

Supplementary Figure 1 Amastigote life stage

A N-terminal extension 1: poly(A) export protein

Leishmania donovani CL_SL Chromosome 01 (Positive strand)

Current Annotation

Gene: LdCL_010008200

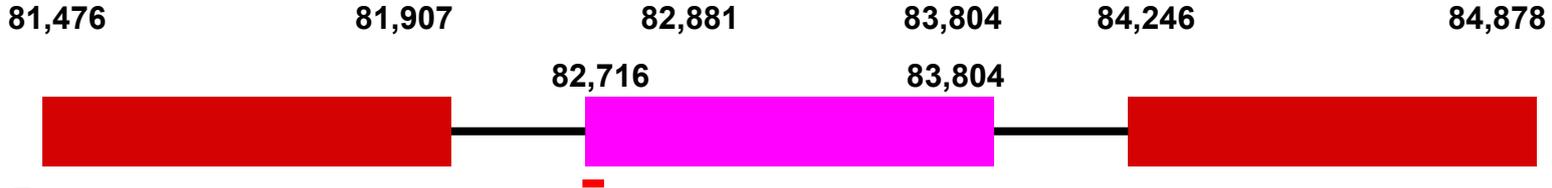
Current gene: LdCL_010008300

Gene: LdCL_010008400

Hypothetical

poly(A)
export protein

Hypothetical



B

N-terminal_1
LdCL_010008300
LAMAPH8_000008200

MAQSVSIGADHR**LEATTSDCVSSVR**FSPKECPMLMTGVASWDGTCSIWQVARNPAGAVIS 60
-----MLMTGVASWDGTCSIWQVARNPAGAVIS 28
MTQSVSIGADHR**LEATTSDCVSSVR**FSPKECPMLMTGVASWDGTCSIWQVARNPAGAVIS 60

N-terminal_1
LdCL_010008300
LAMAPH8_000008200

QPTWTTTHDSPLL**TMSLSADGRVFFGGCSKTAVMWDLNSNQAVVASHDLPI**ISCLDFLSL 120
QPTWTTTHDSPLL**TMSLSADGRVFFGGCSKTAVMWDLNSNQAVVASHDLPI**ISCLDFLSL 88
QPTWTTIHDSPLL**TMSFSADGRVFFGGCSKTAVMWDLNSNQAVVASHDLPI**ISCLDFTL 120
***** :***** :*

N-terminal_1
LdCL_010008300
LAMAPH8_000008200

PQTMSQMLITGSWDGKLRWWDLRQ**QSYVREENLGE**PVFALDAQKTVP**MMAAATGRLAHVY** 180
PQTMSQMLITGSWDGKLRWWDLRQ**QSYVREENLGE**PVFALDAQKTVP**MMAAATGRLAHVY** 148
PQTMSQMLITGSWDGKLRWWDLRQ**QSYVREENLGE**PVFALDAQKTVP**MMAAATGRLAHVY** 180

N-terminal_1
LdCL_010008300
LAMAPH8_000008200

DVQQMQKVNELKLPDVMKFN**LRCITCAPQYDGV**GVGSSEGRVS**FISMKDAPGCTFKAHIT** 240
DVQQMQKVNELKLPDVMKFN**LRCITCAPQYDGV**GVGSSEGRVS**FISMKDAPGCTFKAHIT** 208
DVQQMQKVNELKLPDVMKFN**LRCIACAPQYDGV**GVGSSEGRVS**FISMKDAPGCTFKAHIT** 240
***** :*****

N-terminal_1
LdCL_010008300
LAMAPH8_000008200

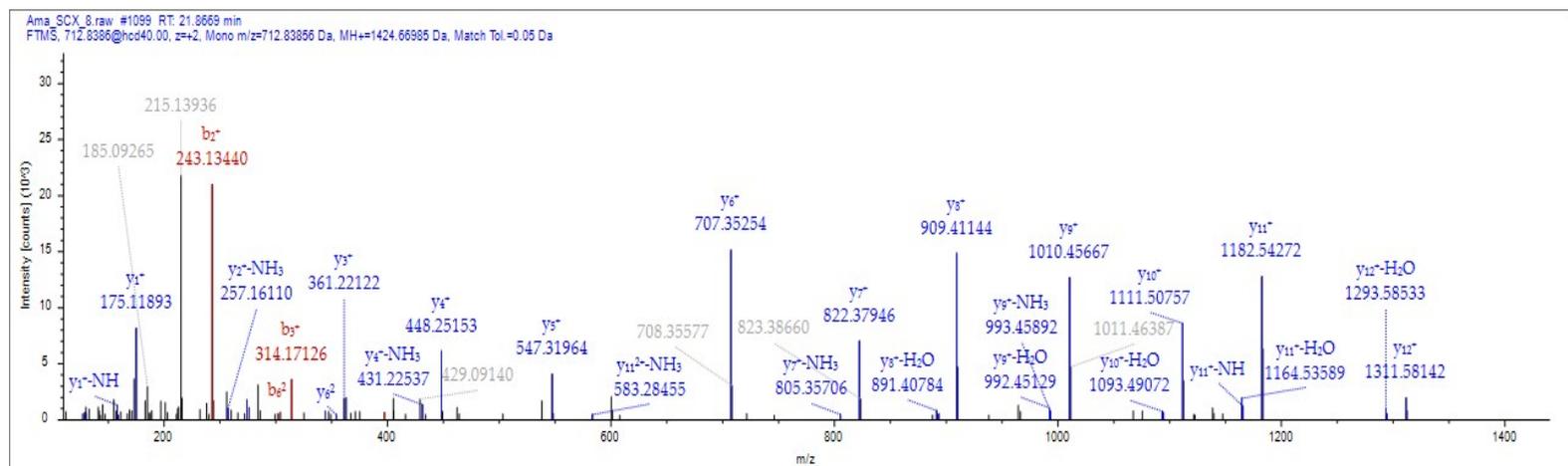
TEKSHYILSQT**NFCVHHPTLPLLLSGGGDGNLTVINR**ADRKVIK**TLQCEQKVGTQAIPI**S 300
TEKSHYILSQT**NFCVHHPTLPLLLSGGGDGNLTVINR**ADRKVIK**TLQCEQKVGTQAIPI**S 268
TEKSHYILSQT**NFCVHHPTLPLLLSGGGDGNLTVINR**ADRKVIK**TLQCEQKVGTQAIPI**S 300

N-terminal_1
LdCL_010008300
LAMAPH8_000008200

AGDISADGSLVAY**AHSYDWAMGKSGYRNQPTSVHIR**P**LL** 339
AGDISADGSLVAY**AHSYDWAMGKSGYRNQPTSVHIR**P**LL** 307
AGDISADGSLVAY**AHSYDWAMGKSGYRNQPTSVHIR**P**LS** 339

C

LEATTSDCVSSVR



Supplementary Figure 2 Amastigote life stage

A N-terminal extension 2: exosome complex exonuclease RRP40

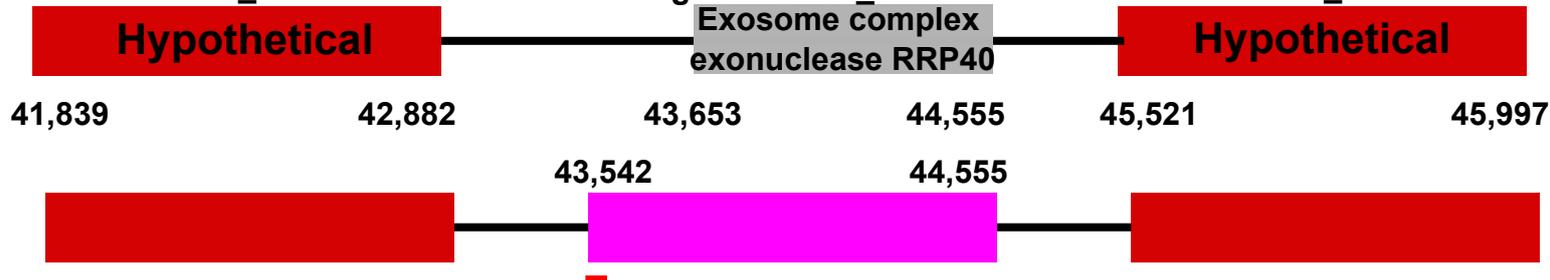
Leishmania donovani CL_SL Chromosome 04 (Positive strand)

Current Annotation

Gene: LdCL_040006300

Current gene: LdCL_040006400

Gene: LdCL_040006500



B

N-terminal_2 MSTVSTSSSPSR**GITELAPLR**GHVCLPGEVLMTQPGAVVAIGGGLRLLAQPAPTPTADG 60
LdCL_040006400 -----MTQPGAVVAIGGGLRLLAQPAPTPTADG 28
LmxM.04.0120 MSTVSTSSIPSRGITELAPLRGHVCLPGEVLMTQPGVVVAIGGGLRLLAQPTPTPSADG 60
*****.*****:***:***

N-terminal_2 ASQALTDVFLSEYCASLQRSSHLLHTHVPRYTVPTPASRRYIPRAGDPVLAI IARKVSQH 120
LdCL_040006400 ASQALTDVFLSEYCASLQRSSHLLHTHVPRYTVPTPASRRYIPRAGDPVLAI IARKVSQH 88
LmxM.04.0120 ASQALTDVFLSEYCAPLQRGSHLLHTHVPRYTVPTPASRRYTPRAGDPVLAI IARKVSQH 120
*****.***.***** *****

N-terminal_2 YYYCYIGGSALAYMDALAFDGATKVSRRPRLVEGDVVICYVKPRAGSSYVGGVHRVASEV 180
LdCL_040006400 YYYCYIGGSALAYMDALAFDGATKVSRRPRLVEGDVVICYVKPRAGSSYVGGVHRVASEV 148
LmxM.04.0120 YYYCYIGGSALAYMDALAFDGATKVSRRPRLVEGDVVICYVKPRAGSNYVEGVHRVAVSGV 180
*****.*** ***** *

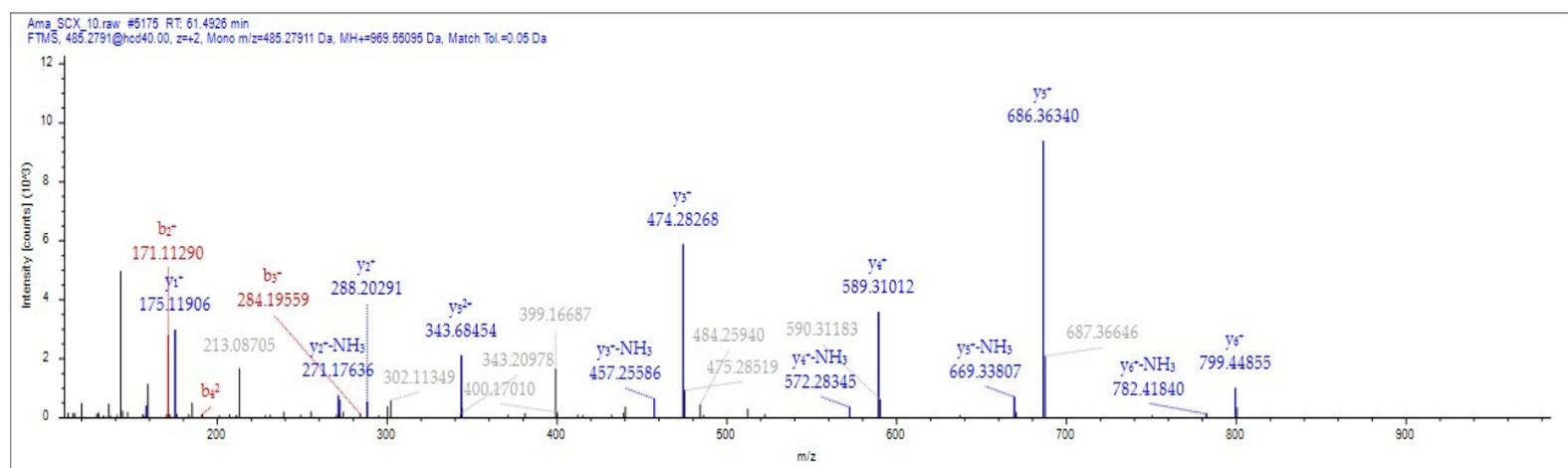
N-terminal_2 FDTTGEVEVSCTAAEVGLPDKDWTSGEAAFGPLQGGRVLHLLPLAYVRRLLITPVGSSPDKA 240
LdCL_040006400 FDTTGEVEVSCTAAEVGLPDKDWTSGEAAFGPLQGGRVLHLLPLAYVRRLLITPVGSSPDKA 208
LmxM.04.0120 FDTTGEVEVSCTAAEVGLPDKDWTSGEAAFGPLQGGRVLHLLPLAYVRRLLITPLGSSPDKA 240
*****.*****:***:*****

N-terminal_2 SAQQRKHGHTEGEGGYGDEVPASYLLQLLGRRVPFVAVGLNGLVWVRGLSSEADTTAA 300
LdCL_040006400 SAQQRKHGHTEGEGGYGDEVPASYLLQLLGRRVPFVAVGLNGLVWVRGLSSEADTTAA 268
LmxM.04.0120 SAQQRKRHTEGEGGDGDEVPASYLLQLLGRRVPFVAVGLNGLVWVRGLSSEADATAAA 300
*****:***** *****:****

N-terminal_2 RRTVAVSSCISEAQYDVTRAEMEARVEVYFPS 332
LdCL_040006400 RRTVAVSSCISEAQYDVTRAEMEARVEVYFPS 300
LmxM.04.0120 RRTVAVSSCISEAQYDVTRAEMEARVEVYFPS 332

C

GITELAPLR



Supplementary Figure 3 Amastigote life stage

A N-terminal extension 3: ATP-dependent DEAD/H RNA helicase

Leishmania donovani CL_SL Chromosome 08 (Positive strand)

Current Annotation

Gene: LdCL_080005600

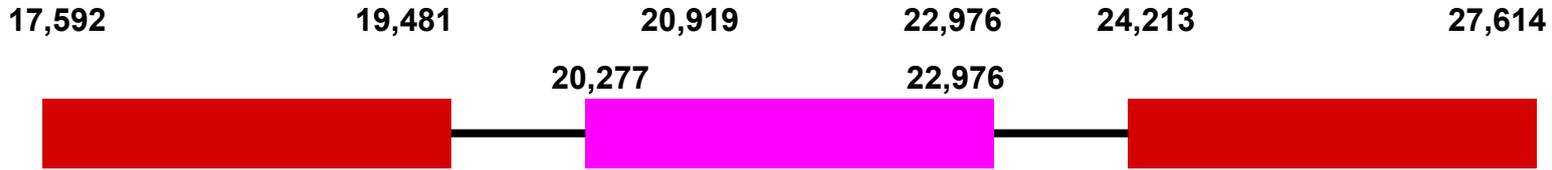
Current gene: LdCL_080005700

Gene: LdCL_080005800

C2HC5-type
/ASCH domain

ATP-dependent DEAD/
H RNA helicase

Adaptor complex protein
(AP) 3 delta subunit 1

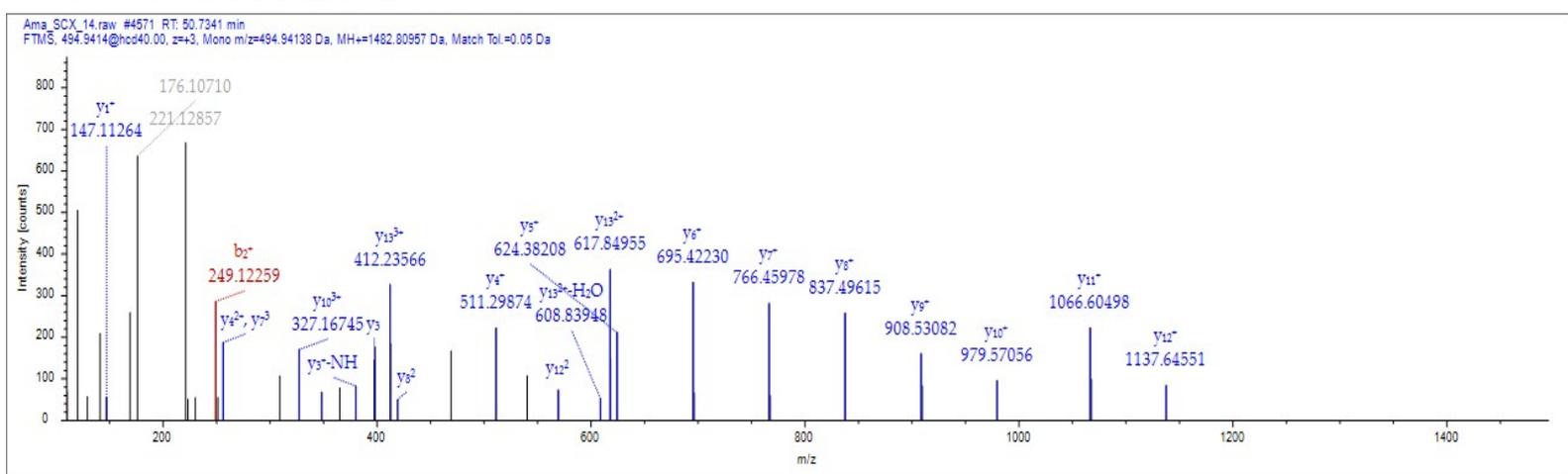


B

N-terminal_3	MRKRARDDGGGLGPSTTSANGEMESATDGAANGGASFERLSGPLDEDSSFPSSATAATSSD	60
LdCL_080005700	-----	
LAEL147_000101700	MPKRARDDGGGLGPSTTSANGEMESVTDGAANGGASYERLSGPLDEDSSFPSSATATTASA	60
N-terminal_3	SDDSEDDDASKRLLLYAKVTAGAKAQAGDATFATARNDPAAFRLRGVSSSRFTPASAAAA	120
LdCL_080005700	-----	
LAEL147_000101700	SDDSEDDDASKRLLLYAKVTAGAKAQAGDSTSATARNDPAAFRLRGVSSSRFTPASAAAA	120
N-terminal_3	ALNHLKAELLKPVAQPTALTVVNAGDESADVLAGIISRKI PPPPAGDAKKLRQLTYVDHS	180
LdCL_080005700	-----	
LAEL147_000101700	ALNHLKAELLKPVAQSTALTVVNAEDESADVLAGIVSRKI PPPPAGDEKKLRQLTYVDHS	180
N-terminal_3	QMNYASIRTDFFVVPDMTNLTAQEMRELLRELDGAKVHGKDVPRPIRSWHGTGLPDRVL	240
LdCL_080005700	-MNYASIRTDFFVVPDMTNLTAQEMRELLRELDGAKVHGKDVPRPIRSWHGTGLPDRVL	59
LAEL147_000101700	QMNYAPIRTDFFVVPDMTNLTAQEMRELLRELDGAKVHGQDVPRPIRSWHGTGLPDRVL	240
	**** . ***** : *****	
N-terminal_3	EVLEEHEYKCPFAVQSLGVPALMSGRDLLLTAKTGSGKTLCYALPLIRHCADQPRCEKGE	300
LdCL_080005700	EVLEEHEYKCPFAVQSLGVPALMSGRDLLLTAKTGSGKTLCYALPLIRHCADQPRCEKGE	119
LAEL147_000101700	EVLEEHEYKCPFAVQSLGVPALMSGRDLLLTAKTGSGKTLCYALPLIRHCADQPRCEKGE	300

C

FTPASAAAAALNHLK



Supplementary Figure 4 Amastigote life stage

A N-terminal extension 4: Hypothetical protein

Leishmania donovani CL_SL Chromosome 08 (Positive strand)

Current Annotation

Gene: LdCL_080010600

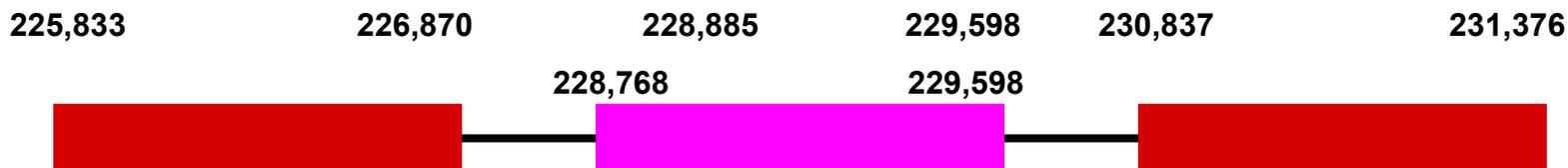
Current gene: LdCL_080010700

Gene: LdCL_080010800

Eukaryotic translation initiation factor 2 beta subunit

Hypothetical

Hypothetical



B

N-terminal_4
LdCL_080010700
LARLEM1108_080010000

```

MLRNSTVRVWVWLGSGSSPALGLDLRSPAGQFVNVVPEGMQPRRMAGHFNPTPQANSLAA 60
-----MQPRRMAGHFNPTPQANSLAA 21
MLRKSTVRVWVWLGSGSSPALGLDLRSPAGQFVNVVPEGMQPRRMAGHFNPTPQANSLAA 60
*****

```

N-terminal_4
LdCL_080010700
LARLEM1108_080010000

```

THYAHAPELRHMADGAAMSLSGQRIPLLKPTLSKWSRKLRSDIYDELLKLPLRYALHDFR 120
THYAHAPELRHMADGAAMSLSGQRIPLLKPTLSKWSRKLRSDIYDELLKLPLRYALHDFR 81
THYAHTPELRHMADGAAMSLSGQRIPLLKPTLSKWSRQLRSDIYDELLKLPLRYALHDFR 120
*****:*****:*****

```

N-terminal_4
LdCL_080010700
LARLEM1108_080010000

```

ALQAHIHAVPDTAPNASGTAAAGERLPPGVYHASSGLSSASPDAPAYYAVAGRDSAVGYA 180
ALQAHIHAVPDTAPNASGTAAAGERLPPGVYHASSGLSSASPDAPAYYAVAGRDSAVGYA 141
TLQAHIHAVPDTATNASGTAAAGERLPPGVYHASSGLSSASPDAPAYYAVAGRDSAVGYA 180
:*****.*****

```

N-terminal_4
LdCL_080010700
LARLEM1108_080010000

```

PPLGPADPVDVIPFFVHRSSNGHLPKGVYSMNAKTLMPAFYMRIQNIEGDMFRFEEELMK 240
PPLGPADPVDVIPFFVHRSSNGHLPKGVYSMNAKTLMPAFYMRIQNIEGDMFRFEEELMK 201
PPLGPADPVDVIPFFVHRSSNGHLPKGVYSMNAKTLMPAFYMRIQNIEGDMFRFEEELMK 240
*****

