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A S T F R A D S QDTFRRVLDAYAYV NAQSVFRAVMDAMARP Q DNQR I FRAL LDTMARR

HNAQS $\square F R S T M N A L \begin{array}{ll}\text { S R P } \\ \text { A }\end{array}$ SQSAFRLILKALSFPGTVQQLDDLLTPPAPLSVAATAL D A Q T T F R TAL Q AL A HPGRV HQLVA ETGVPA GLLS PA M T A L A QSVFK S LMMDGFA R PGQQIDRLEASSSDPPAPMGAAAAAVV H D F R T L L N A L S Y P D

 HA A QQVFR HALNA LSEP GLVQTVVSDVPGLDRMAPATYA LI HDAQQTFR LLMDAVSRPGKKVELLS ILQ FGTVSPAATQV


 A QHAFR L MLDKALSSEPGVVTVTVLGDGP VWPP L NAAD TAA






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LT A DNTPVWID DASNESADQNLRFHTNAPLVSQPEQ

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UniRef90_UPI000346B31A UniRef90_UPIO002E501D6

ATFAVTDEA ${ }^{90}$ S SEQLNALDS G
100 $T L I L Q V A S{ }^{11}$

110
120 A QF AVASEAISSSQLNPDTSATLVLQVSSLSGGRMLRLTG
 ATFTVVNDQAQGEDVSPEASATVIVEVKSLSGGHMLRLTG ARFAFVDEGATGTQEYPDRSTTLVI ELPDLEGGRRLALMG
 A RFVFLDQAAASGTQEYPDRSATVVIVVSSIVGKGSEFVLSG ARFAFFEKGAAGSQEYPDRSTTLVVEVEALEGGQPLIGRG
 ARFAFVEAGAAGTQEYPDRSTTLVMEVSALGGGQPLTLTG ARFAFVEAGAAGTQEYPDRSTTLVIELADLEAGRRLALMG AVFAVADQHAHGSVIAPEHSATLVLQVNSLSGGRMLRLTG PF ALSHAAAAGDNLSPEKSTTLII EVMSSLNGGLTLRLSG ARFGFVDQFALGTQEYPDRSTTLVIEVEALKGGQPLVARG ARFAFVEAGVLGTQEYPDRSTTIALEIASLEGGKELALS G PFALLI GQFSAGNNVSPEKSTTVIIEVPGLNGGLTLRLSG

 PFALDPTDDAAGDNLSPEKSTTLI I EVVASLSGGLTVRLS


 ALLAI ADSTLNGQPLNAESSATLILQLPALSGGRMLRLTG AHFAFIDGFSQGTQDYPDRSTTLILQVADFASGAPLLLEG

AHFALVADPAQGSQEYPD
 $A D F A V T D E L A Q A S A R M P$
$A A F A I L D Q F A D G D D A W P$

 AAFALI HDGAALPDFYPDKSTTVIIEVSGLTGGTPLRLSG
 ADFAVVANFSSGSAECPERSTTLLVQVKGLDGGESKQLNG
 ADFALI QDLATSSELSPETSTTLLVQVESFQGGQSVILTG SDFALI HEFHQGTAEQPETATTLLI QVESWQGGQPVILTG ACFAVLGNEPPGNELSPEQSVTVII QVDSLNQGTPLRLHG



 ADFAV 1 A QLPVGGAEYPDQSATLILMVDDITDNREMHLRG AEFALISPDAQGSHEYPDRSTTVIVQVESLDAASTWALRG TAFALI GDGADGTPEYPDRSTTLII QVQALGSDDGFRLRG AHFAVI EAGSAGSQEYPDRSTTLI E ELSDLDGGRELLLSG AQFALVTDTQSLDPALSPPDRSTTVVLAVSSSLTSGQGFSLKG
 VAFALVGAPTTMPALYPDRSATLILQLPSLEGGAPLTFEG AVFAII P D GHALD DLLY P D R S A TVI I QV R S I E V G C GVVRLS G A D F A V V T D L A L G N A E Y P D Q S A T L I L M M V E D I S D K A A D ML L R G ARFALLAGTDAGTDAYPDRSATLIRQVESLSDGPAYRLSG AAFALVSNTSAGTAEYPDRSTTI I LMVVDELTEDTGVTLKG IHLAVWDDQLRPAELSPEFGATLVVQVTALAGSHTLRLSG ARFAAVPAGCDAPALYPDLSTTLLMDVASLSEGEAVTLSG
 AHFALVVANPATGTQEYPDRSTTLILQQVESLTAGEPLQLKG A AFAVLDATALGTPEYPERSATLI I QVPRLAEGEGHTLTG AAFALVAAPALGTQEYPDRSTTLILQVETLTKGPQLVLEG A AFALLDGEAPGNDRDP HLSCTVMVQLNSLDGGPATVVSG

 A DFALI Q D L A SMAELS PEDSTTMLI QI A S F NGEK S $\square T L T G$








QUERY
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UniRef90_W9BJQ7
UniRef90_UPI0003B7B79F
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UniRef90_B9J6R0
UniRef90_D8MTX9
UniRef90_H0HILX4

