

Supplementary Table S1: Information for 85 BCIs of HLJDD.

Mol ID	Molecule Name	OB (%)	DL	Source
MOL000073	ent-Epicatechin	48.96	0.24	HuangQin
MOL000098	quercetin	46.43	0.28	HuangBai,HuangLian,ZhiZi
MOL000173	wogonin	30.68	0.23	HuangQin
MOL000228	(2R)-7-hydroxy-5-methoxy-2-phenyl chroman-4-one	55.23	0.2	HuangQin
MOL000358	beta-sitosterol	36.91	0.75	HuangBai,HuangQin,ZhiZi
MOL000359	sitosterol	36.91	0.75	HuangQin
MOL000422	kaempferol	41.88	0.24	ZhiZi
MOL000449	Stigmasterol	43.83	0.76	HuangBai,HuangQin,ZhiZi
MOL000525	Norwogonin	39.4	0.21	HuangQin
MOL000552	5,2'-Dihydroxy-6,7,8-trimethoxyflavo ne	31.71	0.35	HuangQin
MOL000622	Magnograndiolide	63.71	0.19	HuangBai,HuangLian
MOL000762	Palmidin A	35.36	0.65	HuangBai,HuangLian
MOL000785	palmatine	64.6	0.65	HuangBai,HuangLian
MOL000787	Fumarine	59.26	0.83	HuangBai
MOL000790	Isocorypalmine	35.77	0.59	HuangBai
MOL001131	phellamurin_qt	56.6	0.39	HuangBai
MOL001406	crocetin	35.3	0.26	ZhiZi
MOL001454	berberine	36.86	0.78	HuangBai,HuangLian
MOL001455	(S)-Canadine	53.83	0.77	HuangBai
MOL001458	coptisine	30.67	0.86	HuangBai,HuangLianHuang Qin
MOL001490	bis[(2S)-2-ethylhexyl] benzene-1,2-dicarboxylate	43.59	0.35	HuangQin
MOL001494	Mandenol	42	0.19	ZhiZi
MOL001506	Supraene	33.55	0.42	HuangQin,ZhiZi
MOL001663	(4aS,6aR,6aS,6bR,8aR,10R,12aR,1 4bS)-10-hydroxy-2,2,6a,6b,9,9,12a- heptamethyl-1,3,4,5,6,6a,7,8,8a,10, 11,12,13,14b-tetradecahydronicene- 4a-carboxylic acid	32.03	0.76	ZhiZi
MOL001689	acacetin	34.97	0.24	HuangQin
MOL001771	poriferast-5-en-3beta-ol	36.91	0.75	HuangBai
MOL001941	Ammidin	34.55	0.22	ZhiZi
MOL001942	isoimperatorin	45.46	0.23	ZhiZi
MOL002636	Kihadalactone A	34.21	0.82	HuangBai
MOL002641	Phellavin_qt	35.86	0.44	HuangBai
MOL002643	delta 7-stigmastenol	37.42	0.75	HuangBai
MOL002644	Phellopterin	40.19	0.28	HuangBai
MOL002651	Dehydrotanshinone II A	43.76	0.4	HuangBai

MOL002652	delta7-Dehydrosophoramine	54.45	0.25	HuangBai
MOL002656	dihydroniloticin	36.43	0.81	HuangBai
MOL002659	kihadanin A	31.6	0.7	HuangBai
MOL002660	niloticin	41.41	0.82	HuangBai
MOL002662	rutaecarpine	40.3	0.6	HuangBai
MOL002663	Skimmianin	40.14	0.2	HuangBai
MOL002666	Chelerythrine	34.18	0.78	HuangBai
MOL002668	Worenine	45.83	0.87	HuangBai,HuangLian
MOL002670	Cavidine	35.64	0.81	HuangBai
MOL002671	Candletoxin A	31.81	0.69	HuangBai
MOL002672	Hericenone H	39	0.63	HuangBai
MOL002673	Hispidone	36.18	0.83	HuangBai
MOL002714	baicalein	33.52	0.21	HuangQin
MOL002879	Diop	43.59	0.39	HuangQin
MOL002883	Ethyl oleate (NF)	32.4	0.19	ZhiZi
MOL002894	berberrubine	35.74	0.73	HuangBai,HuangLian
MOL002897	epiberberine	43.09	0.78	HuangLian,HuangQin
MOL002903	(R)-Canadine	55.37	0.77	HuangLian
MOL002904	Berlambine	36.68	0.82	HuangLian
MOL002907	Corchoroside A_qt	104.95	0.78	HuangLian
MOL002908	5,8,2'-Trihydroxy-7-methoxyflavone	37.01	0.27	HuangQin
MOL002909	5,7,2,5-tetrahydroxy-8,6-dimethoxyflavone	33.82	0.45	HuangQin
MOL002910	Carthamidin	41.15	0.24	HuangQin
MOL002911	2,6,2',4'-tetrahydroxy-6'-methoxychalcone	69.04	0.22	HuangQin
MOL002913	Dihydrobaicalin_qt	40.04	0.21	HuangQin
MOL002914	Eriodyctiol (flavanone)	41.35	0.24	HuangQin
MOL002915	Salvigenin	49.07	0.33	HuangQin
MOL002917	5,2',6'-Trihydroxy-7,8-dimethoxyflavone	45.05	0.33	HuangQin
MOL002925	5,7,2',6'-Tetrahydroxyflavone	37.01	0.24	HuangQin
MOL002926	dihydrooroxylin A	38.72	0.23	HuangQin
MOL002927	Skullcapflavone II	69.51	0.44	HuangQin
MOL002928	oroxylin a	41.37	0.23	HuangQin
MOL002932	Panicolin	76.26	0.29	HuangQin
MOL002933	5,7,4'-Trihydroxy-8-methoxyflavone	36.56	0.27	HuangQin
MOL002934	NEOBAICALEIN	104.34	0.44	HuangQin
MOL002937	DIHYDROOROXYLIN	66.06	0.23	HuangQin
MOL003095	5-hydroxy-7-methoxy-2-(3,4,5-trimethoxyphenyl) chromone	51.96	0.41	ZhiZi
MOL004561	Sudan III	84.07	0.59	ZhiZi
MOL005438	campesterol	37.58	0.71	HuangBai

MOL006392	dihydroniloticin	36.43	0.82	HuangBai
MOL006401	melianone	40.53	0.78	HuangBai
MOL006413	phellochin	35.41	0.82	HuangBai
MOL006422	thalifendine	44.41	0.73	HuangBai
MOL007245	3-Methylkempferol	60.16	0.26	ZhiZi
MOL008206	Moslosooflavone	44.09	0.25	HuangQin
MOL008647	Moupinamide	86.71	0.26	HuangLian
MOL009038	GBGB	45.58	0.83	ZhiZi
MOL010415	11,13-Eicosadienoic acid, methyl ester	39.28	0.23	HuangQin
MOL012245	5,7,4'-trihydroxy-6-methoxyflavanone	36.63	0.27	HuangQin
MOL012246	5,7,4'-trihydroxy-8-methoxyflavanone	74.24	0.26	HuangQin
MOL012266	rivularin	37.94	0.37	HuangQin
MOL013352	Obacunone	43.29	0.77	HuangBai,HuangLian

Supplementary Table S2: The DEGs between UC tissue samples and normal tissue samples.