```

N-terminal_4
LdCL_080010700
LARLEM1108_080010000

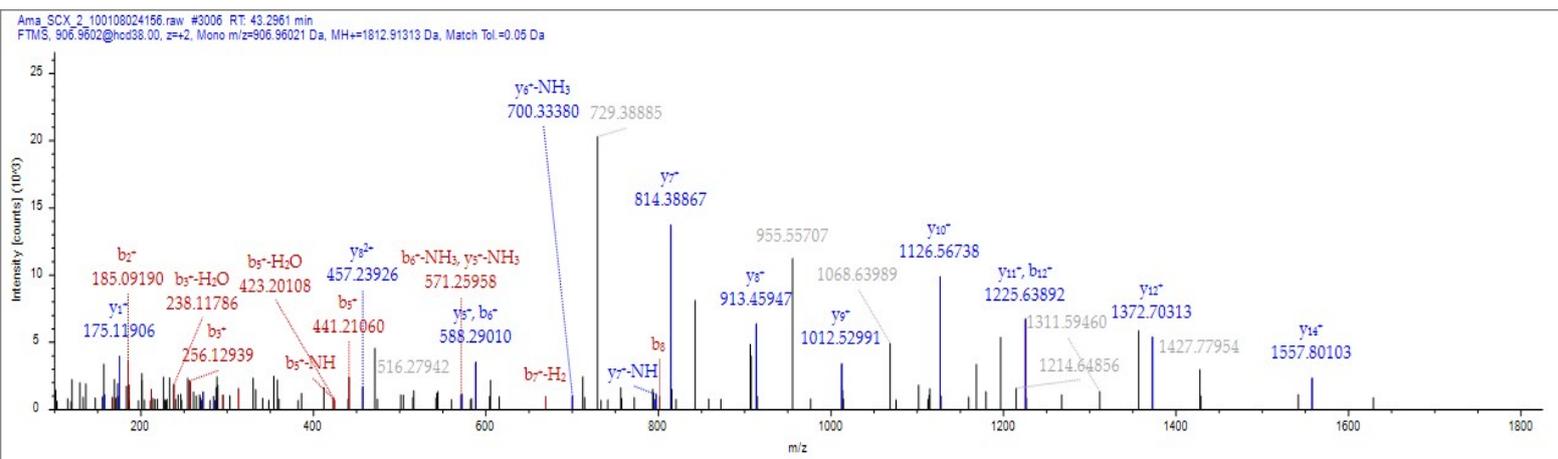
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IFPTKKIFVRSHSVYVYVNVNLDGRAVLHWWLLGLGF 276
IFPTKKIFVRSHSVYVYVNVNLDGRAVLHWWLLGLGF 237
IFPTKKIFVRSHSVYVYVNVNLDGRAVLHWWLLGLGF 276
*****

```

C

SPAGQFVNVVPEGMQPR



Supplementary Figure 5 Amastigote life stage

A N-terminal extension 5: guide RNA binding protein

Leishmania donovani CL_SL Chromosome 08 (Positive strand)

Current Annotation

Gene: LdCL_080016300

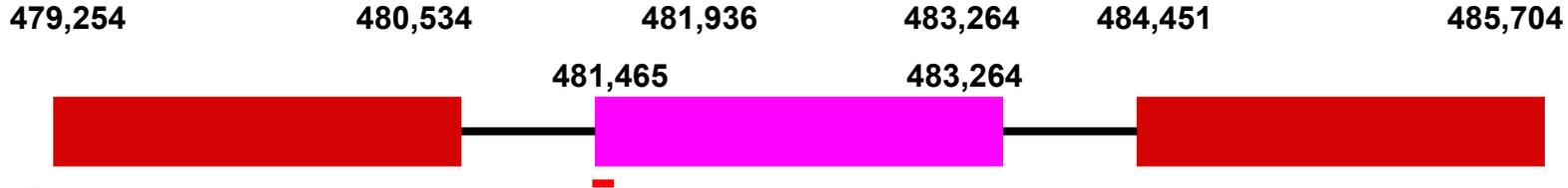
Thiopurine S-methyl
transferase (TPMT)

Current gene: LdCL_080016400

guide RNA
binding protein

Gene: LdCL_080016500

Hypothetical



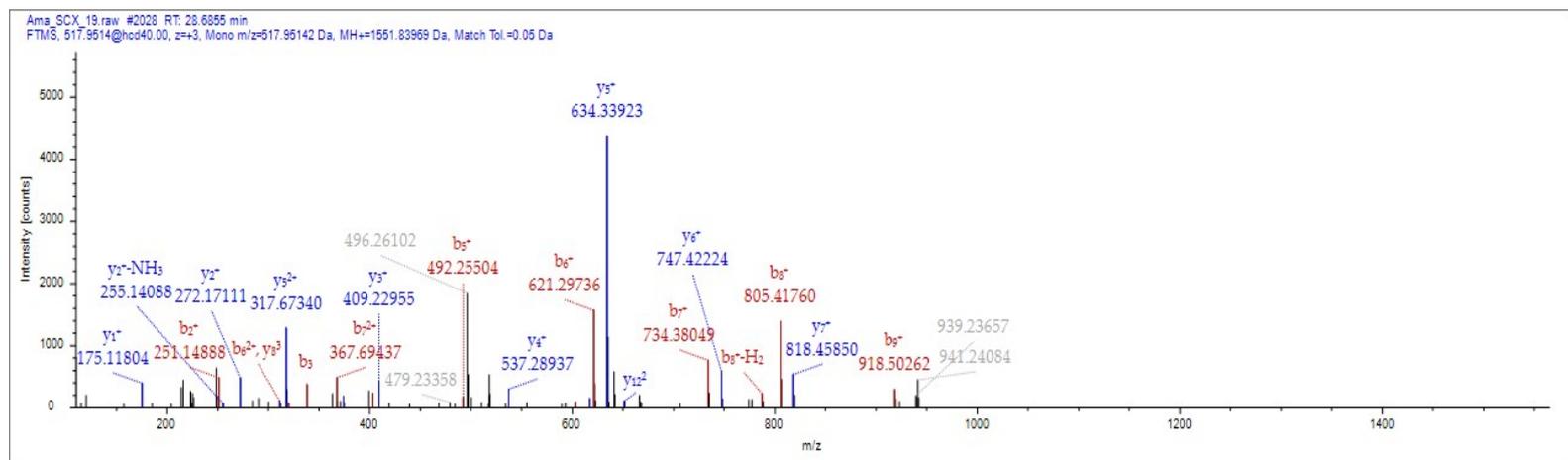
B

N-terminal_5	MRGLGVLGLRGVPTRRPWLCDVARRSGDISMCSTASTSYRSQATSAGGTPPLPPPTSSPV	60
LdCL_080016400	-----	
LTRL590_080015100	MRGLGVLGLRGAPTRRPWLCDVARRSGNISMSTASTSYRSQATSAGGTPPLPPPTSSPV	60
N-terminal_5	PAPAVDNTLFHNSAAVHGTIPFGRHLS PGELALPQH PRGSHLSARNI ATEALQMK KLHQE	120
LdCL_080016400	-----MKKLHQE	7
LTRL590_080015100	PAPAGDNTLFHNSAAGHGTIPFGRHLS PGELALPQH PRGSHLSARNI ATEALQMK KLHQE	120

N-terminal_5	RGGNPMLAQQARRVLFATSITGQNIDARSVALLLNTAVYFGMESDARVVRECIDFCLKND	180
LdCL_080016400	RGGNPMLAQQARRVLFATSITGQNIDARSVALLLNTAVYFGMESDARVVRECIDFCLKND	67
LTRL590_080015100	RGGNPMLAQQARRVLFATSITGQNIDARSIALLLNTAVYFGMESDARVVRECIDFCLKND	180
	*****:*****	
N-terminal_5	KFISLDIMPVVVTACATLKS RDAREVIELQAIKATKNARFLDAK GV TNIISAF SKTGINH	240
LdCL_080016400	KFISLDIMPVVVTACATLKS RDAREVIELQAIKATKNARFLDAK GV TNIISAF SKTGINH	127
LTRL590_080015100	KFISLDIMPVVVTACATLKS RDAREVIELQAIKATRNARFLDAK GV TNIISAF SKTGINH	240
	*****:*****	
N-terminal_5	EKLFGLLSMRVQTLARVGEFEAAHLVILANAFARLRFREQHVF GAIARRAM SLRERVTVN	300
LdCL_080016400	EKLFGLLSMRVQTLARVGEFEAAHLVILANAFARLRFREQHVF GAIARRAM SLRERVTVN	187
LTRL590_080015100	EKLFGLLSMRVQTLARVGEFEAAHLVILANAFARLRFREQHVF SAIARRAM SLRERVTVN	300
	*****.*****	
N-terminal_5	ELVPLINAFSKAGLKDPKLSKRFAGKAMEYVDQMNAEQVAMMFQAFAYFGIRYDQ LE FGVL	360
LdCL_080016400	ELVPLINAFSKAGLKDPKLSKRFAGKAMEYVDQMNAEQVAMMFQAFAYFGIRYDQ LE FGVL	247
LTRL590_080015100	ELVPLISAFSKAGLKDPKLSKRFAGKAMEYVDQMNAEQVAMMFQAFAYFGIRYDQ LE FGVL	360
	*****.*****	

C

HLSPGELALPQHPR



Supplementary Figure 6 Amastigote life stage

A N-terminal extension 6: RNA helicase

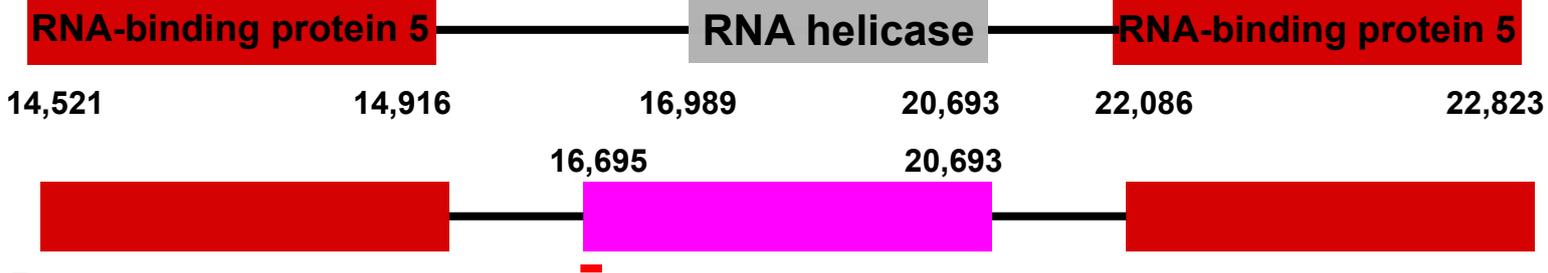
Leishmania donovani CL_SL Chromosome 09 (Positive strand)

Current Annotation

Gene: LdCL_090005700

Current gene: LdCL_090005800

Gene: LdCL_090005900



B

N-terminal_6	MGPNRQRKPPNPGRGGRGRAAAPAGASAKATPSMITNAGR	DLIIDVLHHAATGGSV	PVSE	60
LdCL_090005800	-----	-----	-----	-----
LdBPK_090090.1	MGPNRQRKPPNPGRGGRGRAAAPAGASAKATPSMITNAGR	DLIIDVLHHAATGGSV	PVSE	60
N-terminal_6	K HFDAKISSRVTFQRNAPLMPSEILQRLYEGLGFP	RD	L	120
LdCL_090005800	-----	-----	-----	41
LdBPK_090090.1	K HFDAKISSRVTFQRNAPLMPSEILQRLYEGLGFP	RD	L	120

N-terminal_6	LLDEAGPFQSFVLCSCFELFNCMTWFSREKSDDKVS	PEEGDAILENEIATIESL	FSDSFL	180
LdCL_090005800	LLDEAGPFQSFVLCSCFELFNCMTWFSREKSDDKVS	PEEGDAILENEIATIESL	FSDSFL	101
LdBPK_090090.1	LLDEAGPFQSFVLCSCFELFNCMTWFSREKSDDKVS	PEEGDAILENEIATIESL	FSDSFL	180

N-terminal_6	GRKHFDDEDTNERELYFGFCTSIEKQLLVVVRFPDY	YPT	EP	240
LdCL_090005800	GRKHFDDEDTNERELYFGFCTSIEKQLLVVVRFPDY	YPT	EP	161
LdBPK_090090.1	GRKHFDDEDTNERELYFGFCTSIEKQLLVVVRFPDY	YPT	EP	240

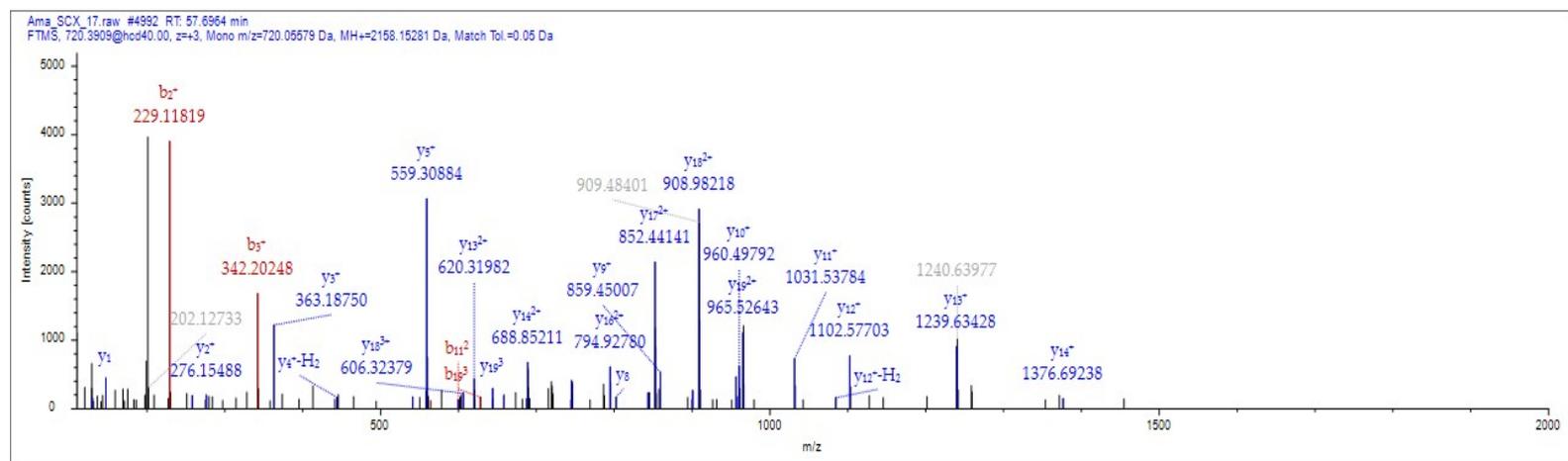
N-terminal_6	VVAPSCTKDISAVDRRAIMDAAVQAINGFVGGCLMVL	ISAIHGAVSSMKEVRPAS	STPP	300
LdCL_090005800	VVAPSCTKDISAVDRRAIMDAAVQAINGFVGGCLMVL	ISAIHGAVSSMKEVRPAS	STPP	221
LdBPK_090090.1	VVAPSCTKDISAVDRRAIMDAAVQAINGFVGGCLMVL	ISAIHGAVSSMKEVRPAS	STPP	300

N-terminal_6	LDRDAAAKERSAVQQQRKAFGLTGNRVANREDIEEAA	EDEEDRFIQVSMPEKVEL	ATV	360
LdCL_090005800	LDRDAAAKERSAVQQQRKAFGLTGNRVANREDIEEAA	EDEEDRFIQVSMPEKVEL	ATV	281
LdBPK_090090.1	LDRDAAAKERSAVQQQRKAFGLTGNRVANREDIEEAA	EDEEDRFIQVSMPEKVEL	ATV	360

N-terminal_6	DAASASRETQRRDFLVSDAALDVTLKSSWEK	LKTEGSLRKARDSLP	PAHSVRET	420
LdCL_090005800	DAASASRETQRRDFLVSDAALDVTLKSSWEK	LKTEGSLRKARDSLP	PAHSVRET	341
LdBPK_090090.1	DAASASRETQRRDFLVSDAALDVTLKSSWEK	LKTEGSLRKARDSLP	PAHSVRET	420

C

DLIIDVLHHAATGGSV



Supplementary Figure 7 Amastigote life stage

A N-terminal extension 7: Hypothetical protein

Leishmania donovani CL_SL Chromosome 10 (Positive strand)

Current Annotation

Gene: LdCL_100006500

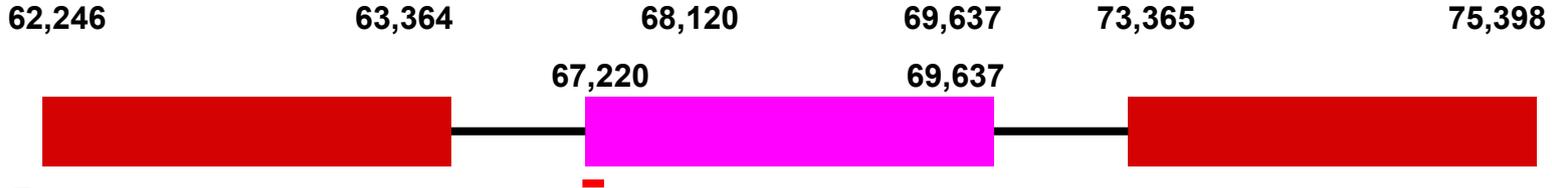
Current gene: LdCL_100006600

Gene: LdCL_100006700

Hypothetical

Hypothetical

Guanosine diphosphatase



B

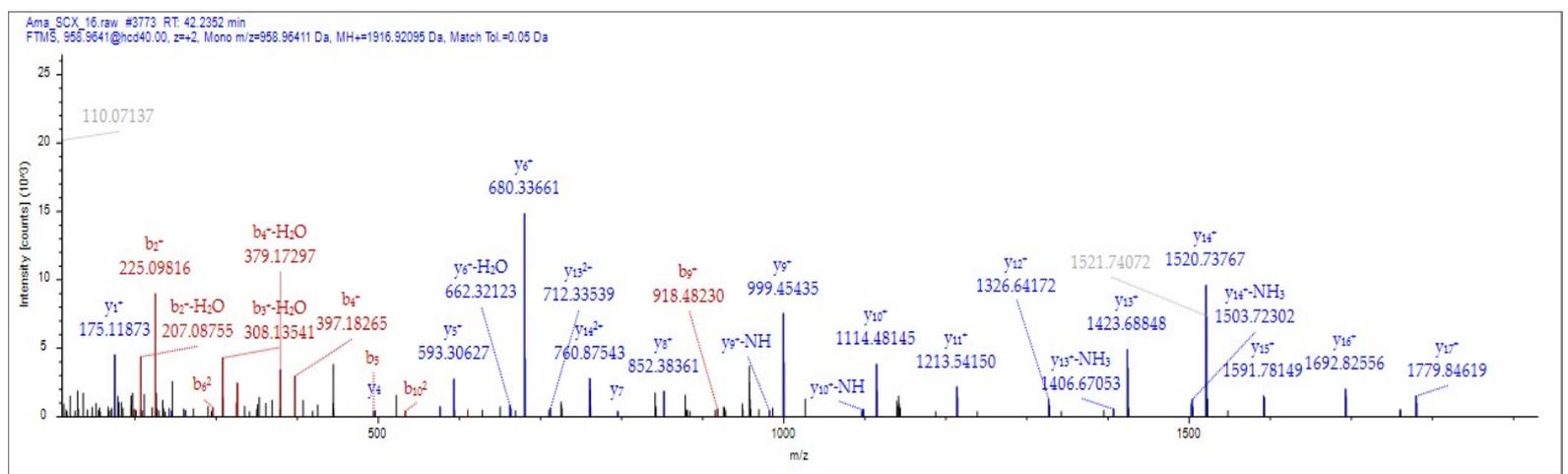
N-terminal_7	MDSRRHRVSPPLVVPSSAHSRTFSKMTVTSANLVNVS	DTNLSLTPCTCTSTNERHPLHGAHT	60
LdCL_100006600	-----	-----	
LAEL147_000132100	MDSRRHRVSPPLVVPSSAHSHTFSKMTVTSANLVS	VSVDNLSLTPCTCPSTNERHPLHGAHT	60
N-terminal_7	PHRRASILEKQQPTPRGSLQWPSTHRSFSSAAATRD	SSRHSQVTD RMNAIGVSVSALSQH	120
LdCL_100006600	-----	-----	
LAEL147_000132100	PHRRASILEKQQPTPRGSLQWPSTHRSFSSAAATRD	SSRHSQVADRMNATGVNVSALSQH	120
N-terminal_7	GRACSSASHTPMSSHDERSEHYSSAFSGAGGRRG	YSLGRHSTAPPLVDFGDSPSFSRHSA	180
LdCL_100006600	-----	-----	
LAEL147_000132100	GRACSSASHTPMSSRDERSEHYSSAFSGAGGRRG	YSLGRHSTAPPLVDFGDSPSFSRHSA	180
N-terminal_7	AHSVCTTALCTPRDGTATSSHGPVASP	SMTTEGYSASMSGPPPLYDFEAEAHQLTREQLE	240
LdCL_100006600	-----	-----MTTEGYSASMSGPPPLYDFEAEAHQLTREQLE	32
LAEL147_000132100	AHSVCTTALCTPRDGTATSSHGPVASP	SMTTEGNSASMSGPPPLYDFEAEAHQLTREQLE	240

N-terminal_7	ERVLQMRAANVVLQTSVLRRLRESLATLQEGMR	ANYADLERRQESIANMLLRRLLEATKRRR	300
LdCL_100006600	ERVLQMRAANVVLQTSVLRRLRESLATLQEGMR	ANYADLERRQESIANMLLRRLLEATKRRR	92
LAEL147_000132100	ERVLQMRAANVVLQTSVLRRLRESLATLQEGMR	ANYADLERRQESIANMLLRRLLEATKRRR	300

N-terminal_7	SKLVAHLCSVEAEKASQETKLRNTTONIKELSK	HKLQEEQEIARLQORRLERLHAQRKQL	360
LdCL_100006600	SKLVAHLCSVEAEKASQETKLRNTTONIKELSK	HKLQEEQEIARLQORRLERLHAQRKQL	152
LAEL147_000132100	SKLVTHLRSVEAEKASQETKLRSTTONINELSK	HKLQEEQEIATRLQORRLERLHAQRKQL	360
		**** : * ***** . ***** : ***** . *****	
N-terminal_7	DHALEEQTNSLQOLEQLVQVEEEMDQSDSAETS	SAGCLATQSATATPALPAAPASSATATT	420
LdCL_100006600	DHALEEQTNSLQOLEQLVQVEEEMDQSDSAETS	SAGCLATQSATATPALPAAPASSATATT	212
LAEL147_000132100	DHALEEQTNSLQOLEQLVQVEEEMDQSDAAEAS	SAGGVAAQSATLTPALPAALASSAAATS	420
		***** : ** : *** : * : ***** ***** ***** : ** :	

C

HSTAPPLVDFGDSPSFSR



Supplementary Figure 8 Amastigote life stage

A N-terminal extension 8: Hypothetical protein

Leishmania donovani CL_SL Chromosome 11 (Positive strand)

Current Annotation

Gene: LdCL_110009100

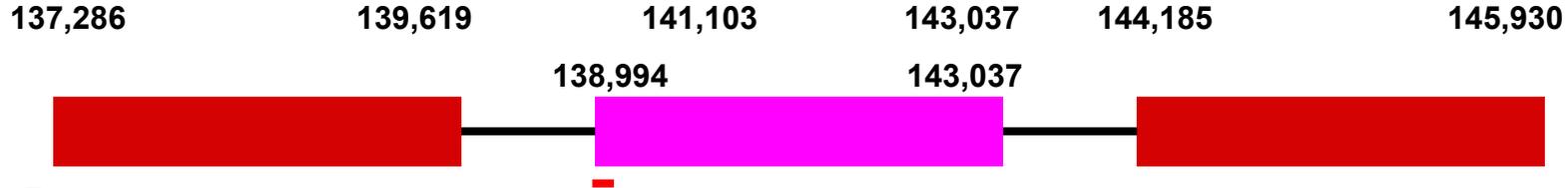
Current gene: LdCL_110009200

Gene: LdCL_110009300

Chromatin binding protein

Hypothetical

Hypothetical

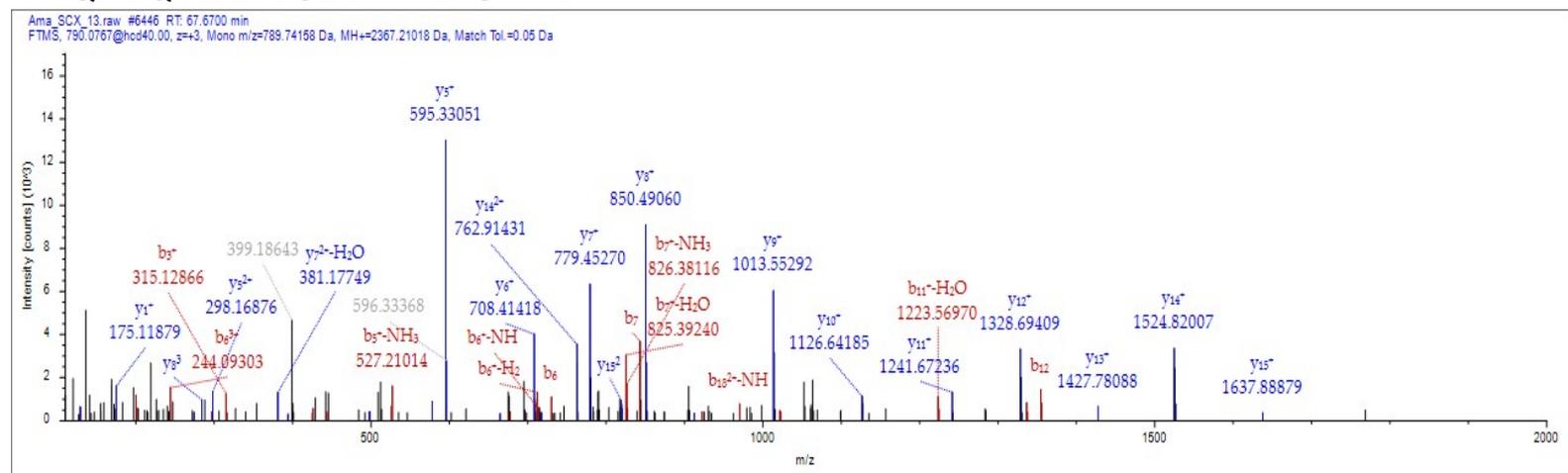


B

N-terminal_8	MGKRCIESLCTGVVTMWRASDKHQRLSHAGILCGAQRSHRVARVVGALAPKSRVLSVFTK	60
LdCL_110009200	-----	
LmjF.11.0430	MGKRCIESLCTGIVTMWRASDKHQRLSHAGILLGAQRSHRVARVMGASAPKSCVLSVSTK	60
N-terminal_8	ALGSSSLSPSSGGLPYAVTCWLPPIAKCAILDCTTSTPVSASSALRCLAIARLADAVPG	120
LdCL_110009200	-----	
LmjF.11.0430	ALCSSSLSPSSGGLPYAVTCWLPPLAKCAILNCTTSTPVSASSALRCLAVARLADAVPG	120
N-terminal_8	RRALSTSSSSSAQGVSAATTAKGSHE SATALAAGNTAGTSNTSVAPALLSEIRAVLERQA	180
LdCL_110009200	-----	
LmjF.11.0430	RRALSTSSSSSAQGVSPATAAKGSHE SATALAAGNTAGTSNTSVAPALLSEICAVLERQA	180
N-terminal_8	DQTWLPVSDLYAALPSHVRRCYVKPHKSM AHVLQKCAHVLGI SLNATGVYYAKGKMPYPA	240
LdCL_110009200	-----MAHVLQKCAHVLGI SLNATGVYYAKGKMPYPA	32
LmjF.11.0430	DQTWLPVSDLYAALPSHVRRSYVKPHKSM AHVLQKCAHVLGI SLSATGVYYAKGKMPYPA	240
	***** . *****	
N-terminal_8	ASSIEGTSSAESIGSSPGKAAKSNTVSAVKESQAATLKSNAHGDSVARAAVHTPSPSSST	300
LdCL_110009200	ASSIEGTSSAESIGSSPGKAAKSNTVSAVKESQAATLKSNAHGDSVARAAVHTPSPSSST	92
LmjF.11.0430	TSSNEGTSSAESMGGSPGKAAKSNTVSAVKESQAATRKSQAQNSVATAAVHTPSPSSST	300
	:** *****:*. ***** **:*:*:** *****	
N-terminal_8	EMNATDLDATSPSSSTAGPVGFFFDVGLHDI PNPPRDFDVTPSALVVDGTHSSANGAVIA	360
LdCL_110009200	EMNATDLDATSPSSSTAGPVGFFFDVGLHDI PNPPRDFDVTPSALVVDGTHSSANGAVIA	152
LmjF.11.0430	EMNATNLDATSPCSSAAGPVGFFFDVGLHDL PNPPRDFDVTPSALAVDGTSSANGAVIA	360
	*****:*****. *:*****:*****. *****	
N-terminal_8	VRDFVLHIPFFVVPVTEVVANMPGYTAEHLEVYLVNKSLELVTVAGERYVRLYGSFGDLS	420
LdCL_110009200	VRDFVLHIPFFVVPVTEVVANMPGYTAEHLEVYLVNKSLELVTVAGERYVRLYGSFGDLS	212
LmjF.11.0430	VRDFVSHIPFFVVPVTEVVANMPGYTAEHLEVYLVNSLELVTVAGERYVRLYGSFGDLS	420
	***** *****:*****:*****:*****	

C

QADQTWLPVSDLYAALPSHVR



Supplementary Figure 9 Amastigote life stage

A N-terminal extension 9: Hypothetical protein

Leishmania donovani CL_SL Chromosome 14 (Positive strand)

Current Annotation

Gene: LdCL_140007800

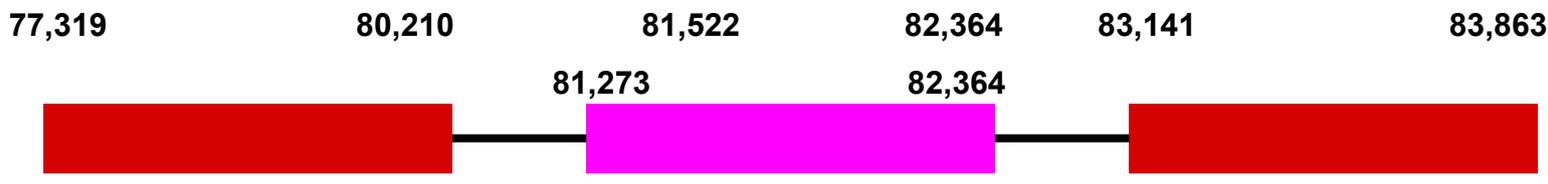
Current gene: LdCL_140007900

Gene: LdCL_140008000

Hypothetical

Hypothetical

Hypothetical

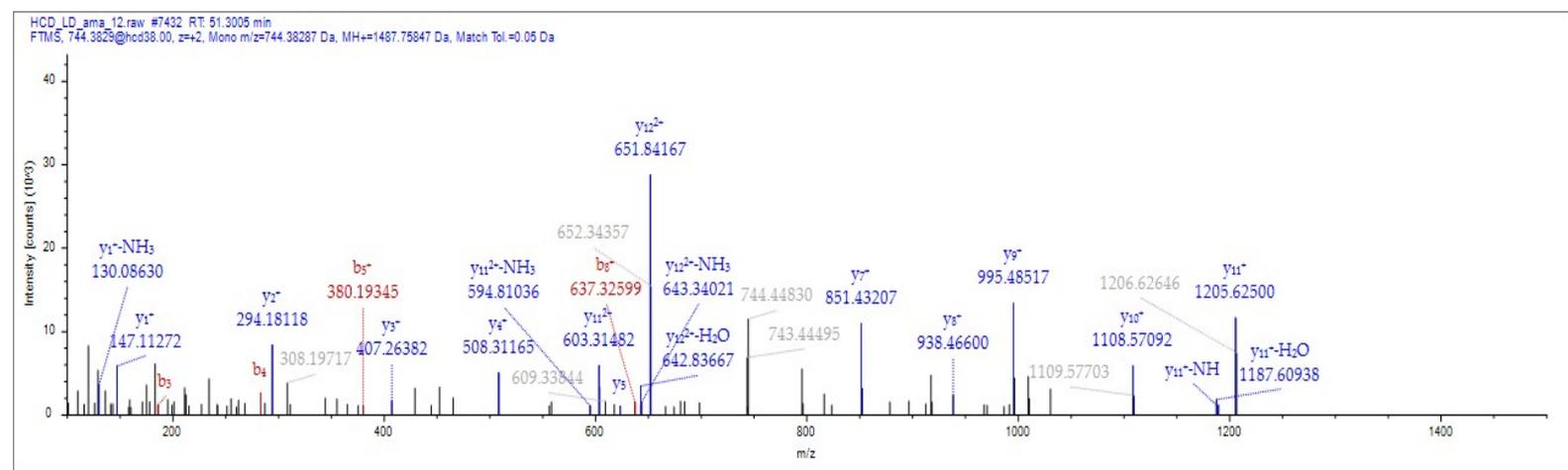


B

N-terminal_9	MHKKLLLFGGTGFVGSLSVAQKALSRGYRVVIATR GGAPPLGSPMDTLFK RVRMIGGPAAA	60
LdCL_140007900	-----	
LAEL147_000193000	MHKKLLLFGGTGFVGSLSVARKALSRGYRVVIATRGGAPPLGSPMDTLFKRVRMIGGPAAA	60
N-terminal_9	RESMSGTSTTTQPSVASSPASSSSSGSTHQRPADQLAKMVHQMDEENALEFV SIDATSRD	120
LdCL_140007900	---MSGTSTTTQPSVASSPASSSSSGSTHQRPADQLAKMVHQMDEENALEFV SIDATSRD	57
LAEL147_000193000	RESMSGTSTPTQPSVASSPASSSSG-----GTHQMDEENALEFV SIDATSRD	107
	***** . *****	. *****
N-terminal_9	QVFHFLHDHSDATAVVNAVGLLTRNYEDARQVNGDVMNTNIAAGVFHPKLAQAVQKV VVYS	180
LdCL_140007900	QVFHFLHDHSDATAVVNAVGLLTRNYEDARQVNGDVMNTNIAAGVFHPKLAQAVQKV VVYS	117
LAEL147_000193000	QVFHFLHDHPDATAVVNAVGLLTRDYEDARQVNGDVMNTNIAAGVFHPKLAQAVQKV VVYS	167
	***** . ***** : *****	*****
N-terminal_9	AEPYNLYSRRILGSKYLLKGYFHGKRIGEKAVLENLGNKGVVLRPSFIYGTRHILVASAV	240
LdCL_140007900	AEPYNLYSRRILGSKYLLKGYFHGKRIGEKAVLENLGNKGVVLRPSFIYGTRHILVASAV	177
LAEL147_000193000	AEPYNLYSRRILGSKHLLKGYFHGKRIGEKAVLENLGNKGVVLRPSFIYGTRHVLVTSAV	227
	***** : ***** : ** : ***	
N-terminal_9	NSDAVSTLSLPLGWIGLPLDKLLKAIGGGKLLMPPVSDVVAEAAVRACAWANQPGNDIH	300
LdCL_140007900	NSDAVSTLSLPLGWIGLPLDKLLKAIGGGKLLMPPVSDVVAEAAVRACAWANQPGNDIH	237
LAEL147_000193000	NPDAVSTLSLPLGWIGLPLDKLLTAIGGGKLLMPPVSDVVAEAAVRACAWANQPGNDIH	287
	* . ***** : **** . *****	*****
N-terminal_9	GTCDVYRMHDICNAVDPSLHEDSKGTMTASAASKEASTVKNDK	343
LdCL_140007900	GTCDVYRMHDICNAVDPSLHEDSKGTMTASAASKEASTVKNDK	280
LAEL147_000193000	GICDVYRMHGICNAADPSLHEDSKGTMTASAASKEASTVKNDK	220
	* ***** . **** . *****	*****

C

GGAPPLGSPMDTLFK



Supplementary Figure 10 Amastigote life stage

A N-terminal extension 10: Tyrosyl or methionyl-tRNA synthetase

Leishmania donovani CL_SL Chromosome 16 (Positive strand)

Current Annotation

Gene: LdCL_160016700

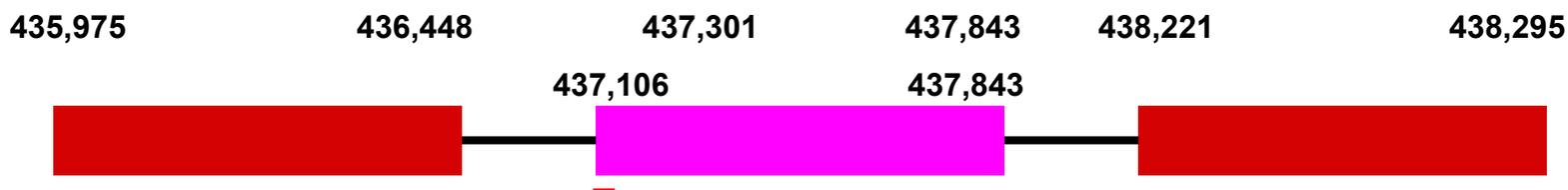
Current gene: LdCL_160016800

Gene: LdCL_160016900

Hypothetical

Tyrosyl or methionyl-tRNA synthetase

ncRNA



B

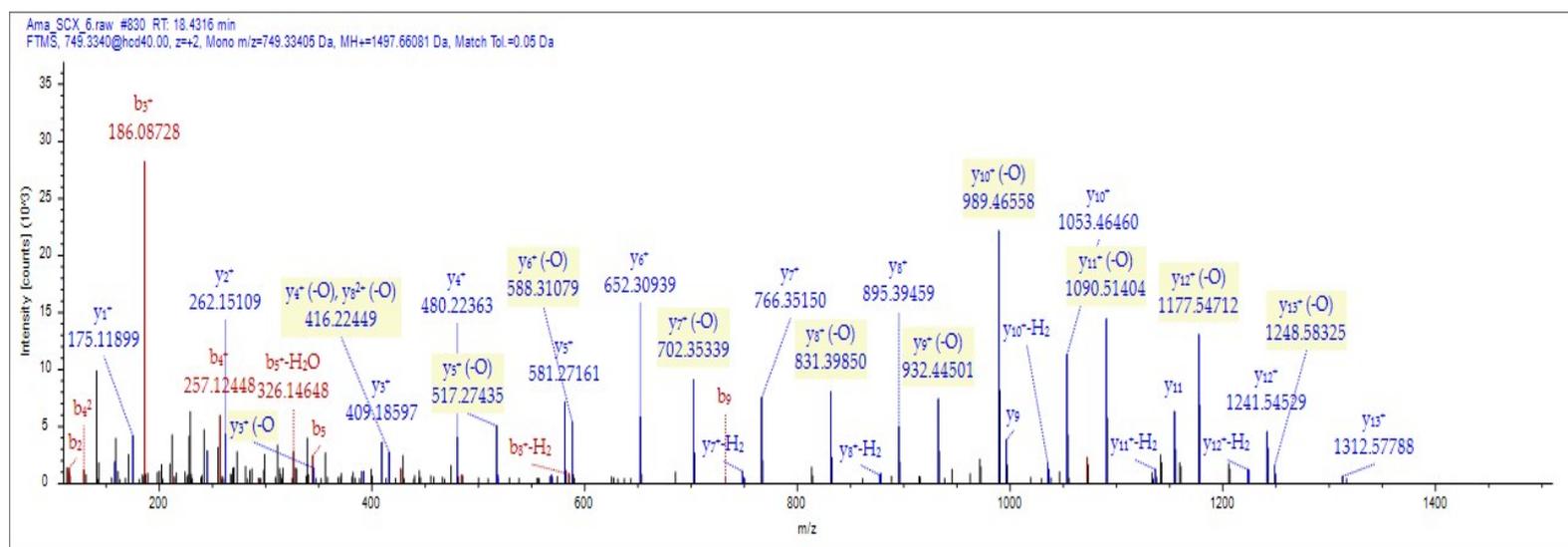
N-terminal_10	MASHAEGRLRLRRSVPYVESWIAELTPKPVASAAGAAPAPKGGKAK GGAASTGTENATAMSR	60
LdBPK.16.2.001170	MASHAEGRLRLRRSVPYVESWIAELTPKPVASAAGAAPAPKGGKAK GGAASTGTENATAMSR	60
LdCL_160016800	-----MSR	3

N-terminal_10	CCFAVGKVLEVSRHPSEKLYIEKIDLGAELNMLSNNEPRTILSGLQEFVKEEDFVNRLV	120
LdBPK.16.2.001170	CCFAVGKVLEVSRHPSEKLYIEKIDLGAELNMLSNNEPRTILSGLQEFVKEEDFVNRLV	120
LdCL_160016800	CCFAVGKVLEVSRHPSEKLYIEKIDLGAELNMLSNNEPRTILSGLQEFVKEEDFVNRLV	63

N-terminal_10	LVIANLEPRKIGGIPSAGMVLCASTGEDPHDPALAGQGERKVLLDIPEGTAVGERVVFE	180
LdBPK.16.2.001170	LVIANLEPRKIGGIPSAGMVLCASTGEDPHDPALAGQGERKVLLDIPEGTAVGERVVFE	180
LdCL_160016800	LVIANLEPRKIGGIPSAGMVLCASTGEDPHDPALAGQGERKVLLDIPEGTAVGERVVFE	123

N-terminal_10	GHDMPYEPVLKKKLAKNFEEVMKDVCSADGVVCWQGKPFQTSAGVIKASLCNARIS	237
LdBPK.16.2.001170	GHDMPYEPVLKKKLAKNFEEVMKDVCSADGVVCWQGKPFQTSAGVIKASLCNARIS	237
LdCL_160016800	GHDMPYEPVLKKKLAKNFEEVMKDVCSADGVVCWQGKPFQTSAGVIKASLCNARIS	180