A G I MI APQLPECVLHELTERPHPFPLGIIDLILTCGDRLLA


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 $P G I L R V G G L P E D F R H Q W Q A N H A G F P D G V D L E L T A A B R I C A$




P GII K T S A GLLP F WY WS DWEMNRELGYPRGI DVI FTNGNAGVG
 P GI I V S P Q L P Q P P L M N Y $\operatorname{L}$ P GI E I S P P L P A AL R D Y L L K R P H R F P L G L D DL L T C G E C L M A






















PGNLIAPSITSTFWEFWEQNYPLYPLGIDVELFTEDSVMG
P G I L A V D G L P K S F V A F R A A N S A L
P GII R G T A P L P A E L L A QR E A S Q A L


 $P$ GIVDGTV S L P A D L F A R L S I N E A L F P R GIVDV I L V D G R S L V A

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| UniRef90-UPI0003B7B79F | L PRTTK |
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| UniRef90-R9VNU6 | 1 PRTTLVE |
| UniRef90-LONL60 | L PRTTR |
| UniRef90-A6UHA9 | LPRTTK |
| UniRef90-UPIOOO366187E | $V \mathrm{PRTT}$ HVEVC |
| UniRef90-H5UZ40 | 1 PRATHVEV |
| UniRef90-W6W9E5 | L P R T VRI |
| UniRef90-W6R3T1 | LPRTTKI |
| UniRef90-A7MPI8 | I PRTTHVE $\square$ A |
| UniRef90-K2PK22 | LPRTTK |
| UniRef90-E1SHV4 | V PRTTVVEVC |
| UniRef90-UPI00041B4736 | LPRTTRLA |
| UniRef90-B9J6R0 | L P R T T K |
| UniRef90-D8MTX9 | L PRTTDVRVC |
| UniRef90-H0HLX4 | L PRTTR |
| UniRef90-UPI00034DDBB6 | L PRTTQVEVC |
| UniRef90-Q8YUV7 | PRTAKPEV |
| UniRef90_UPI00046A8AC3 | LPRTTT |
| UniRef90-W8UPU6 | PRTTHVEVC |
| UniRef90-C6CMZ6 | LPRTTHVEVC |
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| UniRef90-A0Z9U3 | LPRTAKYQV |
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## UniRef90 b9jys7

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$P G$ LVSLPLNSDFWQQWQMMTVDYPLGGDCWCFVDDQVLG
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PGGFVKGLNSTLLASLMAHRGAFP

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$P G G L S V Q G L P P D F T S Q W A A N Q A R F P R G V D V F L A S E N B L A G$





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 LLALCDYSTPVWLAQPDA EVLGSALRFHTGAPGTEEAHD AMALDDGEVSFHLDSEKQQQVGGKI SEYTDAKQAPADKA MLTCCDAETPRFLAPGHDGPALRRWVAFHLGCP LVPR RGE LYTLADQDVRVWLAPALPDDTVASGLRFHTGMRVTDRPEE ALTMLDVDCTAWLAPELLATPAVRAWLTFHTGAKRVVEDESAS ALTVLDEESALWLDPRAADDEVTSWLTFHTGVRLVTAASD LMTLPQCETPVWLDSGLHSEALLNTLHLHTGASVSADKRVV LLALLDSDCTLWLSPRLAASDAGAWLRFHTGCTLVSEAAQ ALTLADMDVPGWLDPEVLSTPDVSGWVRFHTGAPQVESLEEA LMS CDOQTALYLSPALAKEQALHNLAFHNGASSAPANQA VLT FDNEVSFSTS GKQDAEEFSTV LTGAHCTENDDA VLTLCDNEVSFH LLLTLADMDTPVWLDAAAETSAVADFLRFHRGVRMTAAPRE TMTLEDNELSFITPDRLAAMDKELKVLTGAKSVDSLKE CMVLLDVDSPLWLGPSLDTPELRRVLALHCRCSIVELDQA AAVLLDTEVTFKI ISEKEEE\|VRLFNQLTYAKAAETAAA LTLGCDPETPLLEGGAAQDNPGFRDWMTFHCGAPFVTAGGL IACLADADTPIFLDPPLASEAVRQWLGFHVGAPIVSVPGR AMTLLDAEVTFAI DSENSQQLSTKLTAYTLAKSAPIHEA ALAALCDNETTVWLAPGLDTEDVRTWFRFHCGTVLVAEPDR LLALCDDESRLWI ADELNRDGLAAAISFHTGARIVTCADE


