      |         |  |
| SEMA3G  | 4.52077053856664 | 4.93078487897174E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| GALNT15 | 4.51725638379422 | 0.0000573557135571416 | down | NA      |  |
|         | -                |                       |      |         |  |
| ATOH8   | 4.50894194598401 | 0.0000363429564403213 | down | Pathway |  |
|         | -                |                       |      |         |  |
| MT1M    | 4.50874798985914 | 0.0000375375960516261 | down | Pathway |  |
|         | -                |                       |      |         |  |
| HSD11B1 | 4.49988278916708 | 0.00023087769011815   | down | Pathway |  |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| C1QTNF7 | 4.49426143052251 | 0.000612958213159945  | down | NA      |  |
|         | -                |                       |      |         |  |
| DARC    | 4.47576987106342 | 0.00117951915899427   | down | NA      |  |
|         | -                |                       |      |         |  |
| CCDC69  | 4.47422239497144 | 0.0000276279299739945 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PDK4    | 4.46735164696395 | 0.0000736794698513773 | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAM180B | 4.46326897506829 | 0.0000805725609347576 | down | NA      |  |
|         | -                |                       |      |         |  |
| ACSM5   | 4.45073839223754 | 0.000420534806909944  | down | Pathway |  |
| DES     | -4.4398129649725 | 0.0176217438468198    | down | Pathway |  |
|         | -                |                       |      |         |  |
| SVEP1   | 4.43585438224386 | 4.09983852314949E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| MME     | 4.43138021968257 | 0.000660059208830781  | down | Pathway |  |
|         | -                |                       |      |         |  |
| C2orf40 | 4.43031117521089 | 0.000574338703708593  | down | NA      |  |
|         | -                |                       |      |         |  |
| KIF25   | 4.40985128148907 | 0.0000228719746794813 | down | Pathway |  |
|         | -                |                       |      |         |  |
| SNTG2   | 4.39767937742971 | 0.000331787661833553  | down | NA      |  |
|         | -                |                       |      |         |  |
| PKNOX2  | 4.38051533475157 | 0.0000936258389767269 | down | NA      |  |
|         | -                |                       |      |         |  |
| AVPR2   | 4.34876898435487 | 0.000502108817876077  | down | Pathway |  |
|         | -                |                       |      |         |  |
| OGN     | 4.33104978755481 | 0.00328464595664734   | down | Pathway |  |
|         | -                |                       |      |         |  |
| C8orf34 | 4.32775631377141 | 0.000166533427059547  | down | NA      |  |
|         | -                |                       |      |         |  |
| FREM1   | 4.32018173432822 | 0.0000231355064402411 | down | Pathway |  |
|         | -                |                       |      |         |  |
| TWIST2  | 4.31760014726583 | 0.000974221204416011  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CHL1    | 4.30534423264893 | 0.0000136429042467373 | down | Pathway |  |
|         | -                |                       |      |         |  |
| C3orf55 | 4.30532039552845 | 0.000207183989810153  | down | NA      |  |
|         | -                |                       |      |         |  |
| F10     | 4.29627600536128 | 0.0000785780320716064 | down | Pathway |  |
|         | -                |                       |      |         |  |
| HPR     | 4.29336046457851 | 0.00248304237219427   | down | Pathway |  |
|         | -                |                       |      |         |  |
| CPED1   | 4.27893041447912 | 0.0000220455135734751 | down | NA      |  |
|         | -                |                       |      |         |  |
| BMX     | 4.27328620831966 | 7.57103304085244E-06  | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| DTX1     | 4.27271976955953 | 0.0000297807856142578 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CCDC85A  | 4.27014420384844 | 0.000467071501866575  | down | NA      |  |
|          | -                |                       |      |         |  |
| PDE2A    | 4.25891016733054 | 7.03617665926645E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TPO      | 4.25229980850458 | 0.000805427054623683  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CEBPA    | 4.24977280918949 | 0.00103328181299301   | down | Pathway |  |
| CCDC178  | -4.2492206782888 | 0.0000315490420068815 | down | NA      |  |
|          | -                |                       |      |         |  |
| XPNPEP2  | 4.24594118468079 | 0.000841961641436113  | down | NA      |  |
|          | -                |                       |      |         |  |
| FGF2     | 4.23469720337943 | 0.000208755177709903  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FZD4     | 4.23114092495479 | 4.93078487897174E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| GFAP     | 4.22586921794054 | 0.00810123338750151   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CNTNAP3B | 4.22034205754551 | 0.000248543237413034  | down | NA      |  |
|          | -                |                       |      |         |  |
| ENPP2    | 4.19577885483851 | 0.0000138892049247438 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ACACB    | 4.19577088402362 | 0.0000725483837037814 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ALDH1A1  | 4.19375229923244 | 0.000888268179667604  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PDZD2    | 4.19164325573677 | 0.0000281969501506849 | down | NA      |  |
|          | -                |                       |      |         |  |
| GPR146   | 4.18747792560292 | 6.28823464173383E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| INMT     | 4.18265804870926 | 0.0000702001460353275 | down | Pathway |  |
|          | -                |                       |      |         |  |
| LRRN3    | 4.17875052773583 | 0.0000035100225008365 | down | Pathway |  |
| LEFTY2   | -4.1653917739465 | 0.0008890430012595    | down | Pathway |  |
|          | -                |                       |      |         |  |
| NRN1     | 4.16389771669909 | 0.000337787104676769  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PRR26    | 4.14863250265683 | 0.0000317201556733218 | down | NA      |  |
|          | -                |                       |      |         |  |
| PDE11A   | 4.14538313861459 | 0.000888253953419409  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SLC17A7  | 4.14514316769474 | 0.000035799033508745  | down | Pathway |  |
|          | -                |                       |      |         |  |
| IGFBP6   | 4.14207751689887 | 0.000133214633794614  | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| PALMD    | 4.14181839373815 | 9.40865569656448E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| AKAP12   | 4.13623408059883 | 4.19222087788146E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CDKN1C   | 4.13164517991594 | 0.000043451807242662  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FAM89A   | 4.13025876217922 | 0.0000242339676738567 | down | NA      |  |
|          | -                |                       |      |         |  |
| CLCA2    | 4.12502805412794 | 0.000334143519914029  | down | Pathway |  |
| PPP1R14A | -4.1132251342614 | 0.000243299091832372  | down | NA      |  |
|          | -                |                       |      |         |  |
| PKD1L2   | 4.11299553932838 | 0.00407139800958276   | down | Pathway |  |
|          | -                |                       |      |         |  |
| P2RX6    | 4.10864488786676 | 0.000169316799157137  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PRELP    | 4.09619244852288 | 0.0000334916128673879 | down | NA      |  |
|          | -                |                       |      |         |  |
| WNT11    | 4.08370330131689 | 0.00199327714734499   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CPA2     | 4.08020423765729 | 0.000623555058149339  | down | NA      |  |
|          | -                |                       |      |         |  |
| MYO16    | 4.06772952328102 | 0.0000231600052310895 | down | Pathway |  |
|          | -                |                       |      |         |  |
| MAB21L1  | 4.06673623502035 | 0.000190284078984827  | down | Pathway |  |
| AKR1C3   | -4.066023259862  | 4.19222087788146E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| DMRTA1   | 4.06311010577887 | 0.00050374057871714   | down | Pathway |  |
|          | -                |                       |      |         |  |
| DMGDH    | 4.06052880393303 | 0.0000216825353897115 | down | Pathway |  |
|          | -                |                       |      |         |  |
| C10orf10 | 4.04568582036774 | 0.0000054276263364332 | down | NA      |  |
|          | -                |                       |      |         |  |
| PYGM     | 4.04389037521481 | 0.0000281834185229659 | down | Pathway |  |
|          | -                |                       |      |         |  |
| IGF1     | 4.03854532661337 | 0.000295212942885313  | down | Pathway |  |
|          | -                |                       |      |         |  |
| KLHL30   | 4.03733179136833 | 0.000203752307486219  | down | NA      |  |
|          | -                |                       |      |         |  |
| KLHL33   | 4.03130993770455 | 0.000295212942885313  | down | NA      |  |
|          | -                |                       |      |         |  |
| LRP1B    | 4.02112284390598 | 0.00947119322050621   | down | NA      |  |
|          | -                |                       |      |         |  |
| RELN     | 4.01931740579915 | 0.000815822151727438  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ABCC6    | 4.01168093319001 | 0.0000229075862355889 | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| NMNAT2   | 4.00946638294773 | 0.000303085671835874  | down | NA      |  |
| RASD1    | -4.0061211531694 | 0.000108792788264765  | down | Pathway |  |
|          | -                |                       |      |         |  |
| BMPER    | 4.00443602973403 | 0.000142409141081999  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PENK     | 4.00409539087765 | 0.00895166323314354   | down | Pathway |  |
|          | -                |                       |      |         |  |
| AVPR1A   | 3.99962115511668 | 0.000101669495917888  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CBLN1    | 3.99956504416236 | 0.000111254350827603  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TNS1     | 3.99846098407643 | 0.0000164035762947684 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CYP2A6   | 3.99701701651163 | 0.0420665200077647    | down | Pathway |  |
|          | -                |                       |      |         |  |
| HLF      | 3.99564647148942 | 0.0000182494380782862 | down | Pathway |  |
|          | -                |                       |      |         |  |
| TMOD1    | 3.98665347468514 | 0.000248543237413034  | down | Pathway |  |
|          | -                |                       |      |         |  |
| BMP2     | 3.96701673621564 | 0.000083142834261072  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ASPG     | 3.95981348713451 | 0.0004784401782741    | down | Pathway |  |
|          | -                |                       |      |         |  |
| HOXA10   | 3.95905956401771 | 0.0000822637069617463 | down | Pathway |  |
|          | -                |                       |      |         |  |
| HOGA1    | 3.95382152802359 | 0.000237620653586152  | down | Pathway |  |
|          | -                |                       |      |         |  |
| AGMO     | 3.94886454977826 | 0.000334143519914029  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MLIP     | 3.94288259186442 | 0.00106915086935269   | down | Pathway |  |
|          | -                |                       |      |         |  |
| C1QTNF9B | 3.92297627028357 | 8.13603719666152E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| TCF15    | 3.91650227230598 | 0.000270155397232282  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MEOX1    | 3.91636060626135 | 0.000597980642242288  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CLMP     | 3.90267562843546 | 0.000077538075857269  | down | Pathway |  |
|          | -                |                       |      |         |  |
| BOK      | 3.90135032435998 | 0.000076246527908556  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TGFBR3   | 3.89428690790126 | 0.000337787104676769  | down | Pathway |  |
|          | -                |                       |      |         |  |
| BMP3     | 3.87521056652805 | 0.0206499838504648    | down | Pathway |  |
| EBF1     | -3.8683134600187 | 9.35003131715643E-06  | down | NA      |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| NMB      | 3.86818207470585 | 0.0000281834185229659 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CTSG     | 3.86621616687013 | 0.00367689322002081   | down | Pathway |  |
|          | -                |                       |      |         |  |
| ALDH1A2  | 3.86608312629764 | 0.0000776285145144357 | down | Pathway |  |
|          | -                |                       |      |         |  |
| VLDLR    | 3.86469605167026 | 0.0000300655359075657 | down | Pathway |  |
|          | -                |                       |      |         |  |
| NKAPL    | 3.86049444743007 | 0.000014088441156621  | down | NA      |  |
|          | -                |                       |      |         |  |
| SNCG     | 3.85958757577897 | 0.00212912302558871   | down | Pathway |  |
|          | -                |                       |      |         |  |
| NTRK3    | 3.85938608594833 | 0.00206532857401165   | down | Pathway |  |
|          | -                |                       |      |         |  |
| EBF3     | 3.85873267926423 | 0.0000297807856142578 | down | NA      |  |
|          | -                |                       |      |         |  |
| KCNAB1   | 3.84618753012724 | 0.0000302660001749592 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ADIRF    | 3.83969064579344 | 0.000131656086833542  | down | Pathway |  |
| SCN4B    | -3.8285080852239 | 0.000137832569291202  | down | Pathway |  |
|          | -                |                       |      |         |  |
| LUZP2    | 3.82541438557985 | 0.0000985411462195632 | down | NA      |  |
|          | -                |                       |      |         |  |
| ECM2     | 3.81816568389154 | 0.0000208276182863052 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ARHGDIG  | 3.81622222812331 | 0.0143867933717587    | down | Pathway |  |
|          | -                |                       |      |         |  |
| DDR2     | 3.81391766650675 | 9.54545132091244E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| RGS7BP   | 3.80880822504656 | 0.00130689265584673   | down | Pathway |  |
|          | -                |                       |      |         |  |
| AGPAT2   | 3.80465158454141 | 3.53589780530754E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PTH1R    | 3.80347625210138 | 0.000129439610476009  | down | Pathway |  |
|          | -                |                       |      |         |  |
| KCNA2    | 3.80335927722175 | 0.00121028633221942   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PGM5     | 3.80053375824283 | 0.0000135579150977941 | down | Pathway |  |
|          | -                |                       |      |         |  |
| PTGER3   | 3.79537805752215 | 0.00222750025134191   | down | Pathway |  |
|          | -                |                       |      |         |  |
| HOXA6    | 3.79112497240483 | 0.000406484763669773  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FOXP2    | 3.78896095542037 | 0.0000852629833450245 | down | Pathway |  |
|          | -                |                       |      |         |  |
| C16orf89 | 3.78508628838183 | 0.00467081786442399   | down | NA      |  |

|           |                  |                       |      |         |
|-----------|------------------|-----------------------|------|---------|
| SRPX      | -3.7766560194451 | 0.000101569544108791  | down | NA      |
| S100A1    | -                |                       |      |         |
|           | 3.77330752478411 | 0.0100714300020009    | down | Pathway |
| ABCA9     | -                |                       |      |         |
|           | 3.77117167231045 | 0.000018291536526029  | down | Pathway |
| ANKRD53   | -                |                       |      |         |
|           | 3.76894493510949 | 0.000788212727933024  | down | Pathway |
| GNAL      | -                |                       |      |         |
|           | 3.76782091755097 | 0.0000518100577819199 | down | Pathway |
| WISP2     | -                |                       |      |         |
|           | 3.76471112788533 | 0.00389757481976342   | down | NA      |
| GPR133    | -                |                       |      |         |
| FAM47E-   | 3.75513821242355 | 0.00042051996284283   | down | NA      |
| STBD1     | -                |                       |      |         |
|           | 3.75505521734822 | 0.0000293106134078413 | down | NA      |
| SLCO1C1   | -                |                       |      |         |
|           | 3.75152528974678 | 0.000618712960997213  | down | Pathway |
| TFPI2     | -                |                       |      |         |
|           | 3.75069535949488 | 0.00271174209364322   | down | Pathway |
| SRL       | -                |                       |      |         |
|           | 3.74380952947644 | 0.000419733193335058  | down | NA      |
| TRPM3     | -                |                       |      |         |
|           | 3.74170591506731 | 0.0010098666038566    | down | Pathway |
| GNAI1     | -                |                       |      |         |
|           | 3.74170310034176 | 0.0000160561685248542 | down | Pathway |
| ADAMTS18  | -                |                       |      |         |
|           | 3.73965130826001 | 0.00218930866629397   | down | Pathway |
| STXBP6    | -                |                       |      |         |
|           | 3.73053837507406 | 0.000239011377535071  | down | Pathway |
| SPTB      | -                |                       |      |         |
|           | 3.72748827479201 | 0.00035511239248199   | down | Pathway |
| ADCY5     | -                |                       |      |         |
|           | 3.72157590114608 | 0.00236376952926664   | down | Pathway |
| COX7A1    | -                |                       |      |         |
|           | 3.71494575961583 | 0.000244249546016284  | down | NA      |
| HOXA7     | -                |                       |      |         |
|           | 3.71487827616766 | 0.000334044156735741  | down | Pathway |
| GSTM5     | -                |                       |      |         |
|           | 3.71466076186456 | 0.000179838232954031  | down | Pathway |
| DMD       | -                |                       |      |         |
|           | 3.70382411581314 | 0.0000281834185229659 | down | Pathway |
| MMD       | -                |                       |      |         |
|           | 3.70240448935793 | 8.82277213345037E-06  | down | Pathway |
| LINC00961 | -                |                       |      |         |
| TYRO3     | 3.70209100576518 | 0.0000165697766706899 | down | NA      |
|           | -3.7018155097038 | 6.28823464173383E-06  | down | Pathway |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| KRT79    | 3.69924349421895 | 0.0013012448199426    | down | Pathway |  |
|          | -                |                       |      |         |  |
| FHL5     | 3.67506393100664 | 0.0000165697766706899 | down | NA      |  |
|          | -                |                       |      |         |  |
| ALDH2    | 3.67119530260337 | 0.0000669530180311546 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CADM2    | 3.66367535393974 | 0.00752424512668045   | down | NA      |  |
|          | -                |                       |      |         |  |
| ZNF676   | 3.66198885790012 | 0.0000835210703882731 | down | NA      |  |
|          | -                |                       |      |         |  |
| DOC2B    | 3.65926374698171 | 0.00150353420711914   | down | Pathway |  |
| ARHGAP20 | -3.65862152471   | 0.000145928809403184  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FGF10    | 3.65821207212732 | 0.0275520600374499    | down | Pathway |  |
|          | -                |                       |      |         |  |
| FCGR3B   | 3.65420280362623 | 0.000507568307577507  | down | NA      |  |
|          | -                |                       |      |         |  |
| ABCC9    | 3.64513567649009 | 0.0000486314964949464 | down | Pathway |  |
|          | -                |                       |      |         |  |
| FAM228A  | 3.64033611005617 | 0.000158378878195677  | down | NA      |  |
|          | -                |                       |      |         |  |
| CCL24    | 3.63215705182308 | 0.00220286488602987   | down | Pathway |  |
|          | -                |                       |      |         |  |
| GPBAR1   | 3.62954114793159 | 7.02934969351015E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FFAR3    | 3.62658971112777 | 0.000350006354206234  | down | Pathway |  |
|          | -                |                       |      |         |  |
| DNAH9    | 3.62476158852461 | 0.00119702906199665   | down | Pathway |  |
|          | -                |                       |      |         |  |
| MATN2    | 3.62448284915844 | 0.000290682434526154  | down | NA      |  |
|          | -                |                       |      |         |  |
| GSN      | 3.62374538605296 | 6.23165598484117E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| COLEC11  | 3.62237647806452 | 0.0000529984249830006 | down | Pathway |  |
|          | -                |                       |      |         |  |
| TENM1    | 3.62195844355212 | 0.00214689919819285   | down | Pathway |  |
| SIM1     | -3.615285884196  | 0.0282893565224409    | down | Pathway |  |
|          | -                |                       |      |         |  |
| SYNPO    | 3.59949724112553 | 4.60415811305413E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MMRN1    | 3.59874918511679 | 0.00147697324715866   | down | Pathway |  |
|          | -                |                       |      |         |  |
| GABRE    | 3.59839153167981 | 0.00481201807973802   | down | Pathway |  |
|          | -                |                       |      |         |  |
| TLCD2    | 3.59086761666984 | 0.00035108323967454   | down | Pathway |  |



|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| GOLGA8M | 3.58845394971181 | 0.00188975830332752   | down | NA      |  |
|         | -                |                       |      |         |  |
| GNG11   | 3.58207051070969 | 2.81821035777139E-06  | down | NA      |  |
|         | -                |                       |      |         |  |
| CNR1    | 3.57258439497634 | 0.00233570228654904   | down | Pathway |  |
| SYNE3   | -3.5692208770669 | 0.0000383001339113691 | down | Pathway |  |
|         | -                |                       |      |         |  |
| SLIT3   | 3.56448467245205 | 0.000119309514671337  | down | Pathway |  |
|         | -                |                       |      |         |  |
| DENND2A | 3.56370142870472 | 3.46935980267288E-06  | down | NA      |  |
|         | -                |                       |      |         |  |
| PID1    | 3.56053552742711 | 0.000205838892437834  | down | Pathway |  |
|         | -                |                       |      |         |  |
| ABCA6   | 3.55667688669961 | 0.000011339465151072  | down | Pathway |  |
|         | -                |                       |      |         |  |
| ABCB5   | 3.55433235640515 | 0.0188435994940584    | down | Pathway |  |
|         | -                |                       |      |         |  |
| GLDN    | 3.55422856825764 | 0.000608080952459838  | down | Pathway |  |
|         | -                |                       |      |         |  |
| COL25A1 | 3.55305947937497 | 0.00644007706582593   | down | NA      |  |
|         | -                |                       |      |         |  |
| SPTBN1  | 3.54968221482542 | 4.19222087788146E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| BMP6    | 3.54493581011831 | 0.000395784895508871  | down | Pathway |  |
|         | -                |                       |      |         |  |
| RAB3C   | 3.54253182503072 | 0.00696313971949208   | down | Pathway |  |
| KANK4   | -3.5409385285132 | 0.00145553954574202   | down | Pathway |  |
|         | -                |                       |      |         |  |
| ADAMTS5 | 3.53666296454508 | 0.0000231600052310895 | down | Pathway |  |
|         | -                |                       |      |         |  |
| MEDAG   | 3.52065293024942 | 0.0001158000930272    | down | Pathway |  |
|         | -                |                       |      |         |  |
| EGFR    | 3.51603321986057 | 0.0000776285145144357 | down | Pathway |  |
|         | -                |                       |      |         |  |
| SLITRK2 | 3.51431167350137 | 0.000613752329335866  | down | Pathway |  |
|         | -                |                       |      |         |  |
| MRAS    | 3.51043297436587 | 0.000204039481344666  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CLIC5   | 3.50650277180751 | 0.000911933852378139  | down | Pathway |  |
|         | -                |                       |      |         |  |
| THSD7B  | 3.50644150804196 | 0.000248543237413034  | down | Pathway |  |
|         | -                |                       |      |         |  |
| RORB    | 3.49831192125561 | 0.00680934672390898   | down | Pathway |  |
|         | -                |                       |      |         |  |
| THBS4   | 3.49610826999243 | 0.00458278986785771   | down | Pathway |  |

|           |                  |                       |      |         |  |
|-----------|------------------|-----------------------|------|---------|--|
|           | -                |                       |      |         |  |
| PPARGC1A  | 3.49604806001425 | 0.00182534060977757   | down | Pathway |  |
|           | -                |                       |      |         |  |
| EHD2      | 3.49442231432448 | 0.0000160561685248542 | down | Pathway |  |
|           | -                |                       |      |         |  |
| KANK3     | 3.49307724904695 | 0.0000276380671060869 | down | Pathway |  |
|           | -                |                       |      |         |  |
| C1QTNF1   | 3.48954802734576 | 0.0000138892049247438 | down | Pathway |  |
|           | -                |                       |      |         |  |
| DCT       | 3.48877176609222 | 0.000116452235987473  | down | Pathway |  |
|           | -                |                       |      |         |  |
| C7orf41   | 3.46002711728378 | 0.0000246359191821229 | down | NA      |  |
|           | -                |                       |      |         |  |
| SV2B      | 3.45982092338506 | 0.00135253883046239   | down | Pathway |  |
|           | -                |                       |      |         |  |
| RBPM52    | 3.45956498724779 | 0.0000127212743298798 | down | Pathway |  |
| HOXA5     | -3.4582836667281 | 0.000467124973211234  | down | Pathway |  |
|           | -                |                       |      |         |  |
| TMEM88    | 3.45636731239783 | 7.75610919931282E-06  | down | Pathway |  |
|           | -                |                       |      |         |  |
| ITM2A     | 3.45004719791818 | 0.0000276807225929861 | down | NA      |  |
|           | -                |                       |      |         |  |
| MGLL      | 3.44761532324938 | 0.000486714959662508  | down | Pathway |  |
|           | -                |                       |      |         |  |
| WASF3     | 3.43333945711301 | 0.000467178037277391  | down | Pathway |  |
|           | -                |                       |      |         |  |
| PKDCC     | 3.42992369754716 | 0.000141818334379598  | down | Pathway |  |
| LEPR      | -3.4295854795498 | 6.86538373931544E-06  | down | Pathway |  |
|           | -                |                       |      |         |  |
| NDNF      | 3.42799904143851 | 0.00138620547389207   | down | Pathway |  |
|           | -                |                       |      |         |  |
| PTGFR     | 3.42098100677971 | 0.000868075912579947  | down | Pathway |  |
|           | -                |                       |      |         |  |
| ELOVL3    | 3.41574758232844 | 0.00352129257719098   | down | Pathway |  |
|           | -                |                       |      |         |  |
| ADCYAP1R1 | 3.41289170387051 | 0.00887174517079537   | down | Pathway |  |
|           | -                |                       |      |         |  |
| CD209     | 3.40804605619145 | 0.00688492820022576   | down | Pathway |  |
|           | -                |                       |      |         |  |
| BPIFB2    | 3.40677274698719 | 0.00963174662568759   | down | NA      |  |
|           | -                |                       |      |         |  |
| GYPC      | 3.40139450447447 | 0.000250656412124445  | down | NA      |  |
|           | -                |                       |      |         |  |
| MAOB      | 3.40110246209627 | 0.000141818334379598  | down | Pathway |  |
|           | -                |                       |      |         |  |
| MCAM      | 3.40037108980182 | 6.23165598484117E-06  | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| GPB1     | 3.39631730077417 | 0.000113657142831213  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MYRIP    | 3.39241961899401 | 0.00280636574446582   | down | Pathway |  |
|          | -                |                       |      |         |  |
| SSTR1    | 3.38636902546674 | 0.00281418192569626   | down | Pathway |  |
|          | -                |                       |      |         |  |
| LGI4     | 3.38606701718793 | 0.0000987598037500726 | down | Pathway |  |
|          | -                |                       |      |         |  |
| KIAA1045 | 3.38574565620428 | 0.000485274796211091  | down | NA      |  |
| LPHN3    | -3.384021402635  | 0.000226269035045052  | down | NA      |  |
|          | -                |                       |      |         |  |
| ASS1     | 3.37785573469757 | 0.00244230817713593   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PREX2    | 3.37595713583181 | 0.0000501761030412632 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CCL13    | 3.37071825644541 | 0.0178855844568774    | down | Pathway |  |
|          | -                |                       |      |         |  |
| SCN9A    | 3.37040215792798 | 0.000374117349314525  | down | Pathway |  |
|          | -                |                       |      |         |  |
| C10orf90 | 3.36801542581684 | 0.00332097079768363   | down | Pathway |  |
|          | -                |                       |      |         |  |
| TTPA     | 3.36774146458754 | 0.00866293633700327   | down | Pathway |  |
|          | -                |                       |      |         |  |
| MT1X     | 3.35756631792791 | 0.000165237414605702  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CRTAC1   | 3.35520666387272 | 0.0472725533412473    | down | Pathway |  |
|          | -                |                       |      |         |  |
| ESR2     | 3.35256171475675 | 0.000441084063429536  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FMOD     | 3.35095883316811 | 0.000223227171581174  | down | Pathway |  |
|          | -                |                       |      |         |  |
| LRRC2    | 3.34735599647031 | 0.000113657142831213  | down | NA      |  |
|          | -                |                       |      |         |  |
| FAM150B  | 3.34429481477358 | 0.0209400512349099    | down | NA      |  |
|          | -                |                       |      |         |  |
| MFAP4    | 3.34228344466251 | 0.00115661684218583   | down | Pathway |  |
|          | -                |                       |      |         |  |
| LIFR     | 3.33925284963003 | 0.0000233944443705919 | down | NA      |  |
|          | -                |                       |      |         |  |
| AFF2     | 3.33911829215836 | 0.00338219740239093   | down | Pathway |  |
|          | -                |                       |      |         |  |
| EDNRB    | 3.33003493632662 | 0.0000142621697148002 | down | Pathway |  |
|          | -                |                       |      |         |  |
| STX11    | 3.32809780468118 | 0.000151222201296785  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SCN3A    | 3.32362316446504 | 0.00100321475980003   | down | Pathway |  |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| IGSF10  | 3.32297982853027 | 0.000345501284740521  | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAM149A | 3.32084053134004 | 0.000131292341600427  | down | NA      |  |
|         | -                |                       |      |         |  |
| FAM162B | 3.32070639137785 | 0.000248543237413034  | down | NA      |  |
|         | -                |                       |      |         |  |
| DIO3    | 3.31823132905632 | 0.0113296757803969    | down | Pathway |  |
|         | -                |                       |      |         |  |
| ADM     | 3.31328389720215 | 0.000118517326107118  | down | Pathway |  |
| PRPH    | -3.3094818784071 | 0.00181969213656071   | down | NA      |  |
|         | -                |                       |      |         |  |
| TGFBR2  | 3.30267924595493 | 0.0000114475091836265 | down | Pathway |  |
|         | -                |                       |      |         |  |
| GDF5    | 3.30176958731517 | 0.0014394023965887    | down | Pathway |  |
|         | -                |                       |      |         |  |
| MEST    | 3.29709032503795 | 0.0000573557135571416 | down | Pathway |  |
|         | -                |                       |      |         |  |
| MGST1   | 3.29325392755476 | 0.00209453764137192   | down | Pathway |  |
|         | -                |                       |      |         |  |
| RGS6    | 3.29003281800119 | 0.00471885773183127   | down | Pathway |  |
|         | -                |                       |      |         |  |
| PNPLA2  | 3.28907813553096 | 6.86538373931544E-06  | down | Pathway |  |
|         | -                |                       |      |         |  |
| ABLM3   | 3.28800542314957 | 0.000589275416381324  | down | Pathway |  |
|         | -                |                       |      |         |  |
| EBF2    | 3.28146582577916 | 0.0000705182148924997 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PHYHIP  | 3.27970407635738 | 0.0000165697766706899 | down | NA      |  |
|         | -                |                       |      |         |  |
| CSMD1   | 3.27919997651096 | 0.0355721711712099    | down | Pathway |  |
|         | -                |                       |      |         |  |
| CADM3   | 3.27835797177992 | 0.000292548645182149  | down | Pathway |  |
|         | -                |                       |      |         |  |
| ACSL1   | 3.27682817541346 | 0.0000983664357695885 | down | Pathway |  |
|         | -                |                       |      |         |  |
| ANK2    | 3.27682268655122 | 0.000241403265626349  | down | Pathway |  |
|         | -                |                       |      |         |  |
| GPM6A   | 3.27647402547181 | 0.0235103775207698    | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAXDC2  | 3.27554805905379 | 0.000325264961088344  | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAM110D | 3.27303209724073 | 0.0000302660001749592 | down | NA      |  |
|         | -                |                       |      |         |  |
| TRIM61  | 3.27055685152505 | 0.000915919013007425  | down | NA      |  |
|         | -                |                       |      |         |  |
| WSCD1   | 3.26519625581866 | 0.000236331886537201  | down | NA      |  |