C GGAASTGTENATAMSR



Supplementary Figure 11 Amastigote life stage

A N-terminal extension 11: ATP12 chaperone

Leishmania donovani CL_SL Chromosome 18 (Positive strand)

Current Annotation

Gene: LdCL_180008300

Current gene: LdCL_180008400

Gene: LdCL_180008500

DUF4475

ATP12 chaperone

GPI8

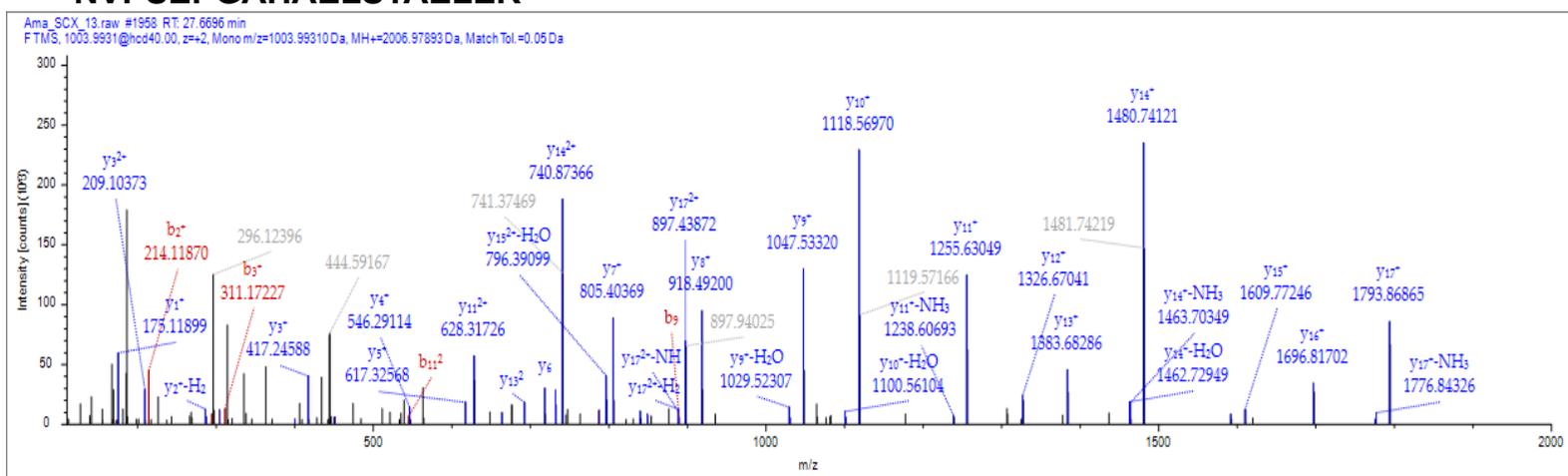


B

N-terminal_11 LdBPK_180350.1 LdCL_180008400	MRPFTLAKGAAPRQLLAVAIAAARMSVSSSTPAEPSTPAGASQATAATGPTVAPKKPRRR 60 MRPFTLAKGAAPRQLLAVAIAAARMSVSSSTPAEPSTPAGASQATAATGPTVAPKKPRRR 60 -----
N-terminal_11 LdBPK_180350.1 LdCL_180008400	IASKLDASALLKNVPSEPGAHAELSTAELEKVEEMSRMNSKQLEEVMRKFEEQENESSR 120 IASKLDASALLKNVPSEPGAHAELSTAELEKVEEMSRMNSKQLEEVMRKFEEQENESSR 120 -----MSRMNSKQLEEVMRKFEEQENESSR 25 *****
N-terminal_11 LdBPK_180350.1 LdCL_180008400	VLSEDSLYQMEVSLKPRSSGAVRVFWKDVVDVELEGRYIGWFAVTVDRKVKAMKSSQVL 180 VLSEDSLYQMEVSLKPRSSGAVRVFWKDVVDVELEGRYIGWFAVTVDRKVKAMKSSQVL 180 VLSEDSLYQMEVSLKPRSSGAVRVFWKDVVDVELEGRYIGWFAVTVDRKVKAMKSSQVL 85 *****
N-terminal_11 LdBPK_180350.1 LdCL_180008400	AVPSEAMACCCAQEYAEQTGYINQLLPMMSDICS GALHIAPQMLTPRIDYLLSFFQNDNL 240 AVPSEAMACCCAQEYAEQTGYINQLLPMMSDICS GALHIAPQMLTPRIDYLLSFFQNDNL 240 AVPSEAMACCCAQEYAEQTGYINQLLPMMSDICS GALHIAPQMLTPRIDYLLSFFQNDNL 145 *****
N-terminal_11 LdBPK_180350.1 LdCL_180008400	YFRAAPIAAKQDAMIAPIIAWFERVYEMDVPRVVGIGDPHITPHATAKMRDALIAMNMNP 300 YFRAAPIAAKQDAMIAPIIAWFERVYEMDVPRVVGIGDPHITPHATAKMRDALIAMNMNP 300 YFRAAPIAAKQDAMIAPIIAWFERVYEMDVPRVVGIGDPHITPHATAKMRDALIAMNMNP 205 *****
N-terminal_11 LdBPK_180350.1 LdCL_180008400	YQVLAMCVTAQFTSLLLPLALFSGVVDLPTTLAINRAEEQHSISEAGLVAGYHDIREAD 360 YQVLAMCVTAQFTSLLLPLALFSGVVDLPTTLAINRAEEQHSISEAGLVAGYHDIREAD 360 YQVLAMCVTAQFTSLLLPLALFSGVVDLPTTLAINRAEEQHSISEAGLVAGYHDIREAD 265 *****
N-terminal_11 LdBPK_180350.1 LdCL_180008400	AVTKICACAMTWKLMKDVPLAKCLEMPRAASAVEEEAEAI 399 AVTKICACAMTWKLMKDVPLAKCLEMPRAASAVEEEAEAI 399 AVTKICACAMTWKLMKDVPLAKCLEMPRAASAVEEEAEAI 304 *****

C

NVPSEPGAHAELSTAELEK



Supplementary Figure 12 Amastigote life stage

A N-terminal extension 12: intraflagellar transport protein 80

Leishmania donovani CL_SL Chromosome 19 (Positive strand)

Current Annotation

Gene: LdCL_190008200

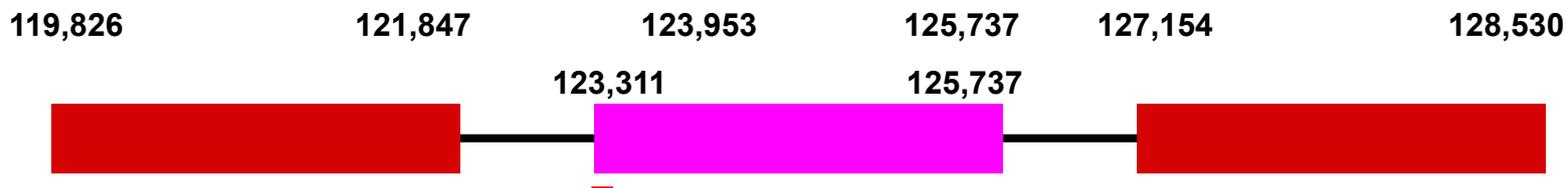
Current gene: LdCL_190008300

Gene: LdCL_190008400

IFT 52

Intraflagellar transport protein 80

Hypothetical



B

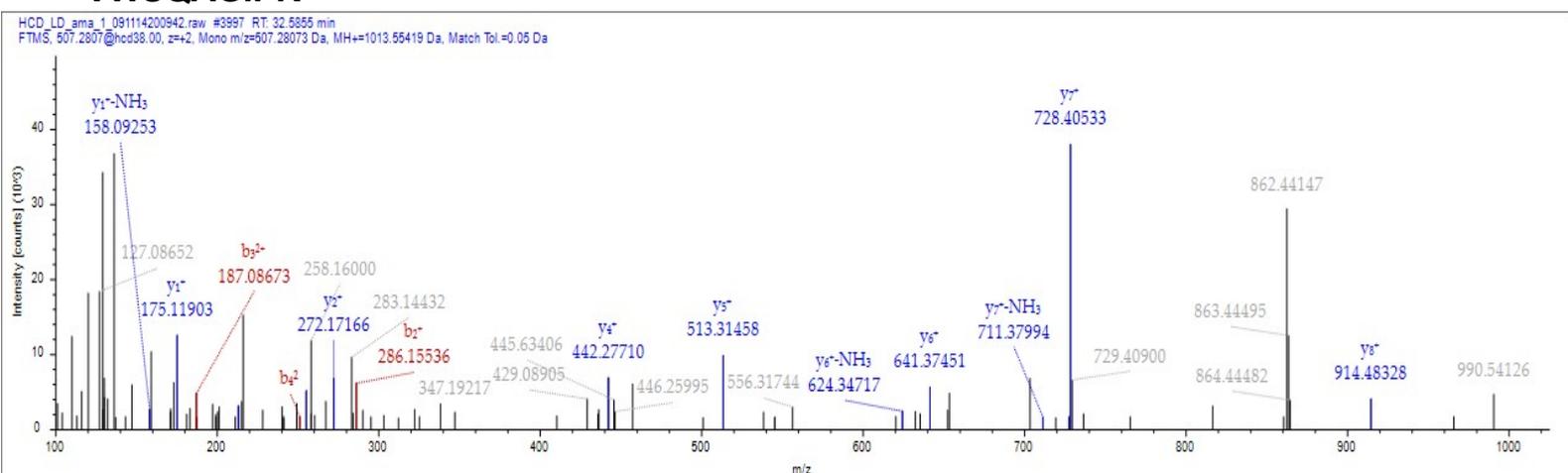
N-terminal_12	MRLNITSAKERHGEACTTVAVSLNGDIISGSDDFTVRRWNANGEALGVVKEFDSCVTFVT	60
LdCL_190008300	-----	
LTRL590_190008000	MRLNITSAKERHGEACTTVAVSLNGDIISGSDDFTVRRWNANGEALGVVKEFDSCVTFVT	60
N-terminal_12	WVPRVGRGARLARGAAAETREGRDNCLVACADGSFSFVNTASGRVERTIEAHAGSITAAV	120
LdCL_190008300	-----	
LTRL590_190008000	WVPAVGRGARLARGAAAETREGRDNCLVACADGSFSFVNTASGRVERTIEAHAGSITAAV	120
N-terminal_12	YPADGSSIIITAGEDGCVK VWSQAGI PR T TLANAGRCINALCWGTEAAELGGDCVLYAVGS	180
LdCL_190008300	-----	
LTRL590_190008000	YAADGSSIIITAGEDGCVK VWSQAGI PR T TLANAGRCINALCWGTEATELGGDCVLYAVGS	180
N-terminal_12	DVVIKPLNPAMKKQIKWKAHKGVVLCADWSRMSGMIVTGGEDGAYKVWDPGCSIFVSAA	240
LdCL_190008300	-----MKKQIKWKAHKGVVLCADWSRMSGMIVTGGEDGAYKVWDPGCSIFVSAA	50
LTRL590_190008000	DVVIKPLNPAMKKQIKWKAHKGVVLCADWSRMSGMIVTGGEDGVYKVWDPYGCISIFVAAA	240
	*****.*****	
N-terminal_12	GEHPITSVRFAADGESFAVGSFMNVRVCDKTGWSHSYERTTEGSAMALDWMMPDGTQMILG	300
LdCL_190008300	GEHPITSVRFAADGESFAVGSFMNVRVCDKTGWSHSYERTTEGSAMALDWMMPDGTQMILG	110
LTRL590_190008000	GEHPITSVRFAADGESFAVGSFMNVRVCDKTGWSHSYERTTEGSAMALDWMMPDGTQMILG	300

N-terminal_12	NGTGALSIAQIVDRKVSWGPTYVTLLDSRRLTVQDVVKDTVQEI E LADKVIKLELGCGYL	360
LdCL_190008300	NGTGALSIAQIVDRKVSWGPTYVTLLDSRRLTVQDVVKDTVQEI E LADKVIKLELGCGYL	170
LTRL590_190008000	NGTGALSIAQIVDRKVSWGPTYVTLLDSRRLTVQDVVKDTVQEI E LADKVIKLELGCGYL	360

N-terminal_12	VVCTTTQCCCYPM D R L NAPVQFDL R DPVISIILGPRQFLLADCSQGLQVYSYEGRQISVL	420
LdCL_190008300	VVCTTTQCCCYPM D R L NAPVQFDL R DPVISIILGPRQFLLADCSQGLQVYSYEGRQISVL	230
LTRL590_190008000	VVCTTTQCCCYPM D R L NAPVQFDL R DPVISIILGPRQFLLADCSQGLQVYSYEGRQISVL	420

C

VWSQAGIPR



Supplementary Figure 13 Amastigote life stage

A N-terminal extension 13: Complex 1 protein (LYR family)/Complex1 LYR

Leishmania donovani CL_SL Chromosome 19 (Positive strand)

Current Annotation

Gene: LdCL_190007100

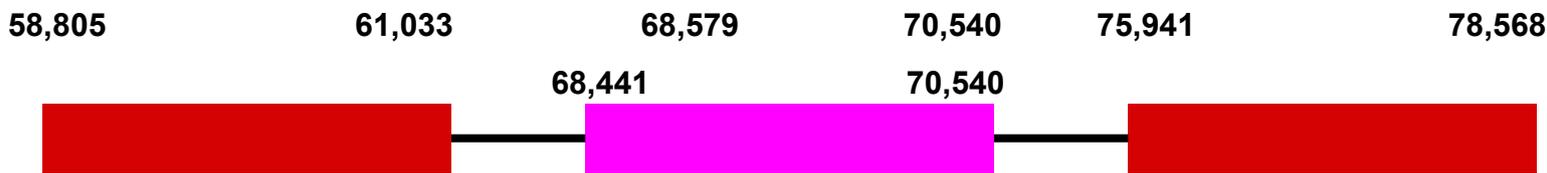
Current gene: LdCL_190007200

Gene: LdCL_190007400

Polyprenyl synthase

Complex 1 protein (LYR family)/Complex1 LYR

UvrB/uvrC motif



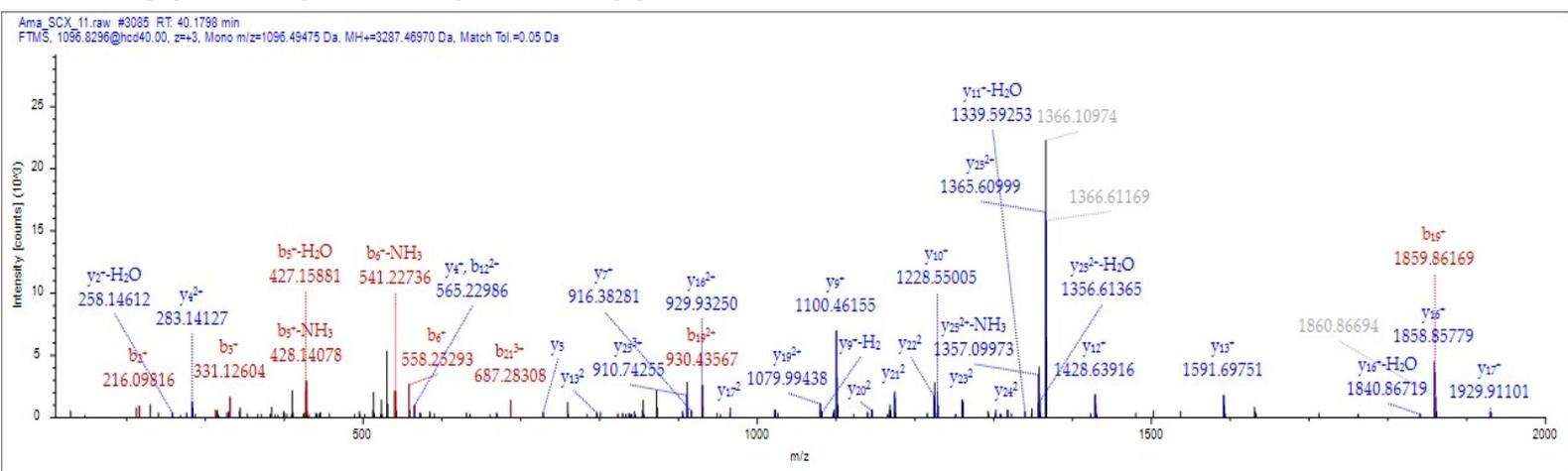
B

N-terminal_13	MLRRLCVPLRVVAAGLRLNSSSSGPSK TNDGGIPNATGMDNAPGLYAEKPSSTYCEEKYP	60
LdCL_190007200	-----MDNAPGLYAEKPSSTYCEEKYP	22
LTRL590_190006800	MSRRLCVPLRVVAAGLRLNSSSSGPSK TNDGGIPNATGMDNAPGLYTEKPSSTYCEEKYP	60
	***** : *****	
N-terminal_13	NKMEEVGSCLKPPTYDVPHGRSDNIKTPEFNTSLGKFDQAPYFTGGPPAMRYHGYKRDPA G	120
LdCL_190007200	NKMEEVGSCLKPPTYDVPHGRSDNIKTPEFNTSLGKFDQAPYFTGGPPAMRYHGYKRDPA G	82
LTRL590_190006800	NKIEEVGSCLKPPTYDVPHGRSDNIKTPEFNTSLGKFDQAPYFTGGPPAMRYHGYKRDPA V	120
	** : *****	
N-terminal_13	EGVDYRDVLPKTP IEDHHPHMEFLSV TGRREGSTFLLANAGVNWELKAAAMSLYRTILKS	180
LdCL_190007200	EGVDYRDVLPKTP IEDHHPHMEFLSV TGRREGSTFLLANAGVNWELKAAAMSLYRTILKS	142
LTRL590_190006800	EGVDYRDVLPKTP IEDHHPHMEFLSV TGRREGSTFLLANAGVNWELKAAAMSLYRTILKS	180

N-terminal_13	LPMIKHYWLLVPLPEMKDKIRL RFLQ NQHTKDPDAIRHLLHNGWMEFQESIMFRRPRAT	240
LdCL_190007200	LPMIKHYWLLVPLPEMKDKIRL RFLQ NQHTKDPDAIRHLLHNGWMEFQESIMFRRPRAT	202
LTRL590_190006800	LPMIKHYWLLVPLPEMKDKIRL RFLQ NQHTKDPDAIRHLLHNGWMEFQESIMFRRPRAT	240

N-terminal_13	IEKYFEHESMDEL SKQYTKEEGLM SSEREFWNGEEQRREGPHNGHWSWLGEQCEKEFTKI	300
LdCL_190007200	IEKYFEHESMDEL SKQYTKEEGLM SSEREFWNGEEQRREGPHNGHWSWLGEQCEKEFTKI	262
LTRL590_190006800	IEKYFEHESIDEL SKQYTKEEGLM SSEREFWNGEEQRREGPHNGHWSWLGEQCEKEFTKI	300
	***** : *****	
N-terminal_13	AGRIPISWTASRGYFEKGQADGTNYWEKNLDYEGWYIK KNVDPDRQ NARREM QGWV ESGYN	360
LdCL_190007200	AGRIPISWTASRGYFEKGQADGTNYWEKNLDYEGWYIK KNVDPDRQ NARREM QGWV ESGYN	322
LTRL590_190006800	AGRIPISWTASRGYFEKGQADGTNYWEKNLDYEGWYIK KNVDPDRQ NARREM QGWV ESGYN	360
	***** : *****	
N-terminal_13	QPKHYASKNRRGYRRMV KDIETLM ETSMEDLYTHNREQLFQYLIRESSPESNRINAERTL	420
LdCL_190007200	QPKHYASKNRRGYRRMV KDIETLM ETSMEDLYTHNREQLFQYLIRESSPESNRINAERTL	382
LTRL590_190006800	QPKHYASKNRRGYRRMV KDIETLM ETSMEDLYTHNREQLFQYLIRESSPESNRINAERTL	420

C TNDGGIPNATGMDNAPGLYAEKPSSTYCEEK



Supplementary Figure 14 Amastigote life stage

A N-terminal extension 14: 40S ribosomal protein S11

Leishmania donovani CL_SL Chromosome 20 (Negative strand)

Current Annotation

Gene: LdCL_200020900

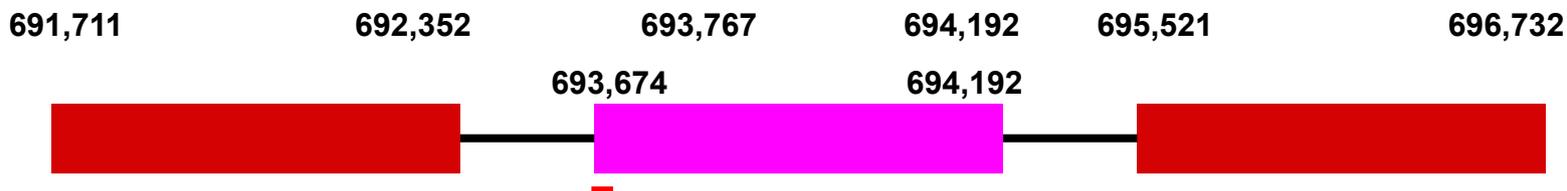
Suppressor of G2
allele of SKP1

Current gene: LdCL_200021000

40S ribosomal
protein S11

Gene: LdCL_200021100

Hypothetical



B

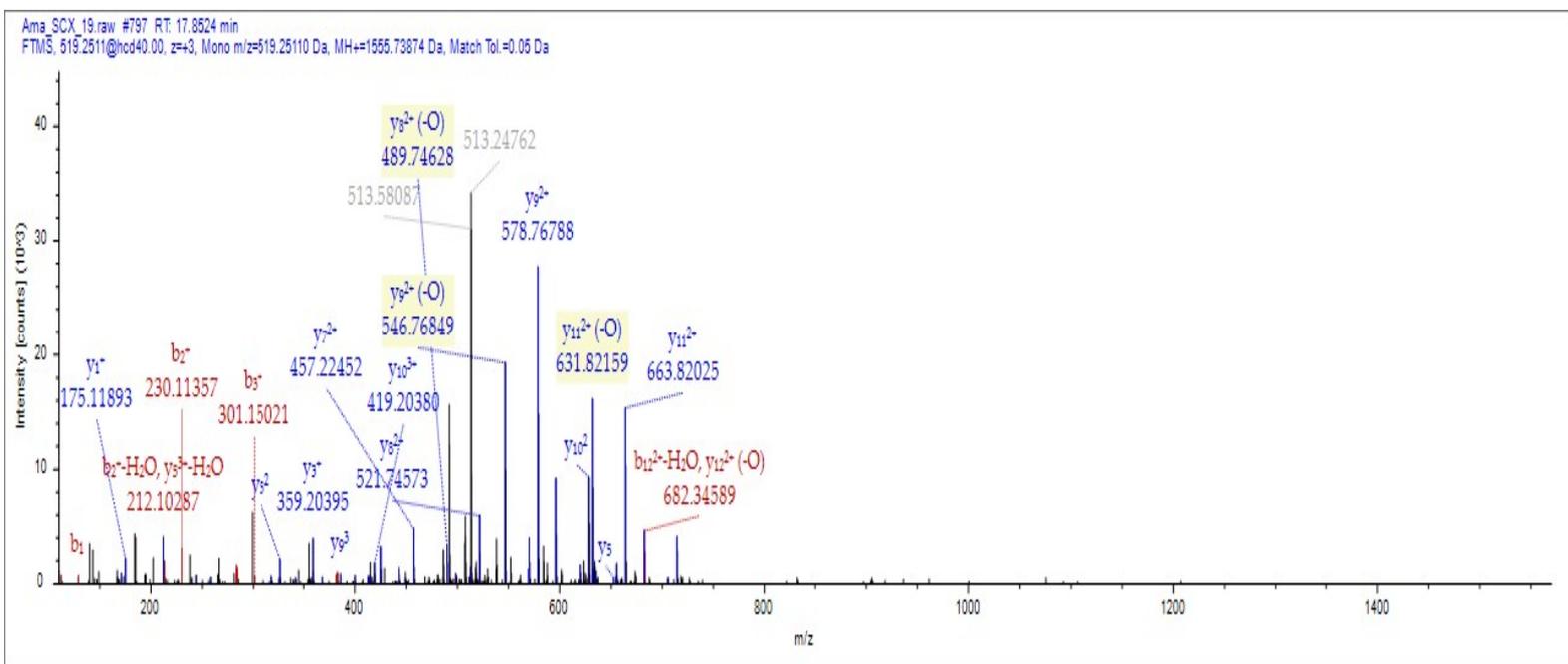
N-terminal_14	MPVAPQYYHAHAVDATIQHEKAYQR QTAVNENMHRPSR KHVNKS GHIRYSK I GLGFKTP	60
LMJSD75_210023800	MPVAPQYYHAHAVDATIQHEKAYQR QTAVNENMHRPSR KHVNKS GHIRYSK I GLGFKTP	60
LdCL_200021000	-----MHRPSRKHV NKSGHIRYSK I GLGFKTP	28

N-terminal_14	AKALNGKYIDRKCPFTSNVVIRGRILRGVVHSTKMHRTIIIRRN YLHF IKKYQRYQKRHK	120
LMJSD75_210023800	AKALNGKYIDRKCPFTSNVVIRGRILRGVVHSTKMHRTIIIRRN YLHF IKKYQRYQKRHK	120
LdCL_200021000	AKALNGKYIDRKCPFTSNVVIRGRILRGVVHSTKMHRTIIIRRN YLHF IKKYQRYQKRHK	88

N-terminal_14	SLAVHCSPA FDPKQ GDEVVIGQCRPLSKTIRYNVLEVVS SKSSADKMGK FAKN	173
LMJSD75_210023800	SLAVHCSPA FDPKQ GDEVVIGQCRPLSKTIRYNVLEVVS SKSSADKMGK FAKN	173
LdCL_200021000	SLAVHCSPA FDPKQ GDEVVIGQCRPLSKTIRYNVLEVVS SKSSADKMGK FAKN	141

C

QTAVNENMHRPSR



Supplementary Figure 15 Amastigote life stage

A N-terminal extension 15: 50S ribosome-binding GTPase/Dynamain

Leishmania donovani CL_SL Chromosome 22 (Negative strand)

Current Annotation

Gene: LdCL_220009800

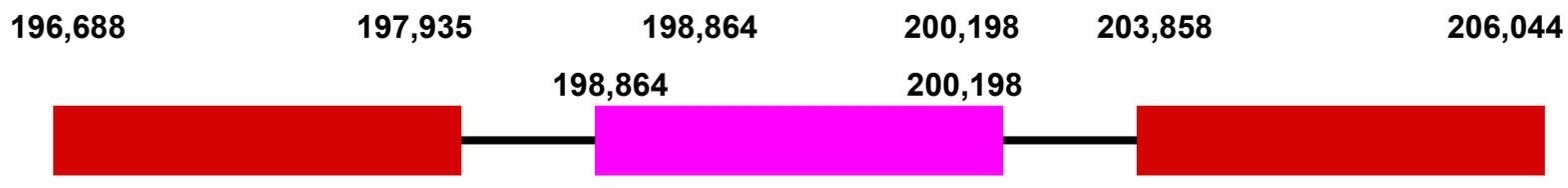
Current gene: LdCL_220009900

Gene: LdCL_220010000

tRNA binding domain

50S ribosome-binding GTPase

Protein kinase

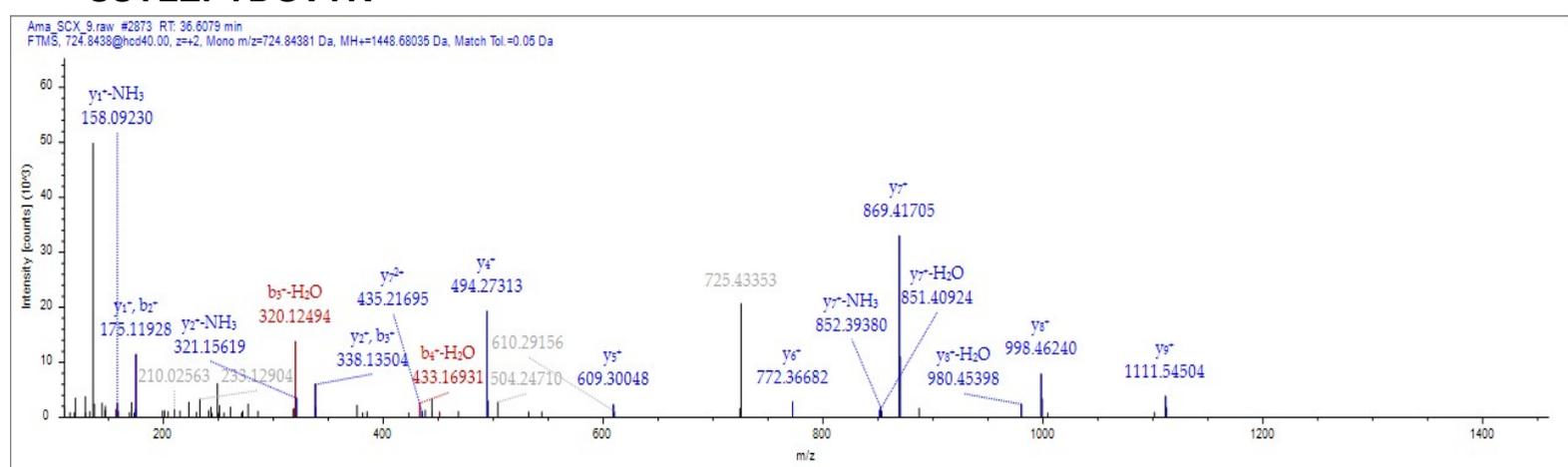


B

N-terminal_15	MYRRLSRVASSQAESRPRTVASAAGWAPTQSFSTAHS PRGSFN SGAVSWLVAASRGLRMH	60
LdCL_220009900	-----	
LGELEM452_220010000	MHRRLSRVASSQADSRLRTVASAAGWVPTQSFSTAHP PRGAFNNAVPSLVAASRSLRTN	60
N-terminal_15	TFVMGTPVNRVQRRGYFSNGPHHQEHSVNLDSGTGKATDGSGASAALSLSGASSHAAVQ	120
LdCL_220009900	-----	
LGELEM452_220010000	TFVMGTPANRAQRRGYSSSGPHHQEHSVNLDSGAGKAADGSGASAALSLSWASSHAAVQ	120
N-terminal_15	AGIEAELQALRSSYLEPYDGVYRFLTPFKSTTPMVMFLGNHSSGKSTLINYL SGCEIQET	180
LdCL_220009900	-----MVMFLGNHSSGKSTLINYL SGCEIQET	27
LGELEM452_220010000	AGIEGELQALRSSYLEPYDGVYRFLTPFKSTTPMVMFLGNHSSGKSTLINYL SGCEVQET	180
	*****:***	
N-terminal_15	GVAPTDDGFTVIKRGTYDMDADGPSVVS NP KYQYQSLQQFGISFVTHFKMKTRAMPATSQ	240
LdCL_220009900	GVAPTDDGFTVIKRGTYDMDADGPSVVS NP KYQYQSLQQFGISFVTHFKMKTRAMPATSQ	87
LGELEM452_220010000	GVAPTDDGFTVIKRGAYDMDADGPSVVS NP KYQYQSLQQFGISFVTHFKMKTRAMPATSQ	240
	*****:*****	
N-terminal_15	IPMDMVLVDTPGMIDTPVHASSAEQAGSGDHTRGYDFLAVTRWFAQQSDVILLMFD PANP	300
LdCL_220009900	IPMDMVLVDTPGMIDTPVHASSAEQAGSGDHTRGYDFLAVTRWFAQQSDVILLMFD PANP	147
LGELEM452_220010000	IPMDMVLVDTPGMIDTPVHASSAEQAGSGDHTRGYDFLGVTRWFAQQSDVILLMFD PANP	300
	*****.*****	

C

SSYLEPYDGVYR



Supplementary Figure 16 Amastigote life stage

A N-terminal extension 16: Hypothetical protein

Leishmania donovani CL_SL Chromosome 23 (Positive strand)

Current Annotation

Gene: LdCL_230021100

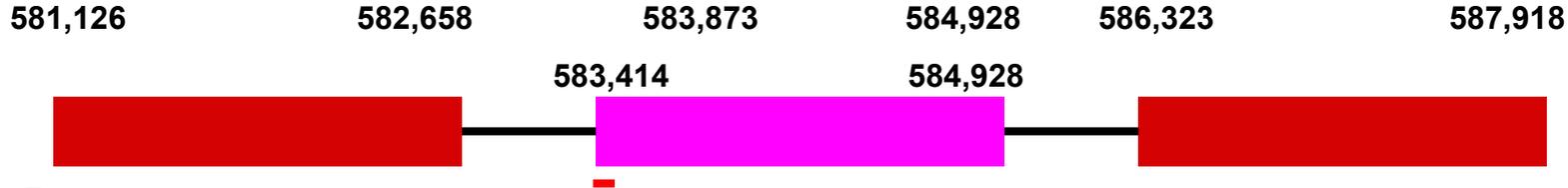
Current gene: LdCL_230021200

Gene: LdCL_230021400

Coronin

Hypothetical

MBAP2



B

N-terminal_16	MKQLLSPKTARHARLFRLANRLAGQKGAPESDGERLSWVNSHVKRTQDMELSRREEEALRE	60
LdCL_230021200	-----	
LmjF.23.1190	MKQLLSPKTARHSRLFRLANRLAGQKGAPESDGERLSWVNSHVKRTQDMELSRREEEALRE	60
N-terminal_16	RIMPLEVGDNAVVSNSQATHGNLFHFREYPMYPGEYVPAGHNTLSSLRDELRSDLTAQSL	120
LdCL_230021200	-----MYPGEYVPAGHNTLSSLRDELRSDLTAQSL	30
LmjF.23.1190	RIMPLEVGDNAVVSNSQATHGNLFHFREYPMYPGEYVPAGHNTLSSLRDELRSDLTAQSL	120

N-terminal_16	KEAWMRVSGGMYFKSIDDYYASVDGLDQEQLGEIVSALLPDLRKYEALVTKVLESLSK	180
LdCL_230021200	KEAWMRVSGGMYFKSIDDYYASVDGLDQEQLGEIVSALLPDLRKYEALVTKVLESLSK	90
LmjF.23.1190	KEAWMRVSGGMYFKSIDDYYASVDGLDQEQLGEIVSALLPDLRKYEALVTKVLESLSK	180

N-terminal_16	PADSPSRQLSRTITADAVGLDNAPGHYTNFLEWMGRMTETKAFKTEHALFEFSRRKFNRE	240
LdCL_230021200	PADSPSRQLSRTITADAVGLDNAPGHYTNFLEWMGRMTETKAFKTEHALFEFSRRKFNRE	150
LmjF.23.1190	PADSPSRQLSRTITADAVGLDNAPGHYTNFLEWMGRMTETKAFKTEHALFEFSRRKFNRE	240

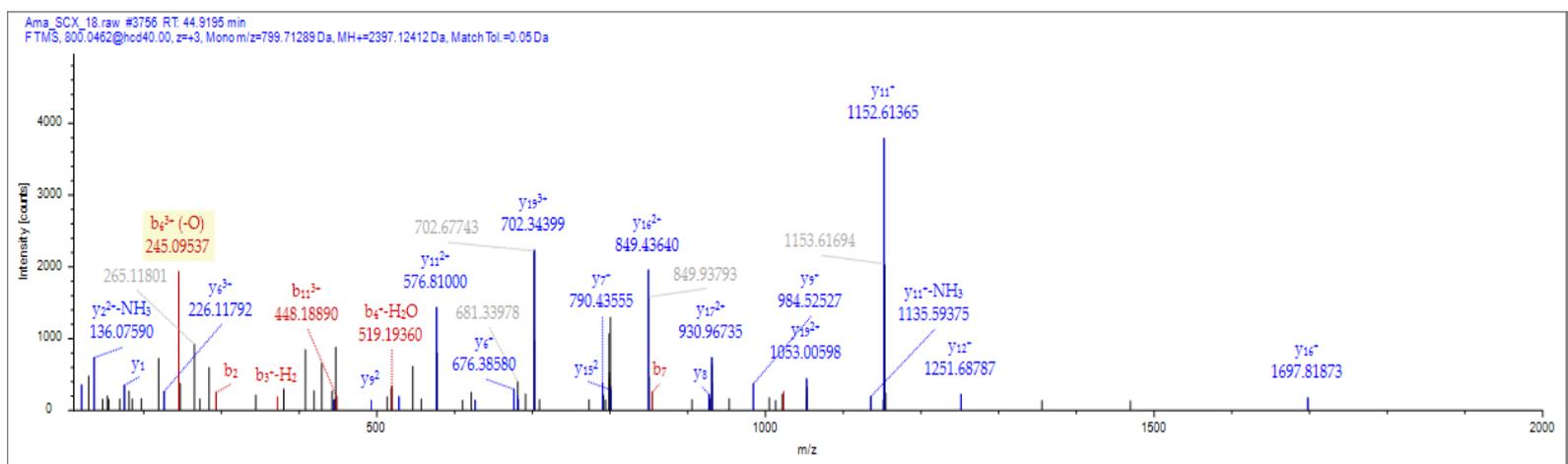
N-terminal_16	DVRVMFENYNLMSKATLEADSSDSYSHFYAVLHDFS RKVAGEDTRHQIGVRIDPAEVDPE	300
LdCL_230021200	DVRVMFENYNLMSKATLEADSSDSYSHFYAVLHDFS RKVAGEDTRHQIGVRIDPAEVDPE	210
LmjF.23.1190	DVRVMFENYNLMSKATLEADSTDSYSHFYTVLHDFS RKVAGEDTRHQIGVRIDPAEVDPE	300
***** : ***** : *****		
N-terminal_16	TGIAVGHGRADGQKYMFTALIRENRDHNGSVTLLGKPLSVAFDDKSWLMEMVLMPPFDEAK	360
LdCL_230021200	TGIAVGHGRADGQKYMFTALIRENRDHNGSVTLLGKPLSVAFDDKSWLMEMVLMPPFDEAK	270
LmjF.23.1190	TGIAVGHGRADGQKYMFTALIRENRDHNGSVTLLGKPLSVAFDDKSWLMEMVLMPPFDEAK	360

N-terminal_16	LDFRDFDVNLI SEGKAMP SFANEIAAFACRM AVANAITKLLPLARIPLKKAGLLSVDRRR	420
LdCL_230021200	LDFRDFDVNLI SEGKAMP SFANEIAAFACRM AVANAITKLLPLARIPLKKAGLLSVDRRR	320
LmjF.23.1190	LDFRDFDVNLI SEGKAMP SFANEIAAFACRM AVANAITKLLPLARIPLKKAGLLSVDRRR	420

N-terminal_16	EPGQFPGFVDGKKNKRKFAKR	441
LdCL_230021200	EPGQFPGFVDGKKNKRKFAKR	341
LmjF.23.1190	EPGQFPGFVDGKKNKRKFAKR	441

C

EYPMYPGEYVPAGHNTLSSLR



Supplementary Figure 17 Amastigote life stage

A N-terminal extension 17: Hypothetical protein

Leishmania donovani CL_SL Chromosome 23 (Positive strand)

Current Annotation

Gene: LdCL_230021100

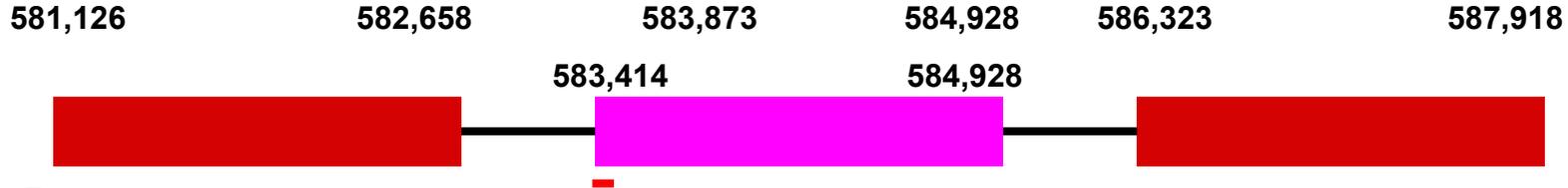