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ARFALI AEP ${ }^{90}{ }^{90}$ MPPEFPD 100
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 DYMF LANDSKAGDLRDPQKSATVILEVEEMSNEKGLILRG AVFAAVPAGHATPKLYPDRSTTLLLEVDALGEGDAVTLRG AVFAVADEQDSHEQLNPETSATLILQVSSLSGGRMLRLTG A AFAYVHDADTLPSLSPEHAATLLI RVTALTGGTRVVLRG DYYAVVQDATEGDLIDPQNSATWL ETPKLSNTAELKKLMG AHFALGTWEALGPPDYPDRSATLIVERDGLSA SGTRLTG ADFlVIAAGSPLPDLYPDRSATLLLEADGFTEGSGPGFAA DYILVLKDAKPGDLLDPHKAATII IETDYVSNDQNLTLTG AHFVIGADVASLPPLDPHQSATVLLASPVEDRTARFVGRG ADFVLADPAAAGTDEEPHRSATALLDVRDAAGAEGPGIDG PFALLHTESDTAPDLSAEKRTTLI EVTALSGGLTLRLRG ARFVWVAQGDLGTDIYPDQSATCVVDVTTTDSEGAWYLRG D AAFAVLADCAALTALDPDLAATLVVQLPPQEADAGPGING ADFVLVRAGCALPSLYPDRSATLLVEVAGFAAGSGPGLAR EFVVVFHEAAVGTLGSPEQSTTLII EVPSTGEGQKYALRG VDYAVIKEHDAGTLASPEKSATLIIEVDSUGEGQKYSLKG $C H F A L V C D A A L G S D E Y P E A S S T V L V Q V E D F D D D A G P L W H G$
$D F I L M L Q D A K T G N L H P Q Q S A T W I V E C D L L S N S T G L S L N G$ TDFIVLQAADLGVLISPEKSVTLIIEVDSVTSGESYIFSG ARFAWVAQGDAVPPLYPDQSATCVMDVDRLTVGEEWRLSG DFIDFLVDAKAGDLDHPHASATFIVEAEQITAGNGLRLSG AHFAYLDGFALGSSEYPDRSATLIVELPELTN SGAVLRG ARFAWVARGDAMPALQPDQSATCVLDVA LGGPGAWQLSG AAFAVIADAAGMPPLYPDRST LLVVQVKGFCGAQPLRLQG DYIIVLQDALQGNLIDPQFSSTWFLESSGLVNQAELLLTG AAFAFVPGVEALPDLYPDRSTTVCLGGVEERETAALTASG A DFALVTNVSEGSDTYPDRSTTLIVVLAATGTTRDWRLSG NFMF MTDAEEGDLINPHGSATIVVEAKGTTNDRETILTG

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RAAF GAAP|L|PADFDERMAENRAGFP|L|V|D|LLL|AGPGG|V|AG $P G I K D S A Q L N L P D V P A L Q A N A A Q F P L G F D L F F S A G D Q L A A$

PGIIKD SRSI S $\square D G L T Q R Q A N Q Q L Y P C G V D L I D F C A P T E E F I A$







QTPF GA A QMQL


 $P G I L R V A G L P A D F A E Q W A A N H A A F P R G V D A F L A S G V R V V G$ P GII K I GL L V S E E F WW ER DE K DK E Y P L G I D LI F T D Q N N I V C

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 A GI A D EP


 PGIDDGAAHLDDPDPAALAANAARFPDGVDLELTA GARLAA PRRFGADGLPASFWREWQHNRARFPLGVDAVLITDTHIAG
 PGIIA S E S GLLP EN WEKT R QRANK EF P L G GI DFFFFV S QA EIL S HAlADAPWADEGFLDAWRANGERFPRGVDLLLVDAGSVAA P S RAV A PRLLSETVVLHY LRRQRPQGMA QRVDMI FTCKE KMMA $P G \square Q E V A G L P D D F E T Q W A A N Q A M F P R G V D L L L A T A D C H V G G$

 PRRSSDCGLPREFWLAARQQAEARFPLGVDDLLFSAGBVMA P G I K D I N T L D A G WM ALLR S EK C LE F P L GII DL:I I A D Q D QL C V
 P GRLLWP R DL P E T F L E E R R A MS E LIF P R GV D Y L F T C G R R L A A P GIN GAT GLHHSFWQKRNEKVNEYPLGI DVILLADSS QVAC



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| L | P | $R$ | $T$ | $T$ | $Q$ |
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LPRTTRL




LPRTMTRIS
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1 PRTTHVE

| $V$ | $P$ | $R$ | $S$ | $T$ | $R$ | 1 |
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|  | $R$ | $R$ |  |  |  |  |



| $L$ | $P$ | $R$ | $T$ | $Q$ |
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LPRSTEVV
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LPRSTRTS

| L | P | $R$ | $T$ | $T$ | $R$ |
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| L | P | R | T | $\square$ | Q |
| P | P |  |  |  |  |


LPRTTELEEA
LPRTTLAEE
LPRTTR1
LPRTTAR



LPRTSTRLE
PRTTRIE
LPRTTKV
LPRT
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LPRTTQI


LTRTTRVE

| L | T | $R$ | $T$ | $T$ |
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| P | R | T | T | Q |
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UniRef90_R7H4C8 UniRef90_D9SDE3 UniRef90_F7PHY7 UniRef90-L9XNW3 UniRef90_F3LH18
 A MTLLD GEVSFHVIS Q NNQSVEEKI AAYT LAKHASMEEA







