QUERY
UniRef90_A0A014NK51
UniRef90-D9QIU2 UniRef90-W8WWT6
UniRef90-W6K0J7 UniRef90_UPI0002F1E0BD UniRef90 A0A059KL28 UniRef90-UPI00036D6769 UniRef90-D8DD57 UniRef90-W9BSD6 UniRef90_UPI000225ED39 UniRef90-B8KG71
UniRef90-14MYY19
UniRef90_F4QNZ5
UniRef90-W6K8S4
UniRef90 A4BGZ2
UniRef90-Q1YUH0
UniRef90-D8MMI7
UniRef90-A0AWP0
UniRef90 B8KHP3
UniRef90 UPI0002DFDCD1 UniRef90-A0A013VKA2
UniRef90_G21J14
UniRef90_UPI000368C107
UniRef90_K6ZV96 UniRef90-Q88JJX5
UniRef90-B6B077
UniRef90-J2L9V5
UniRef90-I2JIF1
UniRef90-A3VB02
UniRef90-F3KXD2
UniRef90-L7SQ19
UniRef90 C7C581
UniRef90_UPI0003774EC4 UniRef90-A0A024ILVO UniRef90_LOME44 UniRef90-M3AAU3 UniRef90-W6WH88 UniRef90_D4I3H1 UniRef90-B5SAZ6 UniRef90_C1DNC2 UniRef90-A6VSL5 UniRef90 KOHXJO UniRef90_UPIO002627BBF UniRef90-B8KG93 UniRef90-UPIO003636C95 UniRef90- G2IV21 UniRef90-D5BSD1 UniRef90_UPI00035C3484 UniRef90_D01X02 UniRef90_G2IKE5
UniRef90_S7JAD6
UniRef90-J8VNC5
UniRef90-TOIVZ9
UniRef90_F2LK28
UniRef90 ${ }^{\text {Q4JML6 }}$
UniRef90-C7MRJ5
UniRef90-V3T6C1
UniRef90_UPI0002D86FFC UniRef90_H2IKE5
UniRef90_H0A7T4
UniRef90-J2LKE7
UniRef90 H6RX67
UniRef90_G8AX38 UniRef90-A6AKT8 UniRef90_A0A024H280 UniRef90_W9UST0 UniRef90_S4MT84 UniRef90_W9VHP6
UniRef90_B0RUG9 UniRef90-S7HYN7 UniRef90_N6Y511 UniRef90-U8BIF7 UniRef90-W1RR08 UniRef90_UPI00037AFB67 UniRef90-E8RUG8 UniRef90-W1RZX0 UniRef90-G2IR62 UniRef90_UPI0003699ABF UniRef90_UPI0003609CFB UniRef90-W8X2Q5 UniRef90-V5PWX9 UniRef90_F6CYC1 UniRef90_UPIO0036C7D69
UniRef90_A1V0V8 UniRef90-A1VQV8 UniRef90-W6KBP1 UniRef90-QOKJL0 UniRef90_F4CY47
UniRef90_A0A009FFM7
 YKDI PGTVI FDAEQSR $\square G Y W L N Q F C Y S L M Q A$ Y LDDVP GTTVVFDAE QSRKGYWLN QF CMSLLMKA
D I H A Y LA E FDDI P

PGTR MD H Q L K G $\underset{V}{V}$ Y S D P O V Y TAARARKGYHINQFAMSLMKA $V E N L P G T Y P F T L E R S H K G Y R L N R F L H Q M I V P$
A DYHDVPGTTVF DERMSRKGYHLNQFCMS LMKP
E Y D D ill P G T Y V P M D S K H C R A G Y H L
NNQDYKAAFGDI PGTLVFTAERARKGYWLNQFCMSLMKP $\square N L Q L S G V E K L P G T Y P F T Q A R S L K A D R I N K F L H K M I Q P$ YK DV P GTTDF DADQARKGYNLNQFCMSLMK P

$D \square H E$ L YHDIP D Y S D I

M Q H QLA \begin{tabular}{ll|l}
G A E Q \& L \& $E$ \\
$N$ \& $Y$ \\
Y E D \& \\
\hline