Current gene: LdCL_260013700

Gene: LdCL_230021400

Coronin

Hypothetical

MBAP2



B

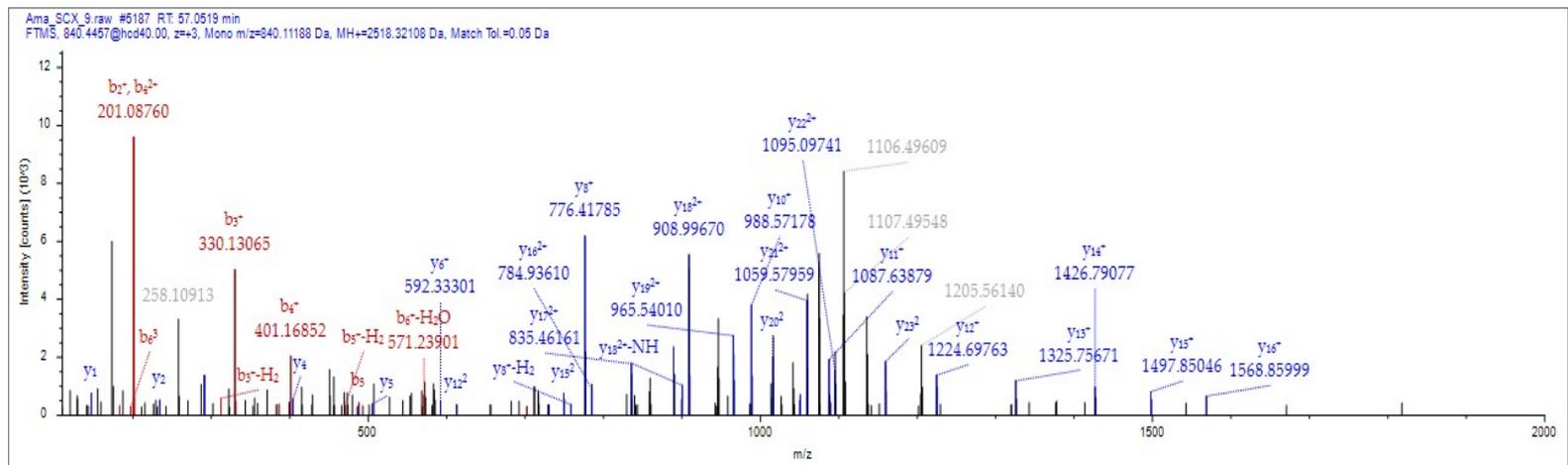
N-terminal_17	M	S	H	L	T	S	S	T	A	E	A	E	A	G	P	G	S	A	T	G	A	G	H	T	V	P	P	P	A	S	T	A	C	V	A	S	Q	Q	S	T	A	T	A	K	P	P	A	P	V	V	R	R	R	G	R	G	T	F	K	H	Q	60
LdCL_260013700	-----																																																													
LdBPK_260800.1	M	S	H	L	T	S	S	T	A	E	A	E	A	G	P	G	S	A	T	G	A	G	H	T	V	P	P	P	A	S	T	A	C	V	A	S	Q	Q	S	T	A	T	A	K	P	P	A	P	V	V	R	R	R	G	R	G	T	F	K	H	Q	60
N-terminal_17	L	R	T	E	E	M	E	R	Q	Y	A	S	G	S	A	A	A	A	A	A	A	A	L	G	R	A	E	E	A	S	T	I	F	T	A	A	T	H	V	V	L	P	S	S	T	L	G	S	K	A	T	K	P	V	T	E	E	120				
LdCL_260013700	-----																																																													
LdBPK_260800.1	L	R	T	E	E	M	E	R	Q	Y	A	S	G	S	A	A	A	A	A	A	A	A	L	G	R	A	E	E	A	S	T	I	F	T	A	A	T	H	V	V	L	P	S	S	T	L	G	S	K	A	T	K	P	V	T	E	E	120				
N-terminal_17	E	E	I	A	A	Q	F	A	H	L	K	K	G	K	D	I	P	L	N	M	M	V	G	Q	V	V	S	S	A	A	A	T	S	T	G	S	P	M	P	V	T	A	R	L	A	A	A	E	A	R	A	A	A	P	R	T	H	F	180			
LdCL_260013700	-----MMV																																																													
LdBPK_260800.1	E	E	I	A	A	Q	F	A	H	L	K	K	G	K	D	I	P	L	N	M	M	V	G	Q	V	V	S	S	A	A	A	T	S	T	G	S	P	M	S	V	T	A	R	L	A	A	A	E	A	R	A	A	A	P	R	T	H	F	180			

N-terminal_17	G	I	F	E	N	N	A	N	D	T	A	R	Q	L	L	F	R	G	E	K	R	R	R	Y	C	V	I	V	G	D	L	Q	N	S	T	R	Q	V	T	L	K	L	F	G	H	K	G	A	K	P	F	K	L	Q	N	K	L	I	R	L	240	
LdCL_260013700	-----																																																													
LdBPK_260800.1	G	I	F	E	N	N	A	N	D	T	A	R	Q	L	L	F	R	G	E	K	R	R	R	Y	C	V	I	V	G	D	L	Q	N	S	T	R	Q	V	T	L	K	L	F	G	H	K	G	A	K	P	F	K	L	Q	N	K	L	I	R	L	240	

N-terminal_17	V	N	L	S	I	G	K	P	R	R	G	T	L	Q	W	R	V	A	H	G	L	L	D	D	D	D	V	E	G	Q	Q	P	V	E	E	Q	R	T	D	S	D	E	E	E	E	E	Q	P	C	E	Q	D	E	S	A	A	D	S	D	A	V	300
LdCL_260013700	-----																																																													
LdBPK_260800.1	V	N	L	S	I	G	K	P	R	R	G	T	L	Q	W	R	V	A	H	G	L	L	D	D	D	D	V	E	G	Q	Q	P	V	E	E	Q	R	T	D	S	D	E	E	E	E	E	Q	P	C	E	Q	D	E	S	A	A	D	S	D	A	V	300

N-terminal_17	S	A	V	D	D	D	G	N	G	M	G	R	D	G	E	D	V	A	A	A	A	T	T	D	G	N	C	G	N	G	G	A	T	P	T	T	E	A	Q	G	R	E	A	A	C	A	T	P	A	A	A	L	S	A	L	N	G	Y	T	P	360	
LdCL_260013700	-----																																																													
LdBPK_260800.1	S	A	V	D	D	D	G	N	G	M	G	R	D	G	E	D	V	A	A	A	A	T	T	D	G	N	C	G	N	G	G	A	T	P	T	T	E	A	Q	G	R	E	A	A	C	A	T	P	A	A	A	L	S	A	L	N	G	Y	T	P	360	

C AEEASTIFTAATTHVLPSSTLGSK



Supplementary Figure 18 Amastigote life stage

A N-terminal extension 18: Glucosidase II beta subunit

Leishmania donovani CL_SL Chromosome 26 (Negative strand)

Current Annotation

Gene: LdCL_260015200

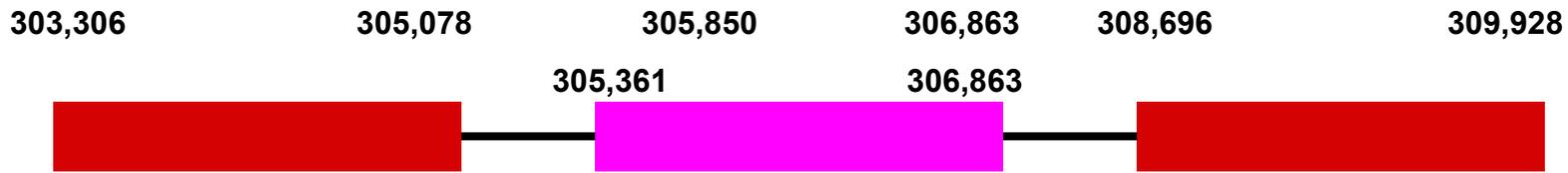
Current gene: LdCL_260015300

Gene: LdCL_260015400

Ion transport protein/
Polycystin cation channel

Glucosidase II
beta subunit

Hypothetical



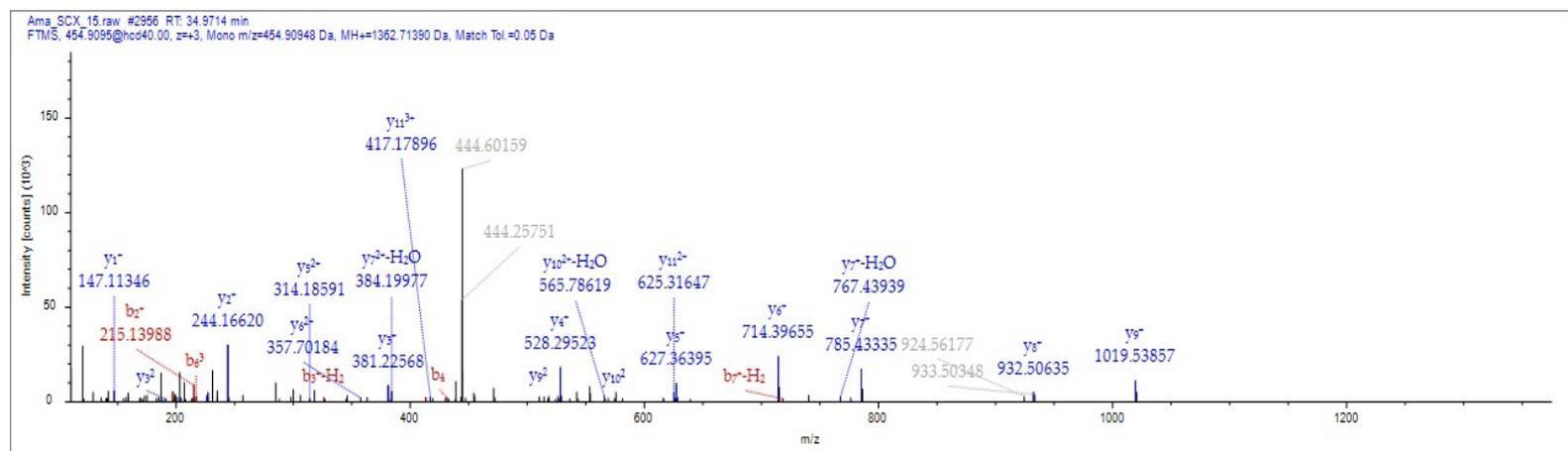
B

N-terminal_18	MTTIRWALFAVALFCSVLTPVHGRILGVQSRYTAYFDAAKNAGVFRCLDGSATIPFSSVN	60
LdCL_260015300	-----	
LGELEM452_260014700	MTTIRWALFAAALFCTVLTVPVHARILGVQSRYTAYFDAAKNEGVRCLDGSATIPFSSVN	60
N-terminal_18	NDICDCADGSDEPGTAACTALRGSALTLFPQDWKFQCTAEHVVSQEFLHNHVNDGICDCC	120
LdCL_260015300	-----	
LGELEM452_260014700	NDICDCGDSDEPGTAACTALRGSALTLFPQDWKFQCTGEEHVVSQAFLHNYVNDGICDCC	120
N-terminal_18	DGSDEAESPTLCPNRCAEVARELVRQREAEQERSRKA AVSKAVMHS AALRRREEAAKSLA	180
LdCL_260015300	-----MHS AALRRREEAAKSLA	17
LGELEM452_260014700	DGSDETESPTLCPNRCAEVARELVRQREAEQERSRKG AESKAVMHS AALRRREEAAKSLA	180

N-terminal_18	ELETEYAQIVADLPAL EARKAAAEKEQEARWTELEMEQNESEAGHYESEFSDDATSCIRW	240
LdCL_260015300	ELETEYAQIVADLPAL EARKAAAEKEQEARWTELEMEQNESEAGHYESEFSDDATSCIRW	77
LGELEM452_260014700	ELEPEYAQIVADLPAL EARKAAAEKEQEARWAELEMKQSESEADHYESEFSDDATSCIRW	240
	*** . ***** : ***** : * . ***** . *****	
N-terminal_18	CQTGGCIGTGPRESHRDKSCSNVIDRDSSGYCECKTND EKD ERE EDEEGAEREAEGEGTE	300
LdCL_260015300	CQTGGCIGTGPRESHRDKSCSNVIDRDSSGYCECKTND EKD ERE EDEEGAEREAEGEGTE	137
LGELEM452_260014700	CETGGCIGTGPRESHRDKSCSNVIDRDSSGYCECKANDEQDEREDDEEGVEREAEGEGME	300
	* : ***** : ***** : ***** : ***** . ***** *	
N-terminal_18	VRNGTIA YRFSCGHP ELTCMYVCDHSGEVGVGKKPEKLQNF AILDEVREASES LERKKSR	360
LdCL_260015300	VRNGTIA YRFSCGHP ELTCMYVCDHSGEVGVGKKPEKLQNF AILDEVREASES LERKKSR	197
LGELEM452_260014700	VRRGTVTYRFSSGHPQFTCMYVCDHSGEVGVDQKPEKLQSF TILDEVREASES LERKKNR	360
	** . ** : ***** . ***** : ***** . ***** . ***** . ***** . *	

C

GSALTLFPQDWK



Supplementary Figure 19 Amastigote life stage

A N-terminal extension 19: SET domain containing protein

Leishmania donovani CL_SL Chromosome 27 (Negative strand)

Current Annotation

Gene: LdCL_270006400

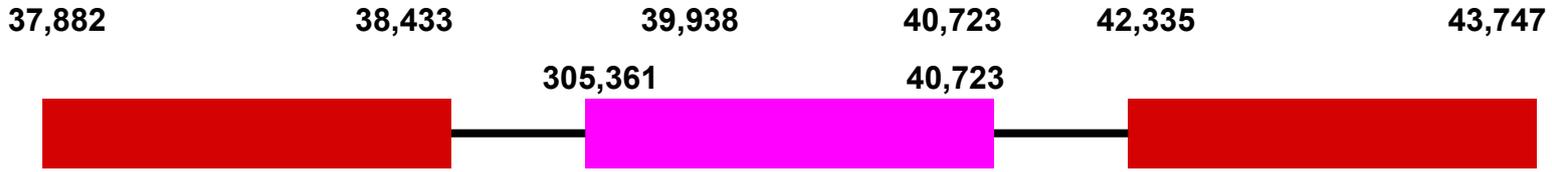
Current gene: LdCL_270006500

Gene: LdCL_270006600

Hypothetical

SET domain
containing protein

Hypothetical



B

N-terminal_19	MRAAFRLAAQSFRLCPAPGVASSLSLSTVASSAFRGSLLVTARSAFAKVSSVQGK IEVPPG	60
LdCL_270006500	-----	
LTRL590_270006700	MRAAFRLAAQSFRLCPASGVATSLSLRTVASSAFRGSLLVTARGFAKVSSVQGK IEVPPG	60
N-terminal_19	GFVTADVR IDMNASFGGSFARGVFAEREIGYGREVMNLPAYCMYISENDRQPLREQVLIM	120
LdCL_270006500	-----MNASFGGSFARGVFAEREIGYGREVMNLPAYCMYISENDRQPLREQVLIM	50
LTRL590_270006700	GFVTADVR IDMNASFGGSFARGVFAEREIGYGREVMNLPAYCMYISENDRQPLREQVLIM	120

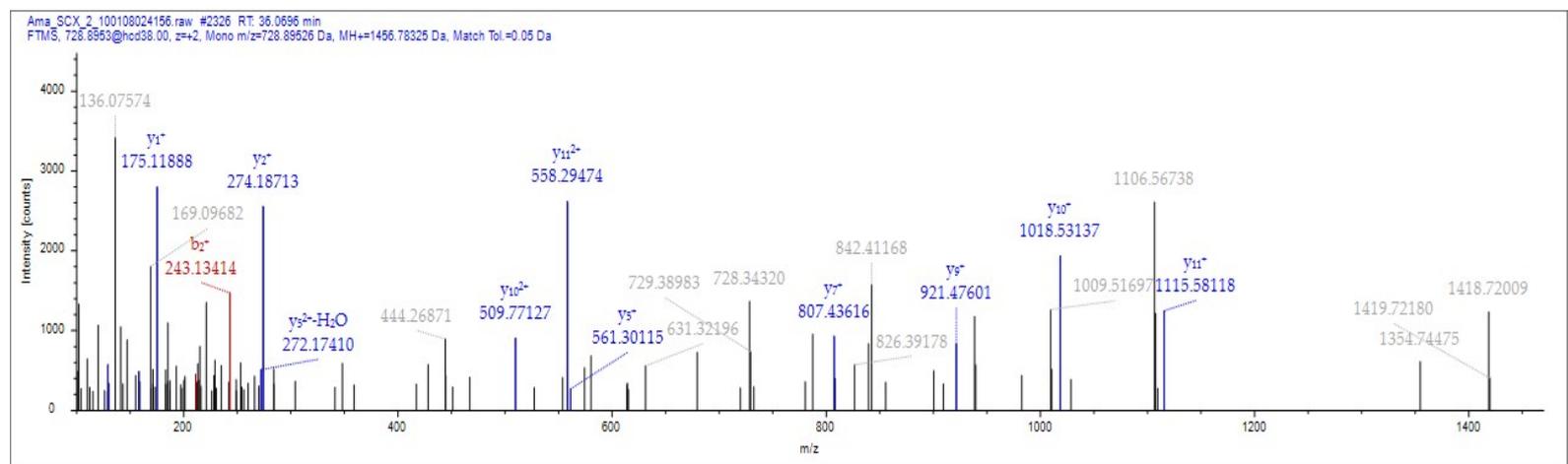
N-terminal_19	TKEIFSKVVYGTPQEQQYVKHRILSLMSGGFSYFTRERDVFDFAEEVRAPGADGAFRNGC	180
LdCL_270006500	TKEIFSKVVYGTPQEQQYVKHRILSLMSGGFSYFTRERDVFDFAEEVRAPGADGAFRNGC	110
LTRL590_270006700	TKEIFSKVVYGTPQEQQYVKHRILSLMSGGFSYFTRERDVFDFAEEVRAPGADGAFRNGS	180

N-terminal_19	SCLMSGEFSSYDLQKLPLIVEFNRFEVDYRGRRGICLFPEASYLNHSCEPNVELSITYNS	240
LdCL_270006500	SCLMSGEFSSYDLQKLPLIVEFNRFEVDYRGRRGICLFPEASYLNHSCEPNVELSITYNS	170
LTRL590_270006700	SCLMSGEFSSYDLQKLPLIVEFNRFEVDYRGRRGICLFPEASYLNHSCEPNVELSIAYNS	240
	***** : **	
N-terminal_19	IKNNFFLSARAVRPILEGEELFINYPGNNLPLSRLALAMKKRWGFECSCVKCKSRAVGA	300
LdCL_270006500	IKNNFFLSARAVRPILEGEELFINYPGNNLPLSRLALAMKKRWGFECSCVKCKSRAVGA	230
LTRL590_270006700	IKNNFFLSARAVRPIREGEELFINYPGNNLPLSRLALAMKKRWGFECSCVKCKSRAVGA	300

N-terminal_19	VTIVFVLLIPIIVYIRRFIVERTKEKHRSL	331
LdCL_270006500	VTIVFVLLIPIIVYIRRFIVERTKEKHRSL	261
LTRL590_270006700	VTIVFVLLIPIIVYIRRFIVERTKEKHRSL	331
	** : *****	

C

IEVPPGGFVTADVR



Supplementary Figure 20 Amastigote life stage

A N-terminal extension 20: Hypothetical protein

Leishmania donovani CL_SL Chromosome 28 (Negative strand)

Current Annotation

Gene: LdCL_280008500

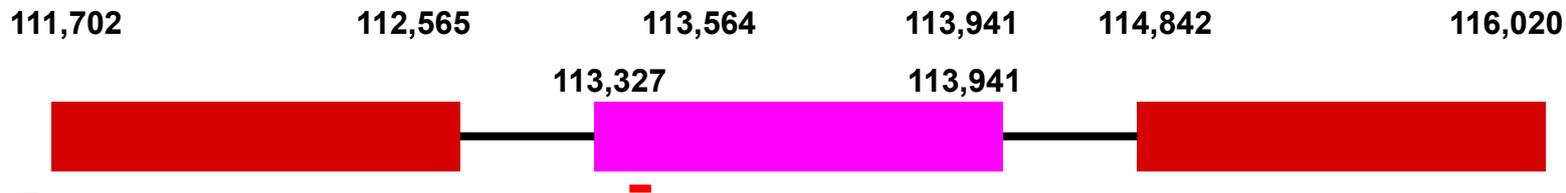
Current gene: LdCL_280008600

Gene: LdCL_280008700

Ubiquitin activating enzyme

Hypothetical

Saccharopine dehydrogenase

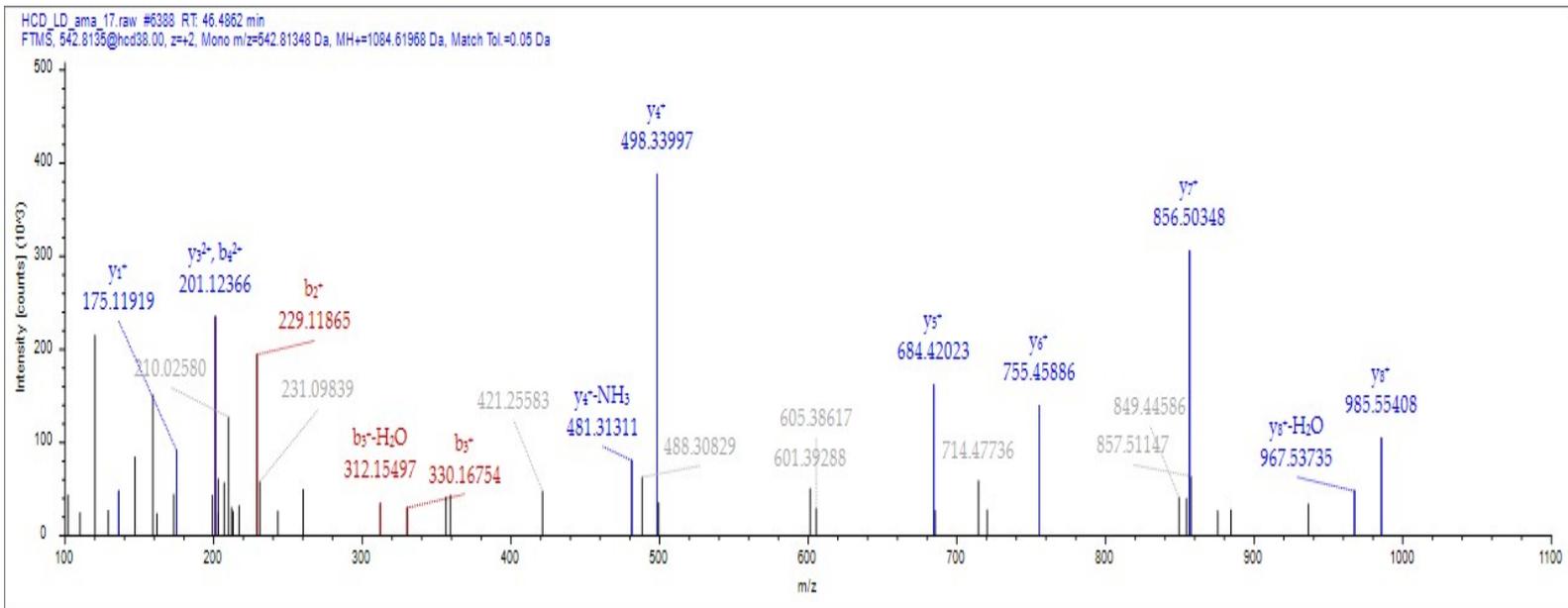


B

N-terminal_20	MATCLGVTMRAVISALLLCGLVAEVT FADPVRSTEYAGRVAAVTCCER	VETAWPILRSWS	60
LdCL_280008600	-----		
LTRL590_280008500	MTTCPGATLRAVLSALLLCGLVAEVT FADPVRSTEYAGRVAAVTCCER	VETAWPILRSWS	60
N-terminal_20	RTCANERARGYATVKRFATMLAAYSRS SAPAL TLSQVCRGKYLSREAVQ	AFFEHAFCGAL	120
LdCL_280008600	-----MLAAYSRS SAPAL TLSQVCRGKYLSREAVQ	AFFEHAFCGAL	41
LTRL590_280008500	RTCANERARGDATVKRFATMLAAHSRS SAPAL TLSQVCRGKYLSPEAVQ	AFFEHAFCGAL	120
	****:*****	*****	
N-terminal_20	PITHTDLVHSAYSPLMEDAPHDEDALASDVAVECQR	LQQRWTMQAEQWEELLGGRHDLAD	180
LdCL_280008600	PITHTDLVHSAYSPLMEDAPHDEDALASDVAVECQR	LQQRWTMQAEQWEELLGGRHDLAD	101
LTRL590_280008500	PITHTDLVHSAYSPLMEDAPHDEDALTSDVAVACQR	LQQRWTMQAEQWEELLGGRHDLAD	180
	*****:*****	*****	
N-terminal_20	AQYGLCPRCTWVKDMLAGDAYDL		204
LdCL_280008600	AQYGLCPRCTWVKDMLAGDAYDL		125
LTRL590_280008500	AQYGLCPRCTS VKDMLAGDAYDL		204
	*****	*****	

C

VETAWPILR



Supplementary Figure 21 Amastigote life stage

A N-terminal extension 21: Hypothetical protein

Leishmania donovani CL_SL Chromosome 30 (Negative strand)

Current Annotation

Gene: LdCL_300009800

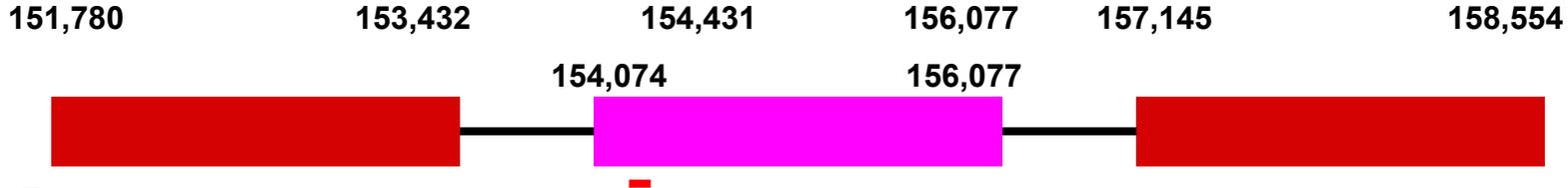
Current gene: LdCL_300009900

Gene: LdCL_300010000

Aspartyl-tRNA synthetase

Hypothetical

Bystin



B

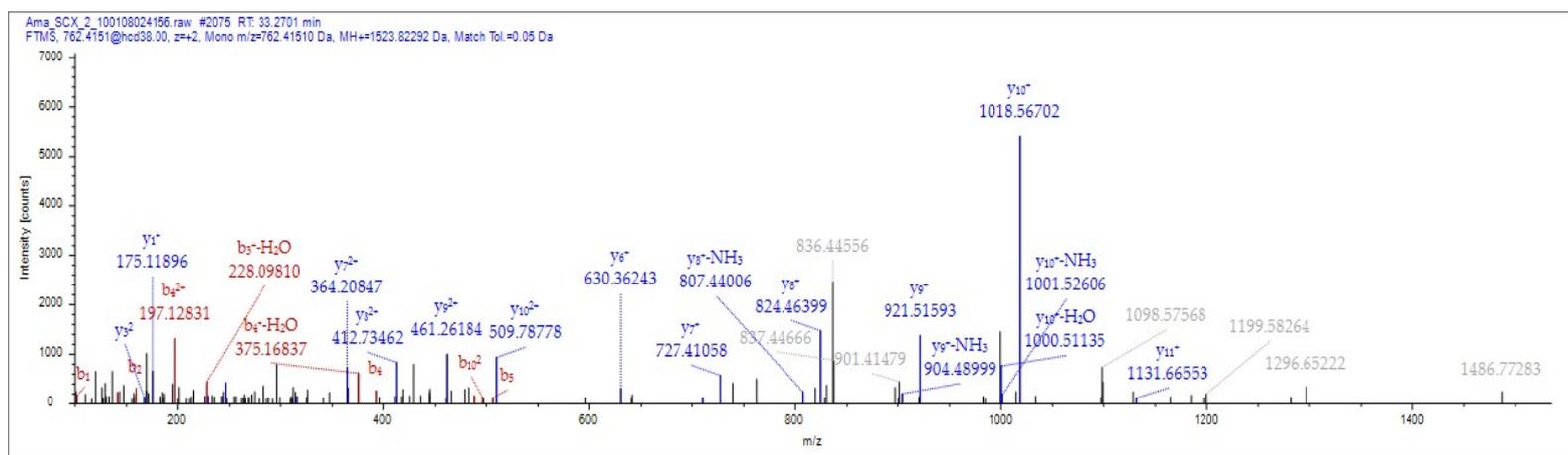
N-terminal_21	MYRVGCGPSPLLHSRFLGSDTALWMFLQHAHVVTGALRPCRSVPTPASHHFAATCFHSAA	60
LdCL_300009900	-----	
LmXM.29.0470	MYRVGYGPSPLLHSRLLGSDTALLMSLQHAHFVTGALGPCRRVSTSTSHHCAATCLHSAA	60
N-terminal_21	AMARRYAGSASRRPLPPLPSLGGPAAGR TGSFLPPPPPLSSAR LTPAHGGGTSHGASIYM	120
LdCL_300009900	-----M	1
LmXM.29.0470	AMARRHAGSASRRFLPPPPPLGSAAGR TGSFLPPPPPLSSAR LSPAHHGGGTSHSASMHL	120
N-terminal_21	LSPQEVANTFVLYVPTYVVSFQCVASLLPDAIREEITGRGRLVNFFKKFPFIFDVLVVDS	180
LdCL_300009900	LSPQEVANTFVLYVPTYVVSFQCVASLLPDAIREEITGRGRLVNFFKKFPFIFDVLVVDS	61
LmXM.29.0470	LSPQEVASTFVLYVPTFYVVSFQCVASLLPDAIREEITGRGRLVNFFKKFPFIFDVLVVDS	180
	***** . ***** : *****	
N-terminal_21	GRINVRLHPDLIHPQRGVADDKYMMSDVGQTTSYVVKPEFIVCAENIESNGMQRVLLTTP	240
LdCL_300009900	GRINVRLHPDLIHPQRGVADDKYMMSDVGQTTSYVVKPEFIVCAENIESNGMQRVLLTTP	121
LmXM.29.0470	GRINVRLHPDLIHPQRGVADDKYMMSDVGQTTSYVVKPEFIVCAENIESNGMQRVLLTTP	240

N-terminal_21	APPAMRVRLEERVVPLDRLRSLVPAEFTAIDALEESISEDILFHPYFNCQGGFLFSIAGK	300
LdCL_300009900	APPAMRVRLEERVVPLDRLRSLVPAEFTAIDALEESISEDILFHPYFNCQGGFLFSIAGK	181
LmXM.29.0470	APPAMRVRLEERVVPLDRLRSLVPAEFTAIDALEESISEDILFHPYFNCQGGFLFSIAGK	300

N-terminal_21	MPEEFQVVDGRIRRRPPLHAPLALDEFTLDTSPLEVAALIKRHVCDSIPHWVSITPLY	360
LdCL_300009900	MPEEFQVVDGRIRRRPPLHAPLALDEFTLDTSPLEVAALIKRHVCDSIPHWVSITPLY	241
LmXM.29.0470	MPEEFQVVDGRIRRRPPLHAPLALDEFTLDTSPLEVAALIKRHVCDSIPHWVSITPLY	360

C

TGSFLPPPPPLSSAR



Supplementary Figure 22 Amastigote life stage

A N-terminal extension 22: AMP-binding enzyme

Leishmania donovani CL_SL Chromosome 30 (Negative strand)

Current Annotation

Gene: LdCL_300011000

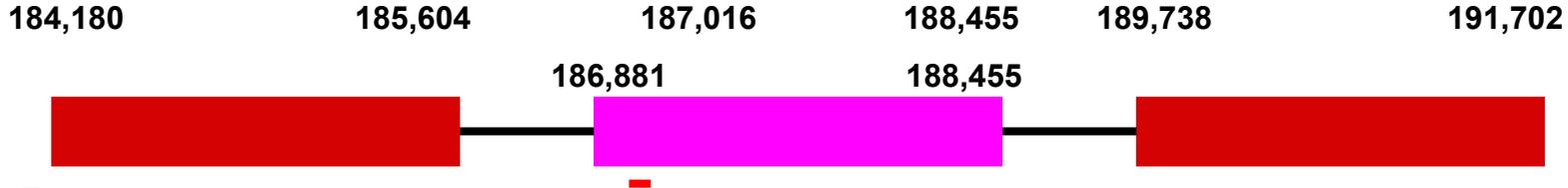
Current gene: LdCL_300011100

Gene: LdCL_300011200

Spliceosome-associated

AMP-binding enzyme

Ciliary BBSome complex subunit 2



B

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N-terminal_21      MFRRIALPLAASAAAAARFNYGVTSSGTIPKSAPGAATAASSGPYMPAYSEVKGTCGTPV 60
LdCL_300011100    -----MPAYSEVKGTCGTPV 15
LGELEM452_300011200 MFRRIALPLAVSAAAAARFNHGVTSSGTIPKSAPGAATAASSGPYMPAYSEVKGTCGTPV 60
                                     *****

N-terminal_21      LDQLIGYYVNIQSRKMYKDFLRIEHQAVRWAFADIRKNSEALAHGLLQTVRPGDRVLA 120
LdCL_300011100    LDQLIGYYVNIQSRKMYKDFLRIEHQAVRWAFADIRKNSEALAHGLLQTVRPGDRVLA 75
LGELEM452_300011200 LDQLIGYYVNIQSRKMYKDFLRIEHQAVRWAFADIRKNSEALAHGLLQTVRPGDRVLA 120
                                     *****

N-terminal_21      IQPCNCETFVLQLACAKIGALLCIVPQDTISADKLRFYLNQPRHLVAREWINVPEMKQ 180
LdCL_300011100    IQPCNCETFVLQLACAKIGALLCIVPQDTISADKLRFYLNQPRHLVAREWINVPEMKQ 135
LGELEM452_300011200 IQPCNCETFVLQLACAKIGALLCIVPQDTISADKLRFYLNQPRHLVAREWINVPEMKQ 180
                                     *****

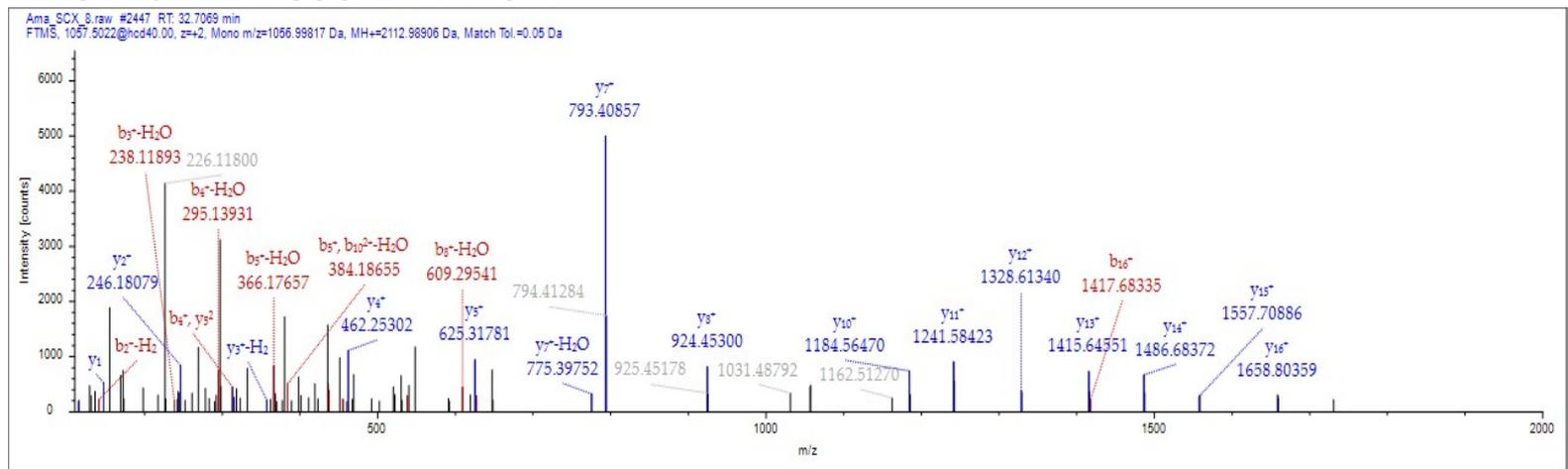
N-terminal_21      GELVERNMHFWDTIYNVIPGLSYPGQKFQWVHSQEFYLYLKKIIITDHNMNLGVTPMR 240
LdCL_300011100    GELVERNMHFWDTIYNVIPGLSYPGQKFQWVHSQEFYLYLKKIIITDHNMNLGVTPMR 195
LGELEM452_300011200 GELVERNMHFWDTIYNVIPGLSYPGQKFQWVHSQEFYLYLKKIIITDHNMNLGVTPMR 240
                                     *****

N-terminal_21      KMLVWGPFSYYEQRLRRLSALLHPDDPVLALDPNPAMEDKLHITYSHRNCVNAGFLFSQ 300
LdCL_300011100    KMLVWGPFSYYEQRLRRLSALLHPDDPVLALDPNPAMEDKLHITYSHRNCVNAGFLFSQ 255
LGELEM452_300011200 KMLVWGPFSYYEQRLRRLSALLHPDDPVLALDPNPAMEDKLHITYSHRNCVNAGFLFSQ 300
                                     *****

N-terminal_21      LMQLKAETRFVMPNHHTDPIGAI IAPYAALTSGAVLVHIHSDMFTDDHAINGIEKLCVE 360
LdCL_300011100    LMQLKAETRFVMPNHHTDPIGAI IAPYAALTSGAVLVHIHSDMFTDDHAINGIEKLCVE 315
LGELEM452_300011200 LMQLKAETRFVMPNHHTDPIGAI IAPYAALTSGAVLVHIHSDMFTDDHAINGIEKLCVE 360
                                     *****
    
```