Gene name	Log ₂ FC	P.Value	adj.P.Val	Gene class
MMP3	5.105582923	2.66E-23	1.18E-20	up
SLC6A14	5.009476355	3.25E-41	6.46E-37	up
DUOX2	4.914188342	2.34E-33	1.55E-29	up
DEFB4A	4.583657307	1.28E-14	5.71E-13	up
CHI3L1	4.566604926	3.25E-22	1.06E-19	up
S100A8	4.311166831	2.43E-22	8.35E-20	up
IL8	3.997391954	2.45E-17	2.40E-15	up
CXCL8	3.997391954	2.45E-17	2.40E-15	up
TNIP3	3.882058292	3.68E-19	6.01E-17	up
REG3A	3.873189491	1.36E-11	2.71E-10	up
CXCL1	3.814936782	1.12E-27	1.71E-24	up
REG1A	3.706336289	2.70E-11	5.01E-10	up
REG1B	3.579290969	5.15E-08	4.35E-07	up
VNN1	3.417585386	2.27E-24	1.46E-21	up
MMP10	3.413122496	5.89E-19	8.96E-17	up
KLK10	3.410769622	1.39E-11	2.76E-10	up
FCGR3B	3.395420033	2.72E-15	1.43E-13	up
GPR109B	3.315846141	1.32E-12	3.47E-11	up
AQP9	3.31164532	7.76E-13	2.16E-11	up
PROK2	3.244370936	5.52E-12	1.23E-10	up
DUOXA2	3.242964204	1.42E-22	5.32E-20	up
DEFA5	3.205622167	6.18E-09	6.45E-08	up
SERPINB5	3.203710345	7.04E-19	1.04E-16	up
TCN1	3.168626437	6.88E-14	2.51E-12	up

DEFA6	3.133857964	4.65E-10	6.32E-09	up
LOC100288985	3.071798686	9.08E-14	3.22E-12	up
PRRX1	3.066507718	2.37E-23	1.09E-20	up
IDO1	3.060743514	7.02E-16	4.49E-14	up
IL1B	3.052697373	5.21E-16	3.48E-14	up
CXCL2	3.032518719	7.76E-20	1.50E-17	up
IL1RN	3.017757964	9.17E-26	1.07E-22	up
CXCL9	2.978891461	3.77E-18	4.53E-16	up
SOCS3	2.960253202	9.99E-20	1.88E-17	up
SERPINA3	2.959840394	8.47E-16	5.32E-14	up
CXCL11	2.912752381	2.18E-14	9.08E-13	up
TRIM29	2.885618555	7.34E-25	5.85E-22	up
MMP1	2.844199507	2.94E-18	3.68E-16	up
CXCL13	2.843093268	1.98E-11	3.77E-10	up
LCN2	2.833235961	2.10E-31	5.98E-28	up
PDPN	2.81887931	2.73E-21	7.60E-19	up
CTLA4	2.811913957	5.32E-19	8.28E-17	up
IL13RA2	2.794836453	8.52E-11	1.38E-09	up
KYNU	2.768413793	2.50E-20	5.78E-18	up
CXCL5	2.708377833	1.31E-08	1.27E-07	up
STC1	2.707484236	3.36E-12	8.04E-11	up
TNC	2.666145484	4.73E-17	4.34E-15	up
BCL2A1	2.649308539	2.91E-15	1.51E-13	up
CXCL6	2.640872414	8.46E-14	3.02E-12	up
FPR1	2.613876026	5.12E-14	1.93E-12	up
GREM1	2.583280296	1.99E-15	1.11E-13	up
MMP12	2.581396552	3.81E-20	8.11E-18	up
MMP9	2.56551133	1.32E-17	1.40E-15	up
CXCL3	2.559807389	7.20E-23	2.87E-20	up
TDO2	2.549479475	5.68E-15	2.78E-13	up
PTGS2	2.544686371	7.94E-10	1.02E-08	up
KIAA1199	2.533436782	1.92E-10	2.85E-09	up
S100A12	2.528511823	1.72E-09	2.03E-08	up
S100A9	2.522174877	2.30E-14	9.51E-13	up
CCL18	2.509685714	1.02E-12	2.77E-11	up
TNFAIP6	2.479783744	1.77E-10	2.65E-09	up
CDH3	2.412320197	7.93E-22	2.47E-19	up
DUOXA1	2.411326929	6.81E-18	7.88E-16	up
LAMP3	2.409577833	1.28E-16	9.96E-15	up
CXCL10	2.408858456	3.19E-12	7.70E-11	up
C2CD4A	2.398782594	4.54E-19	7.35E-17	up
C4orf7	2.381729064	1.77E-08	1.66E-07	up
SELL	2.360595731	1.78E-12	4.54E-11	up

DMBT1	2.358322824	1.59E-14	6.91E-13	up
CYR61	2.351509524	4.81E-17	4.40E-15	up
SELP	2.331929557	3.96E-15	2.02E-13	up
PDE4B	2.3227867	9.55E-16	5.87E-14	up
PI3	2.313507389	2.66E-27	3.78E-24	up
C3	2.31234335	6.43E-16	4.18E-14	up
CD274	2.302016256	2.96E-16	2.11E-14	up
C4BPB	2.293817734	3.76E-17	3.56E-15	up
SPP1	2.269367816	6.66E-09	6.89E-08	up
THBS2	2.262248933	2.39E-11	4.50E-10	up
ZBP1	2.257488506	6.76E-17	5.73E-15	up
CLDN2	2.257188506	1.25E-17	1.33E-15	up
MMP7	2.223987356	3.45E-14	1.34E-12	up
LTF	2.216952381	1.31E-08	1.27E-07	up
SLC6A20	2.194490476	2.16E-15	1.19E-13	up
MS4A1	2.184413136	2.65E-08	2.40E-07	up
CFB	2.184179967	6.57E-24	3.49E-21	up
FGR	2.182579803	1.88E-16	1.39E-14	up
KCND3	2.161907553	2.77E-23	1.20E-20	up
EGFL6	2.155565189	6.55E-10	8.62E-09	up
TWIST1	2.147639573	1.80E-13	6.00E-12	up
CHI3L2	2.143307225	4.56E-11	7.96E-10	up
IL24	2.142160099	3.80E-09	4.14E-08	up
NR4A3	2.138506732	2.10E-10	3.07E-09	up
SLC2A3	2.129349425	1.33E-15	7.84E-14	up
CLEC4E	2.129255172	2.42E-12	5.99E-11	up
GZMB	2.123915764	4.53E-13	1.36E-11	up
TIMP1	2.115407718	1.94E-32	6.42E-29	up
CSF3R	2.109347455	7.46E-11	1.23E-09	up
TGM2	2.109221182	3.46E-22	1.09E-19	up
RGS4	2.100563218	1.42E-10	2.18E-09	up
TACSTD2	2.098512808	1.20E-14	5.40E-13	up
PCDH17	2.091103777	3.99E-16	2.78E-14	up
PRAC	2.090096059	2.10E-07	1.52E-06	up
SERPINB7	2.084840066	1.32E-07	1.01E-06	up
EMR2	2.083907225	4.79E-15	2.39E-13	up
CXCR2	2.074908046	4.24E-10	5.80E-09	up
REG4	2.074883415	2.41E-23	1.09E-20	up
FAM40B	2.074322496	9.19E-16	5.72E-14	up
GZMK	2.053637603	1.15E-16	9.21E-15	up
SIK1	2.049714614	1.51E-16	1.15E-14	up
CFI	2.042413136	6.41E-14	2.36E-12	up
JAK3	2.014273235	1.78E-13	5.96E-12	up

PLA2G2D	2.010565681	2.78E-09	3.13E-08	up
S100A7	1.996610016	8.80E-06	4.53E-05	up
NNMT	1.995039573	1.22E-18	1.65E-16	up
FAP	1.993049589	2.63E-10	3.78E-09	up
CCL20	1.977201642	3.32E-11	6.02E-10	up
PDZK1IP1	1.967794417	3.62E-21	9.49E-19	up
MNDA	1.966669294	3.79E-12	8.94E-11	up
FIBIN	1.959890969	2.53E-11	4.72E-10	up
CD55	1.957441215	5.16E-20	1.07E-17	up
OSMR	1.953289327	2.03E-18	2.60E-16	up
CCL2	1.952432348	3.36E-13	1.04E-11	up
CHST2	1.952319376	9.27E-18	1.04E-15	up
GUCY1B3	1.951798686	6.09E-18	7.22E-16	up
TAGAP	1.947466174	7.73E-12	1.65E-10	up
SNX10	1.945841872	4.26E-16	2.96E-14	up
CCL19	1.943751724	6.38E-09	6.63E-08	up
FCRL5	1.941379639	2.71E-11	5.03E-10	up
HLA-DOB	1.934481609	3.97E-12	9.27E-11	up
HAPLN3	1.929074384	2.10E-17	2.10E-15	up
FAIM2	1.927684072	5.53E-19	8.53E-17	up
IRAK3	1.924413629	3.23E-25	2.93E-22	up
IGHV1-69	1.921398522	1.05E-07	8.21E-07	up
MIR155HG	1.91675665	6.52E-11	1.10E-09	up
IGDCC4	1.916469951	1.88E-20	4.52E-18	up
NCF2	1.91433711	2.47E-14	1.01E-12	up
LAX1	1.911008539	5.78E-14	2.15E-12	up
COL12A1	1.909348276	2.33E-10	3.38E-09	up
TMEM163	1.892721182	2.39E-10	3.45E-09	up
KIAA0802	1.881420361	5.67E-17	4.95E-15	up
HGF	1.874218227	1.89E-11	3.61E-10	up
BGN	1.873513136	1.12E-14	5.12E-13	up
PLAU	1.861776683	1.64E-16	1.23E-14	up
CTSE	1.856209852	4.39E-13	1.32E-11	up
PLA1A	1.855809031	1.73E-15	9.86E-14	up
CTHRC1	1.851310673	3.45E-11	6.24E-10	up
ANXA1	1.848134975	1.32E-19	2.39E-17	up
IL33	1.842593103	9.49E-13	2.59E-11	up
ITGAX	1.84113514	4.91E-14	1.86E-12	up
FCRL3	1.835416749	3.86E-08	3.36E-07	up
PHLDA1	1.833250082	1.07E-15	6.43E-14	up
ARNTL2	1.825833498	5.90E-26	7.35E-23	up
ADAMTS1	1.823177668	5.70E-17	4.95E-15	up
KIAA0125	1.80634647	9.08E-10	1.15E-08	up