|           |                  |                       |      |         |  |
|-----------|------------------|-----------------------|------|---------|--|
|           | -                |                       |      |         |  |
| CCDC80    | 3.26271475919778 | 0.000248598917320596  | down | Pathway |  |
|           | -                |                       |      |         |  |
| ACO1      | 3.25868312763603 | 0.0000216013010133142 | down | Pathway |  |
|           | -                |                       |      |         |  |
| CYP26B1   | 3.25682777968583 | 0.00056566482513222   | down | Pathway |  |
|           | -                |                       |      |         |  |
| CXCR1     | 3.25589960724005 | 0.0032737444367043    | down | Pathway |  |
|           | -                |                       |      |         |  |
| CLVS1     | 3.25318026186152 | 0.000736715997381874  | down | NA      |  |
|           | -                |                       |      |         |  |
| TBX15     | 3.24916438416385 | 0.000929013260278517  | down | Pathway |  |
|           | -                |                       |      |         |  |
| FGF7      | 3.24488159461145 | 0.000102523997037046  | down | Pathway |  |
|           | -                |                       |      |         |  |
| HOXB8     | 3.24342132985722 | 0.000900034428774405  | down | Pathway |  |
|           | -                |                       |      |         |  |
| PLP1      | 3.24229118994353 | 0.0389058721932742    | down | Pathway |  |
|           | -                |                       |      |         |  |
| RNF157    | 3.23775445426018 | 0.000079070782724783  | down | Pathway |  |
|           | -                |                       |      |         |  |
| ART4      | 3.23523764281573 | 0.00767670442226362   | down | Pathway |  |
| ALDOC     | -3.2343597503791 | 0.00013536565337438   | down | Pathway |  |
|           | -                |                       |      |         |  |
| RNF150    | 3.22240820614812 | 0.0126888140897027    | down | NA      |  |
|           | -                |                       |      |         |  |
| BAI3      | 3.22164570523051 | 0.00385388988673581   | down | NA      |  |
|           | -                |                       |      |         |  |
| NIPSNAP3B | 3.22132478548041 | 0.000214581904479832  | down | NA      |  |
| CYP3A5    | -3.220853939586  | 0.00280867451928625   | down | Pathway |  |
|           | -                |                       |      |         |  |
| PM20D1    | 3.22010823349126 | 0.0167291356033649    | down | Pathway |  |
|           | -                |                       |      |         |  |
| CCL21     | 3.21873801302757 | 0.0202295448469118    | down | Pathway |  |
|           | -                |                       |      |         |  |
| MAMDC2    | 3.21588629680419 | 0.00048557048018908   | down | NA      |  |
|           | -                |                       |      |         |  |
| EFEMP1    | 3.21302285404775 | 0.000922833019169213  | down | Pathway |  |
|           | -                |                       |      |         |  |
| EPAS1     | 3.21068203304844 | 0.0000820462790595965 | down | Pathway |  |
| NOVA1     | -3.2064302600185 | 0.00752613011903416   | down | Pathway |  |
|           | -                |                       |      |         |  |
| AQP1      | 3.20168793657922 | 0.0000674325767586959 | down | Pathway |  |
|           | -                |                       |      |         |  |
| FNDC4     | 3.19839471371748 | 0.0000907487497202508 | down | Pathway |  |
|           | -                |                       |      |         |  |
| ACE2      | 3.19812143276693 | 0.00549872263106959   | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| PALM     | 3.19755955545334 | 0.0000271212961336546 | down | Pathway |  |
|          | -                |                       |      |         |  |
| DOCK11   | 3.19702208367297 | 0.0000541162231374976 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CACNA2D1 | 3.19698253253938 | 0.0000983664357695885 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CRHR2    | 3.19050292552157 | 0.00846125009380684   | down | Pathway |  |
|          | -                |                       |      |         |  |
| SMOC1    | 3.18522117690626 | 0.00544629483212838   | down | Pathway |  |
|          | -                |                       |      |         |  |
| GIPC2    | 3.17600417156214 | 0.000119265125967958  | down | NA      |  |
|          | -                |                       |      |         |  |
| GNG2     | 3.17558358397625 | 0.0000298697963818535 | down | Pathway |  |
|          | -                |                       |      |         |  |
| PLA2G16  | 3.17535928544061 | 0.000146406827745791  | down | NA      |  |
|          | -                |                       |      |         |  |
| GALNT13  | 3.17341956275921 | 0.000700595594406309  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ALX1     | 3.17211707451355 | 0.00902106186430693   | down | Pathway |  |
|          | -                |                       |      |         |  |
| LHFP     | 3.16301924839933 | 0.0000110582399127156 | down | NA      |  |
|          | -                |                       |      |         |  |
| LMOD1    | 3.16037908030158 | 0.0000695787681704741 | down | Pathway |  |
|          | -                |                       |      |         |  |
| C1orf115 | 3.15979025904395 | 6.55608097662842E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| SHE      | 3.15780698370336 | 0.0000126485088705199 | down | NA      |  |
|          | -                |                       |      |         |  |
| PTRF     | 3.15449542457307 | 0.0000165697766706899 | down | NA      |  |
|          | -                |                       |      |         |  |
| DPP6     | 3.14904952110205 | 0.0216834725309011    | down | Pathway |  |
| RARRES2  | -3.1484071041035 | 0.000813858716747745  | down | Pathway |  |
|          | -                |                       |      |         |  |
| C2CD4B   | 3.14752997297815 | 0.018819221318244     | down | Pathway |  |
|          | -                |                       |      |         |  |
| P2RY12   | 3.14486322301323 | 0.00017903656295909   | down | Pathway |  |
| CAT      | -3.1441189146174 | 0.0000279906111157143 | down | Pathway |  |
| VGLL3    | -3.1427578294669 | 0.0000271212961336546 | down | NA      |  |
|          | -                |                       |      |         |  |
| S1PR1    | 3.14049986331424 | 0.0000174267445510039 | down | Pathway |  |
|          | -                |                       |      |         |  |
| AIF1L    | 3.13832523451778 | 0.000942497585998621  | down | Pathway |  |
|          | -                |                       |      |         |  |
| PTGIS    | 3.13584278391706 | 0.00302199038600061   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CA3      | 3.13309328206816 | 0.032682009523293     | down | Pathway |  |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| PLIN5   | 3.13273994632366 | 0.0188435994940584    | down | Pathway |  |
|         | -                |                       |      |         |  |
| TEK     | 3.13255535949579 | 0.0000222356336549405 | down | Pathway |  |
|         | -                |                       |      |         |  |
| GRB14   | 3.13209680954944 | 0.022660886497866     | down | Pathway |  |
| RGN     | -3.1229125305068 | 0.0095518537332813    | down | Pathway |  |
|         | -                |                       |      |         |  |
| SOX6    | 3.12254074838663 | 0.0120190094198583    | down | Pathway |  |
|         | -                |                       |      |         |  |
| MAPK10  | 3.12063968967659 | 0.00051428028943494   | down | Pathway |  |
|         | -                |                       |      |         |  |
| KLHL31  | 3.11971654627897 | 0.00128877260305796   | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAM13A  | 3.11887778023604 | 0.000162681118293746  | down | Pathway |  |
| ZCCHC24 | -3.1183839927436 | 0.0000231600052310895 | down | NA      |  |
|         | -                |                       |      |         |  |
| SYNM    | 3.11802734581242 | 0.00161805377113719   | down | Pathway |  |
|         | -                |                       |      |         |  |
| ABCA10  | 3.11631522845126 | 0.0000525970188393347 | down | Pathway |  |
|         | -                |                       |      |         |  |
| FBLN2   | 3.10952818441719 | 0.00119633534347166   | down | Pathway |  |
|         | -                |                       |      |         |  |
| RYR3    | 3.10786226317265 | 0.0202714868055221    | down | Pathway |  |
|         | -                |                       |      |         |  |
| BANK1   | 3.10574695247517 | 0.000117854090787491  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CYP19A1 | 3.09888831648864 | 0.0251428803736838    | down | Pathway |  |
|         | -                |                       |      |         |  |
| SIK2    | 3.09085697631705 | 0.0000319476602110509 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PPAP2A  | 3.09062394922178 | 7.81149829611418E-06  | down | NA      |  |
|         | -                |                       |      |         |  |
| TSPAN7  | 3.08993648380612 | 0.00230802063145906   | down | NA      |  |
|         | -                |                       |      |         |  |
| CXorf36 | 3.08425795625045 | 0.0000108596544569222 | down | NA      |  |
|         | -                |                       |      |         |  |
| MYL3    | 3.07953033708248 | 0.0058038808891796    | down | Pathway |  |
|         | -                |                       |      |         |  |
| CABP1   | 3.05945850835388 | 0.000216635632680683  | down | Pathway |  |
|         | -                |                       |      |         |  |
| DEFB1   | 3.05573198223699 | 0.0231177358048044    | down | Pathway |  |
| NRG2    | -3.0533931724567 | 0.000473536753678606  | down | NA      |  |
|         | -                |                       |      |         |  |
| CORO2B  | 3.05246013638984 | 0.000269175251478561  | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAT2    | 3.05115150709159 | 0.0222470908853414    | down | Pathway |  |

|          |                  |                       |      |  |         |
|----------|------------------|-----------------------|------|--|---------|
|          | -                |                       |      |  |         |
| RETSAT   | 3.05017527464941 | 0.0000182694821537976 | down |  | Pathway |
|          | -                |                       |      |  |         |
| STEAP4   | 3.04911552136889 | 0.00286476027223067   | down |  | Pathway |
|          | -                |                       |      |  |         |
| TACC1    | 3.04602836514345 | 0.0000309776681751308 | down |  | Pathway |
| CCDC36   | -3.0439638961412 | 0.000163991887276702  | down |  | NA      |
| CDKN2C   | -3.0372701571782 | 0.0000776285145144357 | down |  | Pathway |
|          | -                |                       |      |  |         |
| ECSCR    | 3.03410194972266 | 0.0000116557440237734 | down |  | Pathway |
|          | -                |                       |      |  |         |
| KCNK3    | 3.02949375734383 | 0.0415187246244953    | down |  | Pathway |
| ABI3BP   | -3.0225932865783 | 0.00205809357022652   | down |  | Pathway |
|          | -                |                       |      |  |         |
| SLC16A12 | 3.02109016488271 | 0.00233203390978014   | down |  | Pathway |
|          | -                |                       |      |  |         |
| RBMS3    | 3.02094824872171 | 0.0000532787255821952 | down |  | Pathway |
|          | -                |                       |      |  |         |
| KCNJ8    | 3.02066702402038 | 0.0000608423462801813 | down |  | Pathway |
|          | -                |                       |      |  |         |
| CETP     | 3.01977125620677 | 0.00484530835517679   | down |  | Pathway |
|          | -                |                       |      |  |         |
| MGAT3    | 3.01915840412785 | 0.00345665780095536   | down |  | Pathway |
|          | -                |                       |      |  |         |
| MYOCD    | 3.01652652210509 | 0.00348108678866668   | down |  | Pathway |
|          | -                |                       |      |  |         |
| ZNF728   | 3.01153253696136 | 0.0100641863927781    | down |  | NA      |
|          | -                |                       |      |  |         |
| MAP7D3   | 3.00937911927696 | 0.000262144502419119  | down |  | Pathway |
|          | -                |                       |      |  |         |
| PNMA6C   | 3.00864597333944 | 0.02141119530514      | down |  | NA      |
|          | -                |                       |      |  |         |
| GPLD1    | 3.00709992881942 | 0.00418628908115978   | down |  | Pathway |
|          | -                |                       |      |  |         |
| TMEM246  | 3.00568705760756 | 0.000431332646885772  | down |  | NA      |
|          | -                |                       |      |  |         |
| LDB2     | 3.00165239414993 | 0.0000111856259866863 | down |  | Pathway |
|          | -                |                       |      |  |         |
| ALS2CR11 | 2.99404147134348 | 0.011627420777486     | down |  | NA      |
|          | -                |                       |      |  |         |
| TLN2     | 2.98807871352204 | 0.0000105415976727814 | down |  | Pathway |
|          | -                |                       |      |  |         |
| NEGR1    | 2.97906364419617 | 0.000508647596353905  | down |  | Pathway |
|          | -                |                       |      |  |         |
| CCM2L    | 2.97679589041738 | 0.0000271212961336546 | down |  | Pathway |
|          | -                |                       |      |  |         |
| STS      | 2.97638804775021 | 0.0000146139227501972 | down |  | Pathway |



|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| KL       | 2.97361109266607 | 0.00320652401274349   | down | Pathway |  |
|          | -                |                       |      |         |  |
| LOXL4    | 2.96853558489894 | 0.000861267488020354  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CNKS2    | 2.96806099999378 | 0.000940606639141062  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MT1A     | 2.96574301841181 | 0.0299020955501491    | down | Pathway |  |
|          | -                |                       |      |         |  |
| PNMAL2   | 2.96290736189915 | 0.000877977769201698  | down | NA      |  |
|          | -                |                       |      |         |  |
| TMTC1    | 2.96216186861126 | 0.000512606771232984  | down | NA      |  |
|          | -                |                       |      |         |  |
| ANXA1    | 2.96147830241599 | 0.000508647596353905  | down | Pathway |  |
|          | -                |                       |      |         |  |
| LHX6     | 2.95966190829793 | 0.000190284078984827  | down | Pathway |  |
|          | -                |                       |      |         |  |
| USP44    | 2.95820176324187 | 0.00321714455979539   | down | Pathway |  |
| SYT15    | -2.9567327287024 | 0.012311606703728     | down | Pathway |  |
|          | -                |                       |      |         |  |
| EMCN     | 2.95467130479812 | 0.0000279906111157143 | down | NA      |  |
|          | -                |                       |      |         |  |
| ROBO4    | 2.95438490260642 | 0.0000279906111157143 | down | Pathway |  |
|          | -                |                       |      |         |  |
| WSCD2    | 2.95294866509061 | 0.0000706988760858014 | down | NA      |  |
|          | -                |                       |      |         |  |
| SH3BGRL2 | 2.95199645455275 | 0.0000231600052310895 | down | NA      |  |
| COX4I2   | -2.9447757911505 | 0.00042386930184934   | down | NA      |  |
|          | -                |                       |      |         |  |
| GSC      | 2.94339198228953 | 0.000251899046000088  | down | Pathway |  |
|          | -                |                       |      |         |  |
| GFRA2    | 2.94147641209315 | 0.0159750748527446    | down | NA      |  |
|          | -                |                       |      |         |  |
| RNASE1   | 2.94068896780737 | 0.00265938938578874   | down | NA      |  |
|          | -                |                       |      |         |  |
| HCAR3    | 2.93887786240111 | 0.00117672943473209   | down | NA      |  |
|          | -                |                       |      |         |  |
| EGFL7    | 2.93864955029254 | 0.0000159440884555377 | down | Pathway |  |
|          | -                |                       |      |         |  |
| MYEOV    | 2.93659854350643 | 0.0121694911558815    | down | NA      |  |
|          | -                |                       |      |         |  |
| C2CD4C   | 2.93508305935116 | 0.000431332646885772  | down | NA      |  |
|          | -                |                       |      |         |  |
| IGF2     | 2.93380638618972 | 0.00246376790917567   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PCBP3    | 2.93064271768449 | 0.00508167804998552   | down | NA      |  |

|         |   |                  |                       |      |         |
|---------|---|------------------|-----------------------|------|---------|
| JAM2    | - | 2.92950876708732 | 0.0000673604236703592 | down | Pathway |
| PC      | - | 2.92861507630627 | 0.000215840636591643  | down | Pathway |
| CNGA1   | - | 2.92643083117656 | 0.00922407955483978   | down | NA      |
| SBK3    | - | 2.92462741051851 | 0.00056566482513222   | down | NA      |
| PDE8B   | - | 2.92139309675684 | 0.0180524208154652    | down | Pathway |
| PCSK5   | - | 2.92130823430796 | 0.000015696620047865  | down | Pathway |
| PTPRB   | - | 2.91949672347883 | 0.0000501761030412632 | down | Pathway |
| KCNE1L  | - | 2.91889142896902 | 0.00490926927885822   | down | NA      |
| CD34    | - | 2.91663601983918 | 0.0000127084518999542 | down | Pathway |
| SPATA22 | - | 2.91306157317499 | 0.0351453590456273    | down | Pathway |
| SOX5    | - | -2.9121153469593 | 0.0188259132023721    | down | Pathway |
| OLFM2   | - | 2.91086893679128 | 0.00840275837207068   | down | Pathway |
| PPP2R1B | - | 2.90813136994828 | 4.09983852314949E-06  | down | NA      |
| SCN7A   | - | 2.90533089788951 | 0.00520369582389385   | down | Pathway |
| CDH5    | - | -2.9043119193405 | 0.0000276807225929861 | down | Pathway |
| RSPO3   | - | 2.89724963531218 | 0.00909669683764579   | down | Pathway |
| CLSTN2  | - | -2.8964698110971 | 0.0348331726387353    | down | Pathway |
| F13A1   | - | -2.8895883997282 | 0.00270351074517001   | down | Pathway |
| SEMA3D  | - | 2.88333470452205 | 0.00480292293458476   | down | Pathway |
| GIMAP7  | - | 2.88287854789225 | 0.000644903205574493  | down | NA      |
| FAT4    | - | -2.8806864326546 | 0.0000518100577819199 | down | Pathway |
| FLRT2   | - | 2.88062089988889 | 0.00139185330339306   | down | Pathway |
| FGF14   | - | 2.88051153527911 | 0.00229984948079451   | down | Pathway |
| KCTD16  | - | 2.87586186937316 | 0.00454687995958166   | down | Pathway |
| CTNNA3  | - | -2.8732816265294 | 0.000350006354206234  | down | Pathway |
| KANK1   | - | 2.87072176871455 | 0.000212119686593945  | down | Pathway |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| APCDD1   | 2.86587939077875 | 0.00169512196123347   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PCDH18   | 2.86374269990646 | 0.000153027504055082  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SPARCL1  | 2.86073747822022 | 0.0000412403604997038 | down | Pathway |  |
|          | -                |                       |      |         |  |
| SLC35G2  | 2.86048319738658 | 0.000197745261188871  | down | NA      |  |
|          | -                |                       |      |         |  |
| IQSEC3   | 2.85971199089039 | 0.00905557304949794   | down | Pathway |  |
|          | -                |                       |      |         |  |
| AGTR1    | 2.85925819123501 | 0.0446401695534864    | down | Pathway |  |
|          | -                |                       |      |         |  |
| FOLR2    | 2.85702266177438 | 0.0207989872550089    | down | Pathway |  |
|          | -                |                       |      |         |  |
| ICAM2    | 2.85292399944758 | 0.0000776285145144357 | down | NA      |  |
|          | -                |                       |      |         |  |
| SOX7     | 2.85279566486268 | 0.000116452235987473  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ARHGEF15 | 2.85124240274834 | 0.0000970166031874953 | down | Pathway |  |
|          | -                |                       |      |         |  |
| VWF      | 2.84981612172864 | 0.000188487593620814  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TMEM220  | 2.84674215663736 | 0.000649370895645139  | down | NA      |  |
|          | -                |                       |      |         |  |
| DCN      | 2.84271563645101 | 0.0011272928520189    | down | Pathway |  |
|          | -                |                       |      |         |  |
| HOXA3    | 2.84258464832799 | 0.000663244467285107  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ADRB2    | 2.84236433856635 | 0.001549696519053     | down | Pathway |  |
|          | -                |                       |      |         |  |
| LDHD     | 2.84156274820099 | 0.00144348008265578   | down | Pathway |  |
|          | -                |                       |      |         |  |
| HYAL1    | 2.83994889795468 | 7.89799979427237E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ANGPTL2  | 2.83863474870753 | 0.0000608423462801813 | down | NA      |  |
|          | -                |                       |      |         |  |
| USHBP1   | 2.83599201745087 | 0.0000256658752137784 | down | NA      |  |
|          | -                |                       |      |         |  |
| GIMAP6   | 2.83394526666309 | 0.000139807852494195  | down | NA      |  |
|          | -                |                       |      |         |  |
| FAM178B  | 2.82930845962009 | 0.000869120605228221  | down | NA      |  |
|          | -                |                       |      |         |  |
| SERPINF1 | 2.82806675146491 | 0.000738068453006212  | down | Pathway |  |
|          | -                |                       |      |         |  |
| HSPA12B  | 2.82452270709192 | 0.000175174974499993  | down | NA      |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| AFAP1L1  | 2.82138205512249 | 0.000076246527908556  | down | NA      |  |
|          | -                |                       |      |         |  |
| RASIP1   | 2.81588967061164 | 0.0000279906111157143 | down | Pathway |  |
|          | -                |                       |      |         |  |
| RASL11A  | 2.81134613233941 | 0.0000119501501165282 | down | NA      |  |
|          | -                |                       |      |         |  |
| ANKRD29  | 2.81058859522513 | 0.000915276692190789  | down | NA      |  |
|          | -                |                       |      |         |  |
| MYCT1    | 2.80842201673919 | 7.81149829611418E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| ADRA2C   | 2.80507526640384 | 0.0490175716730538    | down | Pathway |  |
|          | -                |                       |      |         |  |
| LILRB5   | 2.80429600230025 | 0.0280582289809411    | down | NA      |  |
| IGFN1    | -2.8005141473809 | 0.0205280709928409    | down | Pathway |  |
|          | -                |                       |      |         |  |
| CLEC14A  | 2.79975060927304 | 0.000014035296417122  | down | Pathway |  |
|          | -                |                       |      |         |  |
| OSR1     | 2.79899881041283 | 0.0188240857257247    | down | Pathway |  |
|          | -                |                       |      |         |  |
| KIF26A   | 2.79693553357693 | 0.0000279906111157143 | down | Pathway |  |
|          | -                |                       |      |         |  |
| FAM13C   | 2.79650539543417 | 0.000431772835303863  | down | NA      |  |
|          | -                |                       |      |         |  |
| GPR116   | 2.79259380102607 | 0.0000197273938950305 | down | NA      |  |
|          | -                |                       |      |         |  |
| EGFLAM   | 2.79182521897109 | 0.000158964635373281  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FERMT2   | 2.78479368516653 | 8.31905963221189E-06  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MRGPRF   | 2.78376174663366 | 0.00249446761649592   | down | NA      |  |
| CAPN11   | -2.7827415082666 | 0.00241236489864774   | down | NA      |  |
|          | -                |                       |      |         |  |
| ASXL3    | 2.78213404053242 | 0.0106162702848304    | down | Pathway |  |
| MMRN2    | -2.7804565164217 | 0.0000804534278010506 | down | Pathway |  |
|          | -                |                       |      |         |  |
| PPP1R16B | 2.77884167767368 | 0.000971678499600897  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ARC      | 2.77609853797032 | 0.0226674284559493    | down | Pathway |  |
|          | -                |                       |      |         |  |
| HSPA12A  | 2.77239174655165 | 0.0000317201556733218 | down | NA      |  |
|          | -                |                       |      |         |  |
| NDN      | 2.76815363001688 | 0.000759925664784329  | down | Pathway |  |
|          | -                |                       |      |         |  |
| KLHL4    | 2.76805918342618 | 0.00535468215420713   | down | NA      |  |
|          | -                |                       |      |         |  |
| PARK2    | 2.76695661257463 | 0.0000121719061601948 | down | NA      |  |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| TDRD10  | 2.76570189791637 | 0.00326614339243186   | down | Pathway |  |
|         | -                |                       |      |         |  |
| LAMA4   | 2.76168288609567 | 0.0000135579150977941 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PFKFB3  | 2.75912851645476 | 0.00445620677212947   | down | Pathway |  |
|         | -                |                       |      |         |  |
| SPATA9  | 2.75859133613808 | 0.00452864868731021   | down | NA      |  |
|         | -                |                       |      |         |  |
| PPAPDC3 | 2.75592713248859 | 0.000601594805013111  | down | NA      |  |
|         | -                |                       |      |         |  |
| TAL1    | 2.75163448334989 | 0.0000154779552885175 | down | Pathway |  |
|         | -                |                       |      |         |  |
| CD248   | 2.74990154804813 | 0.00145915024249602   | down | NA      |  |
|         | -                |                       |      |         |  |
| DLC1    | 2.73842536294813 | 0.0000078671363756136 | down | Pathway |  |
|         | -                |                       |      |         |  |
| HOXA4   | 2.73530309216713 | 0.000562760464026854  | down | Pathway |  |
|         | -                |                       |      |         |  |
| ACKR3   | 2.73436898586493 | 0.000704610227076125  | down | Pathway |  |
|         | -                |                       |      |         |  |
| COL6A6  | 2.73362172895113 | 0.0244636475164922    | down | Pathway |  |
|         | -                |                       |      |         |  |
| ALPK3   | 2.73163640246981 | 0.00145915024249602   | down | Pathway |  |
|         | -                |                       |      |         |  |
| DDX43   | 2.72730639328562 | 0.00832876345793972   | down | NA      |  |
|         | -                |                       |      |         |  |
| MET     | 2.72331879103082 | 0.00750187247990144   | down | Pathway |  |
|         | -                |                       |      |         |  |
| FGF16   | 2.72223024078183 | 0.0253422132360867    | down | Pathway |  |
|         | -                |                       |      |         |  |
| MMP27   | 2.72040305806932 | 0.0190860427790771    | down | Pathway |  |
|         | -                |                       |      |         |  |
| CKB     | 2.71610030490195 | 0.0152623935077707    | down | Pathway |  |
|         | -                |                       |      |         |  |
| FBXO27  | 2.71496027234879 | 0.0108365691865681    | down | NA      |  |
|         | -                |                       |      |         |  |
| FCN3    | 2.71351494056913 | 0.000644903205574493  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CNTNAP3 | 2.71139486532355 | 0.000844752341507983  | down | NA      |  |
|         | -                |                       |      |         |  |
| ADRA2A  | 2.70575002161044 | 0.00482686394488731   | down | Pathway |  |
|         | -                |                       |      |         |  |
| NGFR    | 2.69674677324854 | 0.00307631715715913   | down | Pathway |  |
|         | -                |                       |      |         |  |
| HOXA2   | 2.69333834899702 | 0.00325856338812637   | down | Pathway |  |

|            |                  |                       |      |         |
|------------|------------------|-----------------------|------|---------|
|            | -                |                       |      |         |
| PLSCR4     | 2.69214363422623 | 8.13603719666152E-06  | down | Pathway |
|            | -                |                       |      |         |
| PTGDS      | 2.69073722228498 | 0.0164672022868194    | down | Pathway |
|            | -                |                       |      |         |
| TRPM6      | 2.68444828840117 | 0.00275966451272313   | down | Pathway |
|            | -                |                       |      |         |
| ST6GALNAC3 | 2.68434004773936 | 0.0000494797234835793 | down | Pathway |
|            | -                |                       |      |         |
| TLL1       | 2.68404840495517 | 0.00145102726031926   | down | Pathway |
|            | -                |                       |      |         |
| TNNC2      | 2.67821458840019 | 9.40865569656448E-06  | down | Pathway |
|            | -                |                       |      |         |
| CDC42EP2   | 2.67150529289564 | 2.81821035777139E-06  | down | Pathway |
|            | -                |                       |      |         |
| FFAR4      | 2.66880068173883 | 0.00163768504147142   | down | Pathway |
|            | -                |                       |      |         |
| MSRB3      | 2.66851798580099 | 0.0000300655359075657 | down | NA      |
|            | -                |                       |      |         |
| KCNA1      | 2.66843292725997 | 0.0487983501383243    | down | Pathway |
|            | -                |                       |      |         |
| CNRIP1     | 2.66745937300511 | 0.000292548645182149  | down | NA      |
|            | -                |                       |      |         |
| C4orf19    | 2.66484161463065 | 0.0330371322498722    | down | NA      |
|            | -                |                       |      |         |
| MYOM2      | 2.66280593962407 | 0.00133901541050801   | down | Pathway |
|            | -                |                       |      |         |
| VSTM4      | 2.65933793212794 | 0.000228503668915116  | down | Pathway |
|            | -                |                       |      |         |
| SSPN       | 2.65855337681769 | 0.00027255436347788   | down | Pathway |
|            | -                |                       |      |         |
| EMP1       | 2.65814733216708 | 0.0000272524090656503 | down | Pathway |
|            | -                |                       |      |         |
| POMC       | 2.65759653459094 | 0.00769842241759571   | down | Pathway |
|            | -                |                       |      |         |
| EPDR1      | 2.65569162182974 | 0.0030941928897933    | down | Pathway |
| ECHDC3     | -2.6530440055515 | 0.0000800308091501004 | down | Pathway |
|            | -                |                       |      |         |
| FZD9       | 2.65110135447346 | 0.004124635248681     | down | Pathway |
|            | -                |                       |      |         |
| ACADS      | 2.65060963323293 | 6.94705115187937E-06  | down | Pathway |
|            | -                |                       |      |         |
| CYP4F12    | 2.65001218368114 | 0.0108793314762571    | down | Pathway |
|            | -                |                       |      |         |
| FBLN5      | 2.64955653126288 | 0.00451789014201225   | down | Pathway |
|            | -                |                       |      |         |
| RILP       | 2.64758207191416 | 0.000339081478581284  | down | Pathway |

|         |                  |                       |      |  |         |
|---------|------------------|-----------------------|------|--|---------|
|         | -                |                       |      |  |         |
| AIFM2   | 2.64726768738435 | 0.0000182694821537976 | down |  | Pathway |
|         | -                |                       |      |  |         |
| PODN    | 2.64691304020582 | 0.00219769730433524   | down |  | Pathway |
|         | -                |                       |      |  |         |
| TSHZ2   | 2.64653179405992 | 0.000083142834261072  | down |  | NA      |
|         | -                |                       |      |  |         |
| ADAM33  | 2.64288539518565 | 0.0225282775518651    | down |  | NA      |
|         | -                |                       |      |  |         |
| MLTK    | 2.64184667164346 | 0.000128228570138333  | down |  | NA      |
|         | -                |                       |      |  |         |
| ANTXR2  | 2.64106622210983 | 0.000035273576192804  | down |  | NA      |
|         | -                |                       |      |  |         |
| NYAP1   | 2.64012770599837 | 0.00334856571634844   | down |  | Pathway |
|         | -                |                       |      |  |         |
| CCDC141 | 2.63869092580596 | 0.000906295089778017  | down |  | Pathway |
|         | -                |                       |      |  |         |
| PGM1    | 2.63760342746625 | 0.000120581223029634  | down |  | Pathway |
|         | -                |                       |      |  |         |
| SGCA    | 2.63607459824016 | 0.000529387418480805  | down |  | Pathway |
|         | -                |                       |      |  |         |
| CPM     | 2.63549478216561 | 0.00794135678819648   | down |  | NA      |
|         | -                |                       |      |  |         |
| DMTN    | 2.63485034249489 | 0.000405010877871049  | down |  | Pathway |
|         | -                |                       |      |  |         |
| FAM212B | 2.63113106379777 | 0.0000608423462801813 | down |  | NA      |
|         | -                |                       |      |  |         |
| SPIN2A  | 2.63096440645751 | 0.0000523496120669737 | down |  | NA      |
|         | -                |                       |      |  |         |
| CSPG4   | 2.63085342084907 | 0.000303936242259401  | down |  | Pathway |
|         | -                |                       |      |  |         |
| EPHB6   | 2.62598513778448 | 0.00226918892700237   | down |  | Pathway |
|         | -                |                       |      |  |         |
| MPZ     | 2.62440696351078 | 0.00247461331178703   | down |  | Pathway |
|         | -                |                       |      |  |         |
| KCNJ12  | 2.62370971414237 | 0.00307890462092542   | down |  | Pathway |
|         | -                |                       |      |  |         |
| KCNA6   | 2.62291837784999 | 0.00757408497251189   | down |  | Pathway |
|         | -                |                       |      |  |         |
| NFIB    | 2.62041845173125 | 0.000510167641940358  | down |  | Pathway |
|         | -                |                       |      |  |         |
| ZBED6   | 2.61657566021846 | 0.0232111884782677    | down |  | Pathway |
|         | -                |                       |      |  |         |
| ZNF385D | 2.61338523859428 | 0.000472155211243409  | down |  | NA      |
|         | -                |                       |      |  |         |
| GPT     | 2.61195663821609 | 0.027525311654449     | down |  | Pathway |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| WDR86    | 2.60891267991497 | 0.00376035975460225   | down | NA      |  |
|          | -                |                       |      |         |  |
| TNFRSF8  | 2.60882200247278 | 0.00929335649705296   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CRIM1    | 2.60867839082788 | 0.000507335957373077  | down | Pathway |  |
|          | -                |                       |      |         |  |
| GBE1     | 2.60540159876039 | 0.000162681118293746  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MESP1    | 2.60216497660424 | 0.0151300399591247    | down | Pathway |  |
|          | -                |                       |      |         |  |
| P2RY14   | 2.60017370411147 | 0.000540113325507902  | down | NA      |  |
|          | -                |                       |      |         |  |
| LIMS2    | 2.59898239411857 | 0.00023087769011815   | down | Pathway |  |
|          | -                |                       |      |         |  |
| ARHGEF4  | 2.59764202096039 | 0.00387307674648601   | down | Pathway |  |
|          | -                |                       |      |         |  |
| LOXHD1   | 2.59660556750998 | 0.00113798502039897   | down | Pathway |  |
| IL17D    | -2.585692736402  | 0.00187345393893482   | down | NA      |  |
|          | -                |                       |      |         |  |
| ERG      | 2.58538014693109 | 6.64655070757393E-06  | down | NA      |  |
|          | -                |                       |      |         |  |
| ADAMTSL3 | 2.58279339053288 | 0.000499903596536925  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ACOT2    | 2.58217515789505 | 0.000667550086311639  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ELTD1    | 2.58110609287168 | 0.0000116557440237734 | down | NA      |  |
|          | -                |                       |      |         |  |
| ZFPM2    | 2.58059920399693 | 0.000273291651608255  | down | Pathway |  |
|          | -                |                       |      |         |  |
| RHCG     | 2.58034084717333 | 0.0443365910316329    | down | Pathway |  |
|          | -                |                       |      |         |  |
| TINAGL1  | 2.57668869913375 | 0.0000603309823850517 | down | NA      |  |
|          | -                |                       |      |         |  |
| CXCR2    | 2.57640166854751 | 0.000349273418373698  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SCN3B    | 2.57421825077591 | 0.00281418192569626   | down | Pathway |  |
|          | -                |                       |      |         |  |
| MARK1    | 2.56673833137386 | 0.00258052237930075   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PHKG1    | 2.56596077574796 | 0.000408291543525218  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ITSN1    | 2.56551025551206 | 4.19179441432916E-06  | down | Pathway |  |
| ME1      | -2.5626691791733 | 0.00185530742960061   | down | NA      |  |
|          | -                |                       |      |         |  |
| SELP     | 2.56243923932324 | 0.0103768441045141    | down | Pathway |  |