C

SAPGAATAASSGPYMPAYSEVK



Supplementary Figure 23 Amastigote life stage

A N-terminal extension 23: Ciliary BBSome complex subunit 2

Leishmania donovani CL_SL Chromosome 30 (Negative strand)

Current Annotation

Gene: LdCL_300011100

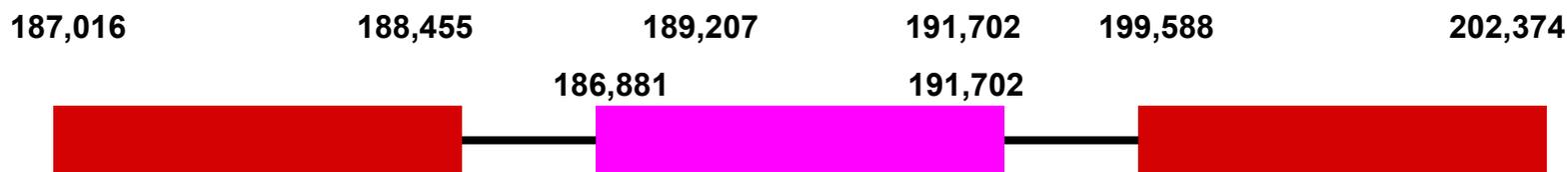
Current gene: LdCL_300011200

Gene: LdCL_300011300

AMP-binding enzyme

Ciliary BBSome complex subunit 2

Protein kinase



B

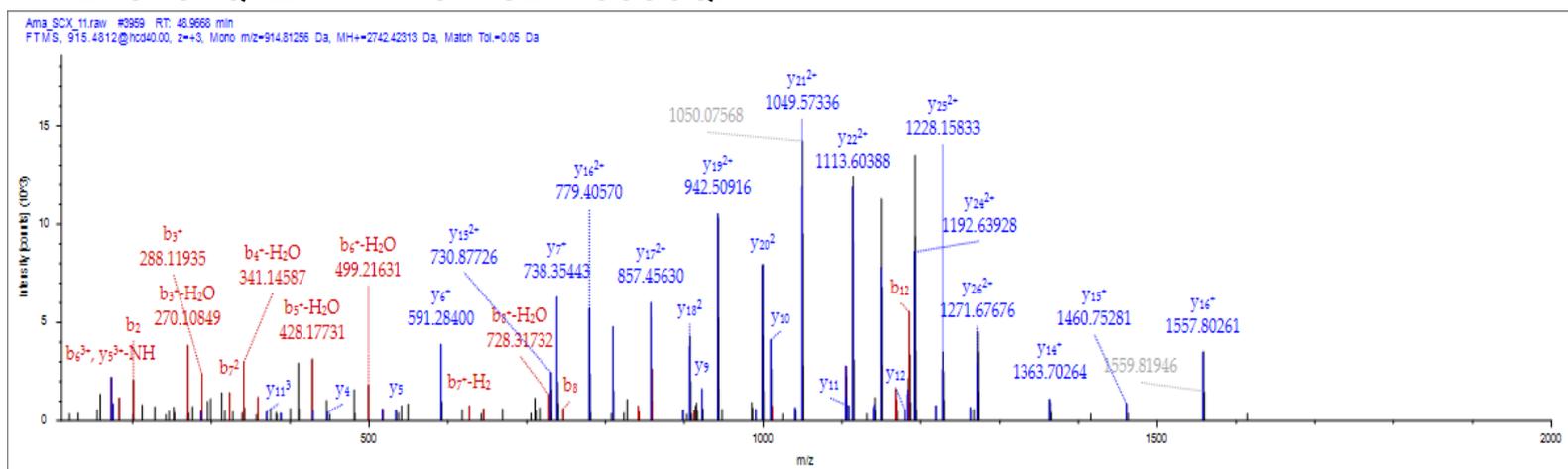
N-terminal_23	MATAKDASNHIRLDTAFELNIGAPILPDRVAAGRFLRSAAAREASASAQTLAVRPPPSAV	60
LdCL_300011200	-----	
LdBPK_300610.1	MATAKDASNHIRLDTAFELNIGAPILPDRVAAGRFLRSAAAREASASAQTLAVRPPPSAV	60
N-terminal_23	SLAFGSSGQRILLHNNNTSTAKAKRSAKRGEAQASVGVTFRLEDDSVIQTlnFGKAPTA	120
LdCL_300011200	-----	
LdBPK_300610.1	SLAFGSSGQRILLHNNNTSTAKAKRSAKRGEAQASVGVTFRLEDDSVIQTlnFGKAPTA	120
N-terminal_23	LAAGQLYDTWSTDIAATYDVLLFGAATSLLAYDAEQNKQVFYKDVEDGVQAVVCGTVMKP	180
LdCL_300011200	-----	
LdBPK_300610.1	LAAGQLYDTWSTDIAATYDVLLFGAATSLLAYDAEQNKQVFYKDVEDGVQAVVCGTVMKP	180

N-terminal_23	SSTSGEAPPLAVVGGNCIFGFDRFGAERYWTVTGDQVTAMALMPWTSVPDSGSAPLSLL	240
LdCL_300011200	SSTSGEAPPLAVVGGNCIFGFDRFGAERYWTVTGDQVTAMALMPWTSVPDSGSAPLSLL	63
LdBPK_300610.1	SSTSGEAPPLAVVGGNCIFGFDRFGAERYWTVTGDQVTAMALMPWTSVPDSGSAPLSLL	240

N-terminal_23	VASDDFEVRVYDGEAEIATVHEVDRVQKLVPLWQPSRIPDTEAAAADSAGRYAYLLENGT	300
LdCL_300011200	VASDDFEVRVYDGEAEIATVHEVDRVQKLVPLWQPSRIPDTEAAAADSAGRYAYLLENGT	123
LdBPK_300610.1	VASDDFEVRVYDGEAEIATVHEVDRVQKLVPLWQPSRIPDTEAAAADSAGRYAYLLANGT	300
	*****	***
N-terminal_23	VGMYERGERVWRVRGKSVPVSAAFCDVDGDGVAELVIGWSNGRVEVVRTDRGGGLEKGGSV	360
LdCL_300011200	VGMYERGERVWRVRGKSVPVSAAFCDVDGDGVAELVIGWSNGRVEVVRTDRGGGLEKGGSV	183
LdBPK_300610.1	VGMYERGERVWRVRGKSVPVSAAFCDVDGDGVAELVIGWSNGRVEVVRTDRGGGLEKGGSV	360

C

EASASAQTLAVRPPPSAVSLAFGSSGQR



Supplementary Figure 24 Amastigote life stage

A N-terminal extension 24: Hypothetical protein

Leishmania donovani CL_SL Chromosome 30 (Negative strand)

Current Annotation

Gene: LdCL_300006800

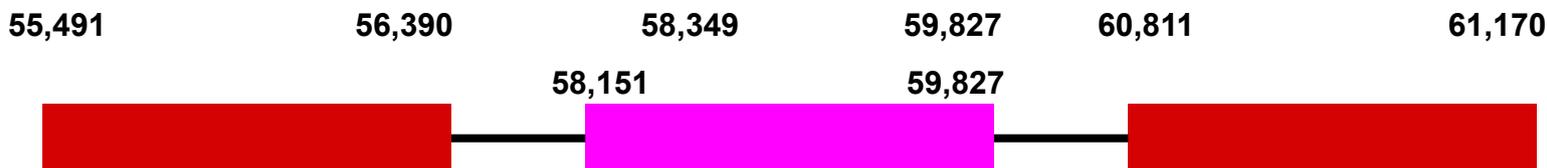
2-hydroxy-3-oxopropionate reductase

Current gene: LdCL_300006900

Hypothetical

Gene: LdCL_300007000

Hypothetical



B

N-terminal_24	MLRVSLACRVTAARSAAPHTASSSSSLVESVTSVVFHSSRYLRHAPPRLYVTCSHDQGIPL	60
LdCL_300006900	-----	
LGELEM452_300007100	MLRVSLACRVTAARSAAPHTTSSSSSLVESVTSVFRSSRYLRHAPPRLYVTCSHDQGIPL	60
N-terminal_24	HGCGRHMTTVLDVSR	120
LdCL_300006900	-----MTTVLDVSR	54
LGELEM452_300007100	HGCGRHMTTVLDVSR	120

N-terminal_24	DAVHRFCDAYAATLSRVHHVLLPGGVSPLOSSLIKQLLEHIPQARLVCNGFGHALLTNAT	180
LdCL_300006900	DAVHRFCDAYAATLSRVHHVLLPGGVSPLOSSLIKQLLEHIPQARLVCNGFGHALLTNAT	114
LGELEM452_300007100	DAVHRFCDTYAATLSRVHHVLLPGGVSPLOSSLIKQLLEHIPQARLVCNGFGHALLTNAT	180

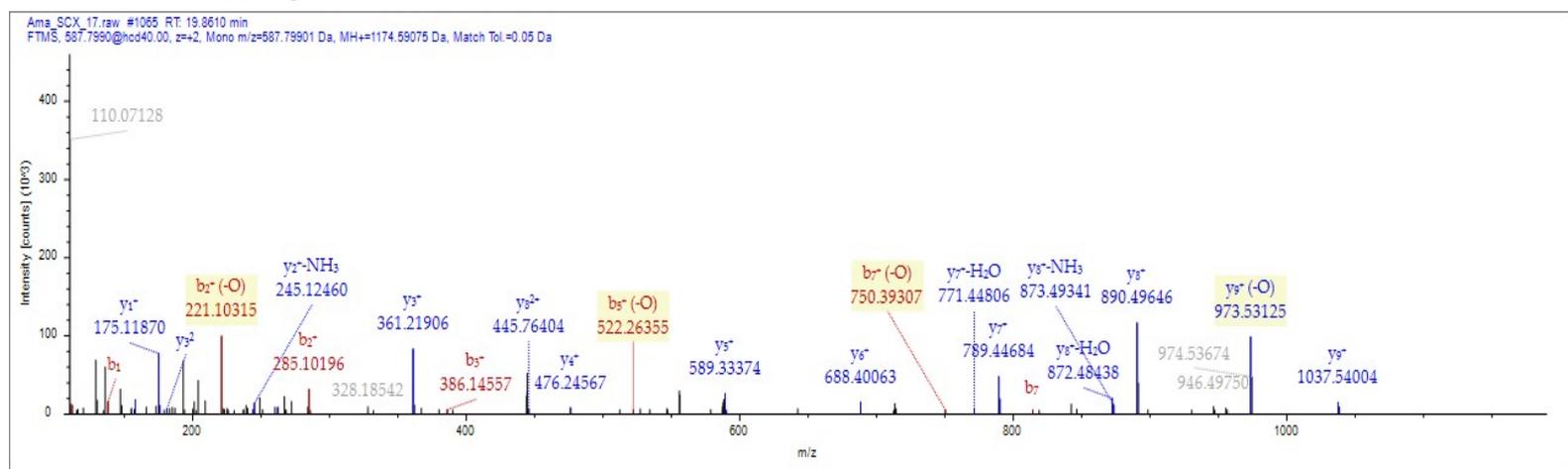
N-terminal_24	FHDGVQRAVLENAPNAPLELLRFAELPEDRVSAMADGDTVAVDVAKSEAEAPAPAAARAL	240
LdCL_300006900	FHDGVQRAVLENAPNAPLELLRFAELPEDRVSAMADGDTVAVDVAKSEAEAPAPAAARAL	174
LGELEM452_300007100	FHDGVQRAVLENEPNAPPELLRFAALPADRVSPMADGDTVAVDVAKSEVESSAPVAARAL	240

N-terminal_24	RVVAVKSKGQQRRREHSQTHHPAHFTNEALFYDDVFNALFVGHTLHRLPWLPTVLTEA	300
LdCL_300006900	RVVAVKSKGQQRRREHSQTHHPAHFTNEALFYDDVFNALFVGHTLHRLPWLPTVLTEA	234
LGELEM452_300007100	RVVAVKSKGQQRRREHSQTHHPAHFTNEVLFYDDVFNALFVGHTLHRLPWLPTVLTEA	300

N-terminal_24	SRELFLPMPPLAMQHQLSRPSPLLDTWVLESCEDVVEALRRTPELERVLGASYGELCG	360
LdCL_300006900	SRELFLPMPPLAMQHQLSRPSPLLDTWVLESCEDVVEALRRTPELERVLGASYGELCG	294
LGELEM452_300007100	SRELFLPMPPLAMQHPLSRPSPLLDTWVLESCEDVVEALRRTPELERVLGASYGELCG	360