EGR3	1.805524138	1.30E-10	2.02E-09	up
PTGES	1.795101149	6.68E-12	1.45E-10	up
P2RX5	1.794002299	8.80E-10	1.12E-08	up
STEAP4	1.778513465	9.56E-13	2.61E-11	up
GPR176	1.776346962	8.87E-15	4.15E-13	up
SLC16A4	1.775133662	5.23E-10	7.01E-09	up
CATSPERB	1.773389163	3.50E-12	8.29E-11	up
AIM2	1.762101642	1.24E-13	4.28E-12	up
SDR16C5	1.75711133	1.79E-16	1.33E-14	up
CD79A	1.754462233	1.02E-12	2.77E-11	up
PARP8	1.753121018	6.08E-28	1.21E-24	up
CCL11	1.751577011	2.13E-15	1.17E-13	up
ABCA12	1.750648112	6.43E-16	4.18E-14	up
LAIR2	1.75049376	8.22E-09	8.35E-08	up
CTSK	1.749536617	5.85E-20	1.17E-17	up
TREM1	1.746225287	4.37E-08	3.76E-07	up
TRIB2	1.744483744	3.83E-17	3.62E-15	up
S100P	1.743041544	1.93E-25	1.92E-22	up
G0S2	1.741816092	2.08E-11	3.94E-10	up
ICAM1	1.739963711	2.75E-16	1.99E-14	up
C4BPA	1.737463547	3.90E-10	5.39E-09	up
GEM	1.737299343	3.77E-12	8.91E-11	up
GBP1	1.735813629	2.09E-13	6.85E-12	up
CHN1	1.734189327	2.45E-13	7.90E-12	up
IGFBP5	1.733759934	1.63E-16	1.23E-14	up
SAA4	1.731551724	8.49E-09	8.58E-08	up
ECSCR	1.731077997	3.20E-18	3.95E-16	up
SLC7A11	1.728557964	5.93E-15	2.89E-13	up
CR2	1.727654187	1.28E-05	6.35E-05	up
CR1	1.721624302	1.46E-11	2.87E-10	up
IFIT3	1.719785386	4.60E-13	1.38E-11	up
INSL5	1.717290805	5.43E-05	0.000233392	up
LRP8	1.708972906	2.17E-20	5.08E-18	up
FAM129C	1.707134483	2.11E-05	9.99E-05	up
APOL1	1.705085878	9.77E-20	1.85E-17	up
MYEOV	1.704541379	8.53E-17	7.11E-15	up
KCNJ15	1.70400312	3.79E-08	3.30E-07	up
IGHD	1.702421018	8.69E-06	4.48E-05	up
HSD11B1	1.698267816	3.97E-09	4.30E-08	up
ITGA5	1.696098686	1.28E-18	1.70E-16	up
PLEK	1.69585468	1.84E-11	3.52E-10	up
GPR183	1.692981117	1.20E-14	5.40E-13	up
SOD2	1.682309524	3.49E-12	8.29E-11	up

CCL22	1.679062233	3.75E-11	6.70E-10	up
CHRD2	1.675349589	9.80E-11	1.57E-09	up
THBD	1.672966502	3.19E-14	1.25E-12	up
VSIG1	1.672826273	3.32E-08	2.92E-07	up
SLC7A5	1.672579146	1.41E-15	8.23E-14	up
CDH11	1.667497865	8.72E-16	5.46E-14	up
CCL4	1.662445977	6.76E-11	1.13E-09	up
FCRL1	1.66235468	1.21E-06	7.48E-06	up
CPXM1	1.661270936	1.29E-14	5.72E-13	up
DOK3	1.660214286	1.63E-11	3.17E-10	up
THY1	1.655615107	4.97E-17	4.49E-15	up
GBP5	1.655571921	6.45E-13	1.84E-11	up
GPR116	1.652065025	6.61E-13	1.88E-11	up
DUSP4	1.650520361	2.55E-16	1.87E-14	up
CLU	1.647756322	1.61E-11	3.15E-10	up
CCR6	1.645831199	2.76E-11	5.10E-10	up
PCSK1	1.645668309	5.52E-09	5.82E-08	up
OAS2	1.642208867	7.67E-14	2.76E-12	up
LILRB2	1.638312972	5.87E-14	2.18E-12	up
CD72	1.637640887	2.38E-09	2.73E-08	up
BANK1	1.634540558	4.96E-08	4.21E-07	up
MASP1	1.629737603	2.51E-08	2.28E-07	up
MGC29506	1.629735304	1.00E-11	2.08E-10	up
FAM65C	1.628832841	2.44E-15	1.30E-13	up
EOMES	1.627153695	2.13E-15	1.17E-13	up
DERL3	1.623843678	5.41E-12	1.21E-10	up
SMARCB1	1.618533169	2.50E-12	6.18E-11	up
TRIM22	1.615410837	6.85E-16	4.41E-14	up
SPRR1B	1.614813465	0.000156484	0.000596189	up
RHOH	1.610422167	6.06E-10	8.04E-09	up
ELK3	1.608667816	3.02E-20	6.83E-18	up
SOCS1	1.606898522	1.79E-16	1.33E-14	up
LOXL2	1.60643908	1.03E-17	1.12E-15	up
LRRK2	1.605751232	1.89E-08	1.77E-07	up
CFP	1.602587685	9.58E-15	4.46E-13	up
COL6A3	1.600906404	4.18E-23	1.77E-20	up
PTPRC	1.597700821	8.36E-16	5.26E-14	up
FILIP1L	1.597150082	6.93E-20	1.35E-17	up
GPX8	1.594785057	2.30E-15	1.25E-13	up
CD19	1.590627915	6.27E-08	5.18E-07	up
F2RL2	1.588534319	2.44E-15	1.30E-13	up
CIITA	1.586905583	1.51E-12	3.91E-11	up
PTGDS	1.585202299	8.46E-11	1.37E-09	up