|            |                  |                       |      |         |
|------------|------------------|-----------------------|------|---------|
|            | -                |                       |      |         |
| RHOXF1     | 2.56037134492675 | 0.000609602651536263  | down | Pathway |
|            | -                |                       |      |         |
| CDH23      | 2.56035259622217 | 0.013147532255673     | down | Pathway |
|            | -                |                       |      |         |
| LRRTM2     | 2.55578528921217 | 0.000083142834261072  | down | Pathway |
|            | -                |                       |      |         |
| LARP6      | 2.54975142181683 | 0.000485274796211091  | down | Pathway |
|            | -                |                       |      |         |
| AMOTL2     | 2.54593383231826 | 0.0000216812107614539 | down | Pathway |
|            | -                |                       |      |         |
| OR51E1     | 2.54492840927036 | 0.00325856338812637   | down | NA      |
|            | -                |                       |      |         |
| RGMA       | 2.54367361456321 | 0.00852337071720228   | down | Pathway |
|            | -                |                       |      |         |
| RRAS       | 2.54276105366424 | 0.0000504491271049433 | down | Pathway |
| ZNF208     | -2.5396428012135 | 0.0100092446603312    | down | NA      |
| C2CD2      | -2.5372990602052 | 0.000125494722169181  | down | NA      |
|            | -                |                       |      |         |
| ST6GALNAC1 | 2.53614507538278 | 0.00538642899109318   | down | Pathway |
| RHOBTB3    | -2.534159713907  | 0.0021078631042849    | down | Pathway |
|            | -                |                       |      |         |
| RAMP3      | 2.52862810288995 | 0.000308899455123123  | down | Pathway |
|            | -                |                       |      |         |
| RIMBP2     | 2.52847946279442 | 0.0403359145812765    | down | NA      |
|            | -                |                       |      |         |
| SH3D19     | 2.52746933352268 | 0.0000249486515527268 | down | Pathway |
|            | -                |                       |      |         |
| RAMP2      | 2.52659064793258 | 0.000153733090164043  | down | Pathway |
|            | -                |                       |      |         |
| GJA4       | 2.52479527896466 | 0.0000351034889861726 | down | Pathway |
|            | -                |                       |      |         |
| PVRL3      | 2.52414994429935 | 0.0021441037747987    | down | NA      |
| PEBP4      | -2.5228878250044 | 0.00331076048162542   | down | NA      |
|            | -                |                       |      |         |
| PEAR1      | 2.52209561522268 | 0.0000601544313076721 | down | Pathway |
|            | -                |                       |      |         |
| SPRY2      | 2.52077918716469 | 9.40865569656448E-06  | down | Pathway |
|            | -                |                       |      |         |
| MOCS1      | 2.52030229148641 | 0.00121028633221942   | down | NA      |
|            | -                |                       |      |         |
| COCH       | 2.51888344105173 | 0.011322249627765     | down | Pathway |
|            | -                |                       |      |         |
| CYYR1      | 2.51689945141495 | 0.0000373578845664019 | down | NA      |
|            | -                |                       |      |         |
| SEPP1      | 2.51620804773035 | 0.00507661167408378   | down | NA      |
| ZNF366     | -2.5140068793793 | 0.000292548645182149  | down | Pathway |

|          |                  |                      |      |         |  |
|----------|------------------|----------------------|------|---------|--|
|          | -                |                      |      |         |  |
| SYNPO2   | 2.51342333019811 | 0.00339097090104914  | down | Pathway |  |
|          | -                |                      |      |         |  |
| COPZ2    | 2.51272345826851 | 0.00100549513202968  | down | NA      |  |
|          | -                |                      |      |         |  |
| RUNX1T1  | 2.50845970123274 | 0.000825138483672569 | down | Pathway |  |
| MYL9     | -2.499711370785  | 0.000433136280562955 | down | Pathway |  |
|          | -                |                      |      |         |  |
| PTX3     | 2.49751371590556 | 0.0366901158454262   | down | Pathway |  |
|          | -                |                      |      |         |  |
| LRP1     | 2.49658237577421 | 0.000249448202162025 | down | Pathway |  |
|          | -                |                      |      |         |  |
| KCNT2    | 2.48894750845244 | 0.00694006308467102  | down | Pathway |  |
|          | -                |                      |      |         |  |
| LCN10    | 2.48891715310964 | 0.00562991818020628  | down | NA      |  |
|          | -                |                      |      |         |  |
| CCDC39   | 2.48353628265944 | 0.0109120167142285   | down | NA      |  |
|          | -                |                      |      |         |  |
| C1QTNF2  | 2.47469316506232 | 0.00133693059646152  | down | Pathway |  |
| C11orf53 | -2.4725294127    | 0.0221775227136671   | down | NA      |  |
|          | -                |                      |      |         |  |
| NR2F1    | 2.46750930611749 | 0.000441084063429536 | down | Pathway |  |
|          | -                |                      |      |         |  |
| LAMA2    | 2.46724627118946 | 0.00091172111452844  | down | Pathway |  |
|          | -                |                      |      |         |  |
| METTL7A  | 2.46582652065669 | 0.000121388009059353 | down | NA      |  |
|          | -                |                      |      |         |  |
| CTTNBP2  | 2.46376819325165 | 0.00626770841408716  | down | Pathway |  |
|          | -                |                      |      |         |  |
| PROS1    | 2.45891290075711 | 0.000214009802442619 | down | Pathway |  |
|          | -                |                      |      |         |  |
| SCN11A   | 2.45493010303588 | 0.00170874121676437  | down | Pathway |  |
|          | -                |                      |      |         |  |
| TMIE     | 2.45478470494593 | 0.00181673268362257  | down | Pathway |  |
|          | -                |                      |      |         |  |
| PPAP2B   | 2.45294372958539 | 0.000254485834340982 | down | NA      |  |
|          | -                |                      |      |         |  |
| MYH11    | 2.45228808320747 | 0.0199033238851549   | down | Pathway |  |
|          | -                |                      |      |         |  |
| CELF2    | 2.45148256081187 | 0.000688734676719381 | down | Pathway |  |
|          | -                |                      |      |         |  |
| ACSS3    | 2.44916875094374 | 0.00775281933385788  | down | NA      |  |
|          | -                |                      |      |         |  |
| GPR124   | 2.44906368648212 | 0.000172264305958254 | down | NA      |  |
|          | -                |                      |      |         |  |
| GYPE     | 2.44768146049906 | 0.00770119757534949  | down | NA      |  |

|         |                  |                       |      |  |         |
|---------|------------------|-----------------------|------|--|---------|
|         | -                |                       |      |  |         |
| ANO4    | 2.44676338010463 | 0.00294454909661334   | down |  | Pathway |
|         | -                |                       |      |  |         |
| TEF     | 2.44615356076068 | 0.0000297807856142578 | down |  | Pathway |
|         | -                |                       |      |  |         |
| HRC     | 2.44594050580498 | 0.00177366881919331   | down |  | Pathway |
|         | -                |                       |      |  |         |
| KLHL29  | 2.44294633149558 | 0.00238262710984893   | down |  | NA      |
|         | -                |                       |      |  |         |
| CRLF1   | 2.44268780116646 | 0.0121956352609844    | down |  | Pathway |
| ADAMTS9 | -2.4380417743832 | 0.0000525970188393347 | down |  | Pathway |
|         | -                |                       |      |  |         |
| RASSF9  | 2.43707407514703 | 0.00438413574157416   | down |  | NA      |
|         | -                |                       |      |  |         |
| SASH1   | 2.43697768753088 | 0.000787830615815324  | down |  | Pathway |
|         | -                |                       |      |  |         |
| CDKN2B  | 2.43404448046895 | 0.0000279906111157143 | down |  | Pathway |
|         | -                |                       |      |  |         |
| TMEM140 | 2.43266702532725 | 0.000468772268881032  | down |  | NA      |
|         | -                |                       |      |  |         |
| PRRG3   | 2.43041251099148 | 0.0374107279167477    | down |  | NA      |
|         | -                |                       |      |  |         |
| SYPL2   | 2.43001902660383 | 0.000176117704657276  | down |  | Pathway |
|         | -                |                       |      |  |         |
| FMN2    | 2.42992372426147 | 0.0212930972438783    | down |  | Pathway |
|         | -                |                       |      |  |         |
| GIMAP1  | 2.42966700883336 | 0.00201503545441972   | down |  | NA      |
|         | -                |                       |      |  |         |
| PLEKHG6 | 2.42677724593942 | 0.000690022905459024  | down |  | Pathway |
|         | -                |                       |      |  |         |
| REEP2   | 2.42647583739228 | 0.0011492299653367    | down |  | Pathway |
| ZP1     | -2.4263447230585 | 0.0046103242323531    | down |  | Pathway |
|         | -                |                       |      |  |         |
| CLEC2L  | 2.42318078207612 | 0.00604092034650895   | down |  | NA      |
|         | -                |                       |      |  |         |
| DHRS3   | 2.42234159704129 | 0.000239200260565704  | down |  | Pathway |
|         | -                |                       |      |  |         |
| NOTCH4  | 2.41811964833808 | 0.000248543237413034  | down |  | Pathway |
|         | -                |                       |      |  |         |
| GIMAP8  | 2.41777986297669 | 0.000911933852378139  | down |  | NA      |
|         | -                |                       |      |  |         |
| OXT     | 2.41701431006424 | 0.0108972102649181    | down |  | Pathway |
|         | -                |                       |      |  |         |
| PLN     | 2.41554782680986 | 0.00108929186953253   | down |  | Pathway |
|         | -                |                       |      |  |         |
| PECR    | 2.41532166171923 | 0.000667550086311639  | down |  | Pathway |

|           |                  |                       |      |  |         |
|-----------|------------------|-----------------------|------|--|---------|
|           | -                |                       |      |  |         |
| MFAP5     | 2.41339894401977 | 0.00326602496705623   | down |  | Pathway |
|           | -                |                       |      |  |         |
| TM4SF18   | 2.41174164539375 | 0.0000136429042467373 | down |  | NA      |
| ESAM      | -2.4106558070303 | 0.0000348721026430314 | down |  | Pathway |
|           | -                |                       |      |  |         |
| MSRA      | 2.41011108616822 | 0.000145928809403184  | down |  | Pathway |
|           | -                |                       |      |  |         |
| SGCE      | 2.40877107632688 | 0.000700503270072223  | down |  | Pathway |
|           | -                |                       |      |  |         |
| BIN1      | 2.40858131567007 | 0.00019746681291275   | down |  | Pathway |
|           | -                |                       |      |  |         |
| SOBP      | 2.40593509572562 | 0.0043034161229907    | down |  | Pathway |
|           | -                |                       |      |  |         |
| KLF4      | 2.40463494171611 | 0.00693139176967699   | down |  | Pathway |
|           | -                |                       |      |  |         |
| FAM124B   | 2.40299467675363 | 0.000993835869103217  | down |  | NA      |
|           | -                |                       |      |  |         |
| SYN3      | 2.40127938698094 | 0.000259201308557463  | down |  | Pathway |
|           | -                |                       |      |  |         |
| C10orf128 | 2.40073646014368 | 0.00196351350704928   | down |  | NA      |
|           | -                |                       |      |  |         |
| NDRG2     | 2.39962535270586 | 0.000644903205574493  | down |  | Pathway |
|           | -                |                       |      |  |         |
| TESC      | 2.39620847693588 | 0.00312808545879524   | down |  | Pathway |
|           | -                |                       |      |  |         |
| TMEM47    | 2.39558472242743 | 0.000516062519049087  | down |  | NA      |
|           | -                |                       |      |  |         |
| ELN       | 2.39418084859561 | 0.00788924216501734   | down |  | Pathway |
|           | -                |                       |      |  |         |
| TTN       | 2.39212301641035 | 0.00605886133650656   | down |  | Pathway |
|           | -                |                       |      |  |         |
| HOXB7     | 2.39048539932819 | 0.000230684280569815  | down |  | Pathway |
|           | -                |                       |      |  |         |
| FABP5     | 2.38750298787268 | 0.0052221558926021    | down |  | Pathway |
|           | -                |                       |      |  |         |
| TENM3     | 2.38650357112582 | 0.00621178910355922   | down |  | Pathway |
|           | -                |                       |      |  |         |
| KIAA1614  | 2.38142209502988 | 0.000092702025597482  | down |  | Pathway |
|           | -                |                       |      |  |         |
| SMAD9     | 2.38104977438201 | 0.0000182694821537976 | down |  | Pathway |
|           | -                |                       |      |  |         |
| ANKRD35   | 2.38039921539123 | 0.00267947386790323   | down |  | NA      |
|           | -                |                       |      |  |         |
| PDE7B     | 2.37919066672054 | 0.00190000587193525   | down |  | Pathway |
|           | -                |                       |      |  |         |
| FADS3     | 2.37428622754384 | 0.0000136527038725634 | down |  | Pathway |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| FBXO17   | 2.37220728651492 | 0.0220343578088744    | down | NA      |  |
|          | -                |                       |      |         |  |
| PLIN2    | 2.37004971058131 | 0.00138550130500484   | down | Pathway |  |
|          | -                |                       |      |         |  |
| RASGRF2  | 2.37003044399895 | 0.000310725913459433  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SEMA3A   | 2.36758328909398 | 0.011723248920309     | down | Pathway |  |
| PLA2G4A  | -2.3631351204978 | 0.00209366569254892   | down | Pathway |  |
|          | -                |                       |      |         |  |
| SLC9A9   | 2.36095049781371 | 0.00117672943473209   | down | Pathway |  |
|          | -                |                       |      |         |  |
| TENC1    | 2.35837741716803 | 0.000164493266543036  | down | NA      |  |
|          | -                |                       |      |         |  |
| C10orf54 | 2.35699721235557 | 0.0013246982820412    | down | NA      |  |
|          | -                |                       |      |         |  |
| FGD5     | 2.35563781241528 | 0.0000244970606182201 | down | Pathway |  |
|          | -                |                       |      |         |  |
| FEZ1     | 2.35358280786176 | 0.00105890810473494   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CRYBG3   | 2.35335217578319 | 0.000215607438062973  | down | NA      |  |
|          | -                |                       |      |         |  |
| EPS8     | 2.35264132318553 | 0.0000506791357951246 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ALDH4A1  | 2.35199752979498 | 0.000215842509418116  | down | Pathway |  |
|          | -                |                       |      |         |  |
| TRIM50   | 2.35084384529796 | 0.0177486959427138    | down | NA      |  |
|          | -                |                       |      |         |  |
| SH2D1B   | 2.34778498050455 | 0.020345024415386     | down | NA      |  |
|          | -                |                       |      |         |  |
| PLA2G5   | 2.34624407639458 | 0.0021048761859491    | down | Pathway |  |
|          | -                |                       |      |         |  |
| PHGDH    | 2.34329041340047 | 0.00887711457661303   | down | Pathway |  |
| CFH      | -2.342947057539  | 0.00159571332335374   | down | NA      |  |
|          | -                |                       |      |         |  |
| CYGB     | 2.33472200433035 | 0.000736715997381874  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SGK2     | 2.33348587392094 | 0.00372566789800948   | down | Pathway |  |
| ZEB2     | -2.3325594630487 | 0.000628853343204391  | down | Pathway |  |
|          | -                |                       |      |         |  |
| HSDL2    | 2.33225760334512 | 0.000207433504676273  | down | NA      |  |
|          | -                |                       |      |         |  |
| MYO1H    | 2.33089369051936 | 0.0142591766331992    | down | Pathway |  |
|          | -                |                       |      |         |  |
| COBLL1   | 2.33058561401423 | 0.0000292644696970919 | down | NA      |  |
|          | -                |                       |      |         |  |
| ADRA1B   | 2.32898571788729 | 0.00862350011647218   | down | Pathway |  |

|          |                  |                       |      |  |         |
|----------|------------------|-----------------------|------|--|---------|
|          | -                |                       |      |  |         |
| ITGB1BP1 | 2.32647798796142 | 9.35003131715643E-06  | down |  | Pathway |
|          | -                |                       |      |  |         |
| TUBB6    | 2.32519235682511 | 0.0000845369655144294 | down |  | NA      |
| CTNNAL1  | -2.3181357682328 | 0.00023393419048509   | down |  | Pathway |
|          | -                |                       |      |  |         |
| CYB5R3   | 2.31527927466101 | 9.02194580668829E-06  | down |  | Pathway |
|          | -                |                       |      |  |         |
| CXCL12   | 2.31466939814107 | 0.00211137401172175   | down |  | Pathway |
|          | -                |                       |      |  |         |
| TFPI     | 2.30344140572727 | 0.0000494797234835793 | down |  | Pathway |
|          | -                |                       |      |  |         |
| PAMR1    | 2.30233901929891 | 0.0228097906880952    | down |  | NA      |
|          | -                |                       |      |  |         |
| PRDM16   | 2.29850619560963 | 0.0051534027900591    | down |  | Pathway |
|          | -                |                       |      |  |         |
| ACSS2    | 2.29754619285559 | 0.0000216825353897115 | down |  | Pathway |
|          | -                |                       |      |  |         |
| CEP112   | 2.29581624005838 | 0.000810110470696398  | down |  | Pathway |
| PAPPA2   | -2.2951129492516 | 0.0372795416383165    | down |  | Pathway |
|          | -                |                       |      |  |         |
| LDHB     | 2.29438024825291 | 0.000545535222688912  | down |  | NA      |
|          | -                |                       |      |  |         |
| DHH      | 2.29154074858214 | 0.0188259132023721    | down |  | Pathway |
|          | -                |                       |      |  |         |
| KCNA5    | 2.28942752562313 | 0.00786067140452324   | down |  | Pathway |
|          | -                |                       |      |  |         |
| CPS1     | 2.28925318235319 | 0.00520369582389385   | down |  | Pathway |
|          | -                |                       |      |  |         |
| HAND2    | 2.28510049266033 | 0.0090083680338739    | down |  | Pathway |
|          | -                |                       |      |  |         |
| FOXN3    | 2.28509159645605 | 0.0000302660001749592 | down |  | Pathway |
|          | -                |                       |      |  |         |
| GIMAP5   | 2.28448548524175 | 0.00491352659349936   | down |  | NA      |
|          | -                |                       |      |  |         |
| SHANK3   | 2.27747390167699 | 0.000205446686047126  | down |  | Pathway |
|          | -                |                       |      |  |         |
| AOC2     | 2.27649073559242 | 0.000170060550641866  | down |  | Pathway |
|          | -                |                       |      |  |         |
| RUNDC3B  | 2.27491874605935 | 0.0041798401796802    | down |  | NA      |
|          | -                |                       |      |  |         |
| ANO6     | 2.27410479368568 | 0.000220589758364881  | down |  | Pathway |
|          | -                |                       |      |  |         |
| RAB6B    | 2.27260216536147 | 0.00108922007814007   | down |  | NA      |
|          | -                |                       |      |  |         |
| ZNF423   | 2.27171494233054 | 0.00558235305166484   | down |  | Pathway |

|            |                  |                       |      |         |  |
|------------|------------------|-----------------------|------|---------|--|
|            | -                |                       |      |         |  |
| KANK2      | 2.26789295541132 | 9.29322477234728E-06  | down | Pathway |  |
|            | -                |                       |      |         |  |
| PDGFRL     | 2.26368155167737 | 0.00773311364441068   | down | NA      |  |
|            | -                |                       |      |         |  |
| VIM        | 2.26278103315448 | 0.00048207700127577   | down | Pathway |  |
|            | -                |                       |      |         |  |
| TWIST1     | 2.26018914511073 | 0.0252744632550311    | down | Pathway |  |
|            | -                |                       |      |         |  |
| ANXA3      | 2.25968353623889 | 0.030288943491289     | down | Pathway |  |
|            | -                |                       |      |         |  |
| FGF1       | 2.25564043498968 | 0.000450824470498984  | down | Pathway |  |
|            | -                |                       |      |         |  |
| ANKRD33B   | 2.25532437512456 | 0.00269583076825462   | down | NA      |  |
|            | -                |                       |      |         |  |
| PEMT       | 2.25172297816225 | 0.0000246359191821229 | down | Pathway |  |
|            | -                |                       |      |         |  |
| ASPH       | 2.24954160588975 | 0.0024500709589003    | down | Pathway |  |
|            | -                |                       |      |         |  |
| THSD7A     | 2.24705433141967 | 0.000391187746166089  | down | Pathway |  |
|            | -                |                       |      |         |  |
| DLGAP2     | 2.24657367726438 | 0.0318840051621111    | down | Pathway |  |
| ID1        | -2.2420939418669 | 0.00255359974113374   | down | Pathway |  |
|            | -                |                       |      |         |  |
| CTIF       | 2.23867011804749 | 0.0000983664357695885 | down | NA      |  |
|            | -                |                       |      |         |  |
| TUBB2B     | 2.23809226838988 | 0.0129742483772123    | down | Pathway |  |
| CLDND2     | -2.2379076738119 | 0.0044236087945341    | down | NA      |  |
|            | -                |                       |      |         |  |
| VEGFB      | 2.23370081501659 | 0.0000776285145144357 | down | Pathway |  |
|            | -                |                       |      |         |  |
| AC011242.6 | 2.22916325904979 | 0.0123699031226192    | down | NA      |  |
|            | -                |                       |      |         |  |
| FMO3       | 2.22822131749059 | 0.00307684048047913   | down | NA      |  |
| SPTA1      | -2.2276675898561 | 0.0334356491927514    | down | Pathway |  |
|            | -                |                       |      |         |  |
| EPHA3      | 2.22299238462671 | 0.0118689936170433    | down | Pathway |  |
|            | -                |                       |      |         |  |
| HFM1       | 2.22131140602015 | 0.0110054393686342    | down | Pathway |  |
|            | -                |                       |      |         |  |
| ABHD6      | 2.22069706594807 | 0.00153501584143883   | down | Pathway |  |
|            | -                |                       |      |         |  |
| KLF9       | 2.21782198739451 | 0.000168232320553012  | down | Pathway |  |
|            | -                |                       |      |         |  |
| C2orf73    | 2.21691843414404 | 0.0199439040369627    | down | NA      |  |
|            | -                |                       |      |         |  |
| SLC24A3    | 2.21573584504441 | 0.00951653821392023   | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| DAAM2    | 2.21569243326377 | 0.000488192635042567  | down | Pathway |  |
|          | -                |                       |      |         |  |
| F8       | 2.21184555841888 | 0.000088167205817432  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ADAMTSL4 | 2.21182235873485 | 0.00592804137738116   | down | Pathway |  |
|          | -                |                       |      |         |  |
| TMEM132B | 2.21153312541306 | 0.0480684797169861    | down | NA      |  |
|          | -                |                       |      |         |  |
| SH3RF2   | 2.21139840047814 | 0.00780913914480076   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CAMK1    | 2.20969124882013 | 0.0000650555176656801 | down | Pathway |  |
|          | -                |                       |      |         |  |
| PRCD     | 2.20736475542816 | 0.0110559690241855    | down | NA      |  |
|          | -                |                       |      |         |  |
| TIE1     | 2.20730720946347 | 0.0000355328007087224 | down | Pathway |  |
|          | -                |                       |      |         |  |
| MICU3    | 2.20489096631708 | 0.0000834195459999636 | down | Pathway |  |
|          | -                |                       |      |         |  |
| CLCN4    | 2.20466179450951 | 0.0169946930157186    | down | Pathway |  |
|          | -                |                       |      |         |  |
| TCF7L1   | 2.20016274866925 | 0.0109961846083061    | down | Pathway |  |
|          | -                |                       |      |         |  |
| NGF      | 2.19994092881192 | 0.00257832651968228   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PDE1B    | 2.19710635556537 | 0.00276579133623911   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CDC14B   | 2.19704425917901 | 0.0000800308091501004 | down | Pathway |  |
|          | -                |                       |      |         |  |
| PTPRS    | 2.19494779603142 | 0.00182534060977757   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PZP      | 2.19218334449558 | 0.00141093543080837   | down | Pathway |  |
|          | -                |                       |      |         |  |
| GPR34    | 2.19014704956364 | 0.00251349528441885   | down | NA      |  |
|          | -                |                       |      |         |  |
| IL1RL1   | 2.18979877315635 | 0.044776884678522     | down | Pathway |  |
| PAPSS2   | -2.1879698751783 | 0.000416222788834241  | down | Pathway |  |
|          | -                |                       |      |         |  |
| LY6K     | 2.18660242189042 | 0.0444413524124325    | down | NA      |  |
| SLC14A1  | -2.179513384637  | 0.00577702406883004   | down | NA      |  |
|          | -                |                       |      |         |  |
| LIMCH1   | 2.17638392433019 | 0.00683453116517172   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PLEKHG5  | 2.17614844578997 | 0.0000820462790595965 | down | Pathway |  |
|          | -                |                       |      |         |  |
| GPR97    | 2.17459565170562 | 0.0238393234010804    | down | NA      |  |



|           |                  |                       |      |         |  |
|-----------|------------------|-----------------------|------|---------|--|
|           | -                |                       |      |         |  |
| SNCAIP    | 2.17439684516547 | 0.0131697712379213    | down | Pathway |  |
|           | -                |                       |      |         |  |
| ELMOD3    | 2.16888939512476 | 0.000123180519229478  | down | NA      |  |
| EPB41L4B  | -2.1678172480109 | 0.0208693549167121    | down | Pathway |  |
|           | -                |                       |      |         |  |
| TSKS      | 2.16723691837424 | 0.0218953657214285    | down | NA      |  |
|           | -                |                       |      |         |  |
| STK32A    | 2.16628705609853 | 0.0200840340969399    | down | Pathway |  |
| SOCS2     | -2.1662309558028 | 0.00312929793923999   | down | Pathway |  |
|           | -                |                       |      |         |  |
| STXBP1    | 2.16289231713125 | 0.000162681118293746  | down | Pathway |  |
|           | -                |                       |      |         |  |
| KLF2      | 2.16033796277745 | 0.00188516693694283   | down | Pathway |  |
|           | -                |                       |      |         |  |
| ACVRL1    | 2.15952337078852 | 0.000112551861422631  | down | Pathway |  |
|           | -                |                       |      |         |  |
| FSTL1     | 2.15482458673052 | 0.000711819222909794  | down | Pathway |  |
|           | -                |                       |      |         |  |
| APLNR     | 2.15001351852252 | 0.000740009341689421  | down | Pathway |  |
|           | -                |                       |      |         |  |
| NOSTRIN   | 2.14837579835896 | 0.00301812310270163   | down | Pathway |  |
| SLC35F1   | -2.1466788534757 | 0.00704396390732661   | down | NA      |  |
|           | -                |                       |      |         |  |
| UST       | 2.14639960879839 | 0.000217045050979065  | down | Pathway |  |
|           | -                |                       |      |         |  |
| TPPP3     | 2.14589718531972 | 0.0137536074881435    | down | Pathway |  |
|           | -                |                       |      |         |  |
| VAMP5     | 2.14427410769805 | 0.00136971994879107   | down | Pathway |  |
|           | -                |                       |      |         |  |
| SLC26A7   | 2.14329457543163 | 0.0288288826055289    | down | Pathway |  |
|           | -                |                       |      |         |  |
| ITPK1     | 2.14239623303148 | 0.0000276807225929861 | down | Pathway |  |
|           | -                |                       |      |         |  |
| GABARAPL1 | 2.14212437409292 | 0.0000109146579501064 | down | Pathway |  |
|           | -                |                       |      |         |  |
| BMP4      | 2.14074446212685 | 0.013997789543765     | down | Pathway |  |
|           | -                |                       |      |         |  |
| PDE1A     | 2.13099498216153 | 0.000431779887936525  | down | NA      |  |
|           | -                |                       |      |         |  |
| PROCR     | 2.13047027901179 | 0.00335368941960841   | down | Pathway |  |
|           | -                |                       |      |         |  |
| SNX21     | 2.13040135103782 | 0.0000164035762947684 | down | NA      |  |
|           | -                |                       |      |         |  |
| HMCN2     | 2.12614470197237 | 0.0127745751752361    | down | NA      |  |
|           | -                |                       |      |         |  |
| CD302     | 2.12577883021267 | 0.000700503270072223  | down | NA      |  |