 MAEQTA $G \underset{Y}{L} E E L A$ 

$E$ \& $Y$ \& $D$ \& $D$ \\
$G$ \& $I$ \& $P$ \\
A \& $E$ \& $R$ \& $L$ \\
\& $K$
\end{tabular} DYHDIP

M G E QL GY D P
IA R Q LS GAD GLLT


 $\square N Q Q L A G V E K L A G T Y P F T H A R S L K A L R I N R F L H R L I Q P$ $M G R Q L A$ \begin{tabular}{clll|ll}
G \& V \& E \& $A$ \& 1 \& $P$ \\
D \& Y \& D \& D \& I \& P \\
\hline

 $\prod \mathrm{NLQL} \mathrm{L}$ G I GHQLR G I E ALE $\mathrm{V} N \mathrm{~V}$ Q A Y S D ${ }_{1} |$

P \\
\hline

 GAERLAGSYDF 

$Y$ \& $L$ \& $D$ \& $P$ \\
$E$ \& $D$ \& $P$ \\
\hline
\end{tabular}

MRHQTA A MERELA

ND F E S DA Q QLE GVDKL D GTYVQ AA M N A MKEQLA ALAD PGTY VFSDDVAVKAFR NSYLHRMVEP
 $\square$ Q H E I A G V E K L P G T Y P F G L E S A H R A Y R L N D F L M R L L I MDQQLA GAEELEGTYPYTLERSARGWKINKGLHGLI EP MGS QLA G I S R L E G T Y P Y T L D R S A R G WKVNK F L H S L I D A
 MAEQLAGDEKLSGSYPF TQARSLEALRLNRFLYQLIMP MNP QL K GME EI E GTYAFD DRTSNKALKKLNRFFWNMIRA S YLDNKSSI E GTVLFDGEMARKGYGLNKMCFSLNTA NPQLE GVKDI E GTYAFD IPTGRERLRLNRFFWNMKEA

 K P I P GTTMFDGAMARKGYGLNKMCHS LNE Q

 NL P G T Y I F D G GLLSNK GY AL N K M C Y S F N N V $M N P Q V Q G M D Q L G G T Y V F D L R T S N R A L D I N R F F W H M D R A$ A YVVNEVP I F GTTFFDGHMARKGYGLNKMCYSLNEA E I P G T R V F
NP Q T VG $\square E E L T G$
GELA
A Q
M N Q V N P
P GNDMFDGPMATKGYP DNKMAFSLNK V I E GTTLFDGAQARKGYALNKMCFSFNDA MA H QLA GAEALEGTYPYTLERSATGYRLNKFLHQLIVP IA HEELQ GAE TL P GTY P F THARS QANFRIN DFLHRLVI P L N E QL D G DE A L E G T Y P F T L E V S H K A Y R I N D F L R R L S I S

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


M N P Q LD G $\square D K L S G T Y G F D V R \square C N K R L N D N R F F W K M I D A$