LOC399959	1.5838133	2.72E-13	8.69E-12	up
PRR16	1.582890148	7.57E-12	1.63E-10	up
VNN2	1.581033662	7.91E-09	8.05E-08	up
ANGPTL2	1.576240722	1.03E-14	4.75E-13	up
RSPO3	1.574349425	4.67E-11	8.15E-10	up
LPCAT1	1.574271757	8.32E-28	1.45E-24	up
IL7R	1.574006568	1.40E-12	3.66E-11	up
SP140	1.57220821	7.49E-13	2.09E-11	up
COL4A1	1.570602627	3.14E-19	5.25E-17	up
CD83	1.566859278	8.48E-10	1.08E-08	up
KLHL5	1.560417241	5.67E-17	4.95E-15	up
FCGR1B	1.560240722	7.04E-11	1.17E-09	up
TCL1A	1.559442857	9.57E-05	0.000385067	up
PLA2G2A	1.557522332	1.75E-18	2.31E-16	up
C2	1.55410509	5.17E-24	2.94E-21	up
NOS2	1.552404105	1.30E-10	2.02E-09	up
GUCY1A3	1.5503	3.93E-11	6.98E-10	up
ROBO1	1.548346962	1.46E-14	6.44E-13	up
GAS1	1.547815435	7.03E-05	0.000293751	up
SLAMF6	1.547371757	2.30E-12	5.72E-11	up
ST3GAL1	1.547027422	1.64E-15	9.42E-14	up
MIAT	1.545470608	2.77E-10	3.96E-09	up
BHLHE22	1.543334319	4.93E-11	8.55E-10	up
SLA	1.542040558	6.05E-17	5.22E-15	up
MME	1.541625452	8.97E-10	1.14E-08	up
IKBIP	1.539170936	1.09E-18	1.49E-16	up
CSF2RB	1.536724466	5.40E-10	7.22E-09	up
LILRA2	1.536102627	6.40E-10	8.44E-09	up
CLEC5A	1.532699672	2.46E-08	2.24E-07	up
SLCO1B3	1.529202627	1.95E-07	1.43E-06	up
SELE	1.528252874	5.41E-06	2.93E-05	up
EBF1	1.517796223	1.65E-09	1.97E-08	up
EIF5A2	1.517627258	3.81E-18	4.55E-16	up
DYSF	1.51680624	1.91E-14	8.06E-13	up
AREG	1.514506404	3.16E-12	7.64E-11	up
ELTD1	1.511999015	2.08E-14	8.72E-13	up
MGP	1.511052545	3.85E-13	1.18E-11	up
VWF	1.506830049	1.34E-11	2.68E-10	up
ACSL4	1.503851888	5.76E-12	1.28E-10	up
SAMD9L	1.502270936	6.32E-18	7.40E-16	up
BEST4	-1.509373727	9.83E-08	7.77E-07	down
AIFM3	-1.509957635	4.20E-11	7.39E-10	down
C10orf116	-1.512471921	9.99E-21	2.52E-18	down

EYA2	-1.513284236	4.58E-13	1.37E-11	down
PXMP2	-1.517189163	3.43E-14	1.34E-12	down
GDPD2	-1.524343186	8.42E-13	2.32E-11	down
CDHR1	-1.532785878	6.67E-07	4.36E-06	down
EFNA1	-1.536175862	5.08E-13	1.49E-11	down
C10orf108	-1.538797537	4.06E-15	2.06E-13	down
FAM55D	-1.544185878	2.44E-07	1.74E-06	down
SLC39A2	-1.545965025	3.31E-19	5.44E-17	down
PLEKHG6	-1.553013136	5.02E-13	1.48E-11	down
ESPN	-1.555070279	1.88E-12	4.79E-11	down
TMEM171	-1.557557964	7.94E-14	2.85E-12	down
NEURL1B	-1.558563218	1.16E-19	2.14E-17	down
GSTA1	-1.559916092	8.32E-08	6.68E-07	down
LOC100287411	-1.568869951	3.64E-15	1.87E-13	down
LOC727916	-1.573654023	2.95E-13	9.30E-12	down
ANK3	-1.580686864	8.68E-19	1.25E-16	down
LIPC	-1.584017898	1.59E-22	5.85E-20	down
GCNT2	-1.592902135	7.94E-21	2.03E-18	down
FMO4	-1.599639901	3.98E-17	3.72E-15	down
ETNK1	-1.605910181	3.24E-21	8.84E-19	down
LOC100286922	-1.608550575	3.55E-17	3.41E-15	down
PPARG	-1.614452709	3.36E-13	1.04E-11	down
PIGZ	-1.620480131	5.06E-10	6.81E-09	down
SGK2	-1.623861084	1.89E-12	4.80E-11	down
HEPACAM2	-1.624314778	1.33E-05	6.58E-05	down
VSTM2A	-1.625163711	1.89E-15	1.07E-13	down
EXPH5	-1.628878325	2.79E-10	3.98E-09	down
EDN3	-1.629215764	1.27E-09	1.54E-08	down
C1orf175	-1.63278358	2.27E-13	7.38E-12	down
MEP1A	-1.644277668	1.35E-10	2.09E-09	down
RHOJ	-1.648068309	1.82E-18	2.38E-16	down
LRRC19	-1.659251232	2.09E-10	3.07E-09	down
LDHD	-1.66052266	1.00E-15	6.11E-14	down
USP2	-1.664816749	2.12E-10	3.10E-09	down
KIAA1984	-1.677204598	4.02E-14	1.54E-12	down
INPP5J	-1.683767816	1.02E-18	1.43E-16	down
TMEM56	-1.684913957	4.47E-16	3.07E-14	down
CCNJL	-1.685094089	4.69E-19	7.53E-17	down
FAM82A1	-1.686720197	4.79E-15	2.39E-13	down
MB	-1.687355993	6.37E-09	6.62E-08	down
TMEM63C	-1.690029392	3.64E-17	3.47E-15	down
PTPRR	-1.690349097	8.84E-09	8.90E-08	down
METTL7B	-1.699011987	3.46E-12	8.21E-11	down

ISX	-1.702941051	1.04E-08	1.04E-07	down
FLJ22763	-1.703845649	2.02E-11	3.84E-10	down
ZNF575	-1.704782923	1.05E-21	3.11E-19	down
ENPP1	-1.706773399	2.57E-19	4.34E-17	down
LOC100128893	-1.714000821	1.21E-12	3.21E-11	down
NR1H4	-1.71406601	2.87E-11	5.28E-10	down
SCUBE2	-1.7148133	4.74E-24	2.78E-21	down
LOC100422737	-1.716173071	6.28E-15	3.04E-13	down
CDKN2B	-1.718584729	3.00E-11	5.49E-10	down
PADI2	-1.723572578	3.97E-14	1.52E-12	down
LOC646627	-1.724451067	3.76E-08	3.28E-07	down
C7orf10	-1.725023317	1.62E-17	1.69E-15	down
PBLD	-1.7269711	1.85E-14	7.85E-13	down
MS4A12	-1.734644663	4.19E-07	2.85E-06	down
UGT2B15	-1.739174384	1.11E-06	6.90E-06	down
RPS6KA6	-1.742337438	1.05E-17	1.14E-15	down
FLJ35024	-1.745970936	1.24E-18	1.67E-16	down
YBX2	-1.74792069	1.29E-10	2.01E-09	down
VLDLR	-1.749346798	4.63E-24	2.78E-21	down
FRMD1	-1.758215271	1.73E-17	1.76E-15	down
HSD17B2	-1.760987192	2.90E-15	1.51E-13	down
VIPR1	-1.767199836	6.50E-11	1.09E-09	down
MS4A8B	-1.768694581	1.05E-10	1.68E-09	down
TMEM37	-1.770342693	6.69E-12	1.45E-10	down
PAQR5	-1.770470936	5.49E-20	1.12E-17	down
SLC25A34	-1.776747783	3.53E-20	7.89E-18	down
SLC39A5	-1.786559442	4.60E-14	1.76E-12	down
TRHDE	-1.787890969	1.83E-25	1.92E-22	down
CNGA1	-1.793061412	3.34E-21	8.97E-19	down
PHLPP2	-1.799260427	3.42E-18	4.18E-16	down
B4GALNT2	-1.818643678	6.10E-24	3.38E-21	down
SLC4A4	-1.822183087	1.30E-08	1.26E-07	down
LOC25845	-1.825434811	2.91E-15	1.51E-13	down
SLC16A9	-1.826910673	6.40E-12	1.40E-10	down
PPARGC1A	-1.833709195	6.16E-13	1.77E-11	down
WDR78	-1.847634319	1.38E-19	2.48E-17	down
TMEM20	-1.849355829	1.28E-21	3.69E-19	down
NPY	-1.893928243	1.01E-17	1.11E-15	down
DPP10	-1.896852545	1.09E-32	5.24E-29	down
LOC100288092	-1.897361412	1.09E-14	4.98E-13	down
OSTBETA	-1.927264532	5.36E-13	1.57E-11	down
TUBAL3	-1.946329885	2.06E-14	8.68E-13	down
SLC23A3	-1.949557471	1.61E-23	7.81E-21	down