|              |                  |                       |      |         |  |
|--------------|------------------|-----------------------|------|---------|--|
|              | -                |                       |      |         |  |
| TRIM55       | 2.12562173674477 | 0.0345671917537695    | down | Pathway |  |
|              | -                |                       |      |         |  |
| MYO1C        | 2.12120085318963 | 0.0000165697766706899 | down | Pathway |  |
|              | -                |                       |      |         |  |
| CYP11A1      | 2.12061372580603 | 0.016749076455753     | down | Pathway |  |
| ST6GALNAC6   | -2.1205915423265 | 0.0000138892049247438 | down | Pathway |  |
|              | -                |                       |      |         |  |
| FAM124A      | 2.11931241319313 | 0.0118988882291875    | down | NA      |  |
|              | -                |                       |      |         |  |
| ASB9         | 2.11921830248658 | 0.000291821939599855  | down | NA      |  |
|              | -                |                       |      |         |  |
| KDR          | 2.11608972409529 | 0.00017500910237081   | down | Pathway |  |
|              | -                |                       |      |         |  |
| FAM166B      | 2.11495282210235 | 0.00810573283533351   | down | NA      |  |
|              | -                |                       |      |         |  |
| PLTP         | 2.11254408389732 | 0.0327481301295951    | down | Pathway |  |
|              | -                |                       |      |         |  |
| GLI1         | 2.11235530123409 | 0.0312884340823514    | down | Pathway |  |
|              | -                |                       |      |         |  |
| UGP2         | 2.11029135114629 | 0.0000138892049247438 | down | Pathway |  |
|              | -                |                       |      |         |  |
| PYGL         | 2.10720068511866 | 0.00235263051078067   | down | Pathway |  |
|              | -                |                       |      |         |  |
| EHBP1        | 2.10697728477521 | 0.0000109146579501064 | down | NA      |  |
|              | -                |                       |      |         |  |
| PHLDB2       | 2.10682810162755 | 0.0021078631042849    | down | Pathway |  |
|              | -                |                       |      |         |  |
| GULP1        | 2.10586777803114 | 0.000254485834340982  | down | Pathway |  |
| CFL2         | -2.1036981088485 | 0.0000174267445510039 | down | Pathway |  |
|              | -                |                       |      |         |  |
| NMT2         | 2.10356565775371 | 0.000116515980185141  | down | Pathway |  |
|              | -                |                       |      |         |  |
| ARHGAP24     | 2.10332047610127 | 0.000239941225756581  | down | Pathway |  |
| EFNB1        | -2.1018137772875 | 0.00107479335798494   | down | Pathway |  |
| RGCC         | -2.0989362700451 | 0.000448856211033562  | down | Pathway |  |
|              | -                |                       |      |         |  |
| TMEM221      | 2.09718358364698 | 0.0308917236024481    | down | NA      |  |
|              | -                |                       |      |         |  |
| CACHD1       | 2.09664538895948 | 0.00870120133366826   | down | Pathway |  |
|              | -                |                       |      |         |  |
| RP11-122A3.2 | 2.09529444148548 | 0.00119633534347166   | down | NA      |  |
|              | -                |                       |      |         |  |
| ALDH6A1      | 2.09375143647149 | 0.00193278694790573   | down | Pathway |  |
|              | -                |                       |      |         |  |
| NDUFA4L2     | 2.08962105527002 | 0.0000532787255821952 | down | NA      |  |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| DCLK1   | 2.08897674029832 | 0.019551694635488     | down | Pathway |  |
|         | -                |                       |      |         |  |
| RAPGEF3 | 2.08825772555247 | 0.00181673268362257   | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAM213A | 2.08824360128562 | 0.000356273730229586  | down | NA      |  |
| STON1   | -2.0872455416721 | 0.00499531273823489   | down | NA      |  |
|         | -                |                       |      |         |  |
| NUDT7   | 2.08615644202864 | 0.000405010877871049  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CIB2    | 2.08281768843334 | 0.0183883108996659    | down | Pathway |  |
|         | -                |                       |      |         |  |
| MXRA7   | 2.08201550662261 | 0.000283631640767584  | down | NA      |  |
|         | -                |                       |      |         |  |
| MSX1    | 2.08169873783649 | 0.00182453898514806   | down | Pathway |  |
| ECHDC1  | -2.0814798018535 | 0.00247529312572664   | down | Pathway |  |
|         | -                |                       |      |         |  |
| CDH13   | 2.07837882517048 | 0.000471013104407419  | down | Pathway |  |
|         | -                |                       |      |         |  |
| PLCL2   | 2.07580429767431 | 0.0020816284783849    | down | Pathway |  |
|         | -                |                       |      |         |  |
| ROBO3   | 2.07383160099551 | 0.000763802742473218  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CYP39A1 | 2.07261242822938 | 0.0237126773179452    | down | Pathway |  |
|         | -                |                       |      |         |  |
| EEPD1   | 2.06975271416584 | 0.00471405621268965   | down | Pathway |  |
|         | -                |                       |      |         |  |
| CD93    | 2.06883889882302 | 0.0000872680034807056 | down | NA      |  |
| LAMC1   | -2.0682437226186 | 0.000626417394262855  | down | Pathway |  |
|         | -                |                       |      |         |  |
| PLCL1   | 2.06724497102471 | 0.000476126243266669  | down | Pathway |  |
|         | -                |                       |      |         |  |
| PKD1L1  | 2.06676312653583 | 0.00659550276027539   | down | Pathway |  |
|         | -                |                       |      |         |  |
| MYO7B   | 2.06673693693965 | 0.00437358676856239   | down | Pathway |  |
|         | -                |                       |      |         |  |
| SPNS2   | 2.06663451485803 | 0.00164634102680297   | down | Pathway |  |
|         | -                |                       |      |         |  |
| TPPP    | 2.06554573400674 | 0.0126888140897027    | down | Pathway |  |
| KIF17   | -2.0644749543305 | 0.00109190146331252   | down | Pathway |  |
|         | -                |                       |      |         |  |
| PLEKHH2 | 2.06357795606748 | 0.00990019919880412   | down | Pathway |  |
|         | -                |                       |      |         |  |
| PTPRM   | 2.06251263107762 | 0.000166187451735925  | down | Pathway |  |
|         | -                |                       |      |         |  |
| PCDH12  | 2.06168596479316 | 0.0000323174020300252 | down | Pathway |  |

|          |                  |                       |      |         |
|----------|------------------|-----------------------|------|---------|
|          | -                |                       |      |         |
| FGFR1    | 2.06059645160512 | 0.0011272928520189    | down | Pathway |
|          | -                |                       |      |         |
| MALL     | 2.05812820193356 | 0.0074157114338491    | down | Pathway |
|          | -                |                       |      |         |
| RGL1     | 2.05673307789524 | 0.010403606957345     | down | Pathway |
|          | -                |                       |      |         |
| SMAD6    | 2.05440778175498 | 0.00630377850534343   | down | Pathway |
|          | -                |                       |      |         |
| CLEC1A   | 2.05295106535494 | 0.000067262681463929  | down | NA      |
|          | -                |                       |      |         |
| AMOTL1   | 2.05237941448808 | 0.000264261417358478  | down | Pathway |
|          | -                |                       |      |         |
| RECK     | 2.05021218354473 | 0.000268320741088932  | down | Pathway |
|          | -                |                       |      |         |
| RFTN2    | 2.04787905725103 | 0.000253346530197055  | down | NA      |
|          | -                |                       |      |         |
| ITPRIPL1 | 2.04532419141149 | 0.00395298694804414   | down | NA      |
|          | -                |                       |      |         |
| EHHADH   | 2.04471350570649 | 0.00074141469115704   | down | Pathway |
|          | -                |                       |      |         |
| C3       | 2.04441588074182 | 0.00996872930780224   | down | Pathway |
|          | -                |                       |      |         |
| NLGN4X   | 2.04367488517406 | 0.016132695267151     | down | Pathway |
|          | -                |                       |      |         |
| ADAM22   | 2.04254644404003 | 0.00915072993447028   | down | Pathway |
|          | -                |                       |      |         |
| C19orf12 | 2.04042816829058 | 0.0000148509983906441 | down | Pathway |
|          | -                |                       |      |         |
| RASA3    | 2.04029551511782 | 0.000363661472296406  | down | Pathway |
|          | -                |                       |      |         |
| ADSSL1   | 2.03969129392695 | 0.000248430078437311  | down | NA      |
| ACR      | -2.0377641039692 | 0.00124590520515647   | down | Pathway |
|          | -                |                       |      |         |
| NOVA2    | 2.03736996615211 | 0.000420214028467988  | down | Pathway |
| RASGRP2  | -2.0330723146407 | 0.00568630668358794   | down | Pathway |
|          | -                |                       |      |         |
| PDP2     | 2.03073983128917 | 0.0012117962851961    | down | NA      |
|          | -                |                       |      |         |
| TMC1     | 2.03056737340036 | 0.0300726247451444    | down | Pathway |
|          | -                |                       |      |         |
| COL21A1  | 2.03047505568641 | 0.010847416030757     | down | NA      |
|          | -                |                       |      |         |
| NRP1     | 2.02789096407208 | 0.0000506791357951246 | down | Pathway |
|          | -                |                       |      |         |
| TRABD2A  | 2.02598439649012 | 0.016232843764579     | down | Pathway |

|             |                  |                       |      |         |  |
|-------------|------------------|-----------------------|------|---------|--|
|             | -                |                       |      |         |  |
| CLDN11      | 2.02596889061728 | 0.019358519395915     | down | Pathway |  |
|             | -                |                       |      |         |  |
| RFTN1       | 2.02567457720216 | 0.000143752115808916  | down | Pathway |  |
|             | -                |                       |      |         |  |
| FFAR2       | 2.02535661703133 | 0.0175476881499325    | down | Pathway |  |
|             | -                |                       |      |         |  |
| PPP1R3G     | 2.02148290505592 | 0.00491485921465165   | down | Pathway |  |
|             | -                |                       |      |         |  |
| TSKU        | 2.02112901396823 | 0.000704610227076125  | down | Pathway |  |
|             | -                |                       |      |         |  |
| ATP1B2      | 2.02087669741172 | 0.0222863569022569    | down | Pathway |  |
|             | -                |                       |      |         |  |
| PHLDB1      | 2.02024655134705 | 0.000113090619824214  | down | Pathway |  |
|             | -                |                       |      |         |  |
| IRAK3       | 2.01793680434328 | 0.00638740141816541   | down | Pathway |  |
|             | -                |                       |      |         |  |
| TMEM56      | 2.01586424459836 | 0.0472473341140652    | down | NA      |  |
|             | -                |                       |      |         |  |
| HOXA9       | 2.01435005111031 | 0.00350510071357994   | down | Pathway |  |
|             | -                |                       |      |         |  |
| ACAT1       | 2.01146720768784 | 0.0000908288860926587 | down | Pathway |  |
|             | -                |                       |      |         |  |
| LYNX1       | 2.01131630709493 | 0.0000947346685538899 | down | Pathway |  |
|             | -                |                       |      |         |  |
| APBB1IP     | 2.01102122781169 | 0.0032357903437502    | down | NA      |  |
| SEC14L5     | -2.0051835218949 | 0.0109231314627126    | down | NA      |  |
|             | -                |                       |      |         |  |
| PDZD4       | 2.00220032517122 | 0.000308665816614267  | down | NA      |  |
|             | -                |                       |      |         |  |
| ARHGAP28    | 1.99931118624393 | 0.0102620111971817    | down | Pathway |  |
|             | -                |                       |      |         |  |
| SPRY1       | 1.99911139672865 | 0.000628853343204391  | down | Pathway |  |
|             | -                |                       |      |         |  |
| PDE3A       | 1.99513999273183 | 0.00422499544835807   | down | Pathway |  |
|             | -                |                       |      |         |  |
| FAM212A     | 1.99467366892557 | 0.00243192549206861   | down | NA      |  |
|             | -                |                       |      |         |  |
| AC006547.14 | 1.99421278406586 | 0.0107110602174137    | down | NA      |  |
|             | -                |                       |      |         |  |
| TMEM35      | 1.99229203462872 | 0.0202714868055221    | down | NA      |  |
|             | -                |                       |      |         |  |
| NNMT        | 1.98865737789243 | 0.00339275830195315   | down | Pathway |  |
|             | -                |                       |      |         |  |
| BOC         | 1.98828853255036 | 0.011115775963202     | down | Pathway |  |
|             | -                |                       |      |         |  |
| UTRN        | 1.98802569437571 | 0.0000653191222370623 | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| BTBD6    | 1.98713703089729 | 0.0000594803468915483 | down | NA      |  |
|          | -                |                       |      |         |  |
| PCCA     | 1.98629843847428 | 0.0000820462790595965 | down | Pathway |  |
|          | -                |                       |      |         |  |
| TEAD1    | 1.98331812444994 | 0.00254356709610707   | down | Pathway |  |
|          | -                |                       |      |         |  |
| HADH     | 1.98179811448032 | 0.000519472046918103  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CRTAP    | 1.98140958576944 | 0.0000712512997588031 | down | Pathway |  |
|          | -                |                       |      |         |  |
| KIAA1462 | 1.97903384052347 | 0.00092693459266144   | down | NA      |  |
|          | -                |                       |      |         |  |
| LIMA1    | 1.97768464541383 | 0.000357020895717162  | down | Pathway |  |
|          | -                |                       |      |         |  |
| REM1     | 1.97670526578294 | 0.000971678499600897  | down | Pathway |  |
|          | -                |                       |      |         |  |
| XG       | 1.97667324554329 | 0.042185682884104     | down | Pathway |  |
|          | -                |                       |      |         |  |
| TCEAL7   | 1.97595858078002 | 0.0055751785436753    | down | NA      |  |
|          | -                |                       |      |         |  |
| ACOT1    | 1.97544185090081 | 0.00998545280970259   | down | Pathway |  |
| POLR3GL  | -1.9745655075771 | 0.000448856211033562  | down | NA      |  |
|          | -                |                       |      |         |  |
| ADAMTS3  | 1.97347107403116 | 0.00547574673144751   | down | Pathway |  |
|          | -                |                       |      |         |  |
| HIGD1B   | 1.96580349230075 | 0.00462133890211985   | down | NA      |  |
|          | -                |                       |      |         |  |
| ZDBF2    | 1.96312057106938 | 0.00706190750915601   | down | NA      |  |
|          | -                |                       |      |         |  |
| CCBE1    | 1.96195709187234 | 0.0448362270108187    | down | Pathway |  |
|          | -                |                       |      |         |  |
| MCTP1    | 1.96176775442993 | 0.00174267483578896   | down | Pathway |  |
| STAT5A   | -1.9590575768852 | 0.00117951915899427   | down | Pathway |  |
|          | -                |                       |      |         |  |
| KCTD12   | 1.95687921450341 | 0.00138046603939258   | down | NA      |  |
|          | -                |                       |      |         |  |
| RNF180   | 1.95634211701375 | 0.014136352287295     | down | Pathway |  |
|          | -                |                       |      |         |  |
| CCDC107  | 1.95616407233923 | 0.000205446686047126  | down | NA      |  |
|          | -                |                       |      |         |  |
| TMEM178B | 1.95613675382748 | 0.0102268892774019    | down | NA      |  |
|          | -                |                       |      |         |  |
| ORMDL3   | 1.95488627906012 | 0.000763802742473218  | down | Pathway |  |
|          | -                |                       |      |         |  |
| KIF1C    | 1.95049310128619 | 0.0000337437858946321 | down | Pathway |  |

|             |                  |                       |      |         |  |
|-------------|------------------|-----------------------|------|---------|--|
|             | -                |                       |      |         |  |
| SMIM10      | 1.95024235279794 | 0.00220454450982573   | down | NA      |  |
|             | -                |                       |      |         |  |
| VKORC1L1    | 1.94908943868579 | 0.000131712152793352  | down | Pathway |  |
|             | -                |                       |      |         |  |
| ZNF106      | 1.94907434386524 | 0.000101349074328654  | down | Pathway |  |
|             | -                |                       |      |         |  |
| SNTA1       | 1.94594570647451 | 0.0000985411462195632 | down | Pathway |  |
|             | -                |                       |      |         |  |
| TNIP1       | 1.94593233430578 | 0.0000293106134078413 | down | Pathway |  |
|             | -                |                       |      |         |  |
| RP11-3N2.13 | 1.94545884137913 | 0.0110635314110508    | down | NA      |  |
|             | -                |                       |      |         |  |
| CLU         | 1.94448361126248 | 0.00770064857934628   | down | Pathway |  |
|             | -                |                       |      |         |  |
| THRB        | 1.94342117920551 | 0.00141093543080837   | down | Pathway |  |
|             | -                |                       |      |         |  |
| VIP         | 1.94311589582721 | 0.00132503330749421   | down | Pathway |  |
|             | -                |                       |      |         |  |
| PLS3        | 1.94083106398271 | 0.0000236395522203272 | down | Pathway |  |
|             | -                |                       |      |         |  |
| OXCT1       | 1.94026341193186 | 0.000876859143059688  | down | Pathway |  |
|             | -                |                       |      |         |  |
| TCN2        | 1.93969643597869 | 0.0142716554505583    | down | NA      |  |
|             | -                |                       |      |         |  |
| VSIG2       | 1.93947820640905 | 0.0184838246216       | down | NA      |  |
|             | -                |                       |      |         |  |
| PLEKHA4     | 1.93824126495257 | 0.00704505451770364   | down | Pathway |  |
|             | -                |                       |      |         |  |
| AVPI1       | 1.93749927921681 | 0.00342730582790048   | down | NA      |  |
|             | -                |                       |      |         |  |
| TMEM200B    | 1.93697200760582 | 0.0000765099910680501 | down | NA      |  |
|             | -                |                       |      |         |  |
| NOV         | 1.93637854522149 | 0.00711884141653348   | down | NA      |  |
|             | -                |                       |      |         |  |
| THSD1       | 1.93463094643869 | 0.000116145582440322  | down | Pathway |  |
|             | -                |                       |      |         |  |
| SRCRB4D     | 1.93302878094115 | 0.00315255128750998   | down | NA      |  |
|             | -                |                       |      |         |  |
| RHOQ        | 1.93220880271496 | 0.000268320741088932  | down | Pathway |  |
|             | -                |                       |      |         |  |
| ZFHx4       | 1.93197507180845 | 0.00777856227005529   | down | NA      |  |
|             | -                |                       |      |         |  |
| C11orf96    | 1.93011057040093 | 0.00757408497251189   | down | NA      |  |
|             | -                |                       |      |         |  |
| PDZRN3      | 1.92999927821291 | 0.0142591766331992    | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| OSR2     | 1.92839699207954 | 0.0411739247249634    | down | Pathway |  |
|          | -                |                       |      |         |  |
| ZEB1     | 1.92485036819349 | 0.00042051996284283   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CALCRL   | 1.92279684601088 | 0.00323032043386279   | down | Pathway |  |
|          | -                |                       |      |         |  |
| SERPING1 | 1.92165756706452 | 0.0082474348441763    | down | Pathway |  |
|          | -                |                       |      |         |  |
| ANO2     | 1.91861158674834 | 0.0026354738940612    | down | Pathway |  |
|          | -                |                       |      |         |  |
| BST1     | 1.91785774448464 | 0.000720894017791845  | down | Pathway |  |
|          | -                |                       |      |         |  |
| OLFML1   | 1.91740443915049 | 0.000783542272291761  | down | NA      |  |
| C10orf11 | -1.9167314595645 | 0.00188855403965796   | down | NA      |  |
|          | -                |                       |      |         |  |
| ACAA2    | 1.91668130921037 | 0.000397545133749527  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SUCLA2   | 1.91346922156416 | 0.00033598535174166   | down | Pathway |  |
|          | -                |                       |      |         |  |
| TM7SF2   | 1.90950222905951 | 0.00624888804618131   | down | Pathway |  |
|          | -                |                       |      |         |  |
| ADHFE1   | 1.90822854906813 | 0.0011161451102904    | down | Pathway |  |
|          | -                |                       |      |         |  |
| BCL6B    | 1.90661558035348 | 0.0000983664357695885 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ZNF219   | 1.90627682619212 | 0.000083142834261072  | down | Pathway |  |
|          | -                |                       |      |         |  |
| EPB41L2  | 1.90583468570227 | 0.00181969213656071   | down | Pathway |  |
| CD99L2   | -1.9044465312172 | 0.0000421738197942172 | down | Pathway |  |
|          | -                |                       |      |         |  |
| EDA      | 1.90414555245124 | 0.000601178163986356  | down | Pathway |  |
|          | -                |                       |      |         |  |
| THRA     | 1.89863431518214 | 0.0000836233586411006 | down | Pathway |  |
|          | -                |                       |      |         |  |
| LGALS1   | 1.89619846036072 | 0.00277543029340354   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PLAGL1   | 1.89568138543154 | 0.00972254968752351   | down | NA      |  |
|          | -                |                       |      |         |  |
| ARHGAP31 | 1.89299954834767 | 0.00049018992375733   | down | Pathway |  |
|          | -                |                       |      |         |  |
| TUBB2A   | 1.89126934835612 | 0.00206752002085825   | down | Pathway |  |
|          | -                |                       |      |         |  |
| DPP4     | 1.89077843372564 | 0.0407394921189933    | down | Pathway |  |
|          | -                |                       |      |         |  |
| HOXA11   | 1.89066844024791 | 0.0450820104403733    | down | Pathway |  |



|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| AASS     | 1.89063502016426 | 0.00127967686689168   | down | Pathway |  |
|          | -                |                       |      |         |  |
| SOX18    | 1.89026515279437 | 0.00511126324033011   | down | Pathway |  |
|          | -                |                       |      |         |  |
| FLI1     | 1.89019972202004 | 0.00334209626234771   | down | Pathway |  |
|          | -                |                       |      |         |  |
| MID1     | 1.88983752179496 | 0.0307426485825176    | down | Pathway |  |
|          | -                |                       |      |         |  |
| AK4      | 1.88838444699877 | 0.00272748625291439   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PDGFD    | 1.88786372973981 | 0.00265750967133912   | down | Pathway |  |
|          | -                |                       |      |         |  |
| DAPK2    | 1.88763093786424 | 0.0048512817694514    | down | Pathway |  |
|          | -                |                       |      |         |  |
| MECOM    | 1.88746001534679 | 0.0435419820319113    | down | Pathway |  |
| AAMDC    | -1.8863230254208 | 0.0000135579150977941 | down | Pathway |  |
|          | -                |                       |      |         |  |
| ARHGEF6  | 1.88578807362397 | 0.00628844279303909   | down | Pathway |  |
|          | -                |                       |      |         |  |
| ARHGEF40 | 1.88399900610801 | 0.00147697324715866   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PPP1R36  | 1.88128287658951 | 0.0169804738628558    | down | NA      |  |
|          | -                |                       |      |         |  |
| ESYT1    | 1.87913254793198 | 0.0000903371821431127 | down | Pathway |  |
|          | -                |                       |      |         |  |
| LRRC34   | 1.87773192344921 | 0.0364561878540886    | down | NA      |  |
|          | -                |                       |      |         |  |
| FILIP1   | 1.87581461683338 | 0.00246376790917567   | down | NA      |  |
|          | -                |                       |      |         |  |
| LAMB3    | 1.87578466663576 | 0.0212899946146452    | down | Pathway |  |
|          | -                |                       |      |         |  |
| NAV3     | 1.87517195901378 | 0.000205446686047126  | down | Pathway |  |
|          | -                |                       |      |         |  |
| GPATCH11 | 1.87493655289372 | 0.000241403265626349  | down | NA      |  |
|          | -                |                       |      |         |  |
| GPX4     | 1.87474023851823 | 0.000176792164193682  | down | Pathway |  |
|          | -                |                       |      |         |  |
| MEIS2    | 1.87413533790853 | 0.00151879405288415   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PTPN21   | 1.87408524640604 | 0.000583409684636326  | down | NA      |  |
|          | -                |                       |      |         |  |
| HOXB6    | 1.87120591838017 | 0.000840027060867341  | down | Pathway |  |
|          | -                |                       |      |         |  |
| NPR2     | 1.86974379757694 | 0.000476928494523595  | down | Pathway |  |
|          | -                |                       |      |         |  |
| GRK5     | 1.86897354987849 | 0.000206395232206536  | down | Pathway |  |

|            |                  |                      |      |         |  |
|------------|------------------|----------------------|------|---------|--|
|            | -                |                      |      |         |  |
| SLC10A6    | 1.86624524192032 | 0.0051149138931311   | down | Pathway |  |
|            | -                |                      |      |         |  |
| FAM126A    | 1.86576682795893 | 0.000121388009059353 | down | Pathway |  |
|            | -                |                      |      |         |  |
| FLT4       | 1.86062385747162 | 0.000395784895508871 | down | Pathway |  |
|            | -                |                      |      |         |  |
| CSGALNACT1 | 1.85996898329176 | 0.000841961641436113 | down | Pathway |  |
|            | -                |                      |      |         |  |
| ETFB       | 1.85886023321821 | 0.00147744477533225  | down | Pathway |  |
|            | -                |                      |      |         |  |
| SULT1C4    | 1.85726366536314 | 0.00613114311322311  | down | Pathway |  |
|            | -                |                      |      |         |  |
| FAM43A     | 1.85710502380287 | 0.000459962776335258 | down | NA      |  |
|            | -                |                      |      |         |  |
| SNN        | 1.85588723511854 | 0.00052570559702797  | down | Pathway |  |
|            | -                |                      |      |         |  |
| TMBIM1     | 1.85530742047031 | 0.00022370204671549  | down | Pathway |  |
|            | -                |                      |      |         |  |
| BTBD8      | 1.85444889058909 | 0.00666528593643077  | down | NA      |  |
|            | -                |                      |      |         |  |
| SH3TC2     | 1.85371184236446 | 0.00213856146020748  | down | Pathway |  |
|            | -                |                      |      |         |  |
| TSPAN18    | 1.84965530495259 | 0.00136480741696431  | down | NA      |  |
|            | -                |                      |      |         |  |
| PRKCDBP    | 1.84920438456763 | 0.00408481621367174  | down | NA      |  |
|            | -                |                      |      |         |  |
| LRFN5      | 1.84544680614328 | 0.0389587849772827   | down | Pathway |  |
|            | -                |                      |      |         |  |
| PARD3B     | 1.84542850672993 | 0.00064772397790125  | down | Pathway |  |
|            | -                |                      |      |         |  |
| CPE        | 1.84432248694664 | 0.00469727338401908  | down | Pathway |  |
|            | -                |                      |      |         |  |
| PRKD1      | 1.84431933443334 | 0.000644903205574493 | down | Pathway |  |
|            | -                |                      |      |         |  |
| ADCY4      | 1.84345427164264 | 0.000203752307486219 | down | Pathway |  |
|            | -                |                      |      |         |  |
| FAM49A     | 1.84235220451722 | 0.00651970178464188  | down | NA      |  |
|            | -                |                      |      |         |  |
| MARC2      | 1.84198779956807 | 0.00742082169996448  | down | NA      |  |
|            | -                |                      |      |         |  |
| CFI        | 1.84165102859095 | 0.0147515441940397   | down | NA      |  |
|            | -                |                      |      |         |  |
| PXDC1      | 1.84101836686137 | 0.00422050513357063  | down | NA      |  |
|            | -                |                      |      |         |  |
| DTX4       | 1.84062895557691 | 0.00180818451145274  | down | NA      |  |

|         |                  |                      |      |         |  |
|---------|------------------|----------------------|------|---------|--|
|         | -                |                      |      |         |  |
| HOXC8   | 1.83983040501424 | 0.0138294782983929   | down | Pathway |  |
|         | -                |                      |      |         |  |
| ANKDD1A | 1.83864220789836 | 0.00294876592879868  | down | NA      |  |
|         | -                |                      |      |         |  |
| ABLIM1  | 1.83803059510462 | 0.00270351074517001  | down | NA      |  |
|         | -                |                      |      |         |  |
| DIXDC1  | 1.83659442710389 | 0.000311104455999785 | down | Pathway |  |
| ADRBK2  | -1.8353452309721 | 0.00121028633221942  | down | NA      |  |
|         | -                |                      |      |         |  |
| ABHD1   | 1.83437150511383 | 0.0142274347695393   | down | Pathway |  |
|         | -                |                      |      |         |  |
| KCNH4   | 1.83436951499374 | 0.0229048097093173   | down | Pathway |  |
|         | -                |                      |      |         |  |
| GPRC5B  | 1.83422672947511 | 0.0246070864225715   | down | Pathway |  |
|         | -                |                      |      |         |  |
| HDAC9   | 1.83288011480943 | 0.00194512444061659  | down | Pathway |  |
|         | -                |                      |      |         |  |
| MPDZ    | 1.83238721556675 | 0.0020816284783849   | down | Pathway |  |
|         | -                |                      |      |         |  |
| SH2D3C  | 1.83230960800321 | 0.00148633732729716  | down | Pathway |  |
|         | -                |                      |      |         |  |
| CHST7   | 1.83193557612623 | 0.00139305578450717  | down | Pathway |  |
|         | -                |                      |      |         |  |
| PCYOX1  | 1.83030749309447 | 0.00148633732729716  | down | Pathway |  |
|         | -                |                      |      |         |  |
| TLE1    | 1.82883361205247 | 0.0239952983476666   | down | Pathway |  |
|         | -                |                      |      |         |  |
| GPR153  | 1.82836841285753 | 0.00146990157599343  | down | NA      |  |
|         | -                |                      |      |         |  |
| FYN     | 1.82549327392426 | 0.00258052237930075  | down | Pathway |  |
| TSPAN12 | -1.8254496105367 | 0.0159462793265593   | down | Pathway |  |
|         | -                |                      |      |         |  |
| TK2     | 1.82477126652181 | 0.00011597175870838  | down | NA      |  |
|         | -                |                      |      |         |  |
| EPHX1   | 1.82402918382308 | 0.00495217487937342  | down | Pathway |  |
|         | -                |                      |      |         |  |
| LRRC70  | 1.82383448669945 | 0.000779630130756003 | down | NA      |  |
|         | -                |                      |      |         |  |
| SIX2    | 1.82081363439266 | 0.0162995678512346   | down | Pathway |  |
|         | -                |                      |      |         |  |
| FOXI2   | 1.82070645603191 | 0.0273331740055999   | down | NA      |  |
|         | -                |                      |      |         |  |
| CCDC152 | 1.81951005906336 | 0.00197379925851253  | down | NA      |  |
|         | -                |                      |      |         |  |
| ITGA1   | 1.81809356551362 | 0.000649370895645139 | down | Pathway |  |

|         |                  |                      |      |         |  |
|---------|------------------|----------------------|------|---------|--|
|         | -                |                      |      |         |  |
| FAH     | 1.81630995734016 | 0.00318854345568665  | down | Pathway |  |
|         | -                |                      |      |         |  |
| ACSL4   | 1.81587639576728 | 0.00111333107244355  | down | Pathway |  |
|         | -                |                      |      |         |  |
| SLITRK4 | 1.81394541987993 | 0.0296223385977939   | down | Pathway |  |
| ADAMTS1 | -1.8133533588032 | 0.00795240081953702  | down | Pathway |  |
|         | -                |                      |      |         |  |
| SCN2A   | 1.81069708549687 | 0.00289259669398799  | down | Pathway |  |
|         | -                |                      |      |         |  |
| PER1    | 1.81033494372688 | 0.00165724320113718  | down | Pathway |  |
|         | -                |                      |      |         |  |
| LRRC4B  | 1.80967015015648 | 0.0088003251403496   | down | Pathway |  |
|         | -                |                      |      |         |  |
| HOXB4   | 1.80775345166223 | 0.0027881039353636   | down | Pathway |  |
|         | -                |                      |      |         |  |
| SHROOM4 | 1.80721118446773 | 0.00142596384212134  | down | Pathway |  |
|         | -                |                      |      |         |  |
| ENPEP   | 1.80412281335589 | 0.00121028633221942  | down | Pathway |  |
|         | -                |                      |      |         |  |
| FSTL3   | 1.80288179003171 | 0.00622453575354714  | down | Pathway |  |
|         | -                |                      |      |         |  |
| ACKR4   | 1.80237980572757 | 0.0142946430845491   | down | Pathway |  |
| ALAD    | -1.8023217105843 | 0.000583409684636326 | down | Pathway |  |
|         | -                |                      |      |         |  |
| WTIP    | 1.80223824419703 | 0.00570085537493398  | down | Pathway |  |
|         | -                |                      |      |         |  |
| APOLD1  | 1.80124034686695 | 0.00562991818020628  | down | Pathway |  |
|         | -                |                      |      |         |  |
| GAS1    | 1.79904092754323 | 0.0233177760667566   | down | Pathway |  |
|         | -                |                      |      |         |  |
| LRMP    | 1.79887521133868 | 0.0203724909852069   | down | NA      |  |
|         | -                |                      |      |         |  |
| FLNC    | 1.79871067942222 | 0.0345731093197016   | down | Pathway |  |
|         | -                |                      |      |         |  |
| HIC1    | 1.79834696866204 | 0.00623399091702636  | down | Pathway |  |
|         | -                |                      |      |         |  |
| SH3KBP1 | 1.79430066904843 | 0.00295295674377838  | down | Pathway |  |
|         | -                |                      |      |         |  |
| FAM69B  | 1.79341823401303 | 0.00643343171522469  | down | NA      |  |
|         | -                |                      |      |         |  |
| CARD6   | 1.79291787646834 | 0.00281418192569626  | down | NA      |  |
|         | -                |                      |      |         |  |
| FAM69A  | 1.79172024903371 | 0.000670752647235661 | down | NA      |  |
|         | -                |                      |      |         |  |
| LTBP4   | 1.79055586771675 | 0.000644903205574493 | down | Pathway |  |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| GPC6    | 1.78974785579891 | 0.00721812611063696   | down | Pathway |  |
|         | -                |                       |      |         |  |
| CPXM2   | 1.78972662715658 | 0.011900316418752     | down | NA      |  |
|         | -                |                       |      |         |  |
| NEXN    | 1.78799572580657 | 0.00101779294392152   | down | Pathway |  |
| RNF125  | -1.7872886327798 | 0.006366149643079     | down | NA      |  |
|         | -                |                       |      |         |  |
| CPNE2   | 1.78618330928243 | 0.00120369971264521   | down | Pathway |  |
|         | -                |                       |      |         |  |
| KLHL5   | 1.78493541002345 | 0.0000922735054215946 | down | NA      |  |
|         | -                |                       |      |         |  |
| FOXO1   | 1.78480763385791 | 0.000194405063018176  | down | Pathway |  |
|         | -                |                       |      |         |  |
| SCARF1  | 1.78413184257021 | 0.00170181458497422   | down | Pathway |  |
|         | -                |                       |      |         |  |
| FLT1    | 1.78362092051412 | 0.000601594805013111  | down | Pathway |  |
|         | -                |                       |      |         |  |
| KLRF1   | 1.78336014789347 | 0.0386204255088704    | down | NA      |  |
|         | -                |                       |      |         |  |
| BVES    | 1.78202708887565 | 0.000479061444774117  | down | Pathway |  |
|         | -                |                       |      |         |  |
| ANXA6   | 1.78090370111457 | 0.000268320741088932  | down | Pathway |  |
|         | -                |                       |      |         |  |
| MRO     | 1.78024399551469 | 0.00281418192569626   | down | NA      |  |
|         | -                |                       |      |         |  |
| HABP4   | 1.78005934311956 | 0.0000878102623376788 | down | Pathway |  |
|         | -                |                       |      |         |  |
| NFIX    | 1.77894442679598 | 0.00233203390978014   | down | Pathway |  |
|         | -                |                       |      |         |  |
| EPB41L3 | 1.77838491030593 | 0.0084179667371984    | down | Pathway |  |
| PPARA   | -1.7773459370723 | 0.00175975367170712   | down | Pathway |  |
|         | -                |                       |      |         |  |
| SNED1   | 1.77724162036237 | 0.0000762267464760712 | down | Pathway |  |
|         | -                |                       |      |         |  |
| SCIN    | 1.77634304788663 | 0.0127684265683857    | down | Pathway |  |
| RHOJ    | -1.7755072328378 | 0.000496500461346152  | down | Pathway |  |
| GUCY1A2 | -1.7753023272684 | 0.000490830955935515  | down | Pathway |  |
|         | -                |                       |      |         |  |
| CYBRD1  | 1.76811819037851 | 0.0203260089093394    | down | Pathway |  |
|         | -                |                       |      |         |  |
| KALRN   | 1.76791268880003 | 0.00937897026901019   | down | Pathway |  |
|         | -                |                       |      |         |  |
| NRIP2   | 1.76735061658381 | 0.0272070316154518    | down | NA      |  |
|         | -                |                       |      |         |  |
| LRP3    | 1.76729447626239 | 0.00246696522349474   | down | Pathway |  |
| ULBP3   | -1.767072959906  | 0.0380460293762841    | down | NA      |  |