 AMVLLDDAEVTFHVVLSENNRRDLDEKI SEYTSARFAP LQEA LYMLLDADTSFCAIS QDD QLAVVNIARLTYCRNSTLQQA




 AL TLMDEETTFATLGGPGWEEFV SFCKFYTGSRPAAAPEQ

 A S VLL YP E VR F F QQA D G D WT MI K A M $M K M L L D T E T S F N D G S$ LIE ENKNENDINGLTGAKDKDTNES

 $M F I L L D D E V S F K I V S K Y E A E G A K L V Q Q L T Y A K A E S V V E K A$ LATLLD GAVSSLADPQQLLKDQ DWPLLQ AKFRDLANA

 ATTLAD PCGLVGAADRQRLGAKSASADLAQFVVMPGS

 GLGLLNADVSFFVAR NATAITTYFTVNTASRPAPAAEA
 LL L T A A D N T T Q L WL S S S Y A S Q K L D D N L R F H C GVVS I E P S Q Q K
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 DEALIDRECHVF CADPLLMPKV LETGARIAALAGA

 A A T L L L D Q E T T







 A L A L I D R E C R V H A D D P

 $A V R L V V D Q A V T F C S V G P A S Q D V A R W L T V Q T H A K Q A H A Q G A$ A E S LL L D R E C T F F C C C D E A L K E G I A A A
 $V$ D TLVDRECRVVFSSHKTLQQPLIAS TGAAITGARD ATLIDDLETSYYTNHAGLA QLLAHSGARTLGAHYQFYPDL


$A D T L L D Q E V T F Y V$ ENHTQED TVNDRALTMSNQVDYKKS



UniRef90 B7SUV9 UniRef90 UPIOOO30914CB
UniRef90_V5UG75 UniRef90_UPIO0035FFC94 UniRef90 ${ }^{-}$K6DCX3 UniRef90_UPIO003B4D89E UniRef90-UPIO004157D5C UniRef90-UPIO0046336FF UniRef90-UPIO0037235A3 UniRef90-V7EKP7
UniRef90-I1ARX3
UniRet90-M7NC90 UniRef90-DOD4X2
UniRef90 $14 \times 941$
UniRef90-14X941 UniRef90-E2SK50 UniRef90-R6UNR7 UniRef90-S7VH65 UniRef90-C6DJX3 UniRef90_J8TRE2 UniRef90-E3JOD4 UniRef90-W7KUQ7 UniRef90- $\mathrm{F6CN} 19$ UniRef90_UPIOO031A7EOD UniRef90-A31UM2 UniRef90-UPI0003B580B3 UniRef90-M1PNU9 UniReffo NowALO UniRef90-R616C1 UniRef90-UPI0003B4B14D UniRef90-UPIo0037152BC UniRef90-R4KCR0 UniRef90-V4JSW0 UniRef90-A1TOV3 UniRef90-FOYUX4 UniRef90-A6GN55 UniRef90_B5WKUO UniRef90 $0^{-L 7 L 216}$
UniRef90 W4M9Z2 UniRef90-W4M9Z2
UniRef90-W7YA94 UniRef90-l2GCD6 UniRef90-E9VV97 UniRef90-A0A058ZGY3 UniRef90_E8LY22 UniRef90-C4GPJ4 UniRef90-KOVYE9
P
P UniRef90-L9CCF6 UniRef90-B7JZV6 UniRef90 D5WWE9 UniRef90-Q31DV1 UniRef90 UPI00047DF760 UniRef90-A1WM36 UniR Refo-O69066 UniRef90-K2JRD6 UniRef90-B0UIG7
UniRef90-X7EJF4 UniRef90-UPIo00288ADF9 UniRef90-13U8L9 UniRef90-V4IDR1 UniRef90-UPIO003492C6E UniRef90-Q10V12 UniRef90-A0A037ZHI6 UniRef90-Q3SGK2 UniRef90-UPIO00367C24E UniRef90-A1TX55 UniRef90_B6BPP2
UniRef90_R7H4C8 UniRef90-D9SDE3 UniRef90-F7PHY7 UniRef90-L9XNW3 UniRef90-F3LH18

130
150
160
PG|ITAAPRLAPGFVNFWHKQQGLYPRG\|D|LCCCRNECLC











$P G V L R V A G A R P A L W S H L R D L A H A F P R G L D C I F V D G R R V A C$
PGIIISPRLPGSVRNYLCNRPHAFPTGLDFLFTSGKKLFA
$P G I K A V Q N L Q T N M W G E R L E R V K E Y P D G I E M I F A A Q N D L V C$
$P G G L A A P W A P A G F A D A W R Q N T G L F P R G V D L L V G A D T V T A$
$P G U Q T S T G L A G N W D E K R N E K N K E Y P T G V D L V E V D R N R L L S$

PGULNSNGFDPHWFTLRNQWNRNFPAGVDLILVDTEQLLAB EATVVWVKGINPDLLNYLKEQNNEYPLGIDDLIVTDGNNVLC
 PGILKAVQEI PEAALGKRDEQEYEYPLGLDFFVLDQGCLMG PGI QSCSGLTPAWLNKRSEWNGAFPLGVDMILFDTARVIA



$P G \| L H V T G L N E A W L Q R R A F W N A A F P T G V D F I L V G E N Q V V A$
$P G I L Q V S G V D P Q W W K \square R K Q W N S G F P L G V D V V L L D E R S V V A$