ANKRD43	-1.967200493	1.25E-11	2.52E-10	down
CYP4F2	-1.980938916	4.77E-16	3.26E-14	down
UGT1A6	-1.986738424	9.66E-16	5.92E-14	down
GUCA2A	-1.999787685	6.22E-10	8.22E-09	down
ACSF2	-2.013490805	5.97E-23	2.43E-20	down
PRAP1	-2.019073071	5.52E-11	9.49E-10	down
ANPEP	-2.019960591	8.06E-11	1.31E-09	down
FAM189A1	-2.052004269	9.03E-18	1.02E-15	down
PKIB	-2.060541215	7.21E-12	1.55E-10	down
DHRS11	-2.065951724	1.60E-16	1.21E-14	down
ABCB1	-2.0670867	1.71E-17	1.76E-15	down
PDE6A	-2.070992611	7.89E-25	6.04E-22	down
CAPN13	-2.073469458	1.35E-10	2.09E-09	down
PCDH20	-2.09722775	1.70E-09	2.02E-08	down
HSPB3	-2.111409195	4.49E-24	2.78E-21	down
FAM5C	-2.128840394	3.30E-18	4.06E-16	down
TEX11	-2.141362562	1.60E-17	1.67E-15	down
RUNDC3B	-2.16476486	6.71E-24	3.49E-21	down
CDKN2BAS	-2.168202463	2.70E-22	9.11E-20	down
CA1	-2.177052053	1.53E-06	9.31E-06	down
WSCD1	-2.230492118	6.83E-24	3.49E-21	down
ADH1C	-2.236926765	9.44E-10	1.19E-08	down
LAMA1	-2.284044499	2.56E-13	8.23E-12	down
APOBEC3B	-2.352381445	1.48E-24	1.02E-21	down
MT1M	-2.363885386	6.86E-11	1.14E-09	down
UGT2B17	-2.373620197	2.28E-05	0.00010692	down
SLC23A1	-2.397701314	1.32E-32	5.24E-29	down
SLC3A1	-2.409644663	1.08E-14	4.96E-13	down
BEST2	-2.431984565	8.03E-13	2.23E-11	down
AQP7	-2.452370772	2.03E-29	4.50E-26	down
SLC26A2	-2.453400164	7.16E-16	4.57E-14	down
DEFB1	-2.457067816	1.74E-17	1.77E-15	down
SLC17A4	-2.493070115	1.24E-15	7.39E-14	down
TRPM6	-2.533384072	2.07E-12	5.23E-11	down
CHP2	-2.580467652	2.24E-13	7.29E-12	down
SLC30A10	-2.613824138	6.05E-13	1.75E-11	down
NPY1R	-2.626588013	1.24E-24	9.11E-22	down
FLJ32063	-2.686870443	3.44E-14	1.34E-12	down
PITX2	-2.777535304	1.95E-20	4.62E-18	down
HSD3B2	-2.789092282	6.66E-19	9.90E-17	down
CWH43	-2.807515599	9.45E-12	1.97E-10	down
GUCA2B	-2.820729885	4.07E-12	9.48E-11	down
CYP2B7P1	-2.843197701	4.56E-23	1.89E-20	down

UGT2A3	-2.890092939	1.98E-18	2.56E-16	down
PNLIPRP2	-2.992193268	5.58E-14	2.09E-12	down
CYP2B6	-3.014818719	3.67E-20	8.04E-18	down
MEP1B	-3.015463218	4.99E-25	4.32E-22	down
SLC38A4	-3.045252381	1.70E-30	4.23E-27	down
GBA3	-3.078827422	1.78E-22	6.34E-20	down
ABCG2	-3.196533333	6.51E-20	1.28E-17	down
HMGCS2	-3.398166995	1.28E-14	5.71E-13	down
LOC389023	-3.51543711	6.76E-39	6.73E-35	down
PCK1	-3.631396223	2.69E-13	8.60E-12	down
CLDN8	-3.683299836	5.08E-10	6.83E-09	down
OSTalpha	-3.745492775	3.45E-22	1.09E-19	down
AQP8	-4.773067488	9.51E-22	2.91E-19	down

Supplementary Table S3: Common targets related to active ingredients

Mol ID	Molecule Name	Target	Source
MOL000098	quercetin	ABCG2, PPARG, PLAU, MMP3, CXCL2, ICAM1, DUOX2, CXCL11, CXCL8, SELE, THBD, CXCL10, SPP1, PTGS2, IL1B, CCL2, MMP1, MMP9	HuangBai,HuangLian,ZhiZi
MOL000173	wogonin	MMP9, PPARG, NOS2, CXCL8, PTGS2CCL2, MMP1	HuangQin
MOL000422	kaempferol	PPARG, NOS2, ICAM1, SELE, PTGS2	ZhiZi
MOL000525	Norwogonin	PPARG, NOS2, PTGS2	HuangQin
MOL002933	5,7,4'-Trihydroxy-8-methoxyflavone	PPARG, NOS2, PTGS2	HuangQin
MOL002934	NEOBAICALEIN	PPARG, NOS2, PTGS2	HuangQin
MOL003095	5-hydroxy-7-methoxy-2-(3,4,5-trimethoxyphenyl)chromone	PPARG, NOS2, PTGS2	ZhiZi
MOL008206	Moslosooflavone	PPARG, NOS2, PTGS2	HuangQin
MOL000449	Stigmasterol	ADH1C, PLAU, PTGS2	HuangBai,HuangQin,ZhiZi
MOL002662	rutaecarpine	CYP2B6, PTGS2	HuangBai
MOL000552	5,2'-Dihydroxy-6,7,8-trimethoxyflavone	NOS2, PTGS2	HuangQin
MOL000785	palmatine	NOS2, PTGS2	HuangBai,HuangLian

MOL001454	berberine	NOS2, PTGS2	HuangBai,HuangLian
MOL001458	coptisine	NOS2, PTGS2	HuangBai,HuangLian,HuangQin
MOL001689	acacetin	NOS2, PTGS2	HuangQin
MOL002668	Worenine	NOS2, PTGS2	HuangBai,HuangLian
MOL002894	berberrubine	NOS2, PTGS2	HuangBai,HuangLian
MOL002897	epiberberine	NOS2, PTGS2	HuangLian,HuangQin
MOL002904	Berlambine	NOS2, PTGS2	HuangLian
MOL002909	5,7,2,5-tetrahydroxy-8,6-dimethoxyflavone	NOS2, PTGS2	HuangQin
MOL002915	Salvigenin	NOS2, PTGS2	HuangQin
MOL002917	5,2',6'-Trihydroxy-7,8-dimethoxyflavone	NOS2, PTGS2	HuangQin
MOL002927	Skullcapflavone II	NOS2, PTGS2	HuangQin
MOL002928	oxylin a	NOS2, PTGS2	HuangQin
MOL002932	Panicolin	NOS2, PTGS2	HuangQin
MOL006422	thalifendine	NOS2, PTGS2	HuangBai
MOL007245	3-Methylkempferol	NOS2, PTGS2	ZhiZi
MOL012266	rivularin	NOS2, PTGS2	HuangQin
MOL002651	Dehydrotanshinone II A	PPARG, PTGS2	HuangBai
MOL000073	ent-Epicatechin	PTGS2	HuangQin
MOL000228	(2R)-7-hydroxy-5-methoxy-2-phenylchroman-4-one	PTGS2	HuangQin
MOL000358	beta-sitosterol	PTGS2	HuangBai,HuangQin,ZhiZi
MOL000787	Fumarine	PTGS2	HuangBai
MOL000790	Isocorypalmine	PTGS2	HuangBai
MOL001131	phellamurin_qt	PTGS2	HuangBai
MOL001406	crocin	PTGS2	ZhiZi
MOL001455	(S)-Canadine	PTGS2	HuangBai
MOL001494	Mandenol	PTGS2	ZhiZi
MOL001941	Ammidin	PTGS2	ZhiZi

MOL001942	isoimperatorin	PTGS2	ZhiZi
MOL002641	Phellavin_qt	PTGS2	HuangBai
MOL002644	Phellopterin	PTGS2	HuangBai
MOL002666	Chelerythrine	PTGS2	HuangBai
MOL002670	Cavidine	PTGS2	HuangBai
MOL002714	baicalein	PTGS2	HuangQin
MOL002903	(R)-Canadine	PTGS2	HuangLian
MOL002910	Carthamidin	PTGS2	HuangQin
MOL002913	Dihydrobaicalin_qt	PTGS2	HuangQin
MOL002914	Eriodyctiol (flavanone)	PTGS2	HuangQin
MOL002925	5,7,2',6'-Tetrahydroxyflavone	PTGS2	HuangQin
MOL002937	DIHYDROOROXYLIN	PTGS2	HuangQin
MOL004561	Sudan III	PTGS2	ZhiZi
MOL012245	5,7,4'-trihydroxy-6-methoxyflavanone	PTGS2	HuangQin
MOL012246	5,7,4'-trihydroxy-8-methoxyflavanone	PTGS2	HuangQin

Supplementary Table S4: The GO-BP terms enriched by target genes.