|          |                  |                       |      |         |
|----------|------------------|-----------------------|------|---------|
|          | -                |                       |      |         |
| LPAR1    | 1.76649869949642 | 0.0011621952937401    | down | Pathway |
| C1S      | -1.7660056710748 | 0.014605198914439     | down | NA      |
| ITGA6    | -1.7657461236148 | 0.000141818334379598  | down | Pathway |
|          | -                |                       |      |         |
| DUSP6    | 1.76276161344848 | 0.00042386930184934   | down | Pathway |
|          | -                |                       |      |         |
| CCR10    | 1.76206342660198 | 0.00553942800669223   | down | Pathway |
| MAP1B    | -1.7619726927547 | 0.00627514402292473   | down | Pathway |
|          | -                |                       |      |         |
| CRB1     | 1.75981256377255 | 0.0272780190299227    | down | Pathway |
|          | -                |                       |      |         |
| NDRG4    | 1.75944830175746 | 0.0149566307950456    | down | Pathway |
|          | -                |                       |      |         |
| HOXD8    | 1.75889401152841 | 0.0068387118260065    | down | Pathway |
|          | -                |                       |      |         |
| PPM1L    | 1.75752585786238 | 0.0071136519041166    | down | Pathway |
|          | -                |                       |      |         |
| ABHD5    | 1.75592165561191 | 0.00123650385139297   | down | Pathway |
|          | -                |                       |      |         |
| BHLHE22  | 1.75484218916872 | 0.0356488232470164    | down | NA      |
|          | -                |                       |      |         |
| PRICKLE2 | 1.75437372138211 | 0.00112531383076672   | down | Pathway |
|          | -                |                       |      |         |
| CLIC2    | 1.75316559783142 | 0.00144858652271961   | down | Pathway |
|          | -                |                       |      |         |
| CHCHD10  | 1.75295951626748 | 0.00213262441477563   | down | Pathway |
|          | -                |                       |      |         |
| ANG      | 1.75231269281417 | 0.000364692473193508  | down | Pathway |
| APOL6    | -1.7522576968062 | 0.00233570228654904   | down | Pathway |
|          | -                |                       |      |         |
| PTGER4   | 1.74788529340768 | 0.00764391344791033   | down | Pathway |
|          | -                |                       |      |         |
| SH3BP5   | 1.74753938705479 | 0.000433136280562955  | down | Pathway |
|          | -                |                       |      |         |
| DDIT4L   | 1.74484343963263 | 0.0151589477491166    | down | NA      |
|          | -                |                       |      |         |
| TIMP3    | 1.74164298191291 | 0.00347728048226657   | down | Pathway |
|          | -                |                       |      |         |
| PHLDA3   | 1.74042263275101 | 0.00546883555736987   | down | Pathway |
|          | -                |                       |      |         |
| S100A10  | 1.73907735758194 | 0.00680967701791538   | down | Pathway |
|          | -                |                       |      |         |
| FKBP5    | 1.73459858965337 | 0.0188553799757236    | down | NA      |
|          | -                |                       |      |         |
| SYDE1    | 1.73210390612729 | 0.0000682988008198659 | down | Pathway |

|          |                  |                      |      |         |  |
|----------|------------------|----------------------|------|---------|--|
|          | -                |                      |      |         |  |
| SGCB     | 1.73202628488218 | 0.00155839873950891  | down | Pathway |  |
|          | -                |                      |      |         |  |
| CYS1     | 1.73048912203414 | 0.0225904851453788   | down | NA      |  |
|          | -                |                      |      |         |  |
| CYSTM1   | 1.72932449105665 | 0.00042051996284283  | down | NA      |  |
|          | -                |                      |      |         |  |
| PPL      | 1.72712524867329 | 0.0140506660780196   | down | Pathway |  |
|          | -                |                      |      |         |  |
| DIAPH2   | 1.72701285518083 | 0.000297754513483632 | down | Pathway |  |
|          | -                |                      |      |         |  |
| NUAK1    | 1.72660852078328 | 0.00158924176152983  | down | Pathway |  |
|          | -                |                      |      |         |  |
| ME3      | 1.72588549702581 | 0.000322109665703003 | down | NA      |  |
|          | -                |                      |      |         |  |
| ATP2B4   | 1.72575511076373 | 0.00119780135899441  | down | Pathway |  |
|          | -                |                      |      |         |  |
| OAF      | 1.72467935619694 | 0.00915748616039275  | down | NA      |  |
|          | -                |                      |      |         |  |
| PDGFRA   | 1.72407446527269 | 0.00652367365079394  | down | Pathway |  |
|          | -                |                      |      |         |  |
| MFNG     | 1.72327984531446 | 0.00276951318756057  | down | Pathway |  |
|          | -                |                      |      |         |  |
| NUDT8    | 1.72153814730048 | 0.00744512343304905  | down | Pathway |  |
|          | -                |                      |      |         |  |
| STARD9   | 1.72130890868074 | 0.000601594805013111 | down | Pathway |  |
|          | -                |                      |      |         |  |
| GNA14    | 1.71932566602442 | 0.00126193249823639  | down | Pathway |  |
|          | -                |                      |      |         |  |
| GATA2    | 1.71908068524889 | 0.0143302437627075   | down | Pathway |  |
|          | -                |                      |      |         |  |
| ABHD15   | 1.71800841627494 | 0.00145102726031926  | down | NA      |  |
|          | -                |                      |      |         |  |
| SLC16A2  | 1.71749084200869 | 0.00626770841408716  | down | Pathway |  |
|          | -                |                      |      |         |  |
| ZNF677   | 1.71736552542127 | 0.0263727942984936   | down | NA      |  |
| QKI      | -1.7164838114097 | 0.00120073501325808  | down | Pathway |  |
|          | -                |                      |      |         |  |
| TTC7B    | 1.71642964287521 | 0.000830139190852364 | down | Pathway |  |
|          | -                |                      |      |         |  |
| ARHGAP10 | 1.71574863650361 | 0.00145471215127804  | down | Pathway |  |
|          | -                |                      |      |         |  |
| TLR4     | 1.71530617068676 | 0.0116510406628552   | down | Pathway |  |
|          | -                |                      |      |         |  |
| ITIH3    | 1.71318011589327 | 0.0369657423521988   | down | NA      |  |
|          | -                |                      |      |         |  |
| NR5A2    | 1.71276141817879 | 0.0062649241155265   | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| GIPC3    | 1.70975499190058 | 0.00115836595329297   | down | NA      |  |
|          | -                |                       |      |         |  |
| DST      | 1.70708716102188 | 0.00162111992478466   | down | Pathway |  |
|          | -                |                       |      |         |  |
| CYB5A    | 1.70564890076797 | 0.0320395898745852    | down | NA      |  |
|          | -                |                       |      |         |  |
| RGS17    | 1.70292275522234 | 0.0270660984484938    | down | NA      |  |
|          | -                |                       |      |         |  |
| TKT      | 1.69772721054566 | 0.00199327714734499   | down | NA      |  |
|          | -                |                       |      |         |  |
| STEAP1   | 1.69661020201886 | 0.00270351074517001   | down | NA      |  |
|          | -                |                       |      |         |  |
| RBPMS    | 1.69598078791368 | 0.015622161643148     | down | Pathway |  |
|          | -                |                       |      |         |  |
| NEK7     | 1.69539147784247 | 0.00115836595329297   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PRPH2    | 1.69449444398152 | 0.0260578968111256    | down | Pathway |  |
|          | -                |                       |      |         |  |
| REV3L    | 1.69398153625525 | 0.0000981323114659227 | down | Pathway |  |
|          | -                |                       |      |         |  |
| SHMT1    | 1.69358865837991 | 0.0007283132901898    | down | Pathway |  |
|          | -                |                       |      |         |  |
| LONRF3   | 1.69282344300797 | 0.00168542494454958   | down | NA      |  |
|          | -                |                       |      |         |  |
| SLC9A3R2 | 1.69233688642646 | 0.000467178037277391  | down | Pathway |  |
|          | -                |                       |      |         |  |
| RRAS2    | 1.69042621404476 | 0.0100479114758072    | down | Pathway |  |
|          | -                |                       |      |         |  |
| SYNE1    | 1.68805682491592 | 0.000235721954118244  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ITGB1    | 1.68801292118626 | 0.00185192627706817   | down | Pathway |  |
|          | -                |                       |      |         |  |
| ZNF354C  | 1.68783098970681 | 0.0149034398144706    | down | NA      |  |
|          | -                |                       |      |         |  |
| TNFSF12  | 1.68570104225566 | 0.00209453764137192   | down | Pathway |  |
|          | -                |                       |      |         |  |
| PMEPA1   | 1.68447480503974 | 0.000841961641436113  | down | Pathway |  |
|          | -                |                       |      |         |  |
| GDPD5    | 1.68432643490217 | 0.0061798066195251    | down | Pathway |  |
|          | -                |                       |      |         |  |
| MDH1     | 1.67888029409353 | 0.0000674325767586959 | down | NA      |  |
|          | -                |                       |      |         |  |
| FAM26E   | 1.67617364581364 | 0.000720894017791845  | down | NA      |  |
| PJA1     | -1.6760580713873 | 0.000303280961205611  | down | NA      |  |
|          | -                |                       |      |         |  |
| CSRP2    | 1.67410357331232 | 0.0210829232423331    | down | Pathway |  |



|           |                  |                       |      |         |  |
|-----------|------------------|-----------------------|------|---------|--|
|           | -                |                       |      |         |  |
| SLIT2     | 1.67321587063017 | 0.00283072509777522   | down | Pathway |  |
|           | -                |                       |      |         |  |
| OMD       | 1.67242642303182 | 0.0351441363414662    | down | Pathway |  |
|           | -                |                       |      |         |  |
| KIAA1324L | 1.67172291821668 | 0.0108793314762571    | down | NA      |  |
|           | -                |                       |      |         |  |
| GFOD1     | 1.67114674339424 | 0.000614423176741171  | down | NA      |  |
|           | -                |                       |      |         |  |
| DYNC1I1   | 1.67066971688931 | 0.00154132424937158   | down | Pathway |  |
|           | -                |                       |      |         |  |
| ATP8B4    | 1.67042777788973 | 0.00340418843214864   | down | Pathway |  |
|           | -                |                       |      |         |  |
| MDFIC     | 1.67023282617172 | 0.000165578754766909  | down | Pathway |  |
|           | -                |                       |      |         |  |
| PLCE1     | 1.67016655232556 | 0.049680191317224     | down | Pathway |  |
|           | -                |                       |      |         |  |
| C16orf86  | 1.67014265147683 | 0.00106915086935269   | down | NA      |  |
|           | -                |                       |      |         |  |
| PARVA     | 1.66964291302857 | 0.0000867662331740805 | down | Pathway |  |
|           | -                |                       |      |         |  |
| TSPAN3    | 1.66899010787331 | 0.000644903205574493  | down | NA      |  |
| CCDC68    | -1.6682326698738 | 0.0260770851504337    | down | NA      |  |
|           | -                |                       |      |         |  |
| HSD17B1   | 1.66800387980656 | 0.000766378302764361  | down | Pathway |  |
|           | -                |                       |      |         |  |
| PDE9A     | 1.66518749551518 | 0.0216005607968023    | down | Pathway |  |
|           | -                |                       |      |         |  |
| WLS       | 1.66405071831858 | 0.00385178115848343   | down | Pathway |  |
|           | -                |                       |      |         |  |
| HAAO      | 1.66354609957392 | 0.0230570427441117    | down | Pathway |  |
|           | -                |                       |      |         |  |
| LMO2      | 1.66339591739823 | 0.00187418520764299   | down | NA      |  |
|           | -                |                       |      |         |  |
| GIMAP4    | 1.66303023368713 | 0.00928600159201033   | down | NA      |  |
|           | -                |                       |      |         |  |
| RGS5      | 1.65691765052083 | 0.0344590193497764    | down | Pathway |  |
|           | -                |                       |      |         |  |
| HSD17B11  | 1.65663954721329 | 0.0025953531753237    | down | Pathway |  |
|           | -                |                       |      |         |  |
| KIRREL    | 1.65652282305255 | 0.00156894722727738   | down | NA      |  |
|           | -                |                       |      |         |  |
| FAM184A   | 1.65453742376615 | 0.00717850825503638   | down | NA      |  |
|           | -                |                       |      |         |  |
| CPNE8     | 1.65312662773577 | 0.00220454450982573   | down | Pathway |  |
|           | -                |                       |      |         |  |
| ADCK3     | 1.65168300951413 | 0.00106481929211232   | down | NA      |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| DPF3     | 1.65156022767964 | 0.0186894721379191    | down | NA      |  |
|          | -                |                       |      |         |  |
| RPS6KA2  | 1.65135978908635 | 0.00158498331759283   | down | Pathway |  |
|          | -                |                       |      |         |  |
| C1R      | 1.65118506270233 | 0.0400061635272468    | down | NA      |  |
| PRDX6    | -1.6510122837661 | 0.000339081478581284  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SCRN2    | 1.65014470373559 | 0.00106481398796966   | down | NA      |  |
|          | -                |                       |      |         |  |
| MBNL2    | 1.64826189399098 | 0.000146406827745791  | down | NA      |  |
|          | -                |                       |      |         |  |
| CHST3    | 1.64758000962539 | 0.000710467195448009  | down | Pathway |  |
|          | -                |                       |      |         |  |
| COL15A1  | 1.64632089944675 | 0.000924520437151173  | down | Pathway |  |
| SULT1B1  | -1.6448135790078 | 0.0211530176292111    | down | Pathway |  |
|          | -                |                       |      |         |  |
| SHISA6   | 1.64425761560434 | 0.0330775009997538    | down | Pathway |  |
|          | -                |                       |      |         |  |
| COL4A2   | 1.64363628770959 | 0.000750777485406687  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SELENBP1 | 1.64340480231398 | 0.0200399959949144    | down | NA      |  |
|          | -                |                       |      |         |  |
| CYSLTR1  | 1.64313146023425 | 0.0127030362887505    | down | Pathway |  |
|          | -                |                       |      |         |  |
| ABHD14B  | 1.64236206066742 | 0.000141818334379598  | down | Pathway |  |
|          | -                |                       |      |         |  |
| ENPP3    | 1.64202483151264 | 0.00358870986093913   | down | Pathway |  |
|          | -                |                       |      |         |  |
| LRIG3    | 1.63766839878245 | 0.0314509143231254    | down | Pathway |  |
| MT1E     | -1.6364640709574 | 0.0102071421219476    | down | Pathway |  |
|          | -                |                       |      |         |  |
| MMP15    | 1.63559269976496 | 0.0169021173048264    | down | Pathway |  |
|          | -                |                       |      |         |  |
| SESN3    | 1.63312406076941 | 0.00558149148714527   | down | Pathway |  |
|          | -                |                       |      |         |  |
| ZBTB20   | 1.63267577319873 | 0.00276849610528115   | down | Pathway |  |
|          | -                |                       |      |         |  |
| MAPK11   | 1.63262038288554 | 0.00524068276653727   | down | Pathway |  |
| INPP5K   | -1.6300235450127 | 0.0000698332812978121 | down | Pathway |  |
|          | -                |                       |      |         |  |
| MFSD4    | 1.62941353615014 | 0.0102771029268131    | down | NA      |  |
|          | -                |                       |      |         |  |
| ARL4D    | 1.62921180279832 | 0.0321454471072378    | down | Pathway |  |
|          | -                |                       |      |         |  |
| LMCD1    | 1.62887328802373 | 0.00105875870252309   | down | Pathway |  |

|          |                  |                       |      |         |  |
|----------|------------------|-----------------------|------|---------|--|
|          | -                |                       |      |         |  |
| GOLGA8H  | 1.62866606192409 | 0.0192046020571693    | down | NA      |  |
|          | -                |                       |      |         |  |
| STARD8   | 1.62766771547948 | 0.000170060550641866  | down | Pathway |  |
|          | -                |                       |      |         |  |
| NBEAL1   | 1.62586527469024 | 0.0081659346742982    | down | NA      |  |
|          | -                |                       |      |         |  |
| IRS2     | 1.62445979809151 | 0.0359249486499276    | down | Pathway |  |
|          | -                |                       |      |         |  |
| TNFRSF21 | 1.62080692254596 | 0.0188411356067593    | down | Pathway |  |
| ECH1     | -1.6207895439662 | 0.000110023001841881  | down | Pathway |  |
| PDK2     | -1.6194692910933 | 0.00440701294263352   | down | Pathway |  |
|          | -                |                       |      |         |  |
| TCF4     | 1.61816644188004 | 0.00145553954574202   | down | Pathway |  |
|          | -                |                       |      |         |  |
| DLG2     | 1.61807951060545 | 0.00518239962225961   | down | Pathway |  |
|          | -                |                       |      |         |  |
| GPAT2    | 1.61772449277428 | 0.0269958170015769    | down | Pathway |  |
| NR1D1    | -1.6162018138138 | 0.000253726815949543  | down | Pathway |  |
|          | -                |                       |      |         |  |
| A4GALT   | 1.61367703335569 | 0.00632939494484344   | down | Pathway |  |
|          | -                |                       |      |         |  |
| LRRC8C   | 1.61178983779845 | 0.000698758446656829  | down | Pathway |  |
|          | -                |                       |      |         |  |
| CREB5    | 1.61158583795391 | 0.00887711457661303   | down | NA      |  |
|          | -                |                       |      |         |  |
| RPH3AL   | 1.61000230503452 | 0.000700595594406309  | down | Pathway |  |
|          | -                |                       |      |         |  |
| FBN1     | 1.60961838773746 | 0.0110559690241855    | down | Pathway |  |
|          | -                |                       |      |         |  |
| ZNF541   | 1.60924511279575 | 0.0228270099570833    | down | NA      |  |
| BTD      | -1.6073852715901 | 0.000942091324717271  | down | Pathway |  |
|          | -                |                       |      |         |  |
| SBF2     | 1.60680236470459 | 0.00178890584146715   | down | Pathway |  |
|          | -                |                       |      |         |  |
| SEPT4    | 1.60605156286947 | 0.000420397875164547  | down | NA      |  |
|          | -                |                       |      |         |  |
| GMFG     | 1.60594932457125 | 0.0400293334856324    | down | Pathway |  |
| PHYHD1   | -1.6059424153342 | 0.0356592623789359    | down | NA      |  |
|          | -                |                       |      |         |  |
| VEGFC    | 1.60579248067103 | 0.00185553461592785   | down | Pathway |  |
|          | -                |                       |      |         |  |
| FGL2     | 1.60441151753782 | 0.0187723830610946    | down | Pathway |  |
|          | -                |                       |      |         |  |
| CRY2     | 1.59977444132678 | 0.0000683419627159911 | down | Pathway |  |
|          | -                |                       |      |         |  |
| HOXB5    | 1.59927489365955 | 0.00845646038238792   | down | Pathway |  |

|           |                  |                       |      |  |         |
|-----------|------------------|-----------------------|------|--|---------|
|           | -                |                       |      |  |         |
| ZBTB47    | 1.59899330440535 | 0.0000704163887660646 | down |  | NA      |
|           | -                |                       |      |  |         |
| ABHD14A   | 1.59797080181479 | 0.0000922735054215946 | down |  | NA      |
|           | -                |                       |      |  |         |
| MARCH2    | 1.59652019071146 | 0.000535614279950669  | down |  | NA      |
|           | -                |                       |      |  |         |
| DHDDS     | 1.59623172004825 | 0.00106869234681663   | down |  | Pathway |
|           | -                |                       |      |  |         |
| PLVAP     | 1.59587340673552 | 0.00115836595329297   | down |  | Pathway |
|           | -                |                       |      |  |         |
| CPEB1     | 1.59381495805623 | 0.00480015029323151   | down |  | Pathway |
|           | -                |                       |      |  |         |
| NFIL3     | 1.59368835246355 | 0.0293803406992471    | down |  | Pathway |
|           | -                |                       |      |  |         |
| KAT2B     | 1.59128685886812 | 0.000638241665109871  | down |  | Pathway |
|           | -                |                       |      |  |         |
| STEAP1B   | 1.58943546961055 | 0.00848953306601889   | down |  | NA      |
|           | -                |                       |      |  |         |
| FILIP1L   | 1.58488517356793 | 0.0020816284783849    | down |  | NA      |
|           | -                |                       |      |  |         |
| RGS20     | 1.58163077714468 | 0.0484134164678539    | down |  | Pathway |
|           | -                |                       |      |  |         |
| VTI1B     | 1.58067567316065 | 0.00027467719353159   | down |  | Pathway |
|           | -                |                       |      |  |         |
| WDPCP     | 1.57795765433337 | 0.00108922007814007   | down |  | Pathway |
|           | -                |                       |      |  |         |
| TMEM64    | 1.57784410771412 | 0.0247460601671352    | down |  | Pathway |
|           | -                |                       |      |  |         |
| HMCN1     | 1.57611583009785 | 0.0405130478051652    | down |  | Pathway |
|           | -                |                       |      |  |         |
| SLC12A4   | 1.57611534506235 | 0.000364692473193508  | down |  | Pathway |
|           | -                |                       |      |  |         |
| HIBADH    | 1.57481489735826 | 0.000253346530197055  | down |  | Pathway |
|           | -                |                       |      |  |         |
| COX14     | 1.57457259397878 | 0.00160027080252149   | down |  | NA      |
|           | -                |                       |      |  |         |
| GRASP     | 1.57349155087996 | 0.00292100081529363   | down |  | NA      |
|           | -                |                       |      |  |         |
| TMEM204   | 1.57322757690567 | 0.000589908254731518  | down |  | Pathway |
| HNMT      | -1.571014792615  | 0.00134483697054065   | down |  | Pathway |
|           | -                |                       |      |  |         |
| ECHS1     | 1.57039831685081 | 0.00184622010573845   | down |  | Pathway |
|           | -                |                       |      |  |         |
| ARHGAP42  | 1.56970577146935 | 0.00132033926647642   | down |  | Pathway |
| LINC00087 | -1.5679916421295 | 0.00124880008254324   | down |  | NA      |
| MYCBP2    | -1.5675851539617 | 0.000188885063372902  | down |  | Pathway |

|         |                  |                       |      |         |  |
|---------|------------------|-----------------------|------|---------|--|
|         | -                |                       |      |         |  |
| NES     | 1.56682252912057 | 0.00295087976804644   | down | Pathway |  |
|         | -                |                       |      |         |  |
| FXVD6   | 1.56651183625225 | 0.0357679087705267    | down | Pathway |  |
|         | -                |                       |      |         |  |
| SKAP2   | 1.56440550313912 | 0.00542673173830875   | down | NA      |  |
|         | -                |                       |      |         |  |
| AHNAK   | 1.56345790625852 | 0.000574338703708593  | down | Pathway |  |
|         | -                |                       |      |         |  |
| PDE5A   | 1.56142246759745 | 0.00827144400648057   | down | Pathway |  |
|         | -                |                       |      |         |  |
| GSTP1   | 1.56140254815608 | 0.0348718054713023    | down | Pathway |  |
|         | -                |                       |      |         |  |
| COL4A1  | 1.56014652742222 | 0.00207822151532915   | down | Pathway |  |
| COLEC12 | -1.5586537354391 | 0.0273178528554498    | down | NA      |  |
|         | -                |                       |      |         |  |
| CYP2U1  | 1.55859446729157 | 0.000235214577539393  | down | Pathway |  |
|         | -                |                       |      |         |  |
| WWC2    | 1.55479747343833 | 0.0119163659385013    | down | Pathway |  |
|         | -                |                       |      |         |  |
| IL1R1   | 1.55417251038411 | 0.0136332819593479    | down | Pathway |  |
|         | -                |                       |      |         |  |
| PINK1   | 1.55350952404931 | 0.0000859453541881024 | down | Pathway |  |
|         | -                |                       |      |         |  |
| PIK3R1  | 1.55347749105943 | 0.00176602131458252   | down | Pathway |  |
|         | -                |                       |      |         |  |
| FAM101B | 1.55337584645669 | 0.0001672376444689    | down | NA      |  |
|         | -                |                       |      |         |  |
| ID3     | 1.55260091231612 | 0.000845640412420472  | down | Pathway |  |
|         | -                |                       |      |         |  |
| BNIP3L  | 1.55241024033735 | 0.00145915024249602   | down | Pathway |  |
| PEX19   | -1.5522938087804 | 0.000549682823155422  | down | NA      |  |
|         | -                |                       |      |         |  |
| GCKR    | 1.55190746950297 | 0.0145065711448319    | down | Pathway |  |
|         | -                |                       |      |         |  |
| SDC2    | 1.55114879032921 | 0.0198793867220357    | down | Pathway |  |
|         | -                |                       |      |         |  |
| TMEM163 | 1.54948097113376 | 0.00153501584143883   | down | NA      |  |
|         | -                |                       |      |         |  |
| A2M     | 1.54759866929622 | 0.0109810184792256    | down | Pathway |  |
|         | -                |                       |      |         |  |
| DAB2    | 1.54706604274031 | 0.0237601310887327    | down | Pathway |  |
|         | -                |                       |      |         |  |
| CCDC82  | 1.54655382092615 | 0.00149459685630432   | down | NA      |  |
|         | -                |                       |      |         |  |
| PRUNE2  | 1.54462865071697 | 0.00157914855010636   | down | NA      |  |

|          |                  |                       |      |  |         |
|----------|------------------|-----------------------|------|--|---------|
|          | -                |                       |      |  |         |
| NR3C1    | 1.54318547960041 | 0.00203055769170349   | down |  | Pathway |
| TSTD3    | -1.5422732535006 | 0.0000818111593372942 | down |  | NA      |
|          | -                |                       |      |  |         |
| ST3GAL3  | 1.54009395416019 | 0.00152495166073959   | down |  | Pathway |
|          | -                |                       |      |  |         |
| DOCK6    | 1.53974351847176 | 0.00127941014151396   | down |  | Pathway |
|          | -                |                       |      |  |         |
| ADH5     | 1.53961949540766 | 0.000118744457927505  | down |  | Pathway |
|          | -                |                       |      |  |         |
| ZSCAN23  | 1.53853359458118 | 0.00345806640655465   | down |  | NA      |
|          | -                |                       |      |  |         |
| BEND5    | 1.53551574026704 | 0.00371588644748172   | down |  | NA      |
|          | -                |                       |      |  |         |
| TRIM7    | 1.53075066300483 | 0.0251479160968384    | down |  | NA      |
|          | -                |                       |      |  |         |
| KLHDC8B  | 1.52907186252115 | 0.00773646547756223   | down |  | Pathway |
|          | -                |                       |      |  |         |
| MARCH3   | 1.52814720765958 | 0.0241480842247122    | down |  | NA      |
|          | -                |                       |      |  |         |
| CDC42EP5 | 1.52655161831466 | 0.0462131225007804    | down |  | Pathway |
|          | -                |                       |      |  |         |
| THBD     | 1.52552540406613 | 0.0175026181017843    | down |  | Pathway |
| XRCC6BP1 | -1.5250863249887 | 0.000111398699557408  | down |  | NA      |
|          | -                |                       |      |  |         |
| LPHN2    | 1.52490011297328 | 0.0379828512949598    | down |  | NA      |
|          | -                |                       |      |  |         |
| STAT5B   | 1.52318348790952 | 0.00298161373057095   | down |  | Pathway |
|          | -                |                       |      |  |         |
| TNFRSF1B | 1.52309171417316 | 0.0325420765599535    | down |  | Pathway |
|          | -                |                       |      |  |         |
| ROCK2    | 1.52234656156349 | 0.00202831071785562   | down |  | Pathway |
|          | -                |                       |      |  |         |
| ABCA1    | 1.52231136840371 | 0.00917817391011895   | down |  | Pathway |
|          | -                |                       |      |  |         |
| EPHA4    | 1.52115480612799 | 0.00608635739126197   | down |  | Pathway |
|          | -                |                       |      |  |         |
| SRPX2    | 1.52095654896299 | 0.029004708672121     | down |  | Pathway |
| SLC25A20 | -1.5208833060191 | 0.00166274493222347   | down |  | Pathway |
|          | -                |                       |      |  |         |
| HLA-E    | 1.52066245738095 | 0.00880779721169707   | down |  | Pathway |
|          | -                |                       |      |  |         |
| PIR      | 1.52052165416424 | 0.0000674325767586959 | down |  | Pathway |
|          | -                |                       |      |  |         |
| PMP22    | 1.51975252594395 | 0.00136971994879107   | down |  | Pathway |
|          | -                |                       |      |  |         |
| HOXD3    | 1.51838959345506 | 0.0306738867016833    | down |  | Pathway |