 QQTVFVAGLNEALLTTLRDKNAEYPLGUDTILTDQDQULC

PGQEHQHHLNLPDLQPFQNNAMLFPQQLDFYFTAGTQQAA ${ }_{P}^{P G U K T H V E D D S G F L E Q R Q E R ~ Y T F P R G D D L L L V S G E T L L A}$
$P G \square Q S V V G L P E T F L R \square W T E N R A L F P R G \square D \square V L T S G E R F L C$
$P G \square S D D Q F D P E W F K Q R Y L W N K H F P D G D D M L V D Q T Q D A$
ERRLY DTVHPDTLGAWREDNREFPLGLDWI LVDGGFVCG
PGVAFVSGIDDQAWLEHRNEWCSAFPMGI DCILVDDTQI MA $P G I V Y L S G M S T K L L A Q D Q D C N A D Y P G G L D V I$ AVDEGTVLC $P G I R G Q A T L P P D F V P Q W Q A N H A A F P C G V D L L L G G A A H I V G$
PGI QHVSGIDPGWWKQRSEWNAHFPGGVDLILVSGHEVAV
$P G I I D I G G G P E G F W S D R R D L I Q Q P M G F D V F F I D G A R V L G$
PGGLRAAPLPPDFAARMRANRAAFPLGLDLLLTAPARVAG
 RASNHSA
$P G \prod A A Q A G \square D V D D L V L L N S N E Q Y P L G D D L I V D R Q Q V M A$
AG|LHLNGFHPQWFRQRQNWVENFPLGUDVFLVDSTQVTA
$P$ GILSANGFHHGWFSRRQEWI SAFPLGIIDLILVDVTQVMI
$P G D V H D G G L P D G F W$ Q R R A Q I M RYPA GFEL FLLLD D D QV M G
P G I L R L D GL H P D WL L R R A D WTA GF P L G V D L L F TA A T R I VA
$P G I L S I D G L A G S L V S G W Q A S N A E F P L G I D W I F V D E G R V A C$
$P G G L A V R G L H N E W L D K R G H W N R N F P M G V D V I L V V D T M V V A$


$P G T T V H I G L P A A E L D S I R Q A Q S T Y P R G I D V V F T V G D Q I V A$




$P G D D A V G G V H L D F W A L D R A E A D R Y P L G W D I D L A D G A S L I G$
P G I EKKTA ELQ AAE WAHARAERADGYPCGGDELLLVD GENVVAA
$P G D D A D G G V D P S F W A \quad L R S K A A R Y P D G W D L V L T D G B R L V G$




$P G \square A G Q P G M T R T E \square A A L A D R P G R F P D G \square D \prod F W I D R H Q C A G$ $P G I E I A L G L P A A F W A L R Q K L C A \quad Y P Q G F E L F V V D G R A V I G$ AGIMIAP QLPECLI HELTVERPHPFPLGVDLILTCGERLLA K N S L Y $\quad$ I D G V K K E F L E R L S T D P G I K S V D G I H P GF WA L R A R L C A Y P R G I E V L I M D



UniRef90 B7SUV9 UniRef90_UPIO0030914CB
UniRef90_V5UG75
UniRef90_UPI00035FFC94 UniRef90-K6DCX3 UniRef90_UPI0003B4D89E UniRef90-UPI0004157D5C UniRef90_UPI00046336FF UniRef90-UPI00037235A3
UniRef90-V7EKP7
UniRef90_I1ARX3
UniRef90_D0D4X2
UniRef90_I4X941
UniRef90_E2SK50
UniRef90_A0A021XB80
UniRef90-R6UNR7
UniRef90 ${ }^{-}$C6DJX3
UniRef90-J8TRE2
UniRef90_E3J0D4
UniRef90_W7KUQ7
UniRef90 F6CNI9
UniRef90_UPI00031A7E0D
UniRef90-A3IUM2
UniRef90_UPI0003B580B3
UniRef90-M1PNU9
UniRef90-N9WAL0
UniRef90-R6I6C1
UniRef90_UPI0003B4B14D
UniRef90_UPI00037152BC
UniRef90_R4KCR0
UniRef90 ${ }^{-}$V4JSW0
UniRef90-A1T0V3
UniRef90_FOYUX4
UniRef90-B5WKU0
UniRef90_L7L216
UniRef90_W4M9Z2
UniRef90_W7YA94
UniRef90-I2GCD6
UniRef90-E9VV97
UniRef90_A0A058ZGY3
UniRef90_E8LY22
UniRef90_C4GPJ4
UniRef90_K0VYE9
UniRef90-L9CCF6
UniRef90_B7JZV6
UniRef90_D5WWES
UniRef90_UPI00047DF760
UniRef90_A1WM36
UniRef90_O69066
UniRef90_K2JRD6
UniRef90_B0_X7EJF4
UniRef90_X7
UniRef90_UPIO00288ADF9
UniRef90_I3U8L9
UniRef90_-V4IDR1
UniRef90_UPI0003492C6E
UniRef90_Q10V12
UniRef90-A0A037ZHI6
UniRef90_Q3SGK2
UniRef90_UPI000367C24E
UniRef90_A1TX55
UniRef90_B6BPP2
UniRef90_R7H4C8
UniRef90_F7PHY7
UniRef90_L9XNW3
UniRef90-F3LH18
UniRef90_UPI000364FDAD
UniRef90-A5G2M0
UniRef90_G7VPR3
UniRef90_J2KVF2
UniRef90_R6H8R6
UniRef90-W6W6Q3
UniRef90_B8G9J7
UniRef90_R7CE43
UniRef90-A1U2Z8
UniRef90_K2QFS9
UniRef90 E1IFF1
UniRef90_B2TXB3
UniRef90_A5UTM9
UniRef90_A0A024KHT2
UniRef90_W1FVN1
UniRef90_T3D759 UniRef90_UPI000255903B
UniRef90_M1XPV9
UniRef90_Q2JPW2
UniRef90-A9WG30
$|\mathrm{L}| \mathrm{PR} \mathrm{S} \square \mathrm{S}|\mathrm{I}|$