## QUERY

UniRef90_A0A014NK51 UniRef90_D9QIU2 UniRef90_F6F1R3 UniRef90_W8WWT6 UniRef90_W6K0J7 UniRef90_UPI0002F1E0BD UniRef90_A0A059KL28 UniRef90_UPI00036D6769 UniRef90_D8DD57 UniRef90_W9BSD6 UniRef90_UPI000225ED39 UniRef90_B8KG71 UniRef90_14MY19 UniRef90_F4QNZ5 UniRef90_W6K8S4 UniRef90_A4BGZ2 UniRef90_Q1YUH0 UniRef90_D8MMI7
UniRef90_A0AWP0 UniRef90_B8KHP3 UniRef90_UPI0002DFDCD1 UniRef90_A0A013VKA2 UniRef90_G2IJI4 UniRef90_UPI000368C107 UniRef90_K6ZV96 UniRef90_Q88JX5 UniRef90_B6B077
UniRef90_J2L9V5 UniRef90_I2JIF1
UniRef90_A3VB02
UniRef90-F3KXD2
UniRef90_L7SQ19
UniRef90_C7C581 UniRef90_UPIO003774EC4 UniRef90_A0A024ILV0 UniRef90_LOME44 UniRef90-M3AAU3 UniRef90_W6WH88 UniRef90-D4I3H1 UniRef90_B5SAZ6 UniRef90-C1DNC2 UniRef90_A6VSL5 UniRef90_UPIO002627BBF UniRef90_B8KG93 UniRef90_UPI0003636C95 UniRef90_G2IV21 UniRef90_D5BSD1 UniRef90_UPIO0035C3484 UniRef90_DOIX02 UniRef90_G2IKE5 UniRef90_S7JAD6 UniRef90_J8VNC5 UniRef90_TOIVZ9
UniRef90_F2LK28
UniRef90- Q4JML6 UniRef90_C7MRJ5 UniRef90_V3T6C1 UniRef90_UPI0002D86FFC UniRef90_H2IKE5 UniRef90_H0A7T4 UniRef90-J2LKE7 UniRef90_H6RX67 UniRef90_G8AX38 UniRef90_A6AKT8 UniRef90-A0A024H280 UniRef90_W9UST0 UniRef90_S4MT84 UniRef90_W9VHP6
UniRef90_B0RUG9 UniRef90_S7HYN7 UniRef90_N6Y511 UniRef90_U8BIF7 UniRef90_Q9L3A5 UniRef90_UPI00037AFB67 UniRef90-E8RUG8 UniRef90-A5EDW4 UniRef90_W1RZX0 UniRef90_G2IR62 UniRef90_UPI0003699ABF UniRef90_UPI0003609CFB UniRef90_W8X2Q5 UniRef90_V5PWX9 UniRef90_F6CYC1 UniRef90_UPI00036C7D69 UniRef90-A1VQV8 UniRef90_W6KBP1 UniRef90_Q0KJL0 UniRef90_F4CY47
UniRef90_A0A009FFM7

ENRERFKADESAYLDEWNLTPAAKAAVLARDYNAMIDEGG ENRTRFKADEDAYLATWPMTAEQKAAVRARDLNWMMRTGG
 E NRERWKADESAYLEDWPLSPEQKDAVLARDYNRCLLDLGG ENRERFRADERAYLDEWPMTEEQKQAVLARDLNRCLELGGG

 ENRARFKADERAY L DEWPMSEA QKEAVLAR DL N Q C DA LGG ENRERFRANERAY L D E WAMTE E Q K Q A V L A R DLL N R C I A A L A G G ENRERFKADERAYLD DWA ISEEAKLDAVLARDYNALLDMGG ENRERFKADERAY L D E WQLS DEAK DAVL A R D Y NA L L D D L G A E NREK F RQ D E E S Y L D R F P L T P E Q R Q A V L N R D WV G ML R L G G A WRERF LAA EPEALFDEA QLS GEERDLVRRRDWLGLLQQ GV ENRDRFKSDNRGYLDDWKMTEDQKQAVIDRDYNRMLS LGGG SNRAAFRADEA GYLDDRFMTEAQREAILTRDWNGMLLSLGG ENREAFK A D E A A Y L D K F S MT LDE Q K Q A V L D R D W L G M L Q L G G E NRKR WLLANE QDYLR D WK I T A E QK A A L L A R D Y N QL L A L G G A WRERFRNEPEALYDESKLTEEERTLI SSLDWRGMMIGGV ENRERY LAD R GAYLDE WPLNPVQRQAVLDIDDNTCIIA E G G SNRDRFKENERAYI DEWPMTAEQKQAVLDRDYNKMIA QGG ANRDVFRQDEAAYLDKYPMTDAQRDAVLSRDWLGMLRLGG ENRTRFKADERAYMDEWPLTQDQKEAMLARDYNRCLDLGG
 ENRERFKAEERAYLDEWAMTEEQKQSVLARDYNWMMSLGGG K NRDEFRESETHYLDKFPVTPEQRKAVLDRNWDDMLRLGGG


 ENRQAFRDDPEAHMAKFKMTEDQKQAI RDRDWNRLLEELGG
 ANRDAFRAGPEAYLDRFPMTAEQRQAVLERDWLGMLR LGG A WRERFKT APQA LYEEA GLTEEERRQLI SDRDWRGLI HYGA A HRQAFMADPEAAFEQAGLTTEERTLVRERHWRGLI HYGV