C

HMTTVLDVSR



Supplementary Figure 25 Amastigote life stage

A N-terminal extension 25: Oligomerization domain containing protein

Leishmania donovani CL_SL Chromosome 30 (Negative strand)

Current Annotation

Gene: LdCL_300026700

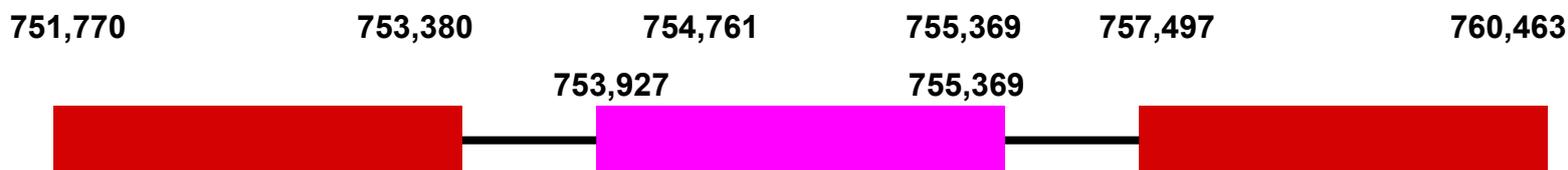
Current gene: LdCL_300026800

Gene: LdCL_300026900

Hypothetical

Oligomerization domain

Protein kinase

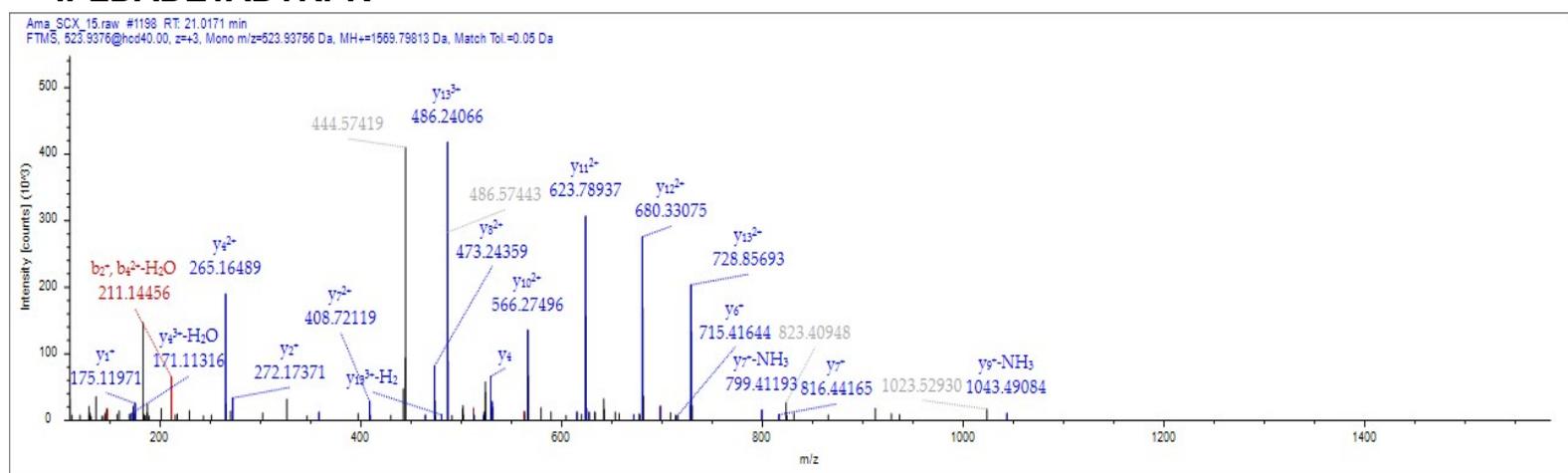


B

N-terminal_25	-----MWNGCSCA	8
LdCL_300026800	-----	
LmxM.29.2120	MATEEDFGWSRQAKIAQQRHGVEERATTSGILCLLRLVFFSLRQAMSVPTRFTWNVCPRA	60
N-terminal_25	CTYVQARLFMYAYQTAKKECAALPSP-HPDCPLFSCFISSVCLLFLVLAQAPSLPDTRSPLY	67
LdCL_300026800	-----	
LmxM.29.2120	GTCVPARLAVYTSQTTHKECAAPPPPRRLHTCFLWFLCSPPLCVASAISSLPDTRRPLH	120
N-terminal_25	LPPLP-LALRVLCAAAAYGRRRRSLVSALTAALFGLHIEQYVHSYSPMSCRGVMFQLAL	126
LdCL_300026800	-----	
LmxM.29.2120	LHPHLHLLALRVSCANAAAYGRQHRSLVSALTPSLFRLHIEQYAYSYSRMSCRGTMFQLAL	180
N-terminal_25	ACGRPTTPALRVPHARLYSLSHTRLQPTHAPHAADDDNFVDIDHLIGLTAATQNPALAEAG	186
LdCL_300026800	-----	
LmxM.29.2120	ACGRSTPPAFRVPHRRLEFSVSRTRLQPTHAPRAADDDNFVDIDHLMGLTAATQNPALAEAG	240
N-terminal_25	AASPSSRLRDAARSEVLGVVVRVPEEEGTRYSLR IPLDADETADTRPR ANTRASLMPGE	246
LdCL_300026800	-----	
LmxM.29.2120	AASPSSGLRDVARSEVLGVVVRVPEEEGARYSLR IPLDADETADTRPR ANTRASLMPGE	300
N-terminal_25	EAAYADKPADASANA AVEVSSLPNAIQDVEAAMTAHEPAEEGRLPSPSRLPYDDERFAEM	306
LdCL_300026800	-----	
LmxM.29.2120	EAAYADKPADASANA AVEVSSLPNAIQDVEAAMTAHEPAEEGRLPSPSRLPYDDERFAEM	28
N-terminal_25	EAAYADKPADASANA AVEVSSLPNAIQDVEAAMTAHEPAEEGRLPSPSRLPYDDERFAEM	360
LdCL_300026800	-----	
LmxM.29.2120	EAAYADKPADASANA AVEVSSLPNAIQDVEAAMTAHEPAEEGRLPSPSRLPYDDERFAEM	360
N-terminal_25	LLEMEVNGVIDEAWQDAKKARMEDVKEIADILSSLKVRDLCCIDVSEKTSNFDYMMFGTC	366
LdCL_300026800	-----	
LmxM.29.2120	LLEMEVNGVIDEAWQDAKKARMEDVKEIADILSSLKVRDLCCIDVSEKTSNFDYMMFGTC	88
N-terminal_25	LLEMEVNGVIDEAWQDAKKARMEDVKEIADILSSLKVRDLCCIDVSEKTSNFDYMMFGTC	420
LdCL_300026800	-----	
LmxM.29.2120	LLEMEVNGVIDEAWQDAKKARMEDVKEIADILSSLKVRDLCCIDVSEKTSNFDYMMFGTC	420
N-terminal_25	EGARHIHLAAWAVQDADKVHRI SKIKRKQTDDELWEVVPVGRIVVNLMVESFREEMTLERK	426
LdCL_300026800	-----	
LmxM.29.2120	EGARHIHLAAWAVQDADKVHRI SKIKRKQTDDELWEVVPVGRIVVNLMVESFREEMTLERK	148
N-terminal_25	EGSRHIHLAAWAVQDADKVHRI SKIKRKQTDDELWEVVPVGRIVVNLMVESFREEMTLERK	480
LdCL_300026800	-----	
LmxM.29.2120	EGSRHIHLAAWAVQDADKVHRI SKIKRKQTDDELWEVVPVGRIVVNLMVESFREEMTLERK	480

C

IPLDADETADTRPR



Supplementary Figure 26 Amastigote life stage

A N-terminal extension 26: Hypothetical protein

Leishmania donovani CL_SL Chromosome 30 (Positive strand)

Current Annotation

Gene: LdCL_300013100

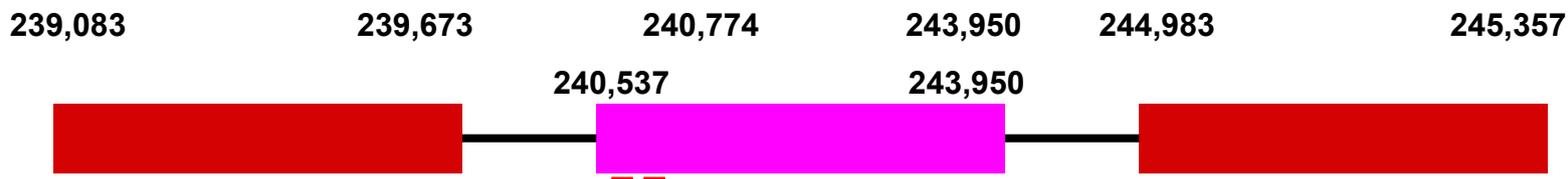
Current gene: LdCL_300013200

Gene: LdCL_300013300

4-methyl-5(beta-hydroxyethyl)-thiazole monophosphate synthesis

Hypothetical

Protein kinase

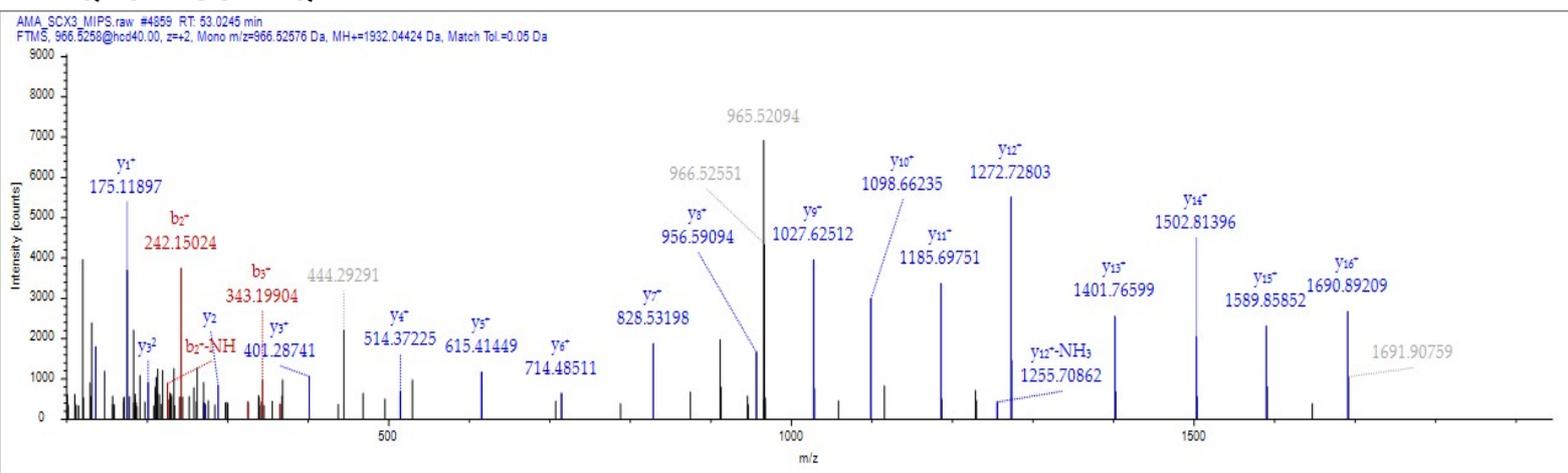


B

N-terminal_26	MEDI F D Q M V C G S P M Q Q L N L K G V D T P E Y T I I C A Q A P D A A R R V A I L Q N R L Q T S T E S S A A Q N V	60
LdCL_300013200	-----	
LTRL590_300013400	MEDI F D Q M V C G S P M Q Q L N L K G V D T P E Y T I I C A Q A P D A A R R V A I L Q N R L Q T S T E S S A A Q N V	60
N-terminal_26	T L L L R T C V S S Q L S P D E V E E M V E N V V R I A R Q H A N W P D F S R W V C A L I H H Y C T D D F T V S L F S E	120
LdCL_300013200	-----M V E N V V R I A R Q H A N W P D F S R W V C A L I H H Y C T D D F T V S L F S E	41
LTRL590_300013400	T L L L R T C V S S Q L S P D E V E E M V E N V V R I A R Q H A N W P E F S R W V C A L I H H Y C T D D F T V S L F S E	120
	*****:*****	
N-terminal_26	F E V P K V A V D A L R N N P H D R R G V L A A A T L L S H F N L Y D I G D G I T Q L T N T L Q N H C S D A T I V R I V	180
LdCL_300013200	F E V P K V A V D A L R N N P H D R R G V L A A A T L L S H F N L Y D I G D G I T Q L T N T L Q N H C S D A T I V R I V	101
LTRL590_300013400	F E V P K V A V D A L R N N P H D R R S V L A A A T L L S H F N L Y D I G D G I T Q L T N A L Q N H C S D A T I V R I V	180
	*****.*****:*****	
N-terminal_26	T R T L A E F T S Y Y K E L P D R F P R V S Q E F V D A K G I T V L E G V L H E H I N N E E I T T Y V A R I A A N V T S	240
LdCL_300013200	T R T L A E F T S Y Y K E L P D R F P R V S Q E F V D A K G I T V L E G V L H E H I N N E E I T T Y V A R I A A N V T S	161
LTRL590_300013400	T R T L A E F T S Y Y K E L P D R F P R V S Q E F V D A K G I T V L E G V L H E H I S N E E I T T Y V A R I A A N V T S	240
	*****.*****	
N-terminal_26	S G A A N M V D A D S P V M M Y L A D T L A R Y Q Q S E M L C G H V L R V F S N L P R S R Y I D W D C V S S L F N N T K	300
LdCL_300013200	S G A A N M V D A D S P V M M Y L A D T L A R Y Q Q S E M L C G H V L R V F S N L P R S R Y I D W D C V S S L F N N T K	221
LTRL590_300013400	S G A A N M V D A D S P V M M Y L A D A L V R Y Q H S E M L C G H V L R V F S N L P R S R Y I A W D C V S S L F N N T K	300
	*****:*.***:*****	
N-terminal_26	S E L V V F E C I H F L C S V A I N V K E M K A K I Y N T G C V P R V L E M M R V Y Q G N A A I Q E E V C S L L S Y L S	360
LdCL_300013200	S E L V V F E C I H F L C S V A I N V K E M K A K I Y N T G C V P R V L E M M R V Y Q G N A A I Q E E V C S L L S Y L S	281
LTRL590_300013400	S E L V V F E C I H F L C S V A I N V K E M K A K I Y T T G C V P R V L E M M R V Y Q G N A A I E E E V C S L L S Y L S	360
	*****.*****:*****	

C

LQTSTESSAAQNVTL L L R



Supplementary Figure 27 Amastigote life stage

A N-terminal extension 27: ATP-binding cassette protein subfamily H, member 3

Leishmania donovani CL_SL Chromosome 30 (Positive strand)

Current Annotation

Gene: LdCL_300019000

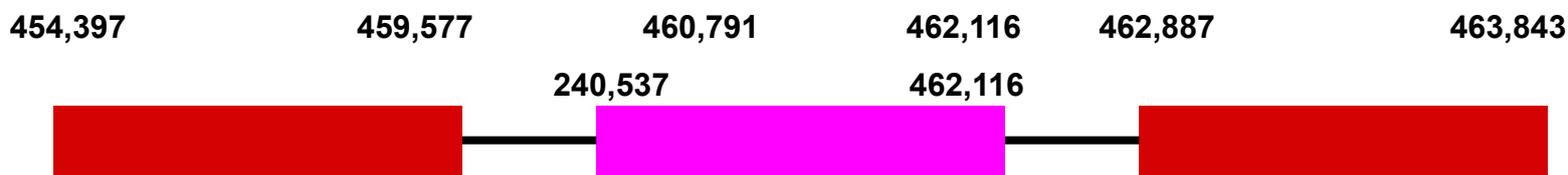
Current gene: LdCL_300019100

Gene: LdCL_300019200

Hypothetical

ABC H3

Hypothetical



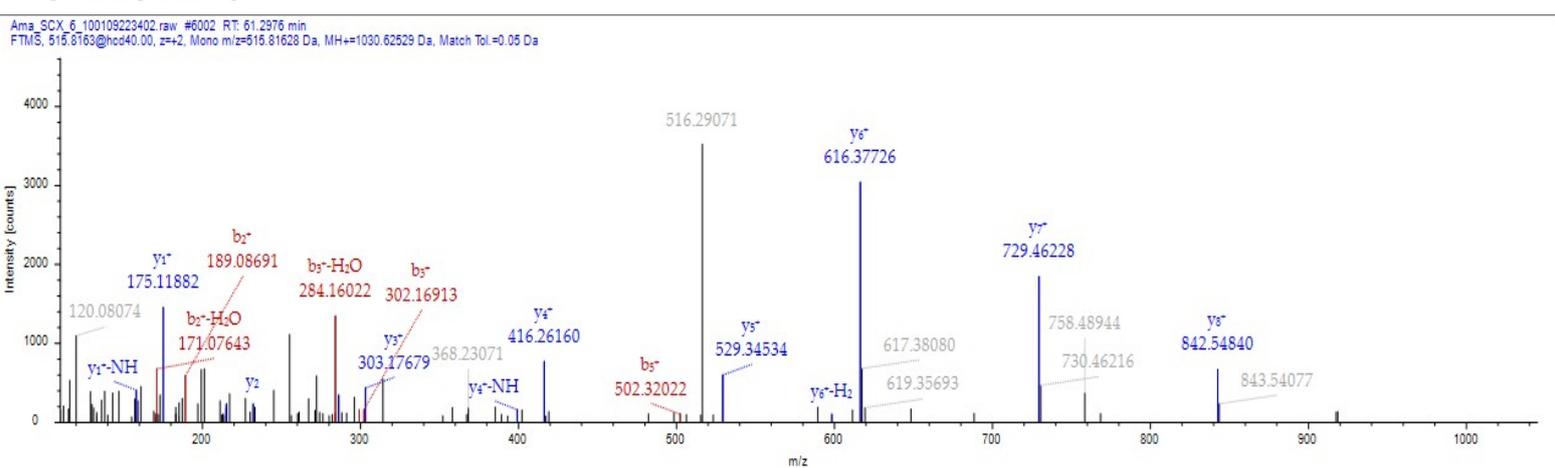
B

N-terminal_27	MQTD RHTTKMGPETILAVDDVSFQYPNAPAASLRQVSVTAYRGDRILVIGHNGSGK STLL	60
LdCL_300019100	-----	
LAEL147_000561000	MQTD RHTTTMGPETILAVDDVSFQYPNAPAASLRQVGVTAYRGDRILVIGHNGSGK STLL	60
N-terminal_27	SLLAGR RKPQSGRVRVLGRDPFDDTSVAQHISMIGAPWPPEAVFGNTVDRVASPAPVPER	120
LdCL_300019100	-----MIGAPWPPEAVFGNTVDRVASPAPVPER	28
LAEL147_000561000	SLLAGR RKPQSGRVRVLGRDPFDDTSIAQHISMIGAPWPPEAVFGNTVDRVASPAPVPER	120

N-terminal_27	KASIADALHLRLSRFLEKMSWGERRRVQILYGLMYPATLYLLDECSTDIDVAERRTVLEL	180
LdCL_300019100	KASIADALHLRLSRFLEKMSWGERRRVQILYGLMYPATLYLLDECSTDIDVAERRTVLEL	88
LAEL147_000561000	KISIADTLHLRLSRFVEKMSWGEEKRRVQILHGLMYPATVFLDECSTDIDVAERRTVLEL	180
	* ****:*****:*****:*****:*****:*****:*****:*****	
N-terminal_27	VRQCEAKDGCCVYATHILDGIEGWATHLLLMEGGRVDFKALEKLTMPLEDYALQFMSK	240
LdCL_300019100	VRQCEAKDGCCVYATHILDGIEGWATHLLLMEGGRVDFKALEKLTMPLEDYALQFMSK	148
LAEL147_000561000	VRQCEAKDGCCVYATHILDGVEGWATHLLLMEGGRVDFKAVEKLTMPLEDYALQFMSK	240
	*****:*****:*****:*****:*****:*****:*****:*****	
N-terminal_27	RAHAARGFDAVAAPSLSQSSAAISTTLSACPTTSSAAYPTPSTADAPVTYWPRGHADEK	300
LdCL_300019100	RAHAARGFDAVAAPSLSQSSAAISTTLSACPTTSSAAYPTPSTADAPVTYWPRGHADEK	208
LAEL147_000561000	RAHAARGVDAVAAPSLSHGSSVAISTTSSACPTTAAACPI SATADAPVTYWPRGHADEK	300
	*****.*****:***.***** *****:*** * .:*****	
N-terminal_27	RSEIVINCAQLNYKDVFKNLSFQVFRGERVLLCGNGTGKSTLLNMLGGKQFFDNRHGSL	360
LdCL_300019100	RSEIVINCAQLNYKDVFKNLSFQVFRGERVLLCGNGTGKSTLLNMLGGKQFFDNRHGSL	268
LAEL147_000561000	RSEIVIDCAQLNYKDVFKNLSFQVFRGERVLLCGNGTGKSTLLNMLGGKQFFDNRQGS	360
	*****:*****:*****:*****:*****:*****:*****:*****	
N-terminal_27	SVLGKRCYDDMLLNALVSYGGDWWTAVPGGEVHVREMLQLRTSRAERLREMLAVDIDWDV	420
LdCL_300019100	SVLGKRCYDDMLLNALVSYGGDWWTAVPGGEVHVREMLQLRTSRAERLREMLAVDIDWDV	328
LAEL147_000561000	SVLGKRCYDDMLLNALVSYGGDWWTAVPDGEVHVREMLQLRTSRAERLREMLAVDMDWDV	420
	*****.*****:*****.***** *****:*****:*****:*****	
N-terminal_27	RHISAGEQKRVQLLLHLLDDKPVLLDEATDLDVYQRHSLLOFLYEESVQRGVTVVYST	480
LdCL_300019100	RHISAGEQKRVQLLLHLLDDKPVLLDEATDLDVYQRHSLLOFLYEESVQRGVTVVYST	388
LAEL147_000561000	RHISAGEQKRVQLLLHLLDDKPVLLDEATADLDVNQRHSLLOFLYEESVQRGVTVVYST	480
	*****:*****:*****:*****:*****:*****:*****:*****	

C

STLLSLLAGR



Supplementary Figure 28 Amastigote life stage

A N-terminal extension 28: Qa-SNARE protein

Leishmania donovani CL_SL Chromosome 32 (Negative strand)

Current Annotation

Gene: LdCL_320005500

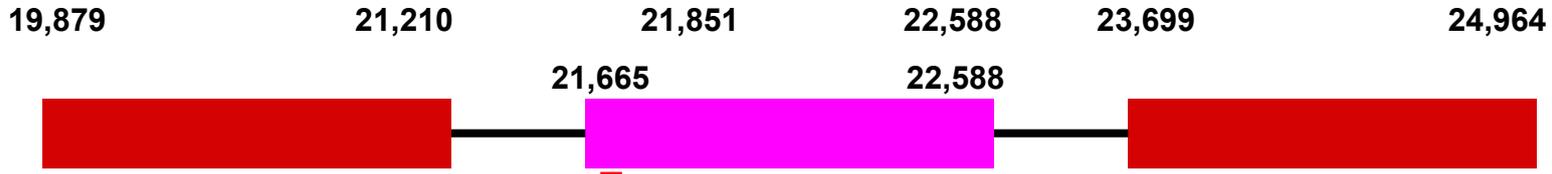
Current gene: LdCL_320005600

Gene: LdCL_320005700

Hypothetical

Qa-SNARE

N-myristoyl transferase

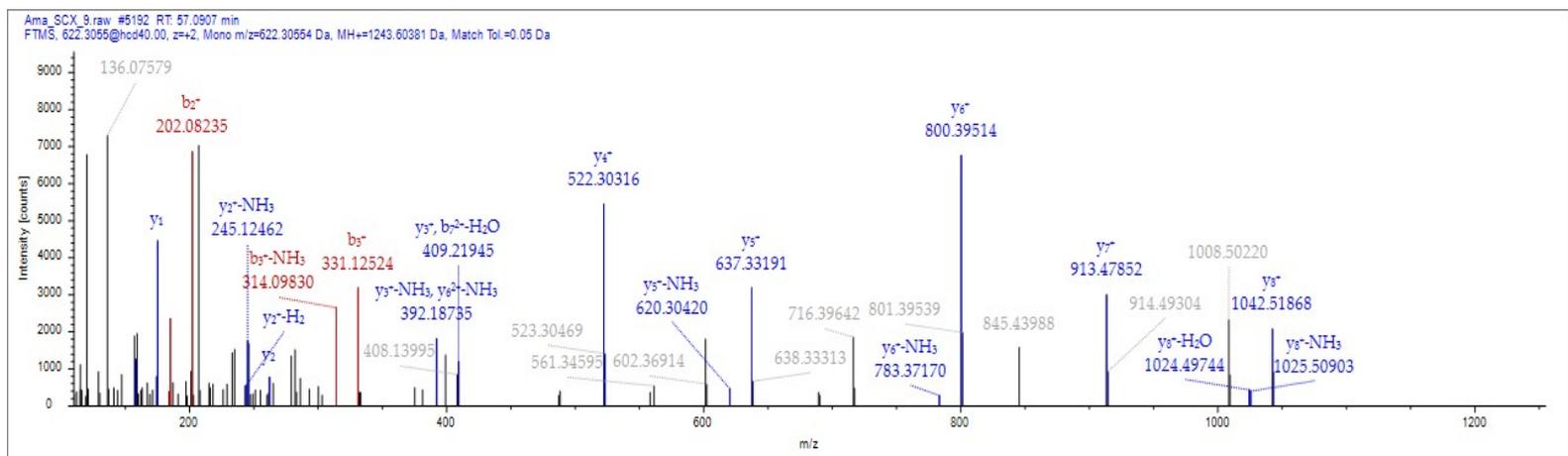


B

N-terminal_28	MVVERDRSNELYDLFSRQRRSRPPSSGAVVSTGLHSSSDVQTFNRFAKEFSNNIATVSE	60
LdCL_320005600	-----	
LAEL147_000621400	MVVERDRSNELYDLFARQRRSRPPSTGAVVSTGLHSSSDVQTFNRFAKEFSNNIATVSE	60
N-terminal_28	YIMRLTQLANRQSVFDDQTAEVSELTQMVKSSLQRLHNDAGTLEELKRRAVESQKGCIQP	120
LdCL_320005600	--MRLTQLANRQSVFDDQTAEVSELTQMVKSSLQRLHNDAGTLEELKRRAVESQKGCIQP	58
LAEL147_000621400	YIMRLTQLANRQSVFDDQTAEVSELTQMVKSSLQRLHNDAAATLEELKRRAVESQKGCIOA	120
	*****.*****.	
N-terminal_28	MGDARGMFGSSSYHLRRTSEKHSDTVETLRSRLARTGQQFRITLQHQSLSLKDKANRRHM	180
LdCL_320005600	MGDARGMFGSSSYHLRRTSEKHSDTVETLRSRLARTGQQFRITLQHQSLSLKDKANRRHM	118
LAEL147_000621400	NGDARGMFGSSSYHFRTSEKHSDTVETLRSRLARTGQQFRITLQHQSLSLKEKANRRHM	180
	*****:*****:*****	
N-terminal_28	FTTADRPQTFESALFQDQEQHQQQQLLLSGAGSTQYYQQRADAVLEIEAAVQEVGELFND	240
LdCL_320005600	FTTADRPQTFESALFQDQEQHQQQQLLLSGAGSTQYYQQRADAVLEIEAAVQEVGELFND	178
LAEL147_000621400	FTTADRPQTFESALFQDQEQHQQQQLLLSGTGNTQYYQQRADAVLEIEAAVQEVGELFND	240
	*****:.******	
N-terminal_28	FTRLVQEQQEEVVLRIDTDVDNAVRHVNAGSNELMRYLTNLSSNRGLILKVFAMLFFFMLML	300
LdCL_320005600	FTRLVQEQQEEVVLRIDTDVDNAVRHVNAGSNELMRYLTNLSSNRGLILKVFAMLFFFMLML	238
LAEL147_000621400	FTRLVQEQQEEVVLRIDTDVDNAVRHVSAGSNELMRYLTNLSSNRGLILKVFAMLFFFMLML	300
	*****.*****	
N-terminal_28	FGILVVR	307
LdCL_320005600	FGILVVR	245
LAEL147_000621400	FGSLVVR	307
	** ****	

C

SNELYDLFSR



Supplementary Figure 29 Amastigote life stage

A N-terminal extension 29: Hypothetical protein

Leishmania donovani CL_SL Chromosome 32 (Negative strand)