| $V$ | $P$ | $R$ | $T$ | $T$ | $Q$ |  | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $P$ | $V$ |  |  |  |  |  |
| $L$ | $P$ | $T$ | $T$ | $H$ | $V$ | $E$ |  |
| $L$ | $P$ | $R$ | $T$ | $T$ | $Q$ | $V$ | $Q$ |
| $V$ | $C$ |  |  |  |  |  |  |

$\begin{array}{llllll}L & P & R & T & T & Q \\ L & V & Q \\ P & R & T & T & Q & V_{K}\end{array}$
L PRTTQIK

| I | P | R | S | T | K | I | N | I |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| I | P | R | T | S | K | V | E | V |
| L | P | R | T | T | Q | R | E | A |


| L | P | $R$ | $T$ | $T$ | $Q$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| I | E | A |  |  |  |  |
| P | R | T | V | I | K | M |


$\begin{array}{llll}L & P & R & T \\ P & S & V V E A \\ P & R & V & \end{array}$
L Pr R T V
PRTTQVE
$\qquad$
L P R T T QVVE
L Pr R S A R I
I PR S T HVVE E C

I | $P$ | $R$ | $T$ | $T$ | $K$ |
| :--- | :--- | :--- | :--- | :--- |
| $P$ | $R$ | $T$ | $T$ | $E$ |

| $L$ | $P$ | $R$ | $T$ | $T$ | $H$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | L | T | A | A |  |

I PR S S S MT WC
PRTTHVEVC
$\begin{array}{lllllll}L & P & R & T & T & 1 & 1 \\ D & R & S & N & R\end{array}$
L P R S N R

I PRRKTRI E

| $P$ | $R$ | $T$ | $T$ | $R$ | $I$ | $K$ | $I$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $R$ | $T$ | $\square$ | $K$ | $V$ | $A$ | $I$ |
|  |  | $R$ | $A$ | $T$ | $K$ | $V$ |  |

L PRATKV
L P R T T R V E V
L P R R T T K V V E I
$1 \quad P R$
LPRTTQVQ


| $L$ | $P$ | $R$ | $T$ |
| :--- | :--- | :--- | :--- |


1 P R S N R
$\left.\begin{array}{lllllll}L & P & R & S & T & Q & V \\ 1 & P & R & T & T & K & \\ l\end{array}\right]$
$\square$ P R T T K $\square$ T A
LP R T T H L E W

| $L$ | $P$ | $R$ | $T$ | $T$ | $H$ | $L$ | $E$ | $W$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $P$ | $R$ | $S$ | $T$ | $S$ | $L$ | $E$ | $W$ |
| $L$ | $P$ | $R$ | $T$ | $T$ | $K$ | $I$ | $E$ | $V$ |
| $V$ | $P$ | $R$ |  | $S$ |  | $L$ | $S$ |  |


| $L$ | $P$ | $R$ | $T$ | $T$ | $K$ | $L$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $P$ | $R$ | $T$ | $S$ | $V$ | $L$ | $S$ |


| L | P | $R$ | R | T |
| :--- | :--- | :--- | :--- | :--- |
| T | R | R |  |  |
| L | P | R | T | T |


| $L$ | $P$ | $R$ | $T$ | $T$ | $H$ | $I$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $R$ | $S$ | $T$ | $K$ | $V$ |  |


| $L$ | $P$ | $R$ | $S$ | $T$ | $K$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $E$ | $E$ |  |  |  |  |
| $L$ | $R$ | $S$ | $T$ | $R$ | $V$ | $T$ |
|  | E | $R$ | $S$ | $T$ | $R$ | $L$ |

$\begin{array}{lllllll}L & P & R & S & T & R & L \\ l & P & R & T & T & R & M\end{array}$

| $L$ | $P$ | $R$ | $S$ | $T$ | $Q$ | $I$ | $K$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $I$ | $P$ | $R$ | $T$ | $T$ | $H$ |  |  |  |
| $I$ | $Q$ | $C$ |  |  |  |  |  |  |
| $l$ |  |  |  |  |  |  |  |  |


I P R S T Q V E V
$\begin{array}{llllll}L & P & R & T & T & R \\ P & R & S & T & K\end{array}$
$V$ PR S TKK K S W