 AFRERFKEEPET LFEEHRLSSEQERDML RRLDWRALI QYGA SNRTAFKQNERAYLDKWPMTEAQKKAVDARDFSQLI A LGGG ARRAAF LAADEEAAYERASLPEEERAMVRARDWRALI RYGV ENRERFKANERAYLDEWPMTE EQKQAVLARDLNWCI QTGG S N R DAFRASPEEYYLSKYPMSDE QRRCVVLERD FLGMMLRVGG EFRARF LAADPQA TYE EA GLLP E ERRDLI TRRRDWQGLI R YGA


A H R K R F V E D P E G L F A E S D L T E E E K S L I R N R D WI G MI H Y GV A H R ERRFK Q E P K A L F T E F G L T T E Q E Q T M V A E K Q W
 ECREEFARDEMAY LQKFPMME EQRQAVLDRDY DRLL QLGA A ARERFSADEA GYCD E F G L T P EQK Q A V L D R D WKKML DL G S E WR D R Y K A D P E A V M Q E A G L N D D T E K N L V R T E D W L A AREEF QRDEMAYCDKF GLTTEEQKVAI QNRDVLGGLL K LGG G
 D N AARQEFLADEEAYC

 ENRERFKADEAAYCETYGLTAEQRDAVLRRDWNRMMELGG TAREAFMADEAAYCDQFGLSDAQKKAI LDDRDIGGLLSEGG PWRDRF LQQDAEALMQEADLSEQEKELI RARDWLGLVVQYGA SAREAFFSDEMAYCDRFGLTEEQKQAVRERDLLRMIELGG ENREAFRQDEAGYCRQFGLNAEQYEAIRTRNVLGLLAAGG K Y R Q A F LDD DE EA A MTVVAS L S D E EK A LVVRA R D WL GIVVQY GV ENRERWKA DERAY DDEWPMSEA QKQABLDRDYNRCLLDLGG QARESFLANEDAYCESFGLTEEQKKAVKNRDVIAMLEAGG ANRAAFLADEDAYCTRFGLDPRQREAVRRRDVLALI EAGG
 EHREKFLSS QEELMSEYDLTEE EKDMI RHLRWI EMI QYGA
 ENRDLYY LADEEAYMTRFGLD DEQKQAVRERDWLRLTQLGG D NR D R F L A D E E A Y C D T Y R L T DE Q K R A V L D R D WT A M L E L G G E H R D T Y L S D P ViA A M T A A G L T P E E Q T M V R A Q D W W G L V R H G V SARDEFNK DPDAYCAKF GLLTEA Q DKA I HER DVI GLLLQQ G G EGREEFKKDEAAYCDKFGLTPEQKEAILLKRDILALQREGG
 VNRDAFLADEASYMDRYGLTPEQRESVVGRDILGMIAAGGG


## QUERY <br> UniRef90_A0A014NK51 <br> UniRef90-D9QIU2 UniRef90-W8WWT6 UniRef90_W6K0J7 UniRef90_UPI0002F1E0BD UniRef90_A0A059KL28 UniRef90_UPI00036D6769 UniRef90_D8DD57 UniRef90_W9BSD6 UniRef90_UPI000225ED39 UniRef90_B8KG71