ID	Description	GeneRatio	p.adjust	Count
GO:0032496	response to lipopolysaccharide	7/10	4.89E-08	7
GO:0002237	response to molecule of bacterial origin	7/10	4.89E-08	7
GO:0150077	regulation of neuroinflammatory response	4/10	1.73E-06	4
GO:0070555	response to interleukin-1	5/10	7.04E-06	5
GO:0002685	regulation of leukocyte migration	5/10	7.04E-06	5
GO:0150076	neuroinflammatory response	4/10	7.04E-06	4
GO:0071216	cellular response to biotic stimulus	5/10	1.02E-05	5
GO:0030593	neutrophil chemotaxis	4/10	1.83E-05	4
GO:0034612	response to tumor necrosis factor	5/10	3.01E-05	5
GO:1990266	neutrophil migration	4/10	3.01E-05	4
GO:0045429	positive regulation of nitric oxide biosynthetic process	3/10	9.16E-05	3
GO:1904407	positive regulation of nitric oxide metabolic process	3/10	9.16E-05	3
GO:0030574	collagen catabolic process	3/10	9.16E-05	3
GO:0071347	cellular response to interleukin-1	4/10	9.16E-05	4
GO:2000377	regulation of reactive oxygen species metabolic process	4/10	0.000124295	4
GO:1904645	response to amyloid-beta	3/10	0.000141931	3

GO:0007566	embryo implantation	3/10	0.000151035	3
GO:2001234	negative regulation of apoptotic signaling pathway	4/10	0.000176902	4
GO:1903039	positive regulation of leukocyte cell-cell adhesion	4/10	0.000176902	4
GO:0051924	regulation of calcium ion transport	4/10	0.000207368	4
GO:0022617	extracellular matrix disassembly	3/10	0.000282963	3
GO:0072593	reactive oxygen species metabolic process	4/10	0.000299321	4
GO:2001057	reactive nitrogen species metabolic process	3/10	0.000306283	3
GO:0001660	fever generation	2/10	0.000306283	2
GO:0070098	chemokine-mediated signaling pathway	3/10	0.000306283	3
GO:0031652	positive regulation of heat generation	2/10	0.000357	2
GO:1990868	response to chemokine	3/10	0.000373169	3
GO:0031392	regulation of prostaglandin biosynthetic process	2/10	0.000394245	2
GO:0002526	acute inflammatory response	3/10	0.000473188	3
GO:0032963	collagen metabolic process	3/10	0.000489775	3
GO:0007159	leukocyte cell-cell adhesion	4/10	0.000515457	4
GO:0006959	humoral immune response	4/10	0.000570364	4
GO:0045765	regulation of angiogenesis	4/10	0.000658251	4
GO:0003158	endothelium development	3/10	0.000690392	3
GO:0060353	regulation of cell adhesion molecule production	2/10	0.000768863	2
GO:0006816	calcium ion transport	4/10	0.000768863	4
GO:0036499	PERK-mediated unfolded protein response	2/10	0.000793032	2
GO:0140467	integrated stress response signaling	2/10	0.000793032	2
GO:0060352	cell adhesion molecule production	2/10	0.000836734	2
GO:0010575	positive regulation of vascular endothelial growth factor production	2/10	0.001233525	2
GO:0051968	positive regulation of synaptic transmission	2/10	0.001538707	2
GO:0033198	response to ATP	2/10	0.00166515	2
GO:0045907	positive regulation of vasoconstriction	2/10	0.00166515	2
GO:0009612	response to mechanical stimulus	3/10	0.001759527	3
GO:0033280	response to vitamin D	2/10	0.001808611	2
GO:0071241	cellular response to inorganic substance	3/10	0.001988537	3
GO:0044706	multi-multicellular organism process	3/10	0.002102353	3
GO:0050920	regulation of chemotaxis	3/10	0.002163435	3
GO:0009743	response to carbohydrate	3/10	0.002253763	3
GO:0061028	establishment of endothelial barrier	2/10	0.002728213	2
GO:0007157	heterophilic cell-cell adhesion via plasma membrane cell adhesion molecules	2/10	0.002793347	2
GO:0031334	positive regulation of protein-containing complex assembly	3/10	0.002863186	3
GO:0006692	prostanoid metabolic process	2/10	0.002923575	2
GO:0006693	prostaglandin metabolic process	2/10	0.002923575	2

GO:0006984	ER-nucleus signaling pathway	2/10	0.003138568	2
GO:0071356	cellular response to tumor necrosis factor	3/10	0.003957993	3
GO:0070372	regulation of ERK1 and ERK2 cascade	3/10	0.004209396	3
GO:2000351	regulation of endothelial cell apoptotic process	2/10	0.004211516	2
GO:0010573	vascular endothelial growth factor production	2/10	0.004441883	2
GO:0046824	positive regulation of nucleocytoplasmic transport	2/10	0.004542761	2
GO:0050918	positive chemotaxis	2/10	0.004600863	2
GO:0070371	ERK1 and ERK2 cascade	3/10	0.004600863	3
GO:0071496	cellular response to external stimulus	3/10	0.004600863	3
GO:0050766	positive regulation of phagocytosis	2/10	0.004600863	2
GO:0072577	endothelial cell apoptotic process	2/10	0.004600863	2
GO:0019058	viral life cycle	3/10	0.00516182	3
GO:1904062	regulation of cation transmembrane transport	3/10	0.00538792	3
GO:0061844	antimicrobial humoral immune response mediated by antimicrobial peptide	2/10	0.00538792	2
GO:0062197	cellular response to chemical stress	3/10	0.005739753	3
GO:0071260	cellular response to mechanical stimulus	2/10	0.00580456	2
GO:0010038	response to metal ion	3/10	0.005936805	3
GO:0043154	negative regulation of cysteine-type endopeptidase activity involved in apoptotic process	2/10	0.006619855	2
GO:0046889	positive regulation of lipid biosynthetic process	2/10	0.00699374	2
GO:0042493	response to drug	3/10	0.007308535	3
GO:0033273	response to vitamin	2/10	0.007372802	2
GO:0035249	synaptic transmission	2/10	0.007979779	2
GO:0048661	positive regulation of smooth muscle cell proliferation	2/10	0.008821453	2
GO:1901570	fatty acid derivative biosynthetic process	2/10	0.008821453	2
GO:0002456	T cell mediated immunity	2/10	0.008934605	2
GO:0019233	sensory perception of pain	2/10	0.009219276	2
GO:0009314	response to radiation	3/10	0.00927231	3
GO:0043434	response to peptide hormone	3/10	0.00927231	3
GO:0006979	response to oxidative stress	3/10	0.009645084	3
GO:0031623	receptor internalization	2/10	0.010187003	2
GO:0042110	T cell activation	3/10	0.010782147	3
GO:0034605	cellular response to heat	2/10	0.01133538	2
GO:0046683	response to organophosphorus	2/10	0.012784874	2
GO:0035296	regulation of tube diameter	2/10	0.014257612	2
GO:0035150	regulation of tube size	2/10	0.014257612	2
GO:0044344	cellular response to fibroblast growth factor stimulus	2/10	0.01446073	2
GO:0044409	entry into host	2/10	0.01446073	2