I PR S L K
$1 \mathrm{P} R$
MPRTTQQTI


| $L$ | $P$ | $R$ | $S$ | $V$ | $P$ | $M$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $E$ | $V$ |  |  |  |  |
| $P$ | $R$ | $S$ | $T$ | $V$ | 1 |  |


| $L$ | $P$ | $R$ | $M$ | $V$ | $K$ | $K$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $E$ |  |  |  |  |  |  |
| $P$ | $R$ | $S$ | $T$ | $R$ | $I$ | $E$ | $V$ |



| $L_{l}$ | $P$ | $R$ | $S$ | $T$ | $K$ | $I$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $P$ | $R$ | $T$ | $T$ | $R$ | $I$ |
| $F$ | $P$ | $R$ | $S$ | $T$ | $E$ | $I$ |



| $L$ | $P$ | $R$ | $T$ | $Q$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| I | R | T | T | K |  |
| L | P | R | T | T | l |


| $L$ | $P$ | $R$ | $T$ | $T$ | $L$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $E$ |  |  |  |  |  |
|  | $R$ | $R$ | $S$ | $T$ | $T$ | $V$ |
| $L$ | $E$ | $V$ |  |  |  |  |

LP R T VQ $\$
I PR S T Q V E V
I PRTTHVEVC


| L | P | $R$ | $S$ | $T$ | $T$ | $V$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| I | P | R | S | V | A | L | E |
| V | V | A |  |  |  |  |  | HDVQNGYRKVLNSMARPGVVENLNEEASNDDSEDEAYKSM HVLQRAFRNIMNALARPGRVEVLRAGDEEENPDPIHFETV AQQVYRAVLDAFSRPGLEVALPAAEHPAALLPVLALAB

TQE $Q Y R K M D D S A S F P G K \square N N \square D N \square N \square E N N T L L N G A \square G \square$ RTFRLLLDSLARPGKQNKLPTFAEVPKQANGFALGA DSQKLFRLILSALSNPGKTVNIKEFADKLFGNNSDFLAV AQRVYRAVLEAFARPGTVQALPRTDFPPALLPALALA HRAQRAFRKVLDAFARPGTVREDEVAGDGPAAAHLGGALAA TQRTFRALLEAMAYPSRVFPLKASSPKEALLR
HDTRQTFRTLCTALSHPGTIKEV
DTQKCFRTLVSAMSRPGTVH
HDTRQTFRTLCAVLSRPGTIEQL
HQQARAYRTLLMAFAYPARLQQLEVG
GVTPADHAV

QQARAYRTLLMAFAYPARLQQLEVG AMQAC HRAQRAFRCVLDAFAHPGTVHQLVPAPENPAADDASLELV HDARTAFSACMHADCAPGTPVEIGRVPHLTDRALDTAAAI QQAFRAVLDGFARPGTRVP ATPPGAVLMFLSAV HRQTRTYRRLLHAFGYPMRIQQLEE RAIHCII

AAFAAMMWALARPGQVQPLAE HDGREAF LACMRAFCAPGTPVELPARPRCTHPEDDCAAA I HDTQKTFRTLCAVLSNPGTIEQ HSVTPVDHAV




[^0]

UniRef90_S9QV37 UniRef90 M0JEV8 UniRef90-N9Z926
UniRef90-R5FKPO UniRef90 R7WNG UniRef90 C4WHQ UniRef90-A0A031WHSO UniRef90_D6TK50 UniRet90 UPI0001E2CBC UniRef90_W8HIY9 UniRef90-S6CDR3 UniRef90_G9MB73 UniRef90 U1NJ41
UniRef90_U1Q6C8 UniRef90_U1PFT5 UniRef90 UPI00037B05F5
UniRef90-E5X9B9
UniRef90-K5B8E1 UniRef90 A2SNR
UniRef90 S1DIX0
UniRef90 UPIO004783C5E UniRef90-IORCV7
UniRef90 Q18H33
UniRef90-D5V513
UniRef90-K9T6H3
UniRef90 G1WHS8
UniRef90 UPI00016AEFA
UniRef90-E5Z123
UniRef90_UPI0003801199 UniRef90 UPI0003F954FF UniRef90-UPI000462D795 UniRef90-UPI000361A70 UniRef90-UPI000463DB5 UniRef90 A1THI7 UniRef90-HOJQS7 UniRef90-UPI00036C8E6 UniRef90_G7CBM9




[^1]


[^2] D R DVDVRECERGTLVEPSDGATAVYVVDSLAAGATVRITG
 ARFVLVAESAPGSAGAPEKGATLIALVPSLTGGTPLTLTG D Y $\quad$ FLLI LDQ
 KYVTALRPPSTGTALSPESAATVVCAVDAVDDGDPVRLAG
 A D IIDI RNVSRGTDLEPSDGATVIVRVETLTTPASVRDDG
 PALLADLDSIPTGSREAPEEGATAVIGVEALSGARGAGLKE DFVVVVAEACRGTLVSPEKGATLLMGCARLAGVPEVALQG S D WV L V WVFL QHDPAGSRESPESGATLVMEIAAISPATGAGLNK