Current Annotation

Gene: LdCL_320037400

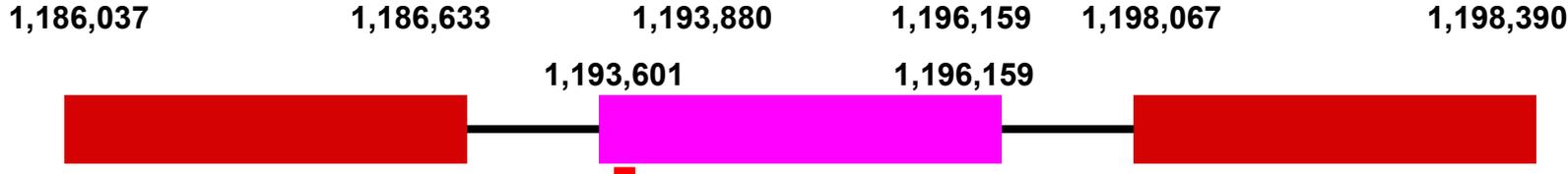
Current gene: LdCL_320037500

Gene: LdCL_320037600

Hypothetical

Hypothetical

Rab5ip

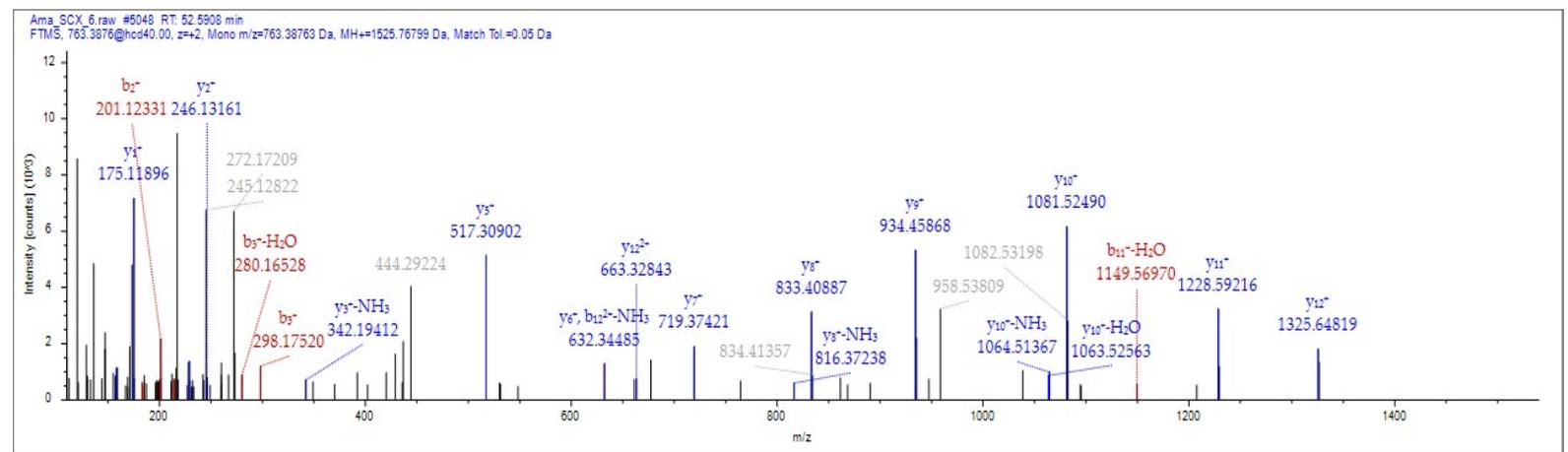


B

N-terminal_28	MHQRTDGTGTYFNDVPYFTPVETAVFYEA VQSCRLHRLPAHLMVKSR	SIPFFTNSDSALA	60
LdCL_320037500	-----	-----	
LmjF.32.2990.2	MHQRTDGTSGYFNDVPYFTPVETAVFYEA VRSCRLHRLPAHLMVKPRS	SIPFFTNSDSALA	60
N-terminal_28	R ALEKTDADRKGKLVKVESSAPLP	IFTTDYSANQMLFKASGKDYVSLSEVCSIFDASTRNT	120
LdCL_320037500	-----	-----MLFKASGKDYVSLSEVCSIFDASTRNT	27
LmjF.32.2990.2	SALEKMDADRKGKRVKVESSAPLP	IFTTDYSANQMLFKASGKDYVSLREVCNIFDASTRNT	120
		***** .***.***** .*	
N-terminal_28	ESNTVDINSLNNEAINKVWTELLLLFLN	SCSGSVGRFVVHNIDTLCMSDGSCEFLVSLLL	180
LdCL_320037500	ESNTVDINSLNNEAINKVWTELLLLFLN	SCSGSVGRFVVHNIDTLCMSDGSCEFLVSLLL	87
LmjF.32.2990.2	ESNTVDIHSLNNEAINKVWTELLLLFLN	SCSGSVGRFVVHNIDTLCMSDGSCEFLVSLLL	180
	***** :	*****	
N-terminal_28	AGVASILRYYSHIGDREALLNSVSVEFT	VLNTELGSRVADSLQFFVEKSLRLTVSRRED	240
LdCL_320037500	AGVASILRYYSHIGDREALLNSVSVEFT	VLNTELGSRVADSLQFFVEKSLRLTVSRRED	147
LmjF.32.2990.2	AGVASILRYYSHIGDREALLNSVSVEFT	VLNTETGSRVADSLQFFVERGLRLTVSRRED	240
	*****	***** :	*****
N-terminal_28	NFKAAYDELISSIPCFIEFSDDDWDMA	ICGEIVDAHEMLCDKDTDAAGSGSFISPIVLLIA	300
LdCL_320037500	NFKAAYDELISSIPCFIEFSDDDWDMA	ICGEIVDAHEMLCDKDTDAAGSGSFISPIVLLIA	207
LmjF.32.2990.2	NFKAAYDELISSMRCIEFSADADWIDA	ICGEIVDAHEMLCDRDIEAAGSGSFISPIVLLIA	300
	***** :	***** ** : ***** : *	*****
N-terminal_28	PPEPSLRVALEKQILDSYSSEALRVQSD	GEWSHAQFDKNAPLVFICSSYWLVEQMSMPRG	360
LdCL_320037500	PPEPSLRVALEKQILDSYSSEALRVQSD	GEWSHAQFDKNAPLVFICSSYWLVEQMSMPRG	267
LmjF.32.2990.2	PPGPSLRVALEKQILDSYSSEALRVQSD	GEWINAQFDKKAPLVFICSSYWLVEQMSMPKG	360
	** *****	***** : ***** : ***** : *	
N-terminal_28	DGLLHRLNVQIIIVHGGFCEIGDSAEEE	IILRCVIALKSCGIQWEEMRVMQHREPSYWRLEE	420
LdCL_320037500	DGLLHRLNVQIIIVHGGFCEIGDSAEEE	IILRCVIALKSCGIQWEEMRVMQHREPSYWRLEE	327
LmjF.32.2990.2	DGLLHRLNVQIIIVHGGFCEIGDSAEEE	IILRCVIALRSCGIQWEEMRVMQHKEPSYWRLEE	420
	*****	***** : ***** : *****	

C

SIPFFTNSDSALAR



Supplementary Figure 30 Amastigote life stage

A N-terminal extension 30: Uncharacterized protein family UPF0564

Leishmania donovani CL_SL Chromosome 32 (Positive strand)

Current Annotation

Gene: LdCL_320042100

Current gene: LdCL_320042200

Gene: LdCL_320042300

Hypothetical

UPF0564

Hypothetical

1,396,063 1,397,268 1,399,668 1,402,085 1,403,321 1,405,468

1,399,254 1,402,085

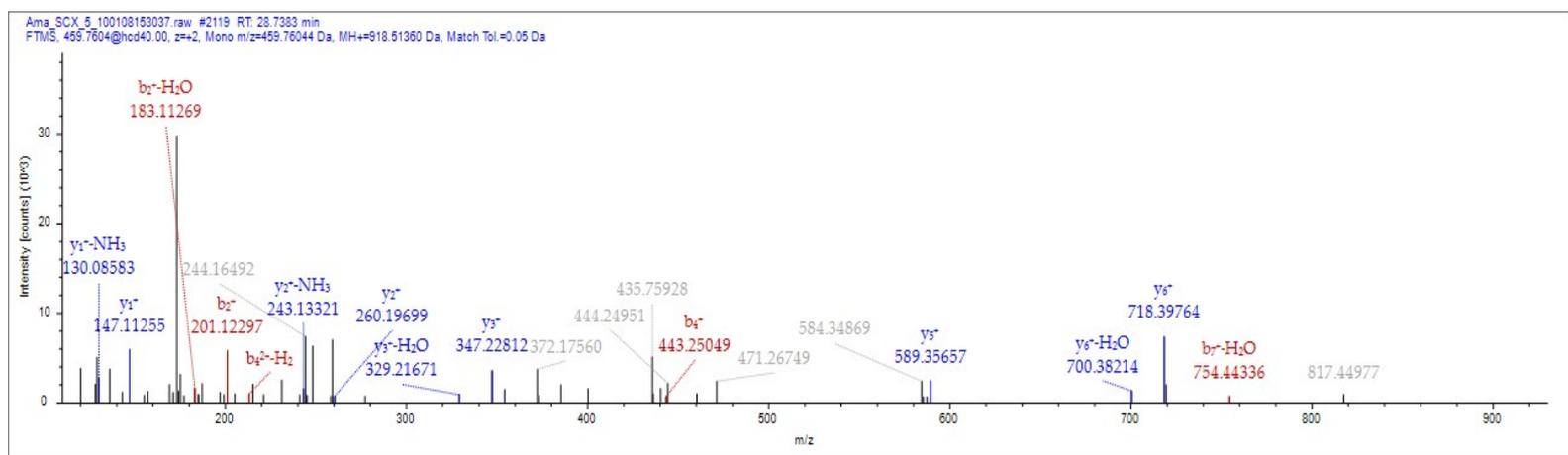
B

N-terminal_30	MEEVLASQLVELRKEQGRLEEQLGHTALGVPRGTCRAF-ITPGTETYAETHRCVRELTAH	59
LdCL_320042200	-----	
LAEL147_000658900	MEEVLASQLVELRKEQERLEEQLGHTALGVPRGACHAFSITPETETYAETRRCVRELTAH	60
N-terminal_30	EANSAATADAGAAASTRSRGGDVRGAPQRKDEADTRKSSPQAPATPGGAARMDSYQER	119
LdCL_320042200	-----	
LAEL147_000658900	EANSAVTAAAGAAASTRSGGGDVRGAPQRQDEADTGKSSPQAPATPGGAARMDSYPER	120
N-terminal_30	LSELES LKRKYDAYAREAMNQYFSSVNGYQGYKERREKMMKRVKPFAFESRELVKPPRIR	179
LdCL_320042200	-----MMNQYFSSVNGYQGYKERREKMMKRVKPFAFESRELVKPPRIR	42
LAEL147_000658900	LSELESLKRKYETYAREAMNHYFSSVNGYQGYKERREKMMKHVKPFAFESRELVKPPRIR	180
	:**:*****	
N-terminal_30	EQRAEADQRARDAAATEHRWHPYKATPVPPSTFMNKYELMVEEWCQRKAAIEMMSRERAR	239
LdCL_320042200	EQRAEADQRARDAAATEHRWHPYKATPVPPSTFMNKYELMVEEWCQRKAAIEMMSRERAR	102
LAEL147_000658900	EQRAEADQRARDAAATEHRRHPYKATPVPPSTFMNKYELMVEEWCQRKAAIEMMSREQAR	240
	*****:***	
N-terminal_30	IAKDDAAFVRLSAQSLRSTREGLMGVVYGPDKPVTRNELRRRARSADVMSRHKSTGAP	299
LdCL_320042200	IAKDDAAFVRLSAQSLRSTREGLMGVVYGPDKPVTRNELRRRARSADVMSRHKSTGAP	162
LAEL147_000658900	IAKDDAAFVRLSAQSLRSTREGLMGVVYGPDKPVTRNELRRRARSADATRSRHKGTGAP	300
	***** . ***:*.****	
N-terminal_30	LREVPLEVRMKLWPA LSDHERLRRERIKFLATVRKSEVDAEVRQVMPLLTSPSPARCYDA	359
LdCL_320042200	LREVPLEVRMKLWPA LSDHERLRRERIKFLATVRKSEVDAEVRQVMPLLTSPSPARCYDA	222
LAEL147_000658900	LREVPLEVRMKLWPA LSDHERLRRERIKFLATVRKSEVDAEVRQVMPLLTSPSPARCYDA	360

N-terminal_30	ASPGGIDMAALLAAANGENVGAAAPRYGVGQAVLSSKRTPFPTAEAGALAAALSPSTVPP	419
LdCL_320042200	ASPGGIDMAALLAAANGENVGAAAPRYGVGQAVLSSKRTPFPTAEAGALAAALSPSTVPP	282
LAEL147_000658900	ASPGGIDMAALLAAANGENVGAAAPCYGVGQAVLPSKRTPFPTAEAGALAAALPPSTVPP	420
	***** ***** . ***** . *****	

C

LSELESLK



Supplementary Figure 31 Amastigote life stage

A N-terminal extension 31: Mitochondrial RNA binding complex 1 subunit

Leishmania donovani CL_SL Chromosome 33 (Positive strand)

Current Annotation

Gene: LdCL_330033400

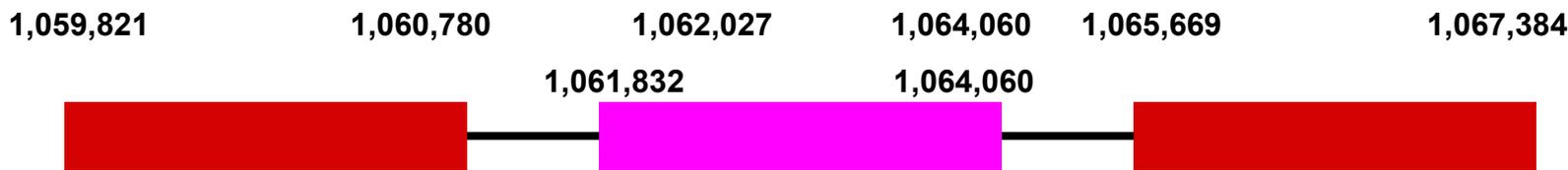
Current gene: LdCL_330033500

Gene: LdCL_330033600

Radial spokehead

MRB1

UDP-N-acetylglucosamine pyrophosphorylase

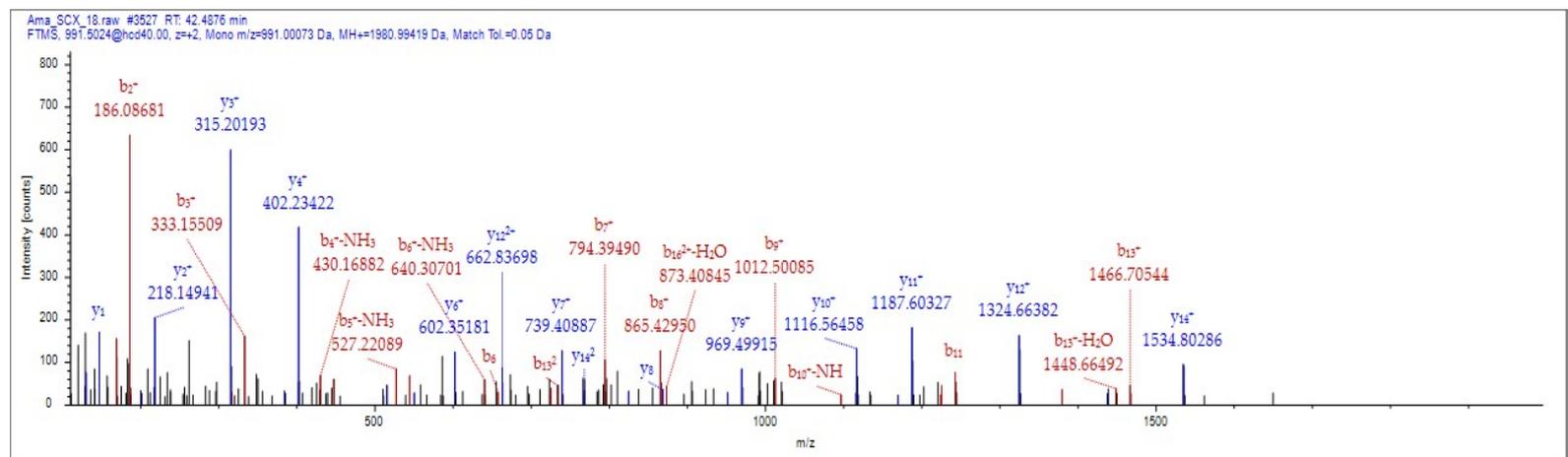


B

N-terminal_31	MLRRRCVRAAAADGVLGGDAAAITYALGSASRTVTSR QGFNPIHAFTEHSISP KRATNE	60
LdCL_330033500	-----	
LGELEM452_330034400	MLRRRCVRAAATDGVLLGGAAVIAYALAGASRTVTSR QGFNPLHAF TAHSISPARRATNE	60
N-terminal_31	KEFEVMITNPGPLRVAYSPDYLDWLYRAYRSKLYTDERKKAEEVFNGLLLT KQADEEGP	120
LdCL_330033500	-----MITNPGPLRVAYSPDYLDWLYRAYRSKLYTDERKKAEEVFNGLLLT KQADEEGP	55
LGELEM452_330034400	KEFELMITNPGPLRVAYSPDYLDWLYRAYRSKLYTDERKKAEEVFNGLLLT SQADEQGP	120
	*****.****:	
N-terminal_31	AAAAALPGAPPPGQTLRPRHSVRRQAGEARRAAAQAKLDALAK QQGMLDLFERQPQFP AI	180
LdCL_330033500	AAAAALPGAPPPGQTLRPRHSVRRQAGEARRAAAQAKLDALAK QQGMLDLFERQPQFP AI	115
LGELEM452_330034400	TAAAALPGAPPPGQTLRPRHSVRRQAGEARRAAAQAKLDTLAK QQGMLDLFERQPQFP AI	180
	:*****:*****	
N-terminal_31	HIDKAARCHVVELFKEMVLDRAWKPEEVWDKALLYRAILAERQASYPASYRYILD TAQGV	240
LdCL_330033500	HIDKAARCHVVELFKEMVLDRAWKPEEVWDKALLYRAILAERQASYPASYRYILD TAQGV	175
LGELEM452_330034400	HLDKAARCHVVELFKEMVLDRAWKPEEVWDKALLYRAILAERQASYPASYRYILD TAQGV	240
	*:*****	
N-terminal_31	NLAPRESGISDTGSNGSSVDARSSNESAGGIVGQSTLVI PREDDYMYFVYLVRRYYID NA	300
LdCL_330033500	NLAPRESGISDTGSNGSSVDARSSNESAGGIVGQSTLVI PREDDYMYFVYLVRRYYID NA	235
LGELEM452_330034400	NLAPRESGSSDTGSSSSSVDARSSNESAGGIVSESTLVI PREDDYMYFVYLVRRYYID NA	300
	*****.*****:*****	
N-terminal_31	VEGHVVLRCHRQPNASELLFSHPPPKDEQEVLRSLYRPGTATATQ GKDASVKAQDGA AAA	360
LdCL_330033500	VEGHVVLRCHRQPNASELLFSHPPPKDEQEVLRSLYRPGTATATQ GKDASVKAQDGA AAA	295
LGELEM452_330034400	VEGHVVLRCHRQPNASELLFSHPPPKDEQEVLRSLYRPGTATATQ GKDA SAKAQDGA AAA	360
	*****.*****	

C

QGFNPIHAFTEHSISP



Supplementary Figure 32 Amastigote life stage

A N-terminal extension 32: Intraflagellar transport protein 57/55

Leishmania donovani CL_SL Chromosome 33 (Positive strand)

Current Annotation

Gene: LdCL_330012100

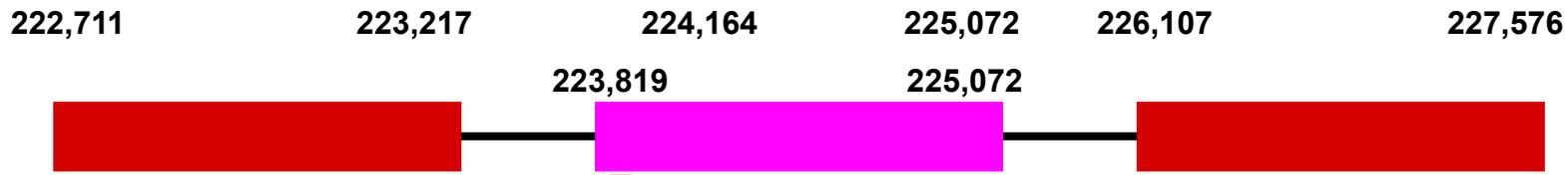
Current gene: LdCL_330012200

Gene: LdCL_330012300

Paraflagellar rod component

IFT 57/55

Hypothetical



B

N-terminal_32	MSEPEATAPKKQPVEDATGPTNGLGVDDRTMSDIIDKLRMLDYETNFCRSFKPPFSPLNPY	60
LdBPK.33.2.000670	MSEPEATAPKKQPVEDATGPTNGLGVDDRTMSDIIDKLRMLDYETNFCRSFKPPFSPLNPY	60
LdCL_330012200	-----	
N-terminal_32	YFSGPSSIDNPNAQFYFYFTSLCVWLMKLCGHQFDAPGQFDDPNASSTTILAELRSMNIAI	120
LdBPK.33.2.000670	YFSGPSSIDNPNAQFYFYFTSLCVWLMKLCGHQFDAPGQFDDPNASSTTILAELRSMNIAI	120
LdCL_330012200	-----MNIAI	5

N-terminal_32	ANIAPTRLKQGSGEAVLAVLSALVNAALSSTGYDFQPIDYGQVGRYDELA AVADA EDEQG	180
LdBPK.33.2.000670	ANIAPTRLKQGSGEAVLAVLSALVNAALSSTGYDFQPIDYGQVGRYDELA AVADA EDEQG	180
LdCL_330012200	ANIAPTRLKQGSGEAVLAVLSALVNAALSSTGYDFQPIDYGQVGRYDELA AVADA EDEQG	65

N-terminal_32	EDEIEDNVVIDSDDDDEVYVGAVSGNRSKSDADRPPTPKVDAE EWKMEVERVAPLLQVR	240
LdBPK.33.2.000670	EDEIEDNVVIDSDDDDEVYVGAVSGNRSKSDADRPPTPKVDAE EWKMEVERVAPLLQVR	240
LdCL_330012200	EDEIEDNVVIDSDDDDEVYVGAVSGNRSKSDADRPPTPKVDAE EWKMEVERVAPLLQVR	125

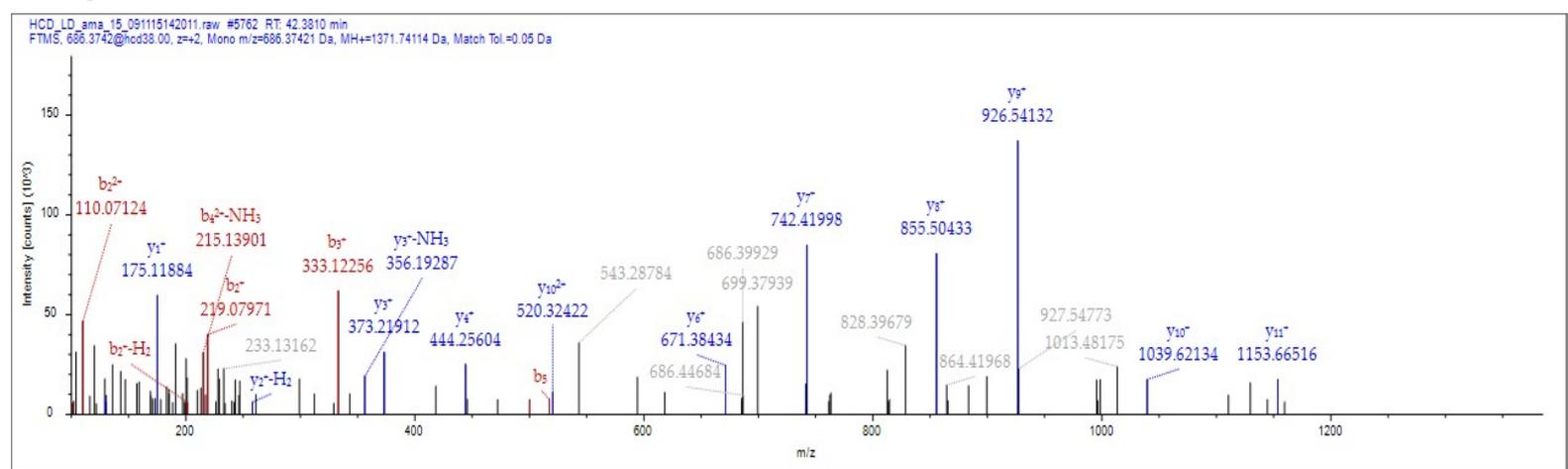
N-terminal_32	QSSLDDWRSRIESATVLLKAVENMYPDVKQMLERLAGDMDKSRDRIQKREQTLAQQFSDQ	300
LdBPK.33.2.000670	QSSLDDWRSRIESATVLLKAVENMYPDVKQMLERLAGDMDKSRDRIQKREQTLAQQFSDQ	300
LdCL_330012200	QSSLDDWRSRIESATVLLKAVENMYPDVKQMLERLAGDMDKSRDRIQKREQTLAQQFSDQ	185

N-terminal_32	VEDYRVKLRRELNTRSRSANVAQQT VQQMTVELNQISELLDQTKR DIAERQAKISDTTPLI	360
LdBPK.33.2.000670	VEDYRVKLRRELNTRSRSANVAQQT VQQMTVELNQISELLDQTKR DIAERQAKISDTTPLI	360
LdCL_330012200	VEDYRVKLRRELNTRSRSANVAQQT VQQMTVELNQISELLDQTKR DIAERQAKISDTTPLI	245

N-terminal_32	QVKEAVVKVQAEIKLMSLRIGILQNGVLQHV MKQTKARREGPTVEGTEMYSGEIMFS	417
LdBPK.33.2.000670	QVKEAVVKVQAEIKLMSLRIGILQNGVLQHV MKQTKARREGPTVEGTEMYSGEIMFS	417
LdCL_330012200	QVKEAVVKVQAEIKLMSLRIGILQNGVLQHV MKQTKARREGPTVEGTEMYSGEIMFS	305

C

SMNIAIANIAPTR



Supplementary Figure 33 Amastigote life stage

A N-terminal extension 33: R3H-associated N-terminal domain containing protein

Leishmania donovani CL_SL Chromosome 34 (Negative strand)

Current Annotation

Gene: LdCL_340021700

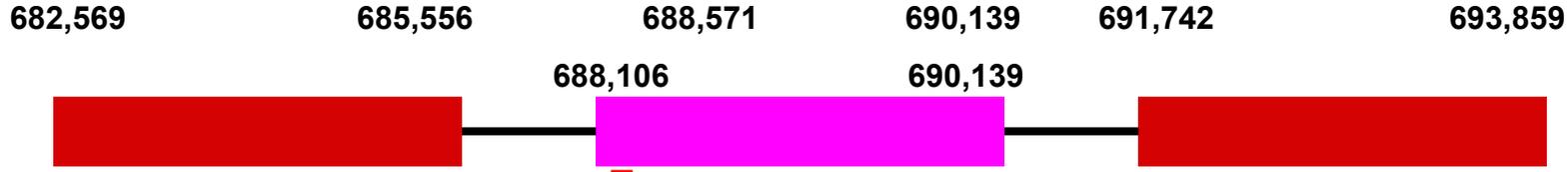
Current gene: LdCL_340021800

Gene: LdCL_340021900

Hypothetical

R3H-associated
N-terminal domain

Hypothetical



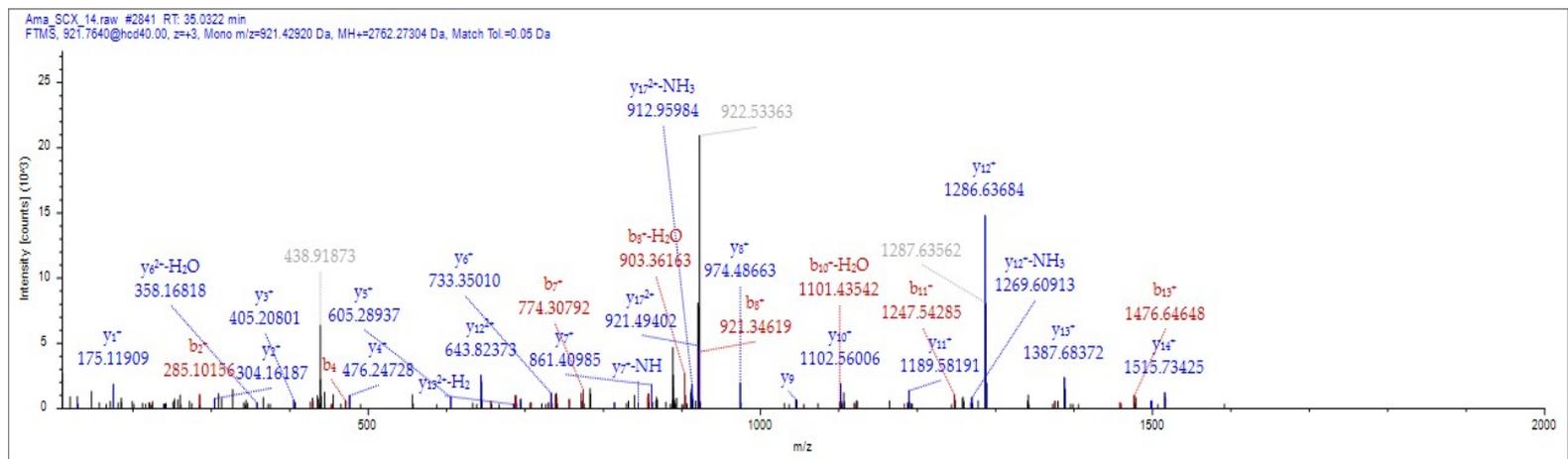
B

N-terminal_33	MHTADSSPTAPQPTEAGTAMSAKTAAESTATATISTMTAPAATKKGSSPKGFQVHTTSY	60
LdCL_340021800	-----	
LARLEM1108_340017700	MPAADSPPTAPQPTEAGTAMPAKTAAESTVTATITTTMAAPTSTRGSSSKGFQVHTTSY	60
N-terminal_33	QRGSTPFRSASPPIAPAAFSGPRNGGSPSGSPVQPPQPPPSFYGVTAPSPYQRHRSSSSSS	120
LdCL_340021800	-----	
LARLEM1108_340017700	QRGSTPFRSASPPIAPAAFSGPRTVGSPSGSPVQSPQPLPSVYGVAAPSPYQRHRSSSSSS	120
N-terminal_33	AHSATTTNTPLGPRTTAVPLITPRYQKKSRTAR HMSVTD S F F P T Q Q T P S G A L Q Q E A T E R M	180
LdCL_340021800	-----	25
LARLEM1108_340017700	VHSATTTNTSPLGPRTTAVPLITPRYQKKSRTAR HMSVTD S F F R Q Q T P S G A L Q Q E A T E R M	180

N-terminal_33	TIQNGPMQYDQEMHFHTYDVYRHGKRQIHTRSVGYSSDGLVMMREDYSEPSDVDNGFVL	240
LdCL_340021800	-----	85
LARLEM1108_340017700	TIHNGPMQYDQEMHFHTYDVYRHGKRQIHTRSVGYSSDGLVMMREDYSEPSDVDNGFVL	240
	** : *****	
N-terminal_33	KRTEISDPAVLDPARRPLTDKELHSHKKKIHLNRPRYKYPGIRAPKNRKNRNRLLNDF	300
LdCL_340021800	-----	145
LARLEM1108_340017700	KRTEISDPTVLDPRARRPLTNKEMHSHKKKIHLNRPRYKYPGIRAPKNRKNRNRLLNDF	300
	***** : ***** : ** : *****	
N-terminal_33	AHELAREVLVKAQKWRTLNPDPEPETS	360
LdCL_340021800	-----	205
LARLEM1108_340017700	AHELAREVLVKAQKWRTLNADKPEASVGPSFADLPKAVMHAFDLEGEEOLEFERLRVHP	360
	***** . ** . * : ** : *****	
N-terminal_33	DMLGPQLRNVRAAPPDPDSPEGRFQGLNTRLRGELQHALNSEFLTQQIEDLEVHFSAFIKD	420
LdCL_340021800	-----	265
LARLEM1108_340017700	DMLGPQLRNVRAAPPVDPDSPEGRFQGLNTRLRGELQHALNSEFLTQQIEDLEVHFSAFIKD	420
	***** ***** *****	

C

HMSVTD SFPTQQTPSGALQQEATER



Supplementary Figure 34 Amastigote life stage

A N-terminal extension 34: Peroxidase

Leishmania donovani CL_SL Chromosome 35 (Negative strand)