|          |                  |                      |      |         |
|----------|------------------|----------------------|------|---------|
|          | -                |                      |      |         |
| ZNF132   | 1.51500413912894 | 0.00385388988673581  | down | NA      |
|          | -                |                      |      |         |
| EIF4E3   | 1.51456082005811 | 0.0053894257113624   | down | NA      |
|          | -                |                      |      |         |
| C11orf63 | 1.50972544421516 | 0.00659550276027539  | down | NA      |
|          | -                |                      |      |         |
| PTGDR2   | 1.50561771412522 | 0.0262782614007196   | down | Pathway |
|          | -                |                      |      |         |
| CYTH3    | 1.50524872286748 | 0.00288565652822036  | down | Pathway |
|          | -                |                      |      |         |
| SAMD4A   | 1.50445590982619 | 0.0295010587002061   | down | NA      |
|          | -                |                      |      |         |
| PAM      | 1.50229384523732 | 0.0317104190407771   | down | Pathway |
|          | -                |                      |      |         |
| TST      | 1.50179022359915 | 0.0247830034629426   | down | Pathway |
|          | -                |                      |      |         |
| SUCLG1   | 1.50093768656181 | 0.000142682493544042 | down | NA      |
|          | -                |                      |      |         |
| PRR5     | 1.50040315435138 | 0.000476723974429816 | down | Pathway |
| TMEM206  | 1.50206300104083 | 0.00357032289951928  | up   | NA      |
| TPBG     | 1.50229584961093 | 0.0282569515546027   | up   | Pathway |
| TSEN54   | 1.5024374048994  | 0.000142828599519749 | up   | NA      |
| SLC26A11 | 1.50249394964651 | 0.00182534060977757  | up   | Pathway |
| DENND1B  | 1.50384594642119 | 0.00417108439348636  | up   | Pathway |
| RFC4     | 1.50797964312409 | 0.00110916714653022  | up   | Pathway |
| PACSIN1  | 1.50855361716523 | 0.0341748238107089   | up   | Pathway |
| SLC39A11 | 1.50960290021139 | 0.00840837982487324  | up   | NA      |
| ASB13    | 1.51000745685354 | 0.00085848026156221  | up   | NA      |
| LETM2    | 1.51057873914715 | 0.026261623539383    | up   | NA      |
| STMN1    | 1.51240027339684 | 0.014328989318616    | up   | Pathway |
| DOPEY2   | 1.51326242017417 | 0.000856772455144523 | up   | NA      |
| WDR34    | 1.51465431122731 | 0.00161970755890169  | up   | NA      |
| SOX12    | 1.51629243090994 | 0.00138046603939258  | up   | NA      |
| CENPP    | 1.51664710221258 | 0.0271581850169887   | up   | Pathway |
| SLC7A1   | 1.51673650584593 | 0.00366644821557256  | up   | Pathway |
| ADAMTS6  | 1.51776550039531 | 0.0126162752683544   | up   | Pathway |
| MTHFD2   | 1.51919235044522 | 0.000237946724054582 | up   | Pathway |
| RELT     | 1.51986167034583 | 0.0182138016689834   | up   | Pathway |
| RTN4RL2  | 1.52006305015226 | 0.00142230717359239  | up   | Pathway |
| FAM208B  | 1.52436324698379 | 0.0130403891592346   | up   | NA      |
| BAI2     | 1.52495173116242 | 0.00553942800669223  | up   | NA      |
| IL23A    | 1.52630300766491 | 0.015726010656474    | up   | Pathway |
| RCC2     | 1.52832996948861 | 0.00122526659088574  | up   | Pathway |
| CCSAP    | 1.53343372453694 | 0.000565246610366704 | up   | Pathway |
| MXRA5    | 1.53368500369042 | 0.0438787835422273   | up   | Pathway |
| SIGLEC10 | 1.53816659844681 | 0.0246070864225715   | up   | Pathway |

|          |                  |                      |    |         |
|----------|------------------|----------------------|----|---------|
| IRF9     | 1.53876821781306 | 0.0012160510220832   | up | NA      |
| CLHC1    | 1.54054927192331 | 0.00555180461055724  | up | NA      |
| PRR22    | 1.54164656110791 | 0.0178565327011306   | up | NA      |
| WEE1     | 1.54225888663569 | 0.0340534062987513   | up | Pathway |
| ZNF26    | 1.54239421099693 | 0.000895982352114403 | up | NA      |
| RBM47    | 1.542763109021   | 0.00294898602444929  | up | NA      |
| ZNF710   | 1.54330818194659 | 0.00117093193320375  | up | NA      |
| TCP10L   | 1.54491181660693 | 0.0105109351990559   | up | NA      |
| YJEFN3   | 1.54839080010154 | 0.00949004004081481  | up | Pathway |
| DOCK5    | 1.54973479981792 | 0.00638797079785207  | up | Pathway |
| SLC39A4  | 1.55168833115641 | 0.0022895754405791   | up | Pathway |
| EEF1E1   | 1.55198005610615 | 0.00112358637543383  | up | NA      |
| NDUFV2   | 1.55204203609894 | 0.00102489591778388  | up | Pathway |
| DNMT3B   | 1.55230749329307 | 0.00145915024249602  | up | NA      |
| COL13A1  | 1.55244583824536 | 0.0455392936512178   | up | Pathway |
| INADL    | 1.55258629530641 | 0.0235128775463151   | up | NA      |
| FKBP10   | 1.55639330155245 | 0.00528967351329939  | up | Pathway |
| TIGD1    | 1.55785411643925 | 0.000840027060867341 | up | NA      |
| TMEM97   | 1.55871948552029 | 0.00375394041768101  | up | Pathway |
| ZDHHC13  | 1.55948073405172 | 0.00130976520489504  | up | NA      |
| LYG1     | 1.56045611107563 | 0.00390784209576858  | up | NA      |
| AGRN     | 1.56081999819592 | 0.00517956726880787  | up | Pathway |
| DDR1     | 1.56164383722412 | 0.03366291933718     | up | Pathway |
| AHRR     | 1.56180980447807 | 0.00535468215420713  | up | Pathway |
| RCC1     | 1.56347980155084 | 0.00052570559702797  | up | Pathway |
| LCA5L    | 1.56535774643928 | 0.0168518161798243   | up | Pathway |
| PYCRL    | 1.56541381906321 | 0.000479061444774117 | up | NA      |
| SLC23A3  | 1.56714486097106 | 0.00656201067176639  | up | NA      |
| MSMO1    | 1.56717141541727 | 0.00735482662378602  | up | Pathway |
| GPR3     | 1.56743609470815 | 0.0475313872246112   | up | Pathway |
| UNC5CL   | 1.56872278606834 | 0.0259938630067968   | up | Pathway |
| DCAF4L1  | 1.56910827716803 | 0.00139305578450717  | up | NA      |
| BGN      | 1.56943185114513 | 0.022772865904403    | up | Pathway |
| RCAN3    | 1.57280535324492 | 0.000841961641436113 | up | Pathway |
| ZNF682   | 1.57306297288513 | 0.00274639569119427  | up | NA      |
| JPH1     | 1.57328302702301 | 0.0359633964652047   | up | Pathway |
| SLC37A1  | 1.57333814113294 | 0.00100650911501318  | up | Pathway |
| CDK18    | 1.57379334379924 | 0.0241480842247122   | up | Pathway |
| PLXNA3   | 1.57539000137844 | 0.000376032581302456 | up | Pathway |
| LEPREL4  | 1.57650205603703 | 0.000276020147346874 | up | NA      |
| KRTCAP2  | 1.57712908720979 | 0.000717488454114974 | up | NA      |
| CARD9    | 1.58026509260192 | 0.0449735123596271   | up | Pathway |
| NDUFAF6  | 1.58268849382377 | 0.000431772835303863 | up | NA      |
| GPATCH2  | 1.58396476474232 | 0.00422296522054893  | up | NA      |
| ZFP69B   | 1.5850641341049  | 0.000350006354206234 | up | NA      |
| ARHGEF19 | 1.58591487156012 | 0.0160438324150357   | up | Pathway |
| MBOAT1   | 1.5859664062831  | 0.00323520335464546  | up | Pathway |



|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| MSI2     | 1.58815838000723 | 0.0168370907274003    | up | Pathway |
| ADC      | 1.59159254444061 | 0.000391187746166089  | up | NA      |
| KIAA1524 | 1.59273197180937 | 0.00271177006687139   | up | NA      |
| BBS1     | 1.59442819508788 | 0.00131695493965      | up | Pathway |
| RPS6KA1  | 1.5969476116621  | 0.0100758667659766    | up | Pathway |
| RHOH     | 1.59709494530642 | 0.0339725270594287    | up | Pathway |
| STK36    | 1.60076956301881 | 0.000292548645182149  | up | Pathway |
| PLEKHF2  | 1.60151306084402 | 0.00624288728893613   | up | NA      |
| C19orf55 | 1.60396087215197 | 0.0000504491271049433 | up | NA      |
| SEMA7A   | 1.60453606503841 | 0.00470658635764137   | up | Pathway |
| CEP85    | 1.60477740849697 | 0.000111254350827603  | up | Pathway |
| MURC     | 1.60507649327326 | 0.0142328962616396    | up | NA      |
| RACGAP1  | 1.60700632335893 | 0.000035799033508745  | up | Pathway |
| EPT1     | 1.60765538758763 | 0.000206281533083547  | up | NA      |
| GPC2     | 1.60884138256646 | 0.00453457564841719   | up | Pathway |
| MSANTD1  | 1.61393615629104 | 0.00790087356097827   | up | NA      |
| RMI1     | 1.61537395234195 | 0.00142596384212134   | up | Pathway |
| C1orf233 | 1.61558465083718 | 0.0345290535500279    | up | NA      |
| ZNF860   | 1.61584938566485 | 0.0139784975205989    | up | NA      |
| TRIM11   | 1.62155963093558 | 0.000119175187363853  | up | Pathway |
| TBC1D30  | 1.62169359832503 | 0.0120390461542805    | up | Pathway |
| SLFNL1   | 1.62214199900018 | 0.00709856689335476   | up | NA      |
| PPAT     | 1.62526083175885 | 0.000135932393250195  | up | Pathway |
| ARRDC1   | 1.62606275487232 | 0.0000983664357695885 | up | Pathway |
| ZSWIM4   | 1.62799203471121 | 0.00420702857911762   | up | NA      |
| C1QTNF3  | 1.62800844863545 | 0.00709624883671271   | up | Pathway |
| CAPS     | 1.6290198686653  | 0.000302676112610582  | up | NA      |
| PHLDA1   | 1.63108281687154 | 0.029406115022519     | up | NA      |
| GPSM2    | 1.63574136923103 | 0.00591591608877752   | up | Pathway |
| ZNF107   | 1.63607786589428 | 0.00138848522194885   | up | NA      |
| KCNS3    | 1.63653474080368 | 0.0204096430793536    | up | Pathway |
| SFXN2    | 1.64282241748174 | 0.00455346619506465   | up | Pathway |
| UBE2S    | 1.64321463682342 | 0.00097481393680394   | up | Pathway |
| WFIKK1   | 1.64345417625807 | 0.0114153028650823    | up | Pathway |
| CCDC40   | 1.64700438097154 | 0.0123659286727766    | up | Pathway |
| CACNB1   | 1.64709148557311 | 0.000762652416362351  | up | Pathway |
| FKBP4    | 1.64709970048809 | 0.000635415412915421  | up | Pathway |
| DEF6     | 1.64723134475746 | 0.0142774440656343    | up | Pathway |
| TRIM14   | 1.64897950436321 | 0.0149535239839532    | up | NA      |
| DUSP5    | 1.64957921764173 | 0.0257179312757213    | up | Pathway |
| MTCP1    | 1.65256513291551 | 0.00151909420811683   | up | Pathway |
| ZNF474   | 1.65568428665533 | 0.00182453898514806   | up | NA      |
| CA13     | 1.65577218574636 | 0.0196205807507955    | up | NA      |
| OASL     | 1.65911771430353 | 0.0308174165789104    | up | NA      |
| MTG1     | 1.65922804795595 | 0.00152929163816738   | up | Pathway |
| LRRC37A3 | 1.66001557591926 | 0.00400762796617777   | up | NA      |
| CYP2C8   | 1.66084681607716 | 0.00972901529699187   | up | Pathway |

|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| VSIG1    | 1.66124338472104 | 0.00399434834763171   | up | Pathway |
| TNK1     | 1.66270515447493 | 0.00625942784465069   | up | Pathway |
| HSF2BP   | 1.66349746082565 | 0.00392394620749101   | up | Pathway |
| CYP2D6   | 1.66646206153411 | 0.016520170236806     | up | Pathway |
| CHEK2    | 1.66684595075556 | 0.00372685603120057   | up | Pathway |
| FZD3     | 1.66956636141288 | 0.0196684058833414    | up | Pathway |
| CTPS1    | 1.66989560690413 | 0.000664676837799438  | up | Pathway |
| RAD54B   | 1.67221694949107 | 0.00327517765179247   | up | Pathway |
| ZNF681   | 1.67435713536117 | 0.000831732132767331  | up | NA      |
| EZR      | 1.6747635648032  | 0.00393984991773987   | up | Pathway |
| CRYBB3   | 1.67591804094302 | 0.0395445275486255    | up | Pathway |
| SLC6A9   | 1.6763416392367  | 0.00659162986452108   | up | Pathway |
| BHLHE40  | 1.67673383387216 | 0.0189414705647988    | up | Pathway |
| AKAP5    | 1.67736617216759 | 0.00128174034231144   | up | Pathway |
| SYCE2    | 1.67750106497689 | 0.00537292428569105   | up | Pathway |
| KIAA1598 | 1.67887103515952 | 0.000291476034775124  | up | NA      |
| SYNJ2    | 1.68130660105356 | 0.00245298894765407   | up | Pathway |
| STX1A    | 1.68166516680496 | 0.00556965729927086   | up | Pathway |
| RNFT2    | 1.68274967466312 | 0.00220382262363427   | up | NA      |
| CCDC154  | 1.68511348641169 | 0.00141113946069284   | up | Pathway |
| KNTC1    | 1.68848450731226 | 0.0000907487497202508 | up | Pathway |
| TARBP1   | 1.69130510247299 | 0.000859990336724413  | up | NA      |
| PRSS27   | 1.6946126421249  | 0.0303636392380581    | up | NA      |
| TRAF5    | 1.69836691946884 | 0.00589782611744088   | up | Pathway |
| PIP5KL1  | 1.69887300275775 | 0.00774965323616244   | up | Pathway |
| GRIN2D   | 1.70123067829244 | 0.0370839698448013    | up | Pathway |
| MAATS1   | 1.70296744905278 | 0.0352387339369508    | up | NA      |
| P2RY2    | 1.70318557609015 | 0.0312326090184183    | up | Pathway |
| SEC61A2  | 1.70507230947944 | 0.0000498615716999355 | up | NA      |
| MAP7     | 1.70662228121255 | 0.00587517942299147   | up | Pathway |
| BAIAP2L1 | 1.71091260394476 | 0.000970047607259142  | up | Pathway |
| CTHRC1   | 1.71123030481394 | 0.0447490543568287    | up | Pathway |
| C3orf35  | 1.71231769090466 | 0.00130881877702352   | up | NA      |
| TMEM51   | 1.71402854175122 | 0.0151313744375043    | up | NA      |
| TTLL4    | 1.71485480111769 | 0.000549682823155422  | up | Pathway |
| OSBP2    | 1.71714837282394 | 0.00552420139638654   | up | Pathway |
| NFKBIE   | 1.71831714185    | 0.0163955359713008    | up | Pathway |
| PASK     | 1.72457916558553 | 0.0000276807225929861 | up | Pathway |
| CCDC11   | 1.72529554079856 | 0.00599418024721437   | up | NA      |
| CYP2S1   | 1.72856015393124 | 0.0483848664517235    | up | Pathway |
| KIAA1244 | 1.73283045060703 | 0.0496919423366155    | up | NA      |
| EXPH5    | 1.73500701169007 | 0.00324326249555947   | up | Pathway |
| ST20     | 1.73826683499567 | 0.00469072761669965   | up | Pathway |
| ZNF239   | 1.73880063088585 | 0.00469342995142372   | up | NA      |
| SDC4     | 1.74095173997828 | 0.0131794853683773    | up | Pathway |
| TMEM79   | 1.74337771005287 | 0.00268498881833785   | up | Pathway |
| FAP      | 1.74385835601803 | 0.00857867564802506   | up | Pathway |

|           |                  |                       |    |         |
|-----------|------------------|-----------------------|----|---------|
| CYB561    | 1.7452163536641  | 0.000587143854522317  | up | NA      |
| ECT2      | 1.74555228400968 | 0.00855565502546065   | up | Pathway |
| RAB3IP    | 1.74557687664274 | 0.00151454343948195   | up | Pathway |
| GALE      | 1.74557785001671 | 0.00065086546894402   | up | Pathway |
| UNC5B     | 1.74852831969865 | 0.00251873286739583   | up | Pathway |
| TPRN      | 1.75183895275097 | 0.000841961641436113  | up | Pathway |
| MST1R     | 1.75859943158356 | 0.0161599332334302    | up | Pathway |
| STRIP2    | 1.76002952803855 | 0.00276169247196343   | up | Pathway |
| TEX14     | 1.76154745766429 | 0.0381907572894224    | up | Pathway |
| TNFSF15   | 1.76278936214184 | 0.0121566532629491    | up | Pathway |
| ZNF367    | 1.76341592001691 | 0.00247576653171771   | up | NA      |
| PDE6B     | 1.76397959019458 | 0.04591131837312      | up | Pathway |
| SLC20A1   | 1.76461761468269 | 0.000170757522420596  | up | Pathway |
| PLAUR     | 1.76475898257391 | 0.0121583559556684    | up | Pathway |
| RPS6KA6   | 1.76635373111518 | 0.0202824634713753    | up | Pathway |
| SEMA4D    | 1.76850066509891 | 0.00247529312572664   | up | Pathway |
| ATAD5     | 1.76998696574414 | 0.000329307780244191  | up | Pathway |
| C19orf26  | 1.77009084386549 | 0.0486961408605182    | up | NA      |
| KPNA2     | 1.77086340456787 | 0.000468452937123437  | up | NA      |
| PLAC8L1   | 1.7714695071229  | 0.0115706337358168    | up | NA      |
| DFNB31    | 1.77179470819072 | 0.00114539280751961   | up | NA      |
| CYP2E1    | 1.7761519756944  | 0.00170637096365094   | up | Pathway |
| CCDC157   | 1.77729562392004 | 0.000313795619829168  | up | NA      |
| RUNX1     | 1.77841411228472 | 0.0171675049022399    | up | Pathway |
| C2ORF15   | 1.77901798456221 | 0.00961806054540523   | up | NA      |
| MFAP2     | 1.77908470786454 | 0.0481911870672368    | up | Pathway |
| CCDC57    | 1.77912349870609 | 0.000724733363954482  | up | Pathway |
| NME1-NME2 | 1.78006121621948 | 0.00245522107807217   | up | NA      |
| LRRC48    | 1.78228830850883 | 0.0303140983516673    | up | NA      |
| KIAA0907  | 1.78314680309554 | 0.000138870378028143  | up | NA      |
| MTBP      | 1.7837790483157  | 0.000519472046918103  | up | Pathway |
| SMC4      | 1.7877375837084  | 0.000056381582449123  | up | Pathway |
| KCNQ3     | 1.79183945673057 | 0.0264791426351144    | up | Pathway |
| SLC4A3    | 1.79288469072593 | 0.0079601083748213    | up | Pathway |
| NR6A1     | 1.79345420384346 | 0.0120589690265858    | up | NA      |
| LAT       | 1.79423453629297 | 0.0013012448199426    | up | Pathway |
| GPRIN1    | 1.79579612897357 | 0.00265369164960224   | up | NA      |
| FAM60A    | 1.79626696914553 | 0.00760429837564804   | up | NA      |
| ARMC9     | 1.79636244447    | 0.0000800308091501004 | up | NA      |
| AP1G2     | 1.79753296299595 | 0.000901124896509146  | up | NA      |
| C9orf169  | 1.79907994121397 | 0.0130724014767002    | up | NA      |
| SAMD10    | 1.8002743579483  | 0.000273291651608255  | up | NA      |
| SHROOM2   | 1.8019108300946  | 0.0283452070632807    | up | Pathway |
| TET3      | 1.80252743310879 | 0.0000408366581746066 | up | NA      |
| CHRNA5    | 1.80663073774293 | 0.0233385373569767    | up | Pathway |
| KIF24     | 1.80926940057137 | 0.00328464595664734   | up | Pathway |
| SSX2IP    | 1.80929082152247 | 0.00162111992478466   | up | Pathway |

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|------------|------------------|-----------------------|----|---------|
| HIST1H2BJ  | 1.8094895129272  | 0.00724666334109843   | up | NA      |
| HID1       | 1.81035795413169 | 0.00455346619506465   | up | NA      |
| BMP8B      | 1.81085606962392 | 0.0295220277242881    | up | Pathway |
| TREML1     | 1.81514929961941 | 0.0473995801739087    | up | Pathway |
| NOD2       | 1.81651625465167 | 0.0460243861722245    | up | Pathway |
| CCDC19     | 1.81657786807188 | 0.0415187246244953    | up | NA      |
| C3orf14    | 1.81703322785888 | 0.00526272322711181   | up | NA      |
| SIX4       | 1.81824215296974 | 0.00513013504633908   | up | Pathway |
| BARD1      | 1.81889029977561 | 0.000212119686593945  | up | Pathway |
| IL18       | 1.82031494726246 | 0.0401056338960979    | up | Pathway |
| APOBR      | 1.82173582640823 | 0.0142233426430729    | up | Pathway |
| AP1S3      | 1.82434403265144 | 0.0139253746321529    | up | NA      |
| WDR52      | 1.82434737416377 | 0.00336688723201336   | up | NA      |
| PARPBP     | 1.82451045911272 | 0.00204486228999566   | up | NA      |
| BAIAP2     | 1.82546779189156 | 0.000337262245187832  | up | Pathway |
| RPL36A     | 1.82691921541605 | 0.000929013260278517  | up | NA      |
| EPHX4      | 1.82749980052079 | 0.0400107234455228    | up | NA      |
| WDR90      | 1.82777347211467 | 0.000810110470696398  | up | NA      |
| FAM110A    | 1.82793726254355 | 0.00142596384212134   | up | NA      |
| SLC52A3    | 1.83179534507823 | 0.00880390044578562   | up | Pathway |
| ZNF469     | 1.83205861525468 | 0.0449735123596271    | up | Pathway |
| FAM102A    | 1.83270774104383 | 0.00197572406218136   | up | NA      |
| C1QTNF6    | 1.83315805474228 | 0.0000820462790595965 | up | NA      |
| MPZL3      | 1.83569354517953 | 0.0172229037697034    | up | Pathway |
| CENPI      | 1.83975916025388 | 0.00390443188665039   | up | Pathway |
| FCHO1      | 1.84041326059938 | 0.040428282763154     | up | NA      |
| ABHD11     | 1.84142225869088 | 0.00078152247691911   | up | NA      |
| ST6GALNAC2 | 1.8427025308541  | 0.0302871779978074    | up | Pathway |
| PLK4       | 1.84274395977602 | 0.00160438663234401   | up | Pathway |
| ZNF692     | 1.84351601062697 | 0.000554683115890849  | up | Pathway |
| RSPH9      | 1.84392537488736 | 0.0382716197100738    | up | Pathway |
| C11orf80   | 1.84628226505607 | 0.00213856146020748   | up | Pathway |
| LRGUK      | 1.84665171422977 | 0.0392962172989077    | up | Pathway |
| FJX1       | 1.84757683951405 | 0.014245696298618     | up | Pathway |
| HIST1H2BN  | 1.84858695435824 | 0.000732720734417925  | up | NA      |
| CREB3L4    | 1.85110681511233 | 0.0110206353212982    | up | NA      |
| SPOCD1     | 1.85180769096815 | 0.012510148231495     | up | NA      |
| STAP2      | 1.85400441565752 | 0.0171132458612732    | up | NA      |
| MUC20      | 1.85437701662394 | 0.0286484005193526    | up | NA      |
| TMED3      | 1.85449124395025 | 0.00228257346191973   | up | NA      |
| NRIP3      | 1.85461375004861 | 0.0489658709529967    | up | NA      |
| ZNF93      | 1.85524361644699 | 0.00125534704783508   | up | NA      |
| ATP1B1     | 1.8562865299406  | 0.0104599466767885    | up | Pathway |
| CCDC120    | 1.85635131367281 | 0.000178098843747599  | up | NA      |
| CD9        | 1.8568445332454  | 0.00110360381131248   | up | Pathway |
| SFI1       | 1.85720954537198 | 0.000705608245898618  | up | NA      |
| CDRT4      | 1.86002495688867 | 0.00372976604558838   | up | NA      |

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| VMP1     | 1.86156231615018 | 0.000175174974499993 | up | Pathway |
| HMGA1    | 1.86157300358246 | 0.000217793877768999 | up | Pathway |
| ADORA2A  | 1.86174771029096 | 0.0157281824916152   | up | Pathway |
| VEPH1    | 1.86303074677734 | 0.0498575277424041   | up | Pathway |
| OSBPL3   | 1.86331660305469 | 0.00565263646504274  | up | Pathway |
| PRR19    | 1.8638871356642  | 0.00191754479124839  | up | NA      |
| ECE2     | 1.86450625781846 | 0.000949528071534232 | up | Pathway |
| SRGAP3   | 1.86534054835595 | 0.000320626940631743 | up | Pathway |
| SLC2A1   | 1.86632297497778 | 0.00177292501128082  | up | Pathway |
| MICAL2   | 1.86896073917152 | 0.000158964635373281 | up | Pathway |
| MCM4     | 1.86934899238048 | 0.000355843204294783 | up | Pathway |
| TNFRSF18 | 1.86954972410187 | 0.0238769799332038   | up | Pathway |
| TIGD4    | 1.86989171085738 | 0.00222443579069482  | up | NA      |
| CASZ1    | 1.87652394198697 | 0.00988847123234526  | up | Pathway |
| LSR      | 1.87735682324264 | 0.000345275370612215 | up | Pathway |
| GGT1     | 1.87855962239138 | 0.0242356839126835   | up | Pathway |
| ZDHHC23  | 1.87925705682134 | 0.00136971994879107  | up | Pathway |
| PRR11    | 1.87955376125878 | 0.00115445867089498  | up | NA      |
| FAM174B  | 1.88087268549348 | 0.00328966424894828  | up | NA      |
| LAG3     | 1.88757504818882 | 0.0217328589941478   | up | Pathway |
| FAM83F   | 1.88867399956913 | 0.0486044815845015   | up | NA      |
| SIPA1L3  | 1.88958194557047 | 0.000662754921180765 | up | Pathway |
| YDJC     | 1.89718686930348 | 0.000803271289386904 | up | NA      |
| WNK3     | 1.89765262878956 | 0.0182929091605755   | up | Pathway |
| KCNK13   | 1.89773784110942 | 0.0165493220651772   | up | Pathway |
| AKR7L    | 1.8988690293041  | 0.0257179312757213   | up | NA      |
| MLLT11   | 1.90034712895784 | 0.00389757481976342  | up | Pathway |
| IPO4     | 1.90186186626524 | 0.0142192978643513   | up | NA      |
| CPT1B    | 1.90251687519514 | 0.00663943471616634  | up | Pathway |
| JAKMIP2  | 1.90778489086119 | 0.00213262441477563  | up | NA      |
| SLC9A3R1 | 1.90789481412149 | 0.0162091537426571   | up | Pathway |
| LIG1     | 1.90866121347148 | 0.000158964635373281 | up | Pathway |
| JMJD7    | 1.90956936358976 | 0.00112332921428468  | up | NA      |
| WNT5A    | 1.91337897484017 | 0.0365428119178917   | up | Pathway |
| SPAG1    | 1.91441838334382 | 0.00352129257719098  | up | Pathway |
| SLC7A9   | 1.91544721839241 | 0.00390502642158636  | up | Pathway |
| CDC25A   | 1.91728511991343 | 0.0115370744888728   | up | Pathway |
| HMGB3    | 1.92001124885234 | 0.0012238966854728   | up | Pathway |
| SGIP1    | 1.92111194822398 | 0.00460728611558834  | up | Pathway |
| KHDC1    | 1.92175061565146 | 0.0202824634713753   | up | NA      |
| CCR4     | 1.92472591830702 | 0.0341914764137012   | up | Pathway |
| BLNK     | 1.92538668657015 | 0.0057620729902112   | up | NA      |
| CYFIP2   | 1.93026774088401 | 0.012081853020791    | up | Pathway |
| CELSR3   | 1.93058858353974 | 0.00233570228654904  | up | Pathway |
| GDPD1    | 1.93063998957767 | 0.0122380663877698   | up | Pathway |
| GPR141   | 1.93146928901371 | 0.00157236669490859  | up | NA      |
| SPTBN5   | 1.9344401135729  | 0.00945737576368963  | up | Pathway |

|           |                  |                      |    |         |
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| BEST4     | 1.93471232883252 | 0.0248395598250645   | up | Pathway |
| TMEM238   | 1.93574749529154 | 0.00633149712061773  | up | NA      |
| MYBL1     | 1.93795349709182 | 0.0044252766818311   | up | Pathway |
| SORD      | 1.93823373524049 | 0.0130184411777078   | up | Pathway |
| GEN1      | 1.93986403219953 | 0.00025212751751663  | up | Pathway |
| P4HA3     | 1.94222963578284 | 0.0120387050254416   | up | NA      |
| CLEC18B   | 1.94896405702212 | 0.0132012206740265   | up | NA      |
| LINC00176 | 1.94965716312986 | 0.011329964921088    | up | NA      |
| SPIRE2    | 1.95055303249334 | 0.00121028633221942  | up | Pathway |
| CHAF1B    | 1.9514366142783  | 0.000963778501952083 | up | Pathway |
| RASGRP1   | 1.95415655283487 | 0.0311552233583491   | up | Pathway |
| FAM222A   | 1.95494501881519 | 0.00571236145696468  | up | NA      |
| ATAD2     | 1.95598488813116 | 0.00788924216501734  | up | NA      |
| CBS       | 1.95626620775725 | 0.0330653920827545   | up | Pathway |
| F2RL1     | 1.95819721403649 | 0.0453778089154887   | up | Pathway |
| PSD       | 1.95824952643197 | 0.014601409805193    | up | Pathway |
| GAPT      | 1.95909849876975 | 0.0366901158454262   | up | NA      |
| SKAP1     | 1.95972021062097 | 0.00115836595329297  | up | Pathway |
| ICOS      | 1.96143581415875 | 0.0348684404319181   | up | NA      |
| SEMA4A    | 1.96143726462157 | 0.014245696298618    | up | Pathway |
| FANK1     | 1.96196361205294 | 0.0117086629742809   | up | NA      |
| GET4      | 1.96359865682973 | 0.00105938301189131  | up | Pathway |
| PLS1      | 1.96429630720241 | 0.0230008926696326   | up | Pathway |
| CCDC24    | 1.9644982619757  | 0.00121028633221942  | up | Pathway |
| PHLDA2    | 1.96664859833097 | 0.0210871693102494   | up | Pathway |
| TLL2      | 1.96689684499544 | 0.0054739891480849   | up | Pathway |
| TRIB3     | 1.96722865536691 | 0.000349273418373698 | up | Pathway |
| CDKN2A    | 1.96927363120504 | 0.0477539858737158   | up | Pathway |
| EME2      | 1.9699712095378  | 0.0131577181271704   | up | Pathway |
| TMEM30B   | 1.97373468974793 | 0.0219683117028708   | up | Pathway |
| LRRC46    | 1.97390244025386 | 0.0031856931561156   | up | NA      |
| SLC1A2    | 1.97874687666682 | 0.045352296765963    | up | Pathway |
| NEBL      | 1.98006373642082 | 0.0411399224762018   | up | Pathway |
| RAB15     | 1.982718466858   | 0.0074157114338491   | up | Pathway |
| PHLDB3    | 1.98601820728202 | 0.00359636766911974  | up | NA      |
| MAPK13    | 1.98629109153321 | 0.00194002085474097  | up | Pathway |
| CHTF18    | 1.9876670045417  | 0.000664676837799438 | up | Pathway |
| POLE2     | 1.99080666551803 | 0.000358181427641145 | up | Pathway |
| FAM81A    | 1.99081877109647 | 0.00915882627269218  | up | NA      |
| FTCD      | 1.99315666088371 | 0.0326294115086425   | up | Pathway |
| SERPINE1  | 1.99330450122001 | 0.0312902307609046   | up | Pathway |
| DRP2      | 1.99666084852252 | 0.00537292428569105  | up | Pathway |
| KIAA1522  | 2.00034991605364 | 0.0020816284783849   | up | NA      |
| ERBB2     | 2.00045147658858 | 0.00799086665294254  | up | Pathway |
| ENO2      | 2.00138238192368 | 0.00560887118460066  | up | Pathway |
| KCNN4     | 2.00161151505859 | 0.0449735123596271   | up | Pathway |
| SLC10A5   | 2.00179651785127 | 0.00236917230691088  | up | Pathway |