UniRef90-I4MY19
UniRef90_F4QNZ5 UniRef90_W6K8S4
UniRef90_A4BGZ2 UniRef90_Q1YUH0 UniRef90_D8MMI7 UniRef90_A0AWP0
UniRef90-B8KHP3
UniRef90-UPI0002DFDCD1 UniRef90_A0A013VKA2 UniRef90_G2IJI4
UniRef90_UPI000368C107
UniRef90_K6ZV96
UniRef90_Q88JX5
UniRef90_B6B077
UniRef90_J2L9V5
UniRef90_I2JIF1
UniRef90_A3VB02
UniRef90-F3KXD2
UniRef90_L7SQ19
UniRef90 C7C58
UniRef90_UPIO003774EC4 UniRef90_A0A024ILV0 UniRef90_LOME44 UniRef90-M3AAU3 UniRef90_W6WH88
UniRef90_D4I3H1 UniRef90_B5SAZ6 UniRef90-C1DNC2 UniRef90_A6VSL5 UniRef90_UPIO002627BBF UniRef90_B8KG93 UniRef90_UPI0003636C95 UniRef90_G2IV21 UniRef90_D5BSD1 UniRef90_UPI00035C3484 UniRef90_D0IX02 UniRef90_G2IKE5
UniRef90_S7JAD6 UniRef90_J8VNC5 UniRef90_TOIVZ9
UniRef90_F2LK28 UniRef90-Q4JML6 UniRef90_C7MRJ5 UniRef90_V3T6C1 UniRef90_UPI0002D86FFC UniRef90_H2IKE5 UniRef90_H0A7T4 UniRef90_J2LKE7
UniRef90 H6RX67 UniRef90_G8AX38 UniRef90_A6AKT8 UniRef90_A0A024H280 UniRef90_W9UST0 UniRef90_S4MT84 UniRef90_W9VHP6
UniRef90_B0RUG9 UniRef90_S7HYN7 UniRef90_N6Y511 UniRef90_U8BIF7 UniRef90_W1RR08 UniRef90_UPI00037AFB67 UniRef90-E8RUG8 UniRef90_A5EDW4 UniRef90_W1RZX0 UniRef90_G2IR62 UniRef90_UPI0003699ABF UniRef90_UPIO003609CFB UniRef90_W8X2Q5 UniRef90_V5PWX9 UniRef90_F6CYC1 UniRef90_UPI00036C7D69 UniRef90-A1VQV8 UniRef90-W6KBP1 UniRef90_Q0KJL0 UniRef90_F4CY47
$N$ VYFLSKLLFSTDGKSFQFAA GSMTGMTQEEYAQMMDDGGR NI YFLSKLGATDGLSFQQMAGSMTGMTEEAYRAMMLAGGR

 NI YF LAKI GATDGRSF QYMAASMTGMTQEEYAAMMLAGGR





 N I Y $\quad$ F L A A K I F

 GAVVGVSNLHIYSAMRGVSLEEFQQT


 $N$ N Y F L V K L S NTMDGWSTAQRAVVSSMTMMTAADEYAAAMMRS GGR

 I FF MLEKL GAVT GVSNLHIVYAAMRGQSLEDFQKTRNA $\overline{N I V} F L A K I F S S D G L S F Q H A A A T M T G M S Q P E Y A Q M M L D G G R$ $N I Y Y T S K L G A F D G I V V Q D L A A M M S G M S R D E Y R K M M V D G G R$

 DFFML E K LLGAV I G V S N L H I Y A A M R G E S L E D F Q K T R N A

 SFFLL

 L
$N I$ Y Y TWK A AF DRVVSMQAAGAAMTGMTEDEFKQMMMEGGR I F F LL E KL GA VVGV S NLHDYAAMRGETLEDFQK
 NI Y Y L




 CFFVI EKFARVVRKTNLEVVAMMRGETFEQFMATRR $S \square Y \mathrm{Y}$ L A K F A G ML G L N M Q DI G A $\square$ Q T G K T VEEFK Q MLVDA G K NFFVLEKFARLVGRTNLEVYADMRGETFEEFLATR SFFVVLEKFARVVKMSNLAMVYASMRGETLEAFLKTRR S I F YV Y K LA M MDGRSMQYLGGVFTGMTEEEFQAAMRAGGR

 SI Y Y L A K FA GI LGLLNVQDVGALQTGMSVDEFKAMLVKAGE SI F YV F KLAMVDDQKSMQYLGGVFTGMTTEEFAQALKAGGR S I Y Y L A K F A GL LK L N M Q DI G A L Q T G M S VDE FK EMLIRKNG NFFVI EKFARVVRMTNLQVYAI MRGETFEAFMQTRR $N D Y Y L A K F A G A L G M N M Q D I$ GALQTGMSVEAFKQKLVDAGR $N V Y Y L A K F A S V L G L D V Q D L G A A Q T G M S K D E F K A M L L A A G K$ NFFV L E K WA RVVRRTNLEVYYADMRGET LDEEFMQTR $N \square Y F L A K V F S T D G L S F L Q A V G G T M T G M T P E D Y Q A M M D A G G R$ SI Y Y L A KFA G I L G L NVQDVGGLQTGMTTDEFKAFLVQQGE $N V Y Y L A K L A G I$ FGLDVQDIGAQQTGMSKEAFQARLLAAG