GO:0051384	response to glucocorticoid	2/10	0.01446073	2
GO:0014074	response to purine-containing compound	2/10	0.014772914	2
GO:0071774	response to fibroblast growth factor	2/10	0.015402259	2
GO:0062013	positive regulation of small molecule metabolic process	2/10	0.015520911	2
GO:0008360	regulation of cell shape	2/10	0.015838186	2
GO:0051092	positive regulation of NF-kappaB transcription factor activity	2/10	0.016276007	2
GO:0030856	regulation of epithelial cell differentiation	2/10	0.017871907	2
GO:0048659	smooth muscle cell proliferation	2/10	0.018177302	2
GO:1901568	fatty acid derivative metabolic process	2/10	0.018177302	2
GO:0010634	positive regulation of epithelial cell migration	2/10	0.018295938	2
GO:0071346	cellular response to interferon-gamma	2/10	0.019355921	2
GO:0090316	positive regulation of intracellular protein transport	2/10	0.019355921	2
GO:0006986	response to unfolded protein	2/10	0.019474928	2
GO:0010565	regulation of cellular ketone metabolic process	2/10	0.020553582	2
GO:0003018	vascular process in circulatory system	2/10	0.020672818	2
GO:0043112	receptor metabolic process	2/10	0.02220432	2
GO:0071456	cellular response to hypoxia	2/10	0.023690167	2
GO:0002703	regulation of leukocyte mediated immunity	2/10	0.023690167	2
	T cell activation via T cell receptor contact with			
GO:0002291	antigen bound to MHC molecule on antigen presenting cell	1/10	0.023690167	1
GO:0019062	virion attachment to host cell	1/10	0.023690167	1
GO:0032308	positive regulation of prostaglandin secretion	1/10	0.023690167	1
GO:0033083	regulation of immature T cell proliferation	1/10	0.023690167	1
GO:0034350	regulation of glial cell apoptotic process	1/10	0.023690167	1
GO:0050870	positive regulation of T cell activation	2/10	0.02410848	2
GO:0033079	immature T cell proliferation	1/10	0.024272233	1
GO:0042118	endothelial cell activation	1/10	0.025811777	1
GO:0042368	vitamin D biosynthetic process	1/10	0.025811777	1
GO:0000302	response to reactive oxygen species	2/10	0.026184512	2
GO:0010623	programmed cell death involved in cell development	1/10	0.026829655	1
GO:0016264	gap junction assembly	1/10	0.026829655	1
GO:0033089	positive regulation of T cell differentiation in thymus	1/10	0.026829655	1
GO:0033127	regulation of histone phosphorylation	1/10	0.026829655	1
GO:0030213	hyaluronan biosynthetic process	1/10	0.027964674	1
GO:0034356	NAD biosynthesis via nicotinamide riboside salvage pathway	1/10	0.027964674	1
GO:0047484	regulation of response to osmotic stress	1/10	0.027964674	1

GO:0051607	defense response to virus	2/10	0.028634957	2
GO:0042180	cellular ketone metabolic process	2/10	0.028634957	2
GO:0034349	glial cell apoptotic process	1/10	0.028634957	1
GO:0042362	fat-soluble vitamin biosynthetic process	1/10	0.028634957	1
GO:0051044	positive regulation of membrane protein ectodomain proteolysis	1/10	0.028634957	1
GO:0060009	Sertoli cell development	1/10	0.028634957	1
GO:0002523	leukocyte migration involved in inflammatory response	1/10	0.029438949	1
GO:0051770	positive regulation of nitric-oxide synthase biosynthetic process	1/10	0.029438949	1
GO:0071732	cellular response to nitric oxide	1/10	0.029438949	1
GO:1900451	positive regulation of glutamate receptor signaling pathway	1/10	0.029438949	1
GO:0015732	prostaglandin transport	1/10	0.029903302	1
GO:0030730	sequestering of triglyceride	1/10	0.029903302	1
GO:0045986	negative regulation of smooth muscle contraction	1/10	0.029903302	1
GO:0090185	negative regulation of kidney development	1/10	0.029903302	1
GO:0090336	positive regulation of brown fat cell differentiation	1/10	0.029903302	1
GO:1903209	positive regulation of oxidative stress-induced cell death	1/10	0.029903302	1
GO:0010832	negative regulation of myotube differentiation	1/10	0.030977147	1
GO:0071318	cellular response to ATP	1/10	0.030977147	1
GO:0071605	monocyte chemotactic protein-1 production	1/10	0.030977147	1
GO:0032409	regulation of transporter activity	2/10	0.03144056	2
GO:0002922	positive regulation of humoral immune response	1/10	0.03144056	1
GO:0003159	morphogenesis of an endothelium	1/10	0.03144056	1
GO:0045091	regulation of single stranded viral RNA replication via double stranded DNA intermediate	1/10	0.03144056	1
GO:0051546	keratinocyte migration	1/10	0.03144056	1
GO:0060252	positive regulation of glial cell proliferation	1/10	0.03144056	1
GO:0061154	endothelial tube morphogenesis	1/10	0.03144056	1
GO:1902170	cellular response to reactive nitrogen species	1/10	0.03144056	1
GO:0034976	response to endoplasmic reticulum stress	2/10	0.03144056	2
GO:0002726	positive regulation of T cell cytokine production	1/10	0.031868741	1
GO:0002827	positive regulation of T-helper 1 type immune response	1/10	0.031868741	1
GO:0051767	nitric-oxide synthase biosynthetic process	1/10	0.031868741	1
GO:0071731	response to nitric oxide	1/10	0.031868741	1
GO:0042063	gliogenesis	2/10	0.032420117	2
GO:0030728	ovulation	1/10	0.032420117	1

GO:0071498	cellular response to fluid shear stress	1/10	0.032420117	1
GO:0042359	vitamin D metabolic process	1/10	0.033519605	1
GO:1901739	regulation of myoblast fusion	1/10	0.033519605	1
GO:1902884	positive regulation of response to oxidative stress	1/10	0.033519605	1
GO:2000479	regulation of cAMP-dependent protein kinase activity	1/10	0.033519605	1
GO:0007568	aging	2/10	0.033782898	2
GO:0051235	maintenance of location	2/10	0.034382627	2
GO:0035743	CD4-positive	1/10	0.034382627	1
GO:0006898	receptor-mediated endocytosis	2/10	0.034966695	2
GO:0002438	acute inflammatory response to antigenic stimulus	1/10	0.035224908	1
GO:0050995	negative regulation of lipid catabolic process	1/10	0.035224908	1
GO:0050863	regulation of T cell activation	2/10	0.035224908	2
GO:1903829	positive regulation of cellular protein localization	2/10	0.036106257	2
GO:0002092	positive regulation of receptor internalization	1/10	0.036106257	1
GO:0045662	negative regulation of myoblast differentiation	1/10	0.036106257	1
GO:0046697	decidualization	1/10	0.036106257	1
GO:0009615	response to virus	2/10	0.037436377	2
GO:0034698	response to gonadotropin	1/10	0.037436377	1
GO:0048143	astrocyte activation	1/10	0.037436377	1
GO:1900120	regulation of receptor binding	1/10	0.037436377	1
GO:0006913	nucleocytoplasmic transport	2/10	0.037459437	2
GO:0051222	positive regulation of protein transport	2/10	0.037459437	2
GO:0051251	positive regulation of lymphocyte activation	2/10	0.037606536	2
GO:0001666	response to hypoxia	2/10	0.037606536	2
GO:0090200	positive regulation of release of cytochrome c from mitochondria	1/10	0.037606536	1
GO:1902932	positive regulation of alcohol biosynthetic process	1/10	0.037606536	1
GO:1905563	negative regulation of vascular endothelial cell proliferation	1/10	0.037606536	1
GO:0002449	lymphocyte mediated immunity	2/10	0.038480059	2
GO:0090132	epithelium migration	2/10	0.038526594	2
GO:0002460	adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin superfamily domains	2/10	0.038652823	2
GO:1904951	positive regulation of establishment of protein localization	2/10	0.038652823	2
GO:0035066	positive regulation of histone acetylation	1/10	0.038878363	1
GO:1900027	regulation of ruffle assembly	1/10	0.038878363	1
GO:0032770	positive regulation of monooxygenase activity	1/10	0.039436126	1