|            |                  |                       |    |         |
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| ACTL10     | 2.00330045605841 | 0.00565270531637202   | up | NA      |
| SLC16A3    | 2.01021033862367 | 0.00122603999975415   | up | Pathway |
| MARCKSL1   | 2.01709120557987 | 0.00112938350159127   | up | Pathway |
| DNA2       | 2.01720698131317 | 0.000398274781386981  | up | Pathway |
| IFI30      | 2.01745566914113 | 0.0354635862272344    | up | Pathway |
| CHDH       | 2.01909451449362 | 0.0168199353774218    | up | Pathway |
| DAPP1      | 2.01950656333019 | 0.0242032100760598    | up | NA      |
| GIN54      | 2.0206987842829  | 0.0000594803468915483 | up | Pathway |
| ADAM8      | 2.02301148276919 | 0.000570638544941905  | up | Pathway |
| ZNF726     | 2.02558749654901 | 0.000600930863194888  | up | NA      |
| C3orf80    | 2.02755702995697 | 0.00385452088387352   | up | NA      |
| PAQR4      | 2.02867277830812 | 0.00182534060977757   | up | NA      |
| SAMD12     | 2.02947217587159 | 0.0131337575959185    | up | NA      |
| MICALL2    | 2.03090005502542 | 0.00167969947195216   | up | Pathway |
| MACC1      | 2.03168216742573 | 0.0380637370125983    | up | Pathway |
| RTKN       | 2.03291403624554 | 0.000162681118293746  | up | Pathway |
| FLVCR1     | 2.03733309118873 | 0.0000532576945494599 | up | Pathway |
| NAT14      | 2.04013652141053 | 0.00229309730356969   | up | NA      |
| CIT        | 2.04179220686261 | 0.00237132491024521   | up | Pathway |
| PDE7A      | 2.04338251976899 | 0.00025212751751663   | up | Pathway |
| OSCAR      | 2.04584960318003 | 0.0370358228254132    | up | NA      |
| FARP1      | 2.04711836178318 | 0.000094244323740427  | up | Pathway |
| C11orf35   | 2.05034815693214 | 0.00397360345476787   | up | NA      |
| PFKFB4     | 2.05367654617467 | 0.000589285919388508  | up | Pathway |
| MCM2       | 2.05720389748042 | 0.000100688489044776  | up | Pathway |
| ABCC3      | 2.05727799037014 | 0.0215039520146331    | up | Pathway |
| LPAR2      | 2.05891018651618 | 0.00241236489864774   | up | Pathway |
| ZMYND10    | 2.06136256506857 | 0.00663943471616634   | up | Pathway |
| CHEK1      | 2.06209426365006 | 0.000828858884724498  | up | Pathway |
| ZNF587     | 2.06454475120993 | 0.00382033136612923   | up | NA      |
| KIF15      | 2.06458111989272 | 0.0014712269319643    | up | Pathway |
| HS3ST3A1   | 2.06748252545463 | 0.0189614464643186    | up | NA      |
| CTNND2     | 2.06868631345028 | 0.0377304304252964    | up | Pathway |
| CCNB1      | 2.07041276540608 | 0.00097390877809808   | up | Pathway |
| FOXO6      | 2.07081974260465 | 0.00228208135608419   | up | Pathway |
| MROH6      | 2.07093891150315 | 0.000111398699557408  | up | NA      |
| CABLES2    | 2.07614231584558 | 0.0000983664357695885 | up | NA      |
| GRID2IP    | 2.07702561949466 | 0.000829905375575771  | up | Pathway |
| GSG2       | 2.08040679034609 | 0.00121028633221942   | up | NA      |
| EGLN3      | 2.08108145195475 | 0.00430768835890432   | up | Pathway |
| CCDC148    | 2.08119913877075 | 0.0232383566339407    | up | NA      |
| SLC22A18AS | 2.08250896342528 | 0.0360316518070838    | up | NA      |
| CNIH2      | 2.08518724520868 | 0.000879322624593572  | up | Pathway |
| IL21R      | 2.08613064064116 | 0.0282893565224409    | up | NA      |
| HIST1H2AG  | 2.08955072418456 | 0.000924332041181922  | up | NA      |
| RAB39B     | 2.09095445638808 | 0.0331292231104064    | up | Pathway |
| MAL2       | 2.09412450100466 | 0.0334752784866362    | up | Pathway |

|                   |                  |                       |    |         |
|-------------------|------------------|-----------------------|----|---------|
| LMO7              | 2.09524581563262 | 0.000677663935937173  | up | NA      |
| FOXH1             | 2.09610636076858 | 0.0210715582621193    | up | Pathway |
| PAQR6             | 2.09695587884413 | 0.000232628787921521  | up | NA      |
| XBP1              | 2.0982906711908  | 0.0352387339369508    | up | Pathway |
| SPC24             | 2.10144234581041 | 0.00215045672405595   | up | Pathway |
| MANEAL            | 2.10582056395922 | 0.00131660031069336   | up | NA      |
| TNFRSF12A         | 2.10961827034957 | 0.0279405107787787    | up | Pathway |
| POSTN             | 2.11032252078921 | 0.00200769638373584   | up | Pathway |
| GABRD             | 2.11085764776192 | 0.00277830814423671   | up | Pathway |
| PANX2             | 2.11348325884533 | 0.0196892398352766    | up | NA      |
| CNNM4             | 2.11456894245633 | 0.000408463821676327  | up | Pathway |
| HN1               | 2.11487003068832 | 0.000378487820262663  | up | NA      |
| TLCD1             | 2.11558824152168 | 0.000574338703708593  | up | Pathway |
| FAM46C            | 2.11750292353305 | 0.0201521533689393    | up | NA      |
| CILP2             | 2.13257719810452 | 0.0140732295635356    | up | NA      |
| RP5-<br>1180C10.2 | 2.13561652110693 | 0.0000506385213250383 | up | NA      |
| IGSF3             | 2.13817839166893 | 0.00892776600221047   | up | Pathway |
| ARHGAP11A         | 2.14453734129862 | 0.000279298057998729  | up | Pathway |
| GRHL1             | 2.1487923819976  | 0.0180245130770724    | up | Pathway |
| GPR19             | 2.15126628125187 | 0.00130531727742229   | up | NA      |
| SPATA17           | 2.15427875465114 | 0.0183883108996659    | up | NA      |
| ABCC5             | 2.15428453475241 | 0.000235214577539393  | up | Pathway |
| HIST4H4           | 2.15709615825255 | 0.00934580710566081   | up | NA      |
| TIGD3             | 2.16120957131676 | 0.00382033136612923   | up | NA      |
| PHEX              | 2.1614855193307  | 0.0123139997378851    | up | Pathway |
| SPEF1             | 2.16154484749408 | 0.0275377785953495    | up | Pathway |
| C15orf27          | 2.16180719191911 | 0.0493317391087599    | up | NA      |
| KIAA1875          | 2.16365053650506 | 0.000736853069612146  | up | NA      |
| KIAA1024          | 2.16729087373567 | 0.00170721093631515   | up | NA      |
| ZNF90             | 2.16966353955302 | 0.00102838916679661   | up | NA      |
| NSUN7             | 2.17186150938782 | 0.0138234450676705    | up | NA      |
| A1BG              | 2.17676393530839 | 0.00304131564925523   | up | NA      |
| SLC23A1           | 2.17873771360133 | 0.0362026060557744    | up | Pathway |
| ZNF165            | 2.17907180674099 | 0.00379169275051211   | up | NA      |
| CENPE             | 2.18038579928963 | 0.00150727664972473   | up | Pathway |
| HOMER2            | 2.1806894367172  | 0.00493799547182434   | up | Pathway |
| KLHDC7B           | 2.1807196170985  | 0.03433532476578      | up | NA      |
| PMAIP1            | 2.18273339710478 | 0.0332165437967119    | up | Pathway |
| WWC1              | 2.18358958685347 | 0.0145239361597585    | up | Pathway |
| RASGRF1           | 2.19552098948723 | 0.00956606303894765   | up | Pathway |
| SOGA2             | 2.19560080914491 | 0.0170882038343085    | up | NA      |
| FA2H              | 2.19658377597048 | 0.0209399330720711    | up | Pathway |
| LRIT3             | 2.19980964482206 | 0.0244864170677308    | up | Pathway |
| NAGS              | 2.19992688195777 | 0.00634286587794532   | up | Pathway |
| PODNL1            | 2.20151815611567 | 0.00779426574577066   | up | NA      |
| CELSR2            | 2.20254354103578 | 0.0105711871070646    | up | Pathway |



|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| C21orf58 | 2.20315050070318 | 0.000645663856617067  | up | NA      |
| KIAA1467 | 2.20424094717622 | 0.0311491827122035    | up | NA      |
| CSMD2    | 2.21679457581323 | 0.00387933783746444   | up | NA      |
| FANCI    | 2.21858068212235 | 0.00020066982285047   | up | NA      |
| MCOLN2   | 2.22023909707506 | 0.00474603524970248   | up | Pathway |
| ASPHD2   | 2.22178567528248 | 0.0141538541072011    | up | NA      |
| LRRC56   | 2.22253905621289 | 0.0085184269846312    | up | NA      |
| DLG3     | 2.23108513192215 | 0.000592339872086392  | up | Pathway |
| BLM      | 2.23479555266424 | 0.000197550176171525  | up | Pathway |
| PRRT2    | 2.24887018761541 | 0.00511581920671087   | up | Pathway |
| PLK1     | 2.25578217261358 | 0.000248730069891533  | up | Pathway |
| MAD2L1   | 2.25642351105252 | 0.000589908254731518  | up | Pathway |
| CDC7     | 2.25711456116415 | 0.000700595594406309  | up | Pathway |
| RASSF7   | 2.25779981616525 | 0.000191471622938169  | up | Pathway |
| TMEM61   | 2.25782456494324 | 0.0355721711712099    | up | NA      |
| ARSE     | 2.25851272551206 | 0.0394864668202511    | up | NA      |
| SOX9     | 2.2603938930621  | 0.0184838246216       | up | Pathway |
| C2CD4D   | 2.26433515383903 | 0.0128537793291694    | up | NA      |
| AGMAT    | 2.26646091562159 | 0.000334143519914029  | up | Pathway |
| ELMO3    | 2.26668789498689 | 0.000706264663722071  | up | Pathway |
| RELL2    | 2.26902998728133 | 0.00174230901888893   | up | Pathway |
| E2F1     | 2.27019200165327 | 0.00187635791697833   | up | Pathway |
| CCDC74B  | 2.27240670753972 | 0.0303139848964262    | up | NA      |
| EDARADD  | 2.27614152117276 | 0.0497958395177395    | up | NA      |
| CATSPERB | 2.27841905759205 | 0.0137140266551214    | up | NA      |
| ABHD17C  | 2.27914810657698 | 0.00648851095978662   | up | Pathway |
| RNF183   | 2.28043777555485 | 0.0347962131080547    | up | NA      |
| CACNA1F  | 2.2813273944392  | 0.00392715490930315   | up | Pathway |
| FSCN2    | 2.28528514722746 | 0.0216672179894037    | up | Pathway |
| LRP8     | 2.28609527081911 | 0.000519472046918103  | up | Pathway |
| ITGAX    | 2.28681707119471 | 0.00744150879819119   | up | Pathway |
| MFSD2A   | 2.28755117590655 | 0.0329264258250978    | up | Pathway |
| CAPN12   | 2.28811300911374 | 0.00188632887174866   | up | NA      |
| PALM3    | 2.28985258758381 | 0.0236282185075584    | up | NA      |
| LYPD1    | 2.29036853798518 | 0.0153365514896887    | up | Pathway |
| PRR7     | 2.29168754948722 | 0.00304614305296458   | up | NA      |
| TMEM132A | 2.2930568549816  | 0.0017270286051826    | up | NA      |
| MED12L   | 2.29916654494698 | 0.00110509301084367   | up | NA      |
| SPAG5    | 2.30072209196753 | 0.0000595770953396175 | up | Pathway |
| STIL     | 2.30088047308066 | 0.000295209929728523  | up | Pathway |
| CORO2A   | 2.30570068993054 | 0.00157709677579446   | up | NA      |
| TRIP13   | 2.30898376291953 | 0.000369158002758366  | up | Pathway |
| DIO2     | 2.31096046472317 | 0.0247241021814546    | up | Pathway |
| GALNT7   | 2.31223109971324 | 0.0069801442531268    | up | NA      |
| RAD51AP1 | 2.31224890187173 | 0.0000858818717921015 | up | Pathway |
| CTAGE8   | 2.31342513662882 | 0.0104252659821406    | up | NA      |
| FAM169A  | 2.31566160750784 | 0.0255384889473093    | up | NA      |

|           |                  |                       |    |         |
|-----------|------------------|-----------------------|----|---------|
| KIFC2     | 2.31582405346442 | 0.000861267488020354  | up | Pathway |
| TDRD5     | 2.31605679391115 | 0.0322513805624948    | up | Pathway |
| KMO       | 2.32096883545577 | 0.0380637634784904    | up | Pathway |
| MORN3     | 2.3254712573663  | 0.000404412180985721  | up | NA      |
| CLEC7A    | 2.32576252270712 | 0.00990834920104383   | up | Pathway |
| MCM10     | 2.32609524508807 | 0.00281392518247231   | up | Pathway |
| PIF1      | 2.32760608465273 | 0.00076654389496254   | up | Pathway |
| STARD10   | 2.32841272740542 | 0.00654297865903201   | up | Pathway |
| CAMK2A    | 2.33455248045524 | 0.0171571843940662    | up | Pathway |
| RBM11     | 2.34136958867761 | 0.0126974212948193    | up | NA      |
| IFNLR1    | 2.34205275114261 | 0.0411399224762018    | up | NA      |
| SYTL1     | 2.34225353185344 | 0.00148633732729716   | up | NA      |
| TFR2      | 2.34831480014765 | 0.0329264258250978    | up | Pathway |
| CCDC87    | 2.35594595559719 | 0.0096739140380748    | up | Pathway |
| SLC6A12   | 2.35872057751111 | 0.0131719812342726    | up | Pathway |
| DNASE1L2  | 2.36207165737849 | 0.0218618669133301    | up | Pathway |
| PSD4      | 2.36251230583047 | 0.00136523329018138   | up | Pathway |
| GUCY2D    | 2.36812396377955 | 0.00989624148676905   | up | Pathway |
| NUAK2     | 2.37477236607306 | 0.00194219014779668   | up | Pathway |
| FANCD2    | 2.37649963822651 | 0.0000136429042467373 | up | Pathway |
| C6orf132  | 2.38134570944634 | 0.00942486447520965   | up | NA      |
| PRRG2     | 2.38303030900865 | 0.00381070411012472   | up | NA      |
| ATAD3C    | 2.38558260413373 | 0.00422296522054893   | up | NA      |
| CABYR     | 2.38689549298517 | 0.00689884602230553   | up | Pathway |
| SYNGR3    | 2.39328998798477 | 0.0188549137608228    | up | Pathway |
| FRMD5     | 2.39355124382191 | 0.00760429837564804   | up | Pathway |
| CCDC150   | 2.39965750952209 | 0.00148676846448783   | up | NA      |
| KIAA1549L | 2.40305670792245 | 0.000888253953419409  | up | NA      |
| MLF1IP    | 2.40460769257855 | 0.000417674733615524  | up | NA      |
| NDC80     | 2.40546693136275 | 0.00118116352687324   | up | Pathway |
| PKIB      | 2.40576798684473 | 0.0188365641459818    | up | Pathway |
| TYMS      | 2.4099024464997  | 0.00388301788607342   | up | Pathway |
| WDR96     | 2.41900898769751 | 0.0371167201276631    | up | NA      |
| RASGEF1A  | 2.42702614003973 | 0.00120161497101071   | up | Pathway |
| FAM155B   | 2.43116568810355 | 0.0158963601296545    | up | NA      |
| RMI2      | 2.43200363772794 | 0.000844752341507983  | up | Pathway |
| PAFAH1B3  | 2.43521199169801 | 0.000104275122471357  | up | Pathway |
| MAP3K9    | 2.4355612849158  | 0.00189000128758172   | up | Pathway |
| PRRG4     | 2.437488614549   | 0.00329542057938119   | up | NA      |
| AGBL2     | 2.44171628417771 | 0.00170538473396595   | up | NA      |
| FOXP3     | 2.44258017577835 | 0.00165819933787852   | up | Pathway |
| FHDC1     | 2.44561701396806 | 0.0010675210015105    | up | Pathway |
| ZNF497    | 2.44762146369836 | 0.00100113982575308   | up | NA      |
| PADI2     | 2.45282635888805 | 0.0191073887562299    | up | Pathway |
| CTSV      | 2.45478955734052 | 0.00148635421887215   | up | Pathway |
| MBOAT2    | 2.45826908175214 | 0.000596665455601958  | up | Pathway |
| TRAF4     | 2.45844942668894 | 0.00153501584143883   | up | Pathway |

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|----------|------------------|-----------------------|----|---------|
| FAAH2    | 2.46024688893089 | 0.00507034402206909   | up | Pathway |
| CLDN9    | 2.4618422063815  | 0.0138967916718629    | up | Pathway |
| VWA7     | 2.46396745809571 | 0.0298674517852519    | up | NA      |
| TRIM46   | 2.46458828224824 | 0.000757598198797455  | up | Pathway |
| TNFRSF9  | 2.46823043454399 | 0.0209053368295463    | up | NA      |
| ZNF730   | 2.47029522597212 | 0.00659550276027539   | up | NA      |
| NOXO1    | 2.47067385670745 | 0.0126162752683544    | up | Pathway |
| ZNF296   | 2.47297606863114 | 0.00145553954574202   | up | NA      |
| ORC1     | 2.47350667986994 | 0.000263936114358879  | up | Pathway |
| STRC     | 2.47380401165399 | 0.012782163899609     | up | Pathway |
| ILDR2    | 2.47395575442676 | 0.0468587190881898    | up | Pathway |
| MTRFR2   | 2.47545789641534 | 0.000391187746166089  | up | NA      |
| C11orf82 | 2.47718405972168 | 0.000736715997381874  | up | NA      |
| ALCAM    | 2.47997026183023 | 0.00713006730167117   | up | Pathway |
| PRC1     | 2.48062392120945 | 0.000123180519229478  | up | Pathway |
| E2F5     | 2.48375219114796 | 0.000516368145033116  | up | NA      |
| SIGLEC8  | 2.48378082774085 | 0.0250663268582413    | up | NA      |
| CTLA4    | 2.48809214164754 | 0.00987216328055093   | up | Pathway |
| KCNK1    | 2.49255929859111 | 0.0470695703615074    | up | Pathway |
| CDKN3    | 2.49365167929146 | 0.00491317584754662   | up | Pathway |
| CXCL11   | 2.49430245504768 | 0.0142926677598967    | up | Pathway |
| FAM72D   | 2.49458436278261 | 0.00179694623517401   | up | NA      |
| SLC22A15 | 2.49683109521124 | 0.0000838494407218363 | up | NA      |
| MYO5B    | 2.49888815642849 | 0.00965359416639844   | up | Pathway |
| CENPK    | 2.51041709796336 | 0.000420208419873881  | up | Pathway |
| PPM1J    | 2.51061634948531 | 0.0043034161229907    | up | NA      |
| BRIP1    | 2.51320202579864 | 0.00106481929211232   | up | Pathway |
| FBN2     | 2.51369209579831 | 0.0033441245341242    | up | Pathway |
| SLC9A7   | 2.52103153511927 | 0.000377306285542243  | up | Pathway |
| SYCP2    | 2.52200814018741 | 0.0340264145065728    | up | Pathway |
| CCDC160  | 2.52226163260424 | 0.0413941573038584    | up | NA      |
| ACTA1    | 2.52536535659551 | 0.0140709049290675    | up | Pathway |
| C5orf49  | 2.52798671057402 | 0.0346917710932833    | up | NA      |
| C16orf59 | 2.53055965953179 | 0.000753195264254039  | up | NA      |
| CCNA2    | 2.53123754320533 | 0.000268320741088932  | up | Pathway |
| AURKA    | 2.53470940819506 | 0.000519472046918103  | up | Pathway |
| VDR      | 2.53616919173651 | 0.00566837447176071   | up | Pathway |
| CLDN7    | 2.53727480999132 | 0.00165254468618578   | up | Pathway |
| LCN12    | 2.54100370929875 | 0.02601879802371      | up | NA      |
| DOC2A    | 2.54656391914207 | 0.00196351350704928   | up | Pathway |
| XK       | 2.54690956873837 | 0.0234589142307055    | up | Pathway |
| PSRC1    | 2.54958429932507 | 0.0000351034889861726 | up | Pathway |
| CCDC74A  | 2.5497781178798  | 0.0142988254831046    | up | NA      |
| ENTPD2   | 2.5515592314666  | 0.00478310802381797   | up | Pathway |
| CDC6     | 2.55818198337214 | 0.000509006221677753  | up | Pathway |
| COL9A2   | 2.56124698138419 | 0.0169946930157186    | up | Pathway |
| CD80     | 2.56284127663467 | 0.000660059208830781  | up | Pathway |

|           |                  |                       |    |         |
|-----------|------------------|-----------------------|----|---------|
| HIST2H2BE | 2.56307771177952 | 0.00273471678689332   | up | NA      |
| STXBP2    | 2.5676932658001  | 0.00158213708083203   | up | Pathway |
| TMEM92    | 2.57078680772653 | 0.0245649944482044    | up | NA      |
| CHMP4C    | 2.57992344576007 | 0.00051428028943494   | up | Pathway |
| KIAA0319  | 2.58185619404056 | 0.014832060538293     | up | Pathway |
| HIST1H4H  | 2.58204635982678 | 0.00213856146020748   | up | NA      |
| XRCC2     | 2.58230576983352 | 0.000501010287690176  | up | Pathway |
| ITPKA     | 2.58320262333549 | 0.00100650911501318   | up | Pathway |
| ENTPD8    | 2.58859782850866 | 0.0212611060697359    | up | NA      |
| C16orf93  | 2.59473981160759 | 0.000667898335859802  | up | NA      |
| OCLN      | 2.59474475193916 | 0.00689884602230553   | up | Pathway |
| FAM135B   | 2.59966133675486 | 0.0317418480867959    | up | NA      |
| CKS2      | 2.59987786495862 | 0.0000683419627159911 | up | Pathway |
| MROH7     | 2.60287736689686 | 0.0118873829995837    | up | NA      |
| HIST1H2BD | 2.6029080781236  | 0.00428965940298131   | up | NA      |
| CDH2      | 2.60509612222196 | 0.0198171702368437    | up | Pathway |
| PPAP2C    | 2.60620066968865 | 0.0103681124456128    | up | NA      |
| SP6       | 2.60802945637212 | 0.00542556753044505   | up | Pathway |
| SLC17A9   | 2.61109259786683 | 0.00810350097701753   | up | Pathway |
| PTK7      | 2.61303522787182 | 0.011329964921088     | up | Pathway |
| NETO2     | 2.61577453891867 | 0.00315255128750998   | up | Pathway |
| ZNF552    | 2.63132661245883 | 0.00796429223262063   | up | NA      |
| ARHGAP39  | 2.64244090466502 | 0.000273291651608255  | up | Pathway |
| RAD51     | 2.64987979549768 | 0.000284014161466381  | up | Pathway |
| FCGR1A    | 2.65089109711693 | 0.0408767389241535    | up | Pathway |
| SCG5      | 2.66172029999168 | 0.03433532476578      | up | Pathway |
| TFCP2L1   | 2.66309725871786 | 0.038557167127307     | up | Pathway |
| PAQR5     | 2.66655037144985 | 0.00502192460041498   | up | NA      |
| EPHB3     | 2.67864522247714 | 0.00104676061895256   | up | Pathway |
| DLEU7     | 2.68039299619485 | 0.0028601567717847    | up | NA      |
| PAK6      | 2.68725242011282 | 0.00422113960257483   | up | Pathway |
| GINS1     | 2.69054225239314 | 0.000421604515831116  | up | Pathway |
| CDK1      | 2.69148349978716 | 0.000805427054623683  | up | Pathway |
| RAB11FIP4 | 2.69213024485355 | 0.0027333224875454    | up | Pathway |
| TCTEX1D2  | 2.69561276322163 | 0.00142304010132895   | up | NA      |
| SQLE      | 2.70870992982269 | 0.00155839873950891   | up | Pathway |
| THSD4     | 2.71474932693327 | 0.049878905310642     | up | Pathway |
| MICALCL   | 2.71536877208103 | 0.00261779260408553   | up | NA      |
| CYP27B1   | 2.71543594279712 | 0.000698758446656829  | up | Pathway |
| SH3D21    | 2.726711532435   | 0.000719977459913792  | up | Pathway |
| EME1      | 2.72691943101819 | 0.000164752278344025  | up | Pathway |
| LMNB1     | 2.73340706641435 | 0.000127345443716461  | up | NA      |
| CTXN1     | 2.73646047942656 | 0.0189660633835277    | up | NA      |
| PRKCZ     | 2.74022870238551 | 0.00270525293884244   | up | Pathway |
| FN1       | 2.74214056642138 | 0.000216635632680683  | up | Pathway |
| CCNI2     | 2.75752426597714 | 0.00810123338750151   | up | Pathway |
| CLSPN     | 2.77726393889825 | 0.00177018203518982   | up | Pathway |

|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| CCDC114  | 2.78315566490019 | 0.000378487820262663  | up | NA      |
| DCDC1    | 2.78457813499501 | 0.0236187649805771    | up | Pathway |
| CXCR4    | 2.78515813817608 | 0.00177796070266155   | up | Pathway |
| STMND1   | 2.78699850324552 | 0.0433861818136822    | up | Pathway |
| UBE2T    | 2.788000342649   | 0.000221168752651162  | up | NA      |
| TRPS1    | 2.79472265464135 | 0.0035710718737098    | up | Pathway |
| ZWINT    | 2.80146262374958 | 0.000615223146382208  | up | Pathway |
| HAGHL    | 2.80364082312427 | 0.00180018263739458   | up | NA      |
| CXCL10   | 2.8038001292575  | 0.00694679944106855   | up | Pathway |
| RASL11B  | 2.81305886632066 | 0.00325856338812637   | up | Pathway |
| FAM84A   | 2.81722175951065 | 0.0182929091605755    | up | NA      |
| ESCO2    | 2.81731828505936 | 0.000927755789375418  | up | Pathway |
| IL17RB   | 2.81831566972187 | 0.0257725501443704    | up | Pathway |
| ZSCAN1   | 2.82449301473976 | 0.0399378067214851    | up | NA      |
| SLC38A1  | 2.82594293868553 | 0.00982997895865081   | up | Pathway |
| CDCA8    | 2.82697182207155 | 0.000162681118293746  | up | Pathway |
| EZH2     | 2.83285267878316 | 0.0000763833155876388 | up | Pathway |
| RHPN1    | 2.83870723140828 | 0.00152232638180539   | up | Pathway |
| PTTG1    | 2.8397587121969  | 0.000398274781386981  | up | Pathway |
| RUNX2    | 2.84255268365644 | 0.000408291543525218  | up | Pathway |
| SALL4    | 2.84685073118852 | 0.000607184694399605  | up | Pathway |
| POLQ     | 2.86014546357065 | 0.000942497585998621  | up | Pathway |
| DHDH     | 2.86257856881118 | 0.00283676451622642   | up | Pathway |
| BHLHA15  | 2.86270135581658 | 0.025151441560057     | up | Pathway |
| F7       | 2.86457474140936 | 0.0304047498136272    | up | Pathway |
| DNAH14   | 2.86626488520998 | 0.00187182897619392   | up | Pathway |
| GLYATL1  | 2.86802713945782 | 0.0111908227923717    | up | Pathway |
| EPS8L2   | 2.86870465417311 | 0.00112035390923959   | up | Pathway |
| GPR84    | 2.8738132506443  | 0.00138415355447896   | up | NA      |
| HAMP     | 2.87465195539205 | 0.0411399224762018    | up | Pathway |
| CDCA2    | 2.87928232953819 | 0.000260191438164158  | up | Pathway |
| SH2D3A   | 2.87935187068646 | 0.0011802314378548    | up | Pathway |
| OIP5     | 2.88528515345055 | 0.000645364554820782  | up | Pathway |
| KCNC3    | 2.89697711933345 | 0.0188192131037244    | up | Pathway |
| MLK4     | 2.89898663224134 | 0.0160929878763038    | up | NA      |
| TONSL    | 2.90313350717423 | 0.0000680525117142832 | up | Pathway |
| KIAA1211 | 2.90617092695015 | 0.0106685439259569    | up | NA      |
| SLCO5A1  | 2.90659646699214 | 0.0092925061324682    | up | Pathway |
| SLC12A8  | 2.90675913504687 | 0.000317717294706102  | up | Pathway |
| FBXO41   | 2.9071341563397  | 0.0000859453541881024 | up | NA      |
| PABPC1L  | 2.90782607125705 | 0.00083195246942083   | up | NA      |
| KRT86    | 2.91206370152457 | 0.0111273098206496    | up | Pathway |
| TTC23L   | 2.91526789837396 | 0.00639544851342644   | up | NA      |
| SERINC2  | 2.91709592125491 | 0.00165254468618578   | up | Pathway |
| LRR8E    | 2.91849283416323 | 0.00160959441921452   | up | Pathway |
| SHCBP1   | 2.9264093555418  | 0.000191471622938169  | up | Pathway |
| ST14     | 2.93241207101729 | 0.00578133544523018   | up | Pathway |

|              |                  |                      |    |         |
|--------------|------------------|----------------------|----|---------|
| GALNT5       | 2.93429929504314 | 0.00859723006064256  | up | NA      |
| HPDL         | 2.93437796088137 | 0.00799395219515198  | up | NA      |
| FAM227A      | 2.94671424470215 | 0.000793176632112059 | up | NA      |
| LLGL2        | 2.9499687596398  | 0.000264003411359058 | up | Pathway |
| HSH2D        | 2.95615260262081 | 0.000830139190852364 | up | Pathway |
| MARVELD2     | 2.96014094586494 | 0.00219255414040764  | up | Pathway |
| ROR2         | 2.96253306201531 | 0.0178314304358834   | up | Pathway |
| HTRA4        | 2.96277927353652 | 0.00761480424673054  | up | Pathway |
| IL4I1        | 2.96590477915471 | 0.00455346619506465  | up | Pathway |
| KLHDC8A      | 2.96802920658119 | 0.0126290954502962   | up | NA      |
| KIF11        | 2.96813647583934 | 0.000235725359934501 | up | Pathway |
| ERMN         | 2.97139983903798 | 0.000287242442401643 | up | Pathway |
| TTBK1        | 2.97584659820847 | 0.00624626167325063  | up | Pathway |
| HIST3H2A     | 2.98801758206312 | 0.000915276692190789 | up | NA      |
| BRSK1        | 2.99424285613442 | 0.00415363598686419  | up | Pathway |
| GPRC5A       | 2.99482112809304 | 0.00652618662248596  | up | Pathway |
| KRTCAP3      | 2.99942870206529 | 0.000709098607885016 | up | NA      |
| FAM183A      | 3.0087410389475  | 0.00895166323314354  | up | NA      |
| KIF5C        | 3.01086678116142 | 0.00936281328230613  | up | Pathway |
| INPP5J       | 3.01451039465407 | 0.0183432371170624   | up | Pathway |
| CRABP2       | 3.02005592438813 | 0.00526819892395613  | up | Pathway |
| LYPD3        | 3.02084554240366 | 0.0125569495365769   | up | Pathway |
| GSTO2        | 3.02569658890095 | 0.0118980584902469   | up | Pathway |
| CCDC64       | 3.0293297812533  | 0.0162659280165425   | up | NA      |
| TREM2        | 3.0395442019228  | 0.0190860427790771   | up | Pathway |
| RP11-366M4.3 | 3.0427526848575  | 0.0344821602330359   | up | NA      |
| IRF6         | 3.04362050741323 | 0.00297707597284382  | up | Pathway |
| NCCRP1       | 3.04427010253701 | 0.0343460382512441   | up | NA      |
| HNF4G        | 3.04623368783228 | 0.0216005607968023   | up | NA      |
| GIN52        | 3.04672116519102 | 0.000472155211243409 | up | Pathway |
| LEF1         | 3.04677334246805 | 0.000519990796027708 | up | Pathway |
| GRB7         | 3.06323170471271 | 0.00654297865903201  | up | Pathway |
| PITX1        | 3.06532636489792 | 0.017292770855018    | up | Pathway |
| FBXO43       | 3.07620713262274 | 0.000166776688431061 | up | Pathway |
| HIST1H1E     | 3.07852481150222 | 0.000319134550957803 | up | NA      |
| ARNT2        | 3.08284633796126 | 0.0101726972918696   | up | Pathway |
| ARHGEF39     | 3.08381091449985 | 0.000164917390145855 | up | NA      |
| WDR62        | 3.08970402935171 | 0.000121388009059353 | up | Pathway |
| BARX2        | 3.09236897767064 | 0.0396562999793072   | up | Pathway |
| CDC42BPG     | 3.09357405576571 | 0.000676026891912816 | up | Pathway |
| FANCA        | 3.09488832123915 | 0.00011974337283636  | up | Pathway |
| BCL2L14      | 3.09683697456186 | 0.00864837331015004  | up | NA      |
| WNT10A       | 3.10040687601188 | 0.0295475886274442   | up | Pathway |
| COL7A1       | 3.10440342985429 | 0.00291972984985498  | up | Pathway |
| SFN          | 3.10900978404063 | 0.0269450875724438   | up | Pathway |
| FBXO16       | 3.11028520435468 | 0.00651302524025588  | up | NA      |
| LAMP3        | 3.1107001023753  | 0.0105220563316939   | up | NA      |