 ARF VVADGPHDGTVDSPELGATVILQGQRGGQGRGPGGLG VAA ACVQGVTAGTLEAPHLGATCIVECSTLDGATEWRITGG ASGAPQTPEHAVTLFVRVASLADGEPRTLRG
 RLCDVIPNVNRGTPMFPDEGATL VVLVPQLGGGPTEGLAE RFVAATRTPSPGELLAPEEGALVVCLPVVDDLGGTAPGGTG A D WVLVHGPAATPISQPETGATVVIATAG DARPLLLSG ARFVLTMSEPTADSLDPHTACLVVQRVEKLDGEVTLTVTGG

|  | UniRef90_S9QV37 |
| :---: | :---: |
|  | iRef90-M0JEV8 |
|  | UniRef90-N9Z926 |
|  | UniRef90-R5FKP0 |
|  | UniRef90-R7WNG2 |
|  | UniRef90-C4WHQ8 |
|  | UniRef90_A0A031WH |
|  | UniRef90-D6TK50 |
|  | UniRef90-UPI0001E2CBC1 |
|  | UniRef90-W8HIY |
|  | UniRef90- S6CDR3 |
|  | UniRef90-G9MB73 |
|  | UniRef90-U1NJ41 |
|  | UniRef90-U1Q6C8 |
|  | UniRef90-U1PFT5 |
|  | UniRef90-UPI00037B05F5 |
|  | UniRef90 E5X9B9 |
|  | UniRef90-K5B8E1 |
|  | UniRef90-A2SNR1 |
|  | UniRef90_S1DIX0 |
|  | UniRef90-UPI0004783C5E |
|  | UniRef90-IORCV7 |
|  | UniRef90-Q18H33 |
|  | UniRef90-D5V513 |
|  | UniRef90-K9T6H3 |
|  | UniRef90-G1WHS8 |
|  | UniRef90-UPI00016AEFA4 |
|  | UniRef90-E5Z123 |
|  | UniRef90-UPI0003801199 |
|  | UniRef90-UPI0003F954FF |
|  | UniRef90-UPI000462D795 |
|  | UniRef90_UPI000361A70B |
|  | UniRef90-UPI000463DB5A |
|  | UniRef90-A1THI7 |
|  | UniRef90-H0JQS7 |
|  | UniRef90-UPI00036C8E63 |
|  |  |



[^3]

| UniRef90_S9QV37 | L P R S T R V JEV V ${ }^{170}$ |
| :---: | :---: |
| UniRef90_M0JEV8 | L PR S VT TEV |
| UniRef90-N9Z926 | 1 PRTTNT |
| UniRef90-R5FKP0 | 1 PRTTKI |
| UniRef90-R7WNG2 | 1 PRTTRV |
| UniRef90-C4WHQ8 | LPRTTRISA |
| UniRef90-A0A031WHSO | 1 PRSSKLS W |
| UniRef90_D6TK50 | L PRTTQI S |
| UniRef90-UPI0001E2CBC1 | 1 P RLLT RLEVV |
| UniRef90-W8HIY9 | 1 PRTTVV |
| UniRef90-S6CDR3 | L PRTSQV |
| UniRef90-G9MB73 | LPRTVEV |
| UniRef90-U1NJ41 | 1 PRSVSI S |
| UniRef90-U1Q6C8 | L PR S I EL E |
| UniRef90-U1PFT5 | 1 PRSASI S |
| UniRef90-UPI00037B05F5 | L P R H L T L E |
| UniRef90_E5X9B9 | $V \mathrm{P}$ R S |
| UniRef90-K5B8E1 | L P R S L E I G V |
| UniRef90-A2SNR1 | L PRTTR1 |
| UniRef90-S1DIX0 | L P R H L T L E |
| UniRef90_UPI0004783C5E | L PRSTMI EV |
| UniRef90_IORCV7 | L P R S VAL E V A |
| UniRef90_Q18H33 | 1 PRSASI S |
| UniRef90-D5V513 | L CRTTKLE $\square$ A |
| UniRef90_K9T6H3 | L PRTTRI S |
| UniRef90_G1WHS8 | 1 PRSSAI E C A |
| UniRef90_UPI00016AEFA4 | LPRTTIVEAC |
| UniRef90-E5Z123 | L P R T TQ\| |
| UniRef90-UPI0003801199 | I PRHLRLE |
| UniRef90_UPI0003F954FF | LPRTTRIEV |
| UniRef90-UPI000462D795 | L PRGATVSI |
| UniRef90_UPI000361A70B | 1 P R S T TV E |
| UniRef90_UPI000463DB5A | 1 PRTT VI |
| UniRef90-A1THI7 | L PRSVAI Q A |
| UniRef90-H0JQS7 | 1 PRTTRV |
| UniRef90-UPI00036C8E63 | LPRTTVV |
| UniRef90_G7CBM9 | LP R S V S V Q |
| lupas_21 |  |
| lupas_14 |  |
| lupas_28 |  |
| jnet |  |
| conf | 1578605623 |
| sol25 | В В В В В |
| sol5 | B B |
| sol0 | B |
| jhmm |  |
| jpssm | , |


[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

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    jpssm