Current Annotation

Gene: LdCL_350040000

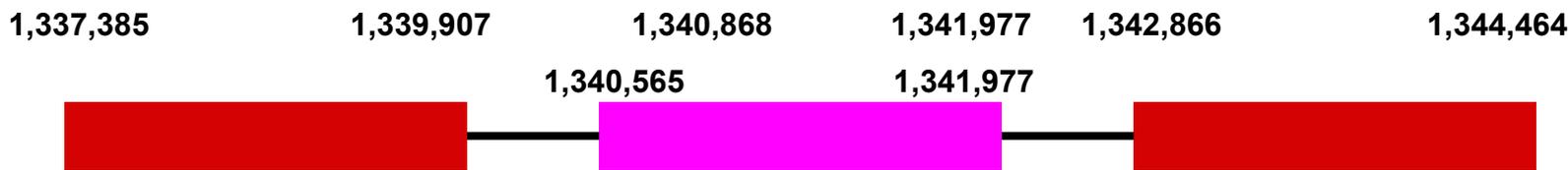
Current gene: LdCL_350040100

Gene: LdCL_350040200

DNA-repair protein

Peroxidase

Acyl transferase



B

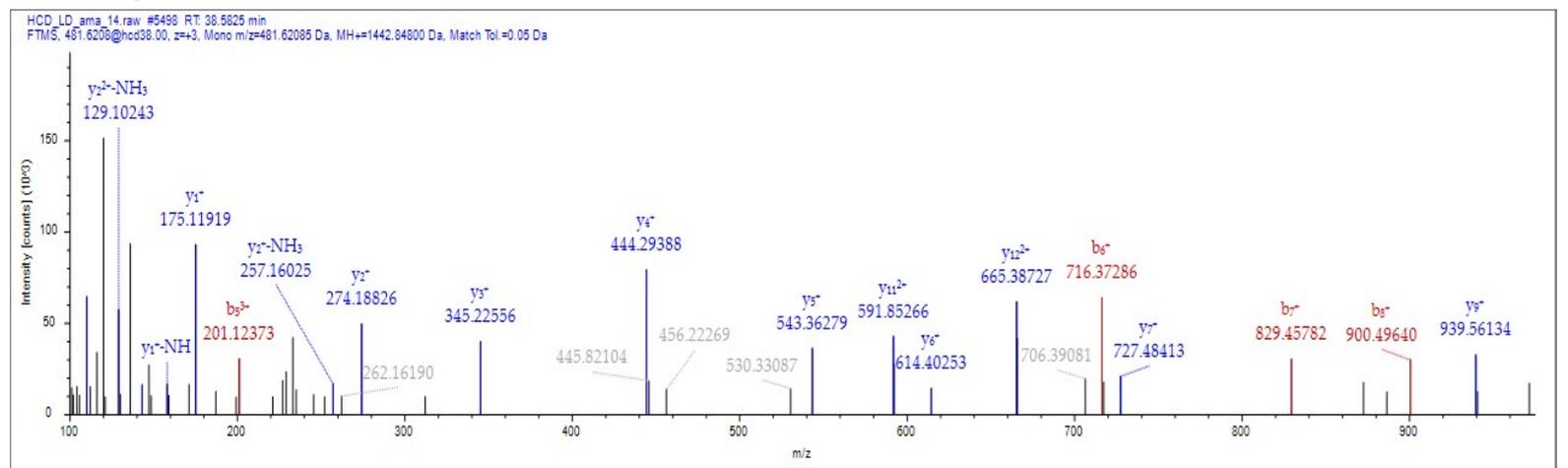
N-terminal_34	MYRASLLKRSTRGLFSSTSGRLLWWGCKESDLHRLARQRPWWETAAIFTGLLAFVNV TSA	60
LdCL_350040100	-----	
LmjF.35.3460	MYRASLLKRSPRGLFSPTSGRLLWWGCKESDLHRLARQRPWWETAAIFTGLLVFVNV TSA	60
N-terminal_34	FFYALNRWYQRWRPSGNELHIRDSIDQKLF SRPDLAVVAVRMLLHHALSNTQT PFGCPIV	120
LdCL_350040100	-----MLLHHALSNTQT PFGCPIV	19
LmjF.35.3460	FFYALNRWYQHRWRPSGNELHIRDSIDQKLF SRPDLAVVAVRMLLHHALSNTQT PFGCPIV	120

N-terminal_34	APENYREEAEEIADFIWKLSTDQPMYTF PDLWAMFTAKAMARLGGPNV VPLRGRDDPPEF	180
LdCL_350040100	APENYREEAEEIADFIWKLSTDQPMYTF PDLWAMFTAKAMARLGGPNV VPLRGRDDPPEF	79
LmjF.35.3460	APENYREEAEEIADFIWKLSTDQPMYTF PDLWAMFTAKAMARLGGPNV VPLRGRDDPPEF	180
	***** . ***** . : ***** : ***** : *****	
N-terminal_34	MTRDLLLAFPRSLVHEDDRDVLNMKRVLSRQGF SLEQVVALIGCNRCIGFHDAANFH TRE	240
LdCL_350040100	MTRDLLLAFPRSLVHEDDRDVLNMKRVLSRQGF SLEQVVALIGCNRCIGFHDAANFH TRE	139
LmjF.35.3460	MTRDLLLAFPRSLVHEDDRDVLNMKRVLSRQGF SLEQVVALIGCNRCIGFHDAANFH TRE	240

N-terminal_34	EVKPKMKRRPGAIGPSDDEFHLPGTIQKT TMDPYVFGSEYFNLLLDYKWRQPGLFQQRRK	300
LdCL_350040100	EVKPKMKRRPGAIGPSDDEFHLPGTIQKT TMDPYVFGSEYFNLLLDYKWRQPGLFQQRRK	199
LmjF.35.3460	EVKPKMKRRPGVIGPSDDEFHLPGTIQKT TMDPYVFGSEYFDLLLDYKWRQPGLFQQGRK	300
	***** . ***** : ***** *	
N-terminal_34	GAYSCNAKERARQVTL LDPFSEKSYESQQRMGPAEKARESSNATDKRIPATLGDGDSAP	360
LdCL_350040100	GAYSCNAKERARQVTL LDPFSEKSYESQQRMGPAEKARESSNATDKRIPATLGDGDSAP	259
LmjF.35.3460	GAYRCNAKERARQVTL LDPFSEKSYESQQRMRRAAEKARESSDAAGKRIPSTLGGNDSAP	360
	*** ***** . ***** : * . ***** : ***** . *****	
N-terminal_34	DRGRFDRSGEAQFIPGAHSANRSDSAESSNREPD IAGDPDYE AERGTVSVDPCHEVSMRG	420
LdCL_350040100	DRGRFDRSGEAQFIPGAHSANRSDSAESSNREPD IAGDPDYE AERGTVSVDPCHEVSMRG	319
LmjF.35.3460	GRGRFDRSGEAQFIPGAHSANWSDSVES SNREPD IAGDPDYE AERVAVSVDPCHEVSMRG	420
	. ***** * . ***** : *****	
N-terminal_34	VDVMLLDDALTKGWLYQFGDNELEFYAAVSEVILNIQGRGYNPNK LAMWK	470
LdCL_350040100	VDVMLLDDALTKGWLYQFGDNELEFYAAVSEVILNIQGRGYNPNK LAMWK	369
LmjF.35.3460	MDVMLLDDALTKGWLYQFGDNELEFYAAVSEVILNIQGRGYNPNK LAMWK	470
	: *****	

C

LFSRPDLAVVAVR



Supplementary Figure 35 Amastigote life stage

A N-terminal extension 35: Prohibitin

Leishmania donovani CL_SL Chromosome 35 (Negative strand)

Current Annotation

Gene: LdCL_350005600

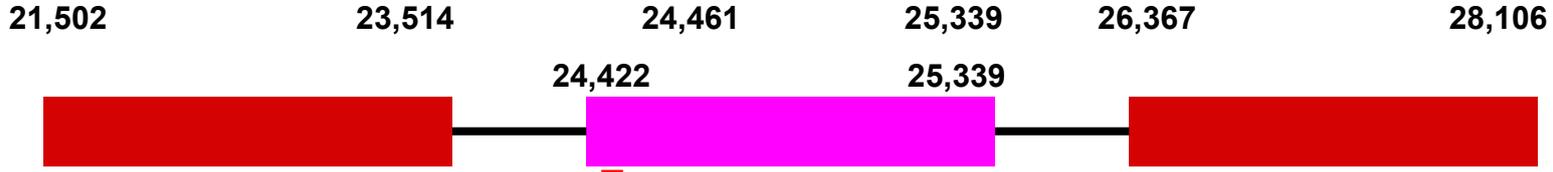
Current gene: LdCL_350005700

Gene: LdCL_350005800

Hypothetical

Prohibitin

Trk system potassium uptake



B

N-terminal_35	MPPK VPPQPDFS KMAAEARKKMNAYGGFGNIIGMSALVGVGCVSIYALYKSIFFVPPGGFR	60
LdCL_350005700	-----MAAEARKKMNAYGGFGNIIGMSALVGVGCVSIYALYKSIFFVPPGGFR	47
LTULEM423_350005600	MPPK VPPQPDFS KMAAEARKKMNAYGGFGNIIGMSALVGVGCVSIYALYKSVFFVPPGGFR	60
	***** : *****	
N-terminal_35	AVKFN CITGLYN RTYGEGANFAIPFLETPVVFDIRNKPIEVPTASGSRDLQTVNMAVRVL	120
LdCL_350005700	AVKFN CITGLYN RTYGEGANFAIPFLETPVVFDIRNKPIEVPTASGSRDLQTVNMAVRVL	107
LTULEM423_350005600	AVKFN CITGLYN RTYGEGANFAIPFLETPVVFDIRNKPIEVPTASGSRDLQTVNMAVRVL	120

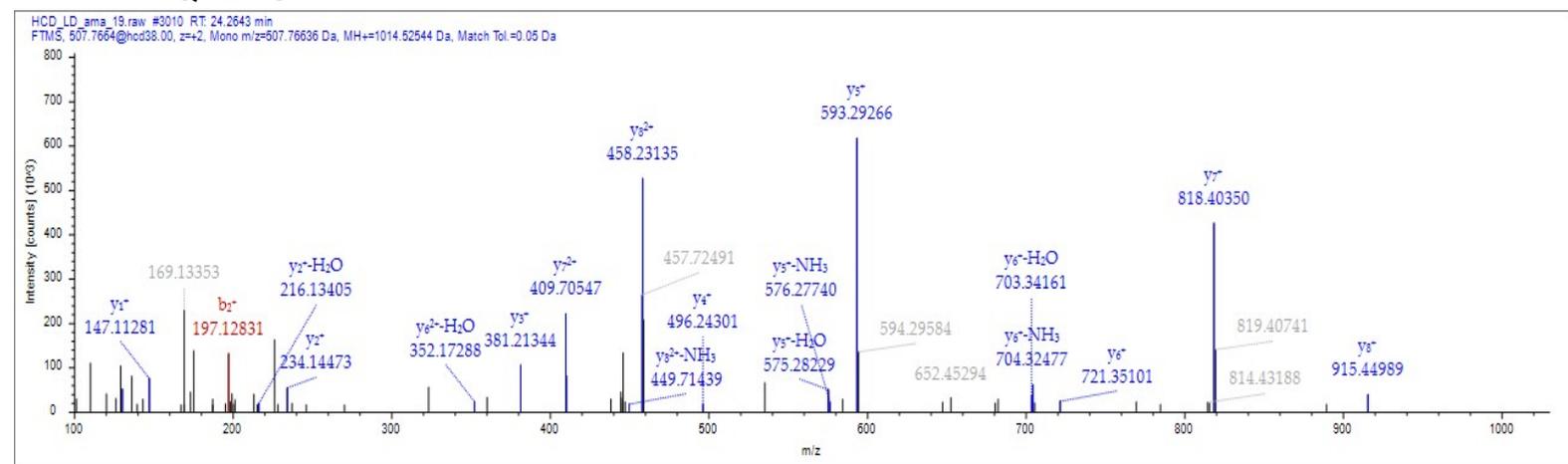
N-terminal_35	YQP NDNLYHI YRHIGVNYAETVLP SLINEI IRAVIAQFNASDLLIKRPEVSHRIGV MLA	180
LdCL_350005700	YQP NDNLYHI YRHIGVNYAETVLP SLINEI IRAVIAQFNASDLLIKRPEVSHRIGV MLA	167
LTULEM423_350005600	YQP NVENLYHI YRHIGVNYAETVLP SLINEI IRAVIAQFNASDLLIKRPEVSHRIGV MLA	180
	***** : *****	
N-terminal_35	ERAKRFNIDITDVSITQMSFGKEYTNAVEAKQVAQ QMAERAKFR VEQAEQEKQA AILLAQ	240
LdCL_350005700	ERAKRFNIDITDVSITQMSFGKEYTNAVEAKQVAQ QMAERAKFR VEQAEQEKQA AILLAQ	227
LTULEM423_350005600	ERAKRFNIDITDVSITQMSFGKEYTNAVEAKQVAQ QMAERAKFR VEQAEQEKQA AILLAQ	240

N-terminal_35	GEAE AATLVG NAVKRNP AFLELR GLEAARTIAKTLRDHGNGR YLDSD SLYVNVKDLKID	300
LdCL_350005700	GEAE AATLVG NAVKRNP AFLELR GLEAARTIAKTLRDHGNGR YLDSD SLYVNVKDLKID	287
LTULEM423_350005600	GEAE AATLVG NAVKRNP AFLELR GLEAARTIAKTLRDHGNGR YLDSD SLYVNVKDLKID	300

N-terminal_35	HSGAK	305
LdCL_350005700	HSGAK	292
LTULEM423_350005600	HSGTK	305
	*** : *	

C

VPPQPDFSK



Supplementary Figure 36 Amastigote life stage

A N-terminal extension 36: Hypothetical protein

Leishmania donovani CL_SL Chromosome 35 (Positive strand)

Current Annotation

Gene: LdCL_350055600

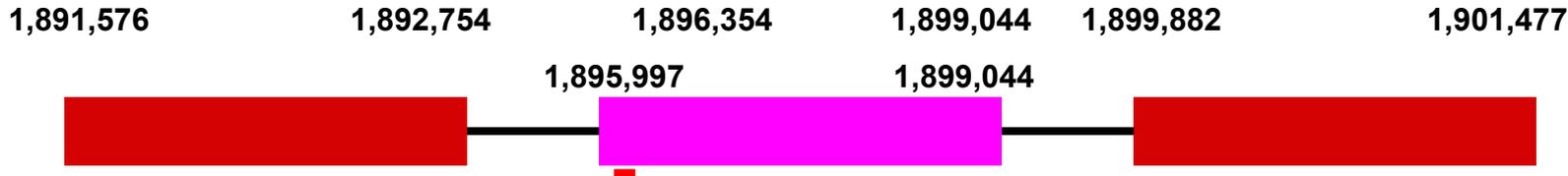
Current gene: LdCL_350055700

Gene: LdCL_350055800

MAPK

Hypothetical

Hypothetical

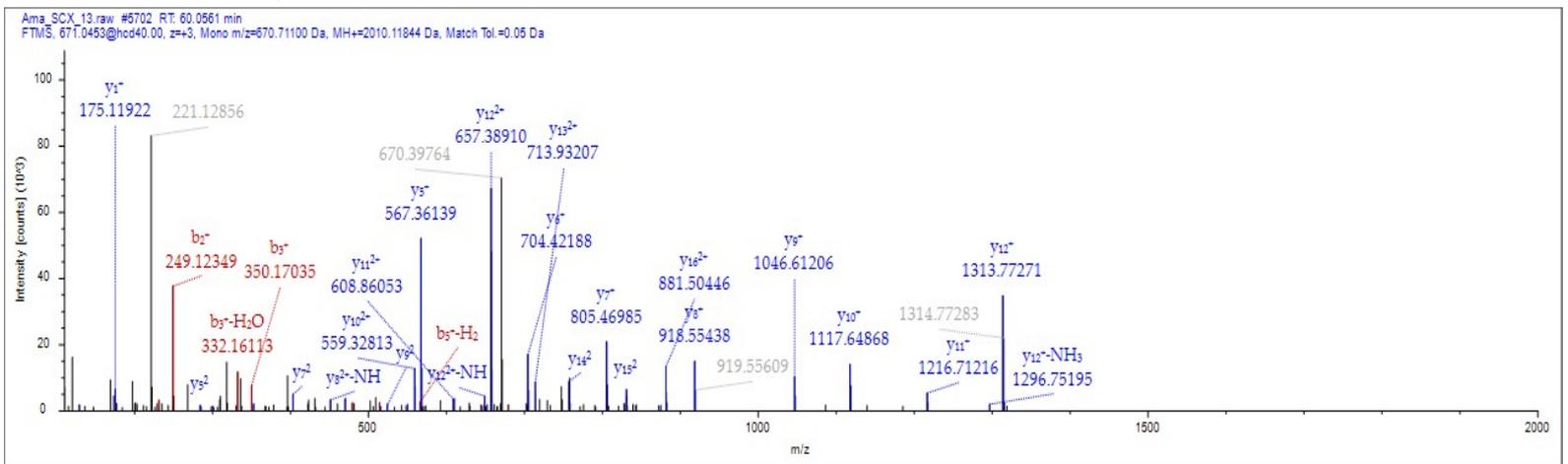


B

N-terminal_36	MHCGRPILQGSAGALTPVYAALTSKRCVSI	GRASPLGFSTPPDRHPRIKQVGTGVIA	60		
LdCL_350055700	-----	-----			
LGELEM452_350056900	MHCGRPILQGSAGALAPT	VYAPLTSKRCVSI	GRASPLGFSTPPDRHPRIKQVGTGFIA	60	
N-terminal_36	QHVPGTTKLRYTNRKGR	TFTFSIPVAQLTHPPVVR	RGAARDGWHEIDTSFSDVGDLEDDM	120	
LdCL_350055700	-----	-----	-----M	1	
LGELEM452_350056900	QHVPGTTKLRYTNRKGR	TFTFSIPVAQLTHPPVVR	RGAATD	GWHEIDTSFSDVGDLEDDM	120
				*	
N-terminal_36	PSEVDECLAAASVAGDEGLVELNQEQLRALQQA	FVRLCKDYVLMDTSGMKTSMMYSELNN	180		
LdCL_350055700	PSEVDECLAAASVAGDEGLVELNQEQLRALQQA	FVRLCKDYVLMDTSGMKTSMMYSELNN	61		
LGELEM452_350056900	PSEVDECLAAASVAGDEGLVELNQEQLRALQQA	FVRLCKDYVLMDTSGMKTSMMYSELNN	180		
	*****	*****	*****		
N-terminal_36	GPDYELFDRKTRRRRH	WLAI	RHRYEDVKELLWPSDAAANDGDAPAASVEDTEREQQCSLA	240	
LdCL_350055700	GPDYELFDRKTRRRRH	WLAI	RHRYEDVKELLWPSDAAANDGDAPAASVEDTEREQQCSLA	121	
LGELEM452_350056900	GPDYELFDRKTRRRRY	WLAI	RHRYEDVKELLWPSDAAADDGDAPAASVEDSERQQQCSLA	240	
	*****	*****	*****	*****	
N-terminal_36	DESLPVLPIADMMEAL	TWLEAASTFAVRKHRPFDT	SNASDFAPLDLSREVRIVASCVRAA	300	
LdCL_350055700	DESLPVLPIADMMEAL	TWLEAASTFAVRKHRPFDT	SNASDFAPLDLSREVRIVASCVRAA	181	
LGELEM452_350056900	DESLPVLPIADMMEAL	TWLEAASTFGVRKHRPFDT	SDASDFTPLDLSREVRIVASCVRAA	300	
	*****	*****	*****	*****	
N-terminal_36	GLSNLLH	SVGQGAAGEPRGDAADTVADRFISL	GALCANHGVPLSAAFAPSVSTSCDAAAS	360	
LdCL_350055700	GLSNLLH	SVGQGAAGEPRGDAADTVADRFISL	GALCANHGVPLSAAFAPSVSTSCDAAAS	241	
LGELEM452_350056900	GLSLLH	SVAHGAAGEPHGDAADAVADRFISL	GALCANHGVPLSVAFAPSVSTSCDAAAS	360	
	***	*****	*****	*****	
N-terminal_36	PTTAAASVQAWLSSIPVLSRVKDAVRVIGVMQICGQ	GKGDGAAAELLRFS	DADGAVVRE	420	
LdCL_350055700	PTTAAASVQAWLSSIPVLSRVKDAVRVIGVMQICGQ	GKGDGAAAELLRFS	DADGAVVRE	301	
LGELEM452_350056900	SATAAAAVQAWLSSIPVLSRVKDAVRVIGVMQICPQ	GKGDGAAAELLRFS	DADGAVVRE	420	
	*****	*****	*****	*****	

C

TFTFSIPVAQLTHPPVVR



Supplementary Figure 37 Amastigote life stage

A N-terminal extension 37: Tetratricopeptide repeat/TPR

Leishmania donovani CL_SL Chromosome 35 (Positive strand)

Current Annotation

Gene: LdCL_350011600

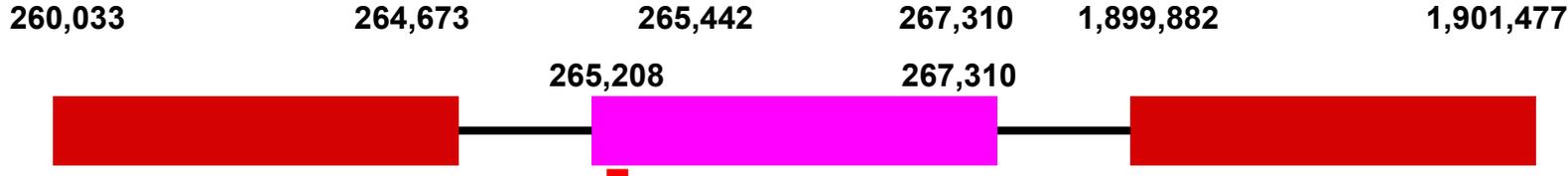
Current gene: LdCL_350011700

Gene: LdCL_350011800

Hypothetical

TPR repeat

Vacuolar ATP synthase



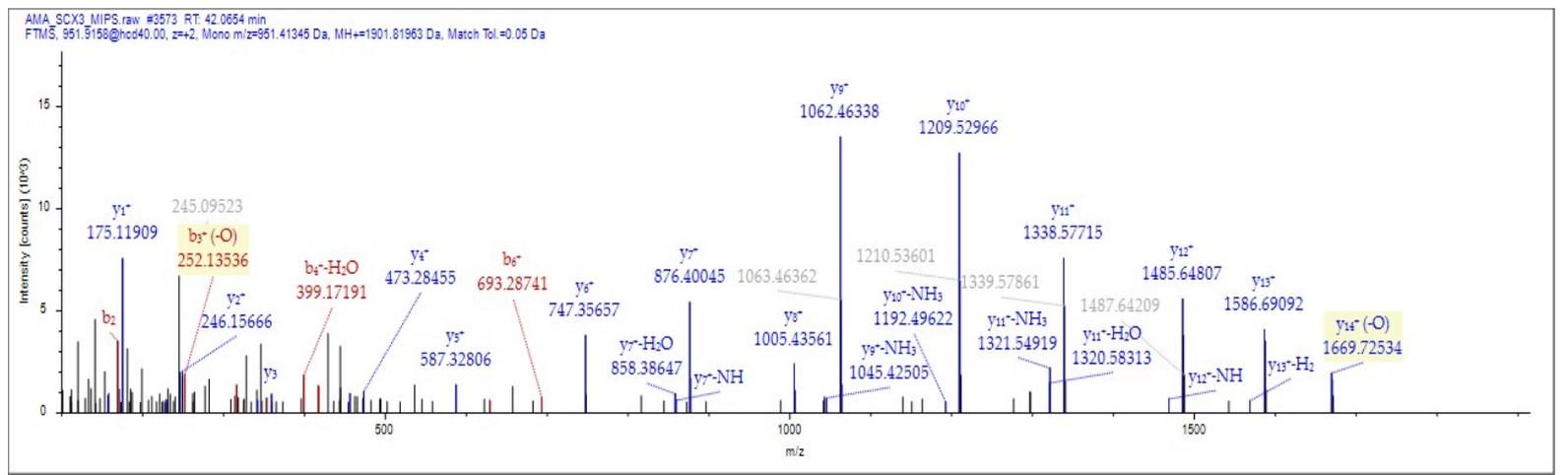
B

N-terminal_37	MPPRVPSVAARSAACSSLWTARLGATWYNRHTHTAVLRVRDNSGLRTCSTSAVATQRRFL	60
LdCL_350011700	-----	
LTRL590_350011600	MPPRVPSVAARSAACSSVWTARLGATWYNRHTHTAVLRVRGNGGLCTCSTSAVATQRRFV	60
N-terminal_37	GPRQYSPKGYREAAGR APMTFFGEECNNL LRAAAHQTKNYGDAISLYDRALAMRREKYGP	120
LdCL_350011700	----- MTFFGEECNNL LRAAAHQTKNYGDAISLYDRALAMRREKYGP	42
LTRL590_350011600	GPRQYSPKGYREAAGR APMTFFGEECNNL LRAAAHQTKNYGDAISLYDRAL TM RREKYGP	120
	*****:*****	
N-terminal_37	IHKKCAATLHNIGRVFIDMKEYGAAENAFTEAAAIYEQVEGDKSLEYAESLELLAF C YTH	180
LdCL_350011700	IHKKCAATLHNIGRVFIDMKEYGAAENAFTEAAAIYEQVEGDKSLEYAESLELLAF C YTH	102
LTRL590_350011600	IHKKCAATLHNIGRVFIDMKEYGAAENAFTEAAAIYEQVEGDKSLEYAESLELLAL C YTH	180
	*****:****	
N-terminal_37	LKFLDEAEKAFKDSIRIFRDQCYNYGNNNSWLPDDKTPPAEPNKHPLSSAAHALADCAALF	240
LdCL_350011700	LKFLDEAEKAFKDSIRIFRDQCYNYGNNNSWLPDDKTPPAEPNKHPLSSAAHALADCAALF	162
LTRL590_350011600	LKFLDEAEKAFKDSIRIFRDQCYNYGNNNSWLPDDKTP P TEPNKHPLSSAAHALADCAALF	240
	*****:*****	
N-terminal_37	LFRRQEHQAVAFLEEAL E IRRFlySRHVKFRPMIAQTLNKLCELKKS L DDAVGAEMCINE	300
LdCL_350011700	LFRRQEHQAVAFLEEAL E IRRFlySRHVKFRPMIAQTLNKLCELKKS L DDAVGAEMCINE	222
LTRL590_350011600	LFRRQEHQAVAFLEEAL E IRRFlySRHVKFRPMIAQTLNKLCELKKS L DDAVGAEMCINE	300

N-terminal_37	CLEIC I ETLGRDHPATAQATSSKAGLLAAKKQFRDALRLYEESTR T RYAVALGKDAPLFGQ	360
LdCL_350011700	CLEIC I ETLGRDHPATAQATSSKAGLLAAKKQFRDALRLYEESTR T RYAVALGKDAPLFGQ	282
LTRL590_350011600	CLEIC I ETLGRDHPATAQATSSKAGLLAAKKQFRDALRLYEESTR S YAVALGKDAPLFGQ	360
	*****:*****	

C

APMTF**F**GEE**C**NNL**R**



Supplementary Figure 38 Amastigote life stage

A N-terminal extension 38: Hypothetical protein

Leishmania donovani CL_SL Chromosome 36 (Positive strand)

Current Annotation

Gene: LdCL_360071600

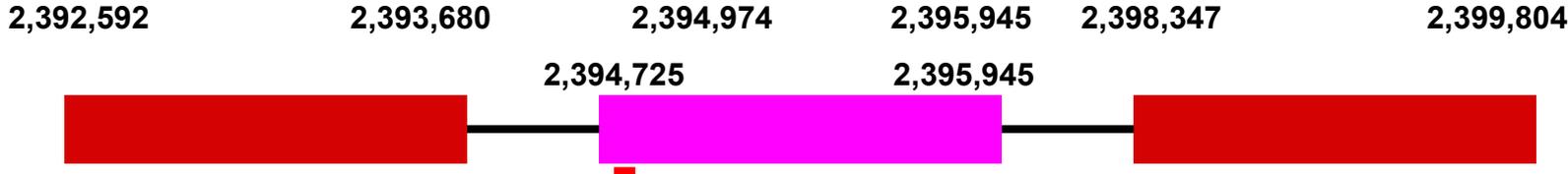
Current gene: LdCL_360071700

Gene: LdCL_360071800

Hypothetical

Hypothetical

Galactose oxidase



B

N-terminal_39	MSEGPRKRVAGAQLSRDDDDGEGRADDEFVTTTPQVADESEMANRRVVRVRRPDGATSSANA	60
LdCL_360071700	-----	
LGELEM452_360072700	MSEGPRKRVAGGQLSRDDDDGEGRADDEFVTTTPQVADESEMANRRVVRVRRPDGATSSANA	60
N-terminal_39	FARGPSLFLK DVSLGSDKEPPVFK MFPFGAGDASKGTAAAFSFAAPASSSSKSSSSFGGLPPT	120
LdCL_360071700	-----MPFGAGDASKGTAAAFSFAAPASSSSKSSSSFGGLPPT	37
LGELEM452_360072700	FARGPSLFLKDVSLGSDKEPPVFKMFPFGAGDASKGTAAAFSFAAPASSSSQSSSSFGGLPPT	120
	*****:*****	
N-terminal_39	TKPSGFSFSGGSTASPATTGTSTTPKTPFSFGGLPTDGSSATTGTTSSFSLGTNSAPSVTA	180
LdCL_360071700	TKPSGFSFSGGSTASPATTGTSTTPKTPFSFGGLPTDGSSATTGTTSSFSLGTNSAPSVTA	97
LGELEM452_360072700	TKPSGFSFSGGSTASPATTGSSTTPKVPFSFGGLHADGSSAQTGATSSFSFGTNSAPSVAA	180
	*****:*****:*****:*****:*****:*****:*	
N-terminal_39	STPAGGFSFGFAPAKSSATAPTDEAPAKEPAPATATALPKAPVFGAGSFNFGSAVNSFVE	240
LdCL_360071700	STPAGGFSFGFAPAKSSATAPTDEAPAKEPAPATATALPKAPVFGAGSFNFGSAVNSFVE	157
LGELEM452_360072700	STPVGGFSFGLAPAKSPATAPTDEAPAKEPAPVTATAQPKAPVFGAGSFNFGSAVNSFVE	240
	.**:*****.*****.*****.*****.*****.*****.*****	
N-terminal_39	ARKKMQEEKGPESEADGEDKGGDAPKDDADGTGFGSEVVEQSARDVLATAPSKLYLFE	300
LdCL_360071700	ARKKMQEEKGPESEADGEDKGGDAPKDDADGTGFGSEVVEQSARDVLATAPSKLYLFE	217
LGELEM452_360072700	ARKKMQEEKGQESDGEDKGGDAPKDDADGTGFGSEVVEQSARDVLATAPSKLYLFEV	300
	***** ***:*****.*****.*****.*****.*****.*****.*****	
N-terminal_39	KGEDTPGRWAERGAGEAKLIAEKK-AEAGVHVHRLLRGGYALNATVGKNLFTLSKTEA	360
LdCL_360071700	KGEDTPGRWAERGAGEAKLIAEKK-AEAGVHVHRLLRGGYALNATVGKNLFTLSKTEA	277
LGELEM452_360072700	KGEDTPARWAERGAGEAKLIAEKKAEAGVHVHRLLRGGYALNATVCKNLFTLSKTEA	360
	*****.*****.*****:*****:*****.*****.*****.*****.*****	

C

DVSLGSDKEPPVFK