|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| TUBB3    | 3.11613773092279 | 0.0149034398144706    | up | NA      |
| RECQL4   | 3.11675315389405 | 0.000689337876851608  | up | Pathway |
| SOWAHB   | 3.11880757224355 | 0.0328182105721982    | up | NA      |
| GOLT1A   | 3.12598894961611 | 0.0113583676412547    | up | NA      |
| ZNF365   | 3.12701846828141 | 0.000470998749679388  | up | Pathway |
| NCAPH    | 3.13152879600656 | 0.0000447686575281947 | up | Pathway |
| CCNE2    | 3.1466895671318  | 0.000587515290771729  | up | Pathway |
| KIF5A    | 3.15001980490232 | 0.01673747327592      | up | Pathway |
| NEURL3   | 3.15318477182362 | 0.00340359852612911   | up | NA      |
| CASC5    | 3.15879452747965 | 0.000157468476137043  | up | NA      |
| FSTL4    | 3.16210673100883 | 0.0179492886797449    | up | Pathway |
| BNIP1    | 3.17033826322089 | 0.0395053252125013    | up | NA      |
| PYCR1    | 3.17194977794952 | 0.000141818334379598  | up | Pathway |
| MND1     | 3.17317505078218 | 0.000761477801047362  | up | Pathway |
| ORC6     | 3.17616317606445 | 0.0000845369655144294 | up | Pathway |
| CDT1     | 3.17653812276869 | 0.0000735297797622699 | up | Pathway |
| ZYG11A   | 3.17751027729174 | 0.00436192495129313   | up | NA      |
| KIF18A   | 3.17752560590404 | 0.0000884529995345068 | up | Pathway |
| MELK     | 3.18221421817838 | 0.00018153478515827   | up | Pathway |
| SKA1     | 3.18346027027458 | 0.00233676442224468   | up | Pathway |
| MMP9     | 3.18524332374093 | 0.011329964921088     | up | Pathway |
| SULT2B1  | 3.18776631231172 | 0.0211117305656323    | up | Pathway |
| RIPK4    | 3.19389911911508 | 0.0353739221455307    | up | NA      |
| GPR143   | 3.19435437858625 | 0.0283892247568998    | up | Pathway |
| PLEKHD1  | 3.19449260951295 | 0.0144108400502652    | up | NA      |
| CDCA5    | 3.20033048794123 | 0.000146406827745791  | up | Pathway |
| FAM160A1 | 3.20167411932727 | 0.00348731366816943   | up | NA      |
| RTKN2    | 3.20185744150486 | 0.0000146445125206015 | up | NA      |
| MTL5     | 3.20881258281239 | 0.00462953827534328   | up | NA      |
| MYBL2    | 3.21168938478698 | 0.000712904123714457  | up | Pathway |
| ANKRD22  | 3.21787879524466 | 0.0073949253539407    | up | NA      |
| NKAIN1   | 3.22258824169313 | 0.048710658195052     | up | Pathway |
| CDCP1    | 3.22736945599455 | 0.0090021306941423    | up | NA      |
| ADM2     | 3.23656981948364 | 0.00111536330428464   | up | Pathway |
| GALNT6   | 3.2368808381892  | 0.00900685147647643   | up | NA      |
| TACSTD2  | 3.23860591723531 | 0.0383105053069992    | up | Pathway |
| RUFY4    | 3.2421812302422  | 0.00392339755665027   | up | NA      |
| DNAH5    | 3.24222771045047 | 0.0227271145178156    | up | Pathway |
| DNAAF1   | 3.26018485974854 | 0.0090083680338739    | up | Pathway |
| TTC22    | 3.26194361152205 | 0.00739850157452355   | up | NA      |
| HMMR     | 3.26256579242262 | 0.000687630657276183  | up | NA      |
| ASF1B    | 3.26624226770606 | 0.0000836233586411006 | up | Pathway |
| TK1      | 3.26808488153447 | 0.000744473918723129  | up | NA      |
| RHPN2    | 3.26877212228062 | 0.00196351350704928   | up | Pathway |
| FAM110C  | 3.26901130196188 | 0.0204757896035019    | up | Pathway |
| SLC4A8   | 3.27791512643376 | 0.00360908416623356   | up | Pathway |
| ARHGAP8  | 3.27795900561669 | 0.00233676442224468   | up | Pathway |

|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| PLEK2    | 3.28225582720762 | 0.000406484763669773  | up | Pathway |
| NUPR1L   | 3.28523923047316 | 0.0329145813752973    | up | NA      |
| ITGB6    | 3.28703567691495 | 0.0264052107779987    | up | Pathway |
| TTK      | 3.28918713148792 | 0.000505918606544073  | up | Pathway |
| CACNA1D  | 3.29396037926826 | 0.016749076455753     | up | Pathway |
| C3orf83  | 3.29601377907333 | 0.017562390602011     | up | NA      |
| MEX3A    | 3.29751441109944 | 0.00166626800176831   | up | NA      |
| FAM83H   | 3.29814661531851 | 0.000158964635373281  | up | Pathway |
| KIF23    | 3.30393504998237 | 0.000066995981626043  | up | Pathway |
| WNK2     | 3.30463568931765 | 0.0119995487134115    | up | Pathway |
| NUP210   | 3.31438919765552 | 0.0000439374577569317 | up | NA      |
| CDS1     | 3.32384280686887 | 0.00148633732729716   | up | Pathway |
| TP73     | 3.32854796702327 | 0.019601973959696     | up | Pathway |
| AURKB    | 3.33780801439234 | 0.00019746681291275   | up | Pathway |
| CDCA3    | 3.34808738247404 | 0.000205838892437834  | up | NA      |
| CADPS    | 3.35032103268006 | 0.00194003331594711   | up | Pathway |
| GSDMC    | 3.35042979382447 | 0.00621178910355922   | up | NA      |
| PLEKHN1  | 3.36040863334945 | 0.00994244746253262   | up | Pathway |
| TPX2     | 3.36085349409231 | 0.0000983664357695885 | up | Pathway |
| SBK1     | 3.36115244921663 | 0.00047340108910888   | up | Pathway |
| BCAS4    | 3.36288652249769 | 0.00192525122037535   | up | NA      |
| NCAPG    | 3.36470085820474 | 0.000408330584021694  | up | Pathway |
| C19orf45 | 3.36781242494206 | 0.00342730582790048   | up | NA      |
| FAXC     | 3.37373306723134 | 0.0047812945006144    | up | NA      |
| ANXA9    | 3.37992037794648 | 0.0145609647351334    | up | Pathway |
| TPD52    | 3.38211274060569 | 0.0012733433616297    | up | NA      |
| ZG16B    | 3.38603430968805 | 0.0480230696749663    | up | Pathway |
| RNF223   | 3.39750573151363 | 0.0129136410098457    | up | NA      |
| RAB17    | 3.39966206784184 | 0.00763884093437723   | up | Pathway |
| SCNN1A   | 3.403639151982   | 0.00775383288365438   | up | Pathway |
| ERBB3    | 3.40394461614036 | 0.0126587341342774    | up | Pathway |
| SMKR1    | 3.40401618260149 | 0.000644903205574493  | up | NA      |
| ARTN     | 3.40880584416723 | 0.00205664522328738   | up | Pathway |
| CNKSR1   | 3.4097680433331  | 0.00122253999389884   | up | Pathway |
| KRT8     | 3.41733794124054 | 0.0044252766818311    | up | Pathway |
| ATG9B    | 3.42176383473723 | 0.0031025774574955    | up | Pathway |
| HPN      | 3.42377546215446 | 0.000882233408713756  | up | Pathway |
| EHF      | 3.43673938663593 | 0.0270875601970393    | up | Pathway |
| RIBC2    | 3.44568344584613 | 0.001549696519053     | up | NA      |
| PARD6B   | 3.44691190036949 | 0.00872320757293315   | up | Pathway |
| RAB3B    | 3.45099919038184 | 0.0120274146099159    | up | Pathway |
| E2F2     | 3.45307058589413 | 0.0013048365196367    | up | Pathway |
| CRB3     | 3.45318148062228 | 0.00312472742044704   | up | Pathway |
| CASKIN1  | 3.45679848941781 | 0.00245460802665968   | up | NA      |
| CARD14   | 3.46432187983423 | 0.015622161643148     | up | Pathway |
| USP43    | 3.46944199117851 | 0.00104676061895256   | up | NA      |
| LMTK3    | 3.47052880879421 | 0.00362660736073139   | up | NA      |



|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| FAM64A   | 3.47651154883203 | 0.000743757915804901  | up | NA      |
| GTSE1    | 3.47741352793175 | 0.000129439610476009  | up | Pathway |
| ST6GAL2  | 3.48171007674405 | 0.0135592768876727    | up | Pathway |
| CENPA    | 3.48881287661793 | 0.00159967308514979   | up | Pathway |
| TOX3     | 3.4890538329658  | 0.0446369924330441    | up | NA      |
| SPINT2   | 3.48972324391476 | 0.000519472046918103  | up | Pathway |
| HOOK1    | 3.50414000157181 | 0.00735443587241716   | up | NA      |
| TRPA1    | 3.50545583058889 | 0.00755914818601825   | up | Pathway |
| DTL      | 3.50766607678946 | 0.000117823399615808  | up | Pathway |
| HELLS    | 3.51231244452813 | 0.0000834322071783268 | up | Pathway |
| KIF2C    | 3.51381736620548 | 0.0000835210703882731 | up | Pathway |
| DSP      | 3.51531644548929 | 0.00892806785177948   | up | Pathway |
| CENPM    | 3.52228396494041 | 0.00223086015864832   | up | NA      |
| APOBEC3B | 3.52456799169835 | 0.000940687174566504  | up | Pathway |
| SPP1     | 3.52929594515106 | 0.00042386930184934   | up | Pathway |
| ANLN     | 3.53212482603676 | 0.000616152927867891  | up | Pathway |
| ESPL1    | 3.5331433036538  | 0.0000744532949887053 | up | Pathway |
| POU2F3   | 3.53391366387145 | 0.00680934672390898   | up | Pathway |
| KRT18    | 3.54576128887416 | 0.0048512817694514    | up | Pathway |
| PBK      | 3.54899562388985 | 0.0014734502545674    | up | Pathway |
| PCP2     | 3.54943641147825 | 0.00972254968752351   | up | NA      |
| CCDC78   | 3.55583820322518 | 0.00183181145755457   | up | Pathway |
| BUB1     | 3.55602306472424 | 0.000107255895851857  | up | Pathway |
| CELSR1   | 3.56028445254866 | 0.00292422104868455   | up | Pathway |
| KIFC1    | 3.56214075461254 | 0.00039228933178638   | up | Pathway |
| RP11-    |                  |                       |    |         |
| 503N18.1 | 3.56429145136492 | 0.00131144497005329   | up | NA      |
| DERL3    | 3.56821021110152 | 0.00664859283510803   | up | Pathway |
| KRT7     | 3.57102035577866 | 0.0253412692379924    | up | Pathway |
| FUT3     | 3.57232275767961 | 0.0111452924043911    | up | Pathway |
| C15orf48 | 3.57508322848792 | 0.00281418192569626   | up | NA      |
| TFAP2A   | 3.5803651384462  | 0.0446369924330441    | up | Pathway |
| CDC20    | 3.58233156534829 | 0.000538763688521035  | up | Pathway |
| PPFIA4   | 3.58315527266475 | 0.00090214920106453   | up | Pathway |
| CD164L2  | 3.58400149466253 | 0.0115579685895833    | up | NA      |
| FAM57B   | 3.58681664626887 | 0.00194156039182602   | up | NA      |
| CEP55    | 3.58905628483753 | 0.00151850243845122   | up | Pathway |
| SLC7A5   | 3.59107757568973 | 0.00110281469064072   | up | Pathway |
| CCL11    | 3.59140244405754 | 0.0129473973639108    | up | Pathway |
| NUSAP1   | 3.59270429204966 | 0.000190284078984827  | up | Pathway |
| SLC16A6  | 3.59503590255757 | 0.0138967916718629    | up | Pathway |
| MYB      | 3.59814280778534 | 0.0270322999128714    | up | NA      |
| LAMP5    | 3.59851196429427 | 0.00299033480640625   | up | NA      |
| SYNE4    | 3.60104094312325 | 0.00067186667339516   | up | Pathway |
| CDC45    | 3.60172890881638 | 0.000395483609521161  | up | Pathway |
| TRPV6    | 3.6031790297251  | 0.0328259654347378    | up | Pathway |
| B4GALNT3 | 3.61526578683562 | 0.00978410092385436   | up | NA      |

|          |                  |                      |    |         |
|----------|------------------|----------------------|----|---------|
| EPHA10   | 3.61658228363675 | 0.022241106607553    | up | Pathway |
| KIAA0101 | 3.61740386826171 | 0.00022370204671549  | up | NA      |
| CLPSL1   | 3.61859111094221 | 0.0304201532307021   | up | Pathway |
| TMC4     | 3.61880863617499 | 0.00241672990645292  | up | NA      |
| KRT19    | 3.62094683264772 | 0.00517925832697476  | up | Pathway |
| B3GNT3   | 3.62480277690589 | 0.0161218932518052   | up | Pathway |
| DEPDC1B  | 3.63028160414954 | 0.000363486883128481 | up | Pathway |
| FHAD1    | 3.6304510101069  | 0.00160614389893204  | up | NA      |
| ABCA12   | 3.63710042848309 | 0.0341851002603364   | up | Pathway |
| LYPD6B   | 3.64026024500636 | 0.0188259132023721   | up | NA      |
| SLC44A4  | 3.64565320604247 | 0.0125363972198085   | up | Pathway |
| PPEF1    | 3.64689530642425 | 0.000299618041369827 | up | NA      |
| TMPRSS6  | 3.64955452115246 | 0.00855582897386266  | up | Pathway |
| SEPT3    | 3.65089645994458 | 0.00145553954574202  | up | NA      |
| RSPH1    | 3.65154552717319 | 0.00304480057341788  | up | Pathway |
| C9orf117 | 3.65445477125754 | 0.00455346619506465  | up | NA      |
| BSPRY    | 3.65539493297029 | 0.00595423768116199  | up | Pathway |
| RASAL1   | 3.65990479093659 | 0.0231049230020836   | up | Pathway |
| LPAR3    | 3.66229700705356 | 0.0259573302366102   | up | Pathway |
| ARHGEF38 | 3.66264208030312 | 0.0460931862875276   | up | NA      |
| RAB26    | 3.66540385946758 | 0.00190145726290614  | up | Pathway |
| SCNN1G   | 3.66636663272952 | 0.0225282775518651   | up | Pathway |
| AARD     | 3.68662812062512 | 0.0296182361036083   | up | NA      |
| DQX1     | 3.7065519727708  | 0.00328721285754064  | up | Pathway |
| FAM83D   | 3.73398846940676 | 0.000275632924351592 | up | Pathway |
| CENPF    | 3.73919035335862 | 0.000248543237413034 | up | Pathway |
| SHROOM3  | 3.73927930863891 | 0.00387307674648601  | up | Pathway |
| PKP3     | 3.7416722649716  | 0.000544691369367457 | up | Pathway |
| RHOV     | 3.74641714687588 | 0.0162502018874337   | up | Pathway |
| LIPH     | 3.74911342447966 | 0.0279432409809875   | up | Pathway |
| TMEM63C  | 3.75094596025703 | 0.0116851286075757   | up | Pathway |
| TNS4     | 3.75268050754228 | 0.0489594945001134   | up | NA      |
| PROM2    | 3.7551015449291  | 0.00678825962044422  | up | Pathway |
| SMPDL3B  | 3.75643652902281 | 0.0219776248638008   | up | Pathway |
| RAP1GAP  | 3.75813746074463 | 0.00392031743915764  | up | Pathway |
| SAPCD2   | 3.76708076619691 | 0.00314355662610002  | up | Pathway |
| RNF43    | 3.76734409086887 | 0.0120898151991117   | up | Pathway |
| EPS8L1   | 3.77436312669953 | 0.00440701294263352  | up | Pathway |
| TFAP2C   | 3.78780124049936 | 0.00744474871211261  | up | Pathway |
| ESPN     | 3.78850939035961 | 0.0152297030171976   | up | Pathway |
| ASPM     | 3.78869721371203 | 0.00137451446761062  | up | Pathway |
| CGN      | 3.79212635383485 | 0.0177739620225969   | up | NA      |
| ESRP2    | 3.79345894080691 | 0.000830139190852364 | up | Pathway |
| SPC25    | 3.80186201517328 | 0.000228503668915116 | up | Pathway |
| SKA3     | 3.8034971206409  | 0.000368446268809778 | up | Pathway |
| KIF20A   | 3.81091768840926 | 0.000676202287658234 | up | Pathway |
| FAM196A  | 3.81387447281287 | 0.0315546195946172   | up | NA      |

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| MUC1       | 3.81447877569435 | 0.00599418024721437   | up | Pathway |
| EPHA1      | 3.81872201620797 | 0.00126686845119704   | up | Pathway |
| PTK6       | 3.82079004418819 | 0.00982997895865081   | up | Pathway |
| C1orf106   | 3.82082388838142 | 0.0209823713098639    | up | NA      |
| IGSF9      | 3.82246797170305 | 0.0116586765166049    | up | Pathway |
| BIK        | 3.82271338164602 | 0.00944783160822367   | up | Pathway |
| KIF12      | 3.82448811844532 | 0.0293803406992471    | up | Pathway |
| OBP2A      | 3.82840421160693 | 0.00198047408728795   | up | NA      |
| ETV4       | 3.83252795634397 | 0.00212489036267517   | up | Pathway |
| NUF2       | 3.84295445825949 | 0.000281854030114776  | up | Pathway |
| ERVMER34-1 | 3.85331210361321 | 0.00495515236033379   | up | NA      |
| CDC25C     | 3.85643795214361 | 0.000122263566346754  | up | Pathway |
| PRLR       | 3.86991068169011 | 0.00918450044101456   | up | Pathway |
| FOXM1      | 3.87075907180676 | 0.000483531691305894  | up | Pathway |
| PLEKHG4B   | 3.87141530574673 | 0.0434662423487181    | up | Pathway |
| HIST1H3D   | 3.87293628803239 | 0.00604092034650895   | up | NA      |
| TMEM125    | 3.87906571249242 | 0.00271375848231484   | up | NA      |
| NEURL      | 3.88169433953446 | 0.00222750025134191   | up | NA      |
| SRMS       | 3.88669558431172 | 0.020762210500034     | up | Pathway |
| ACAN       | 3.88937197827282 | 0.000924332041181922  | up | NA      |
| SDS        | 3.89618759365382 | 0.000669252547627322  | up | Pathway |
| ANO9       | 3.89687216983859 | 0.000519472046918103  | up | Pathway |
| TJP3       | 3.90351129042545 | 0.00324541237160142   | up | Pathway |
| FAM111B    | 3.9058693597857  | 0.000549682823155422  | up | Pathway |
| BUB1B      | 3.92568730715987 | 0.000262144502419119  | up | Pathway |
| CLUL1      | 3.93136452253606 | 0.00746380444011929   | up | NA      |
| CKAP2L     | 3.93243815394737 | 0.000146406827745791  | up | NA      |
| GGT6       | 3.9333774167559  | 0.0211399492374203    | up | Pathway |
| CTD-       |                  |                       |    |         |
| 3193O13.9  | 3.93820262953079 | 0.00301873399135759   | up | NA      |
| GJB2       | 3.94310281643778 | 0.00155839873950891   | up | Pathway |
| IL11       | 3.9573838011835  | 0.000476999976161584  | up | Pathway |
| MFS6L      | 3.96356072091754 | 0.0014734502545674    | up | NA      |
| CCL20      | 3.96745669669846 | 0.000217793877768999  | up | Pathway |
| TMEM184A   | 3.9716979494808  | 0.00336189646931736   | up | NA      |
| CXCL13     | 3.97648455550977 | 0.02601879802371      | up | Pathway |
| WISP1      | 3.97910570117269 | 0.00182453898514806   | up | NA      |
| TROAP      | 3.98328620045191 | 0.000148855646673274  | up | NA      |
| SPDEF      | 3.99419657963587 | 0.0271985415793516    | up | Pathway |
| RRM2       | 3.99873565565564 | 0.000164493266543036  | up | Pathway |
| NLRP2      | 4.0126886515256  | 0.0195792023221121    | up | NA      |
| ILDR1      | 4.01399948995433 | 0.00130531727742229   | up | Pathway |
| TRIM59     | 4.02028781675901 | 0.0000594803468915483 | up | NA      |
| HJURP      | 4.04084895475553 | 0.000205838892437834  | up | Pathway |
| DEPDC1     | 4.04572468106916 | 0.00152837552553578   | up | NA      |
| SLC7A11    | 4.05872602485958 | 0.000433136280562955  | up | Pathway |
| SUSD4      | 4.06290845985171 | 0.00179279225386599   | up | NA      |

|          |                  |                       |    |         |
|----------|------------------|-----------------------|----|---------|
| CORIN    | 4.06551999230361 | 0.000187646059955679  | up | Pathway |
| CCNB2    | 4.08192223054799 | 0.000102385843801771  | up | Pathway |
| TOP2A    | 4.08749080792726 | 0.000343693861847958  | up | Pathway |
| PLA2G4F  | 4.09283475999268 | 0.0401368491550261    | up | Pathway |
| DLGAP5   | 4.09611700245789 | 0.00110509301084367   | up | Pathway |
| RGS1     | 4.10004335118271 | 0.00124880008254324   | up | Pathway |
| AIM1L    | 4.10649457292245 | 0.00035511239248199   | up | NA      |
| EVPL     | 4.14418288634796 | 0.000347671560518047  | up | Pathway |
| C1orf172 | 4.15601424087294 | 0.00383985220207522   | up | NA      |
| AP1M2    | 4.15965148088803 | 0.00624888804618131   | up | Pathway |
| NEIL3    | 4.1701988197952  | 0.000931600112341234  | up | NA      |
| BMP8A    | 4.17038953668279 | 0.000113657142831213  | up | Pathway |
| E2F8     | 4.1712785585092  | 0.000556422056111695  | up | Pathway |
| ZNF695   | 4.18327999300977 | 0.0000948332101410045 | up | NA      |
| FXYP3    | 4.18775009995743 | 0.00762910226193442   | up | Pathway |
| EXO1     | 4.18865913694722 | 0.000233023681866618  | up | Pathway |
| RAD54L   | 4.19118388967238 | 0.0000293106134078413 | up | Pathway |
| B3GALT5  | 4.19191513814152 | 0.033278857202715     | up | Pathway |
| MAPK15   | 4.19467516100246 | 0.00271742959675979   | up | Pathway |
| TDO2     | 4.20267264576092 | 0.00601521096434389   | up | Pathway |
| ESM1     | 4.2129155663698  | 0.00138944610105397   | up | Pathway |
| SPINT1   | 4.21634370464848 | 0.000664053732291982  | up | Pathway |
| COMP     | 4.21697757319679 | 0.00828525701461702   | up | Pathway |
| S100P    | 4.22150964115942 | 0.0125803689236678    | up | Pathway |
| KIAA1324 | 4.22992940403575 | 0.0150178978224102    | up | NA      |
| KLK4     | 4.23201111968415 | 0.00501499406465926   | up | Pathway |
| BIRC5    | 4.23975586765353 | 0.000533320369262864  | up | Pathway |
| B4GALNT4 | 4.2554732728037  | 0.000915276692190789  | up | NA      |
| C9orf152 | 4.26755411866275 | 0.0221255765870114    | up | NA      |
| FUT2     | 4.26888056269836 | 0.00984875232019564   | up | Pathway |
| EDN2     | 4.28597146923453 | 0.00451789014201225   | up | Pathway |
| PKMYT1   | 4.28987814276348 | 0.000402033618715887  | up | Pathway |
| CDH1     | 4.29250934629162 | 0.00879568643309762   | up | Pathway |
| C5orf46  | 4.29581410372717 | 0.00203073193953047   | up | NA      |
| KIF14    | 4.29792912959661 | 0.0011393710066944    | up | Pathway |
| KIF4A    | 4.30031785204686 | 0.000422655761427861  | up | Pathway |
| WNT7B    | 4.31144970797847 | 0.0279094018088086    | up | Pathway |
| TMEM52B  | 4.31957573875663 | 0.000216329881928068  | up | NA      |
| ATP6V0D2 | 4.32606394470569 | 0.00272612419835538   | up | Pathway |
| UBE2C    | 4.32837661314579 | 0.000840027060867341  | up | Pathway |
| MMP3     | 4.32855007877641 | 0.00617849064155119   | up | Pathway |
| CELF5    | 4.33210377550953 | 0.00972254968752351   | up | NA      |
| SDC1     | 4.34541390162561 | 0.000362782043348919  | up | Pathway |
| MISP     | 4.35057042109413 | 0.00165254468618578   | up | Pathway |
| PRR15L   | 4.36029222962226 | 0.0123659286727766    | up | NA      |
| KRT80    | 4.36534267911231 | 0.00150230821724179   | up | Pathway |
| C1orf116 | 4.37233640357646 | 0.0104564655945482    | up | NA      |

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|------------|------------------|-----------------------|----|---------|
| KLC3       | 4.39152877488641 | 0.00389636423202183   | up | Pathway |
| CPNE7      | 4.40626808519386 | 0.00460648456323948   | up | Pathway |
| OVOL2      | 4.41133610542074 | 0.0121694911558815    | up | Pathway |
| TNNT1      | 4.41620006175927 | 0.0232111884782677    | up | Pathway |
| F2RL2      | 4.42063853242277 | 0.00471885773183127   | up | Pathway |
| INHBA      | 4.42645439509597 | 0.000063970729728925  | up | Pathway |
| RASEF      | 4.42876288845529 | 0.00798078523132244   | up | NA      |
| SGOL1      | 4.44547595712331 | 0.000295212942885313  | up | NA      |
| ERCC6L     | 4.45008199505872 | 0.000384763980417933  | up | Pathway |
| MKI67      | 4.45688938633244 | 0.0000835210703882731 | up | Pathway |
| NEK2       | 4.45690554308659 | 0.000123180519229478  | up | Pathway |
| E2F7       | 4.49467618968536 | 0.000116145582440322  | up | Pathway |
| CEACAM6    | 4.49984743978936 | 0.0163191461395652    | up | Pathway |
| IGFL2      | 4.52837230805188 | 0.000751117582664914  | up | NA      |
| SMIM22     | 4.54164350471305 | 0.00901198948306945   | up | Pathway |
| TMPRSS2    | 4.54834961762209 | 0.0119069572102935    | up | NA      |
| CAPN13     | 4.55170350966035 | 0.00775700125981247   | up | NA      |
| ADAMTS14   | 4.56440070954162 | 0.000422655761427861  | up | Pathway |
| CLEC5A     | 4.57103561992426 | 0.000248598917320596  | up | Pathway |
| ARMC3      | 4.57525389993196 | 0.00392715490930315   | up | NA      |
| CAPN9      | 4.58107020715432 | 0.00265375791816514   | up | Pathway |
| CACNG4     | 4.61013506837501 | 0.00643910889005658   | up | Pathway |
| CLDN4      | 4.61678796196774 | 0.00205820296556223   | up | Pathway |
| LRRC15     | 4.63584260614476 | 0.00138641690390131   | up | Pathway |
| OVOL1      | 4.63632405045167 | 0.00237750733161645   | up | Pathway |
| MARVELD3   | 4.65505206187843 | 0.0030742513166216    | up | Pathway |
| ATP2C2     | 4.66618735834296 | 0.00426390831046671   | up | Pathway |
| EPN3       | 4.67267052116451 | 0.00712630531540568   | up | NA      |
| TICRR      | 4.69113915533089 | 0.0000907487497202508 | up | Pathway |
| IQGAP3     | 4.70191100284228 | 0.000162610489219813  | up | Pathway |
| ST6GALNAC5 | 4.71327057855147 | 0.00121455867467012   | up | Pathway |
| CAMSAP3    | 4.71901339830188 | 0.00735443587241716   | up | Pathway |
| C1orf210   | 4.73678013665102 | 0.00454529270740616   | up | NA      |
| RAB25      | 4.76013211831843 | 0.00165780572876931   | up | Pathway |
| CBLC       | 4.77569065167934 | 0.00258052237930075   | up | Pathway |
| ELF3       | 4.78378137193348 | 0.00162988989398329   | up | Pathway |
| PVRL4      | 4.78966662713827 | 0.00167836697251438   | up | NA      |
| S100A14    | 4.79764366444056 | 0.012194856171773     | up | Pathway |
| GRHL2      | 4.8174384287864  | 0.00345806640655465   | up | Pathway |
| PRSS22     | 4.82844903596401 | 0.00356982149049716   | up | NA      |
| KIF18B     | 4.83946376549738 | 0.000141818334379598  | up | Pathway |
| LAD1       | 4.89095767396952 | 0.0024543271402838    | up | NA      |
| AUNIP      | 4.89571494059834 | 0.0000976214217055977 | up | Pathway |
| KIAA1199   | 4.89725468326449 | 0.00721812611063696   | up | NA      |
| COL22A1    | 4.92750596337662 | 0.00142304010132895   | up | Pathway |
| CLDN3      | 4.93232830712026 | 0.0100751328258592    | up | Pathway |
| OLR1       | 4.93363625945041 | 0.000118560170296314  | up | NA      |

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| EPCAM      | 4.96662532110052 | 0.00197239006890241   | up | Pathway |
| FAM83H-AS1 | 4.97021721578249 | 0.00039694894959709   | up | NA      |
| ADAMDEC1   | 4.97927727053638 | 0.00270055283298547   | up | Pathway |
| KIF26B     | 5.02397906548448 | 0.0000352912930170513 | up | Pathway |
| RBBP8NL    | 5.05007184734798 | 0.00138046603939258   | up | NA      |
| CHRNA1     | 5.09530693226678 | 0.0000292644696970919 | up | Pathway |
| CCDC64B    | 5.10364734535457 | 0.0098802366493417    | up | NA      |
| PRSS8      | 5.16774053310092 | 0.00491317584754662   | up | Pathway |
| ALDH3B2    | 5.22277994299483 | 0.0131197189562952    | up | Pathway |
| SOX11      | 5.33885721191544 | 0.00023427802547337   | up | Pathway |
| GRM4       | 5.6900012100117  | 0.000960026707087691  | up | Pathway |
| SLC24A2    | 5.8307316055099  | 0.000104447813318692  | up | Pathway |
| PPAPDC1A   | 5.89441794332459 | 0.0000640331291124177 | up | NA      |
| MMP11      | 5.93725084558441 | 4.93078487897174E-06  | up | Pathway |
| SYT13      | 5.99051358896842 | 0.00717527616884998   | up | Pathway |
| ESRP1      | 5.99542029991487 | 0.00123650385139297   | up | Pathway |
| IBSP       | 6.14704576164679 | 0.0000180908232180651 | up | Pathway |
| MMP1       | 6.48157335078994 | 0.000565906742003079  | up | Pathway |
| COL11A1    | 6.64567184111418 | 6.42952632029787E-06  | up | Pathway |
| STRA6      | 6.77790701215419 | 0.000795808191345553  | up | Pathway |
| MMP13      | 6.81066822017292 | 0.0000115988018709341 | up | Pathway |
| COL10A1    | 7.47891707111377 | 0.0000110323197280703 | up | Pathway |