GO:0045987	positive regulation of smooth muscle contraction	1/10	0.039436126	1
GO:0071549	cellular response to dexamethasone stimulus	1/10	0.039436126	1
GO:0006909	phagocytosis	2/10	0.039856669	2
GO:1901889	negative regulation of cell junction assembly	1/10	0.040152272	1
GO:0001975	response to amphetamine	1/10	0.041030008	1
GO:0046627	negative regulation of insulin receptor signaling pathway	1/10	0.041030008	1
GO:1901653	cellular response to peptide	2/10	0.041526658	2
GO:0007202	activation of phospholipase C activity	1/10	0.041526658	1
GO:0035633	maintenance of blood-brain barrier	1/10	0.041526658	1
GO:0048566	embryonic digestive tract development	1/10	0.041526658	1
GO:0071312	cellular response to alkaloid	1/10	0.042005722	1
GO:0072525	pyridine-containing compound biosynthetic process	1/10	0.042005722	1
GO:0043547	positive regulation of GTPase activity	2/10	0.042149461	2
GO:0034405	response to fluid shear stress	1/10	0.042378871	1
GO:1901099	negative regulation of signal transduction in absence of ligand	1/10	0.042378871	1
GO:2000310	regulation of NMDA receptor activity	1/10	0.042378871	1
GO:0030212	hyaluronan metabolic process	1/10	0.04327296	1
GO:0090050	positive regulation of cell migration involved in sprouting angiogenesis	1/10	0.04327296	1
GO:2000273	positive regulation of signaling receptor activity	1/10	0.04327296	1
GO:0016572	histone phosphorylation	1/10	0.045556796	1
GO:0032892	positive regulation of organic acid transport	1/10	0.045556796	1
GO:0050691	regulation of defense response to virus by host	1/10	0.045556796	1
GO:0051281	positive regulation of release of sequestered calcium ion into cytosol	1/10	0.045556796	1
GO:0140353	lipid export from cell	1/10	0.045556796	1
GO:0071548	response to dexamethasone	1/10	0.046263537	1
GO:0072524	pyridine-containing compound metabolic process	1/10	0.046263537	1
GO:0048608	reproductive structure development	2/10	0.046628558	2
GO:0006509	membrane protein ectodomain proteolysis	1/10	0.046628558	1
GO:0044060	regulation of endocrine process	1/10	0.047690225	1
GO:0097178	ruffle assembly	1/10	0.047690225	1
GO:0006775	fat-soluble vitamin metabolic process	1/10	0.048201993	1
GO:0007520	myoblast fusion	1/10	0.048201993	1
GO:0052372	modulation by symbiont of entry into host	1/10	0.048201993	1
GO:0032309	icosanoid secretion	1/10	0.048702501	1
GO:0035987	endodermal cell differentiation	1/10	0.048702501	1
GO:0003012	muscle system process	2/10	0.048702501	2
GO:0014075	response to amine	1/10	0.049189542	1

GO:0030225	macrophage differentiation	1/10	0.049189542	1
GO:0060986	endocrine hormone secretion	1/10	0.049189542	1
GO:0051346	negative regulation of hydrolase activity	2/10	0.049225922	2
GO:1900274	regulation of phospholipase C activity	1/10	0.049666123	1

Supplementary Table S5: The GO-MF terms enriched by target genes.

ID	Description	GeneRatio	p.adjust	Count
GO:0008009	chemokine activity	3/10	8.97E-05	3
GO:0005125	cytokine activity	4/10	8.97E-05	4
GO:0042379	chemokine receptor binding	3/10	8.97E-05	3
GO:0005126	cytokine receptor binding	4/10	9.79E-05	4
GO:0004222	metalloendopeptidase activity	3/10	0.000198494	3
GO:0045236	CXCR chemokine receptor binding	2/10	0.000291668	2
GO:0004252	serine-type endopeptidase activity	3/10	0.000450283	3
GO:0048018	receptor ligand activity	4/10	0.000450283	4
GO:0030546	signaling receptor activator activity	4/10	0.000450283	4
GO:0008236	serine-type peptidase activity	3/10	0.000452189	3
GO:0008237	metallopeptidase activity	3/10	0.000452189	3
GO:0017171	serine hydrolase activity	3/10	0.000452189	3
GO:0001664	G protein-coupled receptor binding	3/10	0.001471306	3
GO:0004175	endopeptidase activity	3/10	0.004449761	3
GO:0005178	integrin binding	2/10	0.007568557	2
GO:0008603	cAMP-dependent protein kinase regulator activity	1/10	0.014611899	1
GO:0043274	phospholipase binding	1/10	0.019458668	1
GO:0070492	oligosaccharide binding	1/10	0.019458668	1
GO:0005149	interleukin-1 receptor binding	1/10	0.019658677	1
GO:0033691	sialic acid binding	1/10	0.025641419	1
GO:0016702	oxidoreductase activity	1/10	0.027521647	1
GO:0016701	oxidoreductase activity	1/10	0.027521647	1
GO:0042056	chemoattractant activity	1/10	0.037361787	1
GO:0048020	CCR chemokine receptor binding	1/10	0.045370884	1
GO:0004601	peroxidase activity	1/10	0.048130744	1
GO:0016684	oxidoreductase activity	1/10	0.049790777	1

Supplementary Table S6: The GO-CC terms enriched by target genes.

ID	Description	GeneRatio	p.adjust	Count
GO:0045121	membrane raft	3/10	0.004586843	3
GO:0098857	membrane microdomain	3/10	0.004586843	3
GO:0098589	membrane region	3/10	0.004586843	3
GO:0005901	caveola	2/10	0.004586843	2
GO:0044853	plasma membrane raft	2/10	0.00693311	2

Supplementary Table S7: Signaling pathway enrichment analysis of the target genes associated with ulcerative colitis

ID	Description	GeneRatio	p.adjust	Count
hsa04657	IL-17 signaling pathway	8/10	8.44E-13	8
hsa04668	TNF signaling pathway	8/10	1.79E-12	8
hsa05417	Lipid and atherosclerosis	8/10	2.44E-10	8
hsa05323	Rheumatoid arthritis	6/10	7.75E-09	6
hsa05144	Malaria	5/10	2.83E-08	5
hsa04933	AGE-RAGE signaling pathway in diabetic complications	5/10	8.17E-07	5
hsa05171	Coronavirus disease - COVID-19	6/10	1.11E-06	6
hsa05418	Fluid shear stress and atherosclerosis	5/10	3.21E-06	5
hsa05164	Influenza A	5/10	8.24E-06	5
hsa04064	NF-kappa B signaling pathway	4/10	4.00E-05	4
hsa05143	African trypanosomiasis	3/10	7.38E-05	3
hsa05219	Bladder cancer	3/10	9.26E-05	3
hsa05163	Human cytomegalovirus infection	4/10	0.000647028	4
hsa04061	Viral protein interaction with cytokine and cytokine receptor	3/10	0.001139068	3
hsa05142	Chagas disease	3/10	0.001139068	3
hsa04620	Toll-like receptor signaling pathway	3/10	0.001139068	3
hsa04060	Cytokine-cytokine receptor interaction	4/10	0.001410481	4
hsa05135	Yersinia infection	3/10	0.002281236	3
hsa04621	NOD-like receptor signaling pathway	3/10	0.004868641	3
hsa04062	Chemokine signaling pathway	3/10	0.005063075	3
hsa05202	Transcriptional misregulation in cancer	3/10	0.005063075	3
hsa05167	Kaposi sarcoma-associated herpesvirus infection	3/10	0.005063075	3
hsa05134	Legionellosis	2/10	0.007244213	2
hsa04623	Cytosolic DNA-sensing pathway	2/10	0.008461757	2
hsa04622	RIG-I-like receptor signaling pathway	2/10	0.009998708	2
hsa05133	Pertussis	2/10	0.011165403	2
hsa05140	Leishmaniasis	2/10	0.011165403	2
hsa05215	Prostate cancer	2/10	0.01690813	2
hsa05146	Amoebiasis	2/10	0.018001275	2
hsa04625	C-type lectin receptor signaling pathway	2/10	0.018069937	2
hsa04670	Leukocyte transendothelial	2/10	0.020891367	2

	migration			
hsa04926	Relaxin signaling pathway	2/10	0.025686297	2
hsa04514	Cell adhesion molecules	2/10	0.032272965	2
hsa04932	Non-alcoholic fatty liver disease	2/10	0.032272965	2
hsa05161	Hepatitis B	2/10	0.036297574	2