 S I F Y V F KL A MVVDK S M Q HL G GVFTGMSAE EFAEAMR S G GR SFFVLEKMAAVLGVSNPEVYAAFRGESGEQFLAT S $\| Y Y$ L AKFAGVLGLNVQDVGGLQTGRTTEEFKAYLDS QGR

 S $\underset{N}{ } \mathrm{~F}$ Y F V

| QUERY | $\text { SPAGVRSTK }{ }^{130}$ |
| :---: | :---: |
| UniRef90_A0A014NK51 | SPEGNRVLGE G |
| UniRef90-D9QIU2 | SPEGLR S K EKY |
| UniRef90-F6F1R3 | S PEGLRSLRE |
| UniRef90-W8WWT6 | S IE G NRRTGEK |
| UniRef90-W6K0J7 | S I A G N R |
| UniRef90-UPI0002F1E0BD | SPEGMRSDRG |
| UniRef90-A0A059KL28 | SAEGNRVIG |
| UniRef90_UPI00036D6769 | SPDGNRYLDEKH |
| UniRef90-D8DD57 | G $\mathrm{D}_{\text {E G }}$ R F L H |
| UniRef90-W9BSD6 | SPEGVRSI REG |
| UniRef90_UPIO00225ED39 | SPEGLRS ${ }^{\text {P K G K Y }}$ |
| UniRef90-B8KG71 | P $\square \mathrm{E}$ G N R F K S |
| UniRef90-14MY19 | NQQVIYSVA G |
| UniRef90-F4QNZ5 | SPDGNRYKH |
| UniRef90-W6K8S4 | P ${ }^{\text {d }}$ G G R SKKE |
| UniRef90-A4BGZ2 | SVEGNRSKK |
| UniRef90-Q1YUH0 | SPDGVRSTKEG |
| UniRef90-D8MMI7 | N Q QVLY SVA G K |
| UniRef90-A0AWP0 | R P E G N |
| UniRef90-B8KHP3 |  |
| UniRef90-UPI0002DFDCD1 | G $\square \mathrm{D}$ G NRSKQE |
| UniRef90-A0A013VKA2 | SPEGVR S 1 R |
| UniRef90_G2IJI4 | SPEGNRSIREG |
| UniRef90-UPI000368C107 | T PVGNDYKKE |
| UniRef90_K6ZV96 | Q $\square_{\text {d }}$ GNRYT |
| UniRef90-Q88JX5 | NQQVRYSVAGK |
| UniRef90-B6B077 | S $\square$ E GNRYKS |
| UniRef90-J2L9V5 | P GALYY SVA GK |
| UniRef90-12JIF1 | SPEGNMYK |
| UniRef90-A3VB02 | SPDGNRYKSE |
| UniRef90-F3KXD2 | NA QVLY SVA |
| UniRef90-L7SQ19 | P $\square$ K G NRSKKE |
| UniRef90-C7C581 | NQQVLYSVA G |
| UniRef90_UPI0003774EC4 | P GAL Y SVA |
| UniRef90-A0A024ILV0 | PAEGMRSRRE |
| UniRef90-LOME44 | N Q QVLY SVA G K |
| UniRef90-M3AAU3 | PNALYSVA G G |
| UniRef90-W6WH88 | P $\square$ S G NRSVK E |
| UniRef90-D413H1 | NQQVLYSVA GK |
| UniRef90-B5SAZ6 | A P GAL Y SVS G |
| UniRef90-C1DNC2 | N R QVLY S V A G K |
| UniRef90-A6VSL5 | SPEGNRYV |
| UniRef90_KOHXJ0 | P GALYY S VA G K |
| UniRef90_UPI0002627BBF |  |
| UniRef90-B8KG93 | S $\square \mathrm{E}$ G NRSKK E |
| UniRef90_UPI0003636C95 | NTRALYSV |
| UniRef90-G2IV21 | A PGALYSVTGK |
| UniRef90-D5BSD1 |  |
| UniRef90-UPI00035C3484 | A PGALYY SVA G K |
| UniRef90-D01X02 | P $\square$ E GWRSRKE |
| UniRef90-G2IKE5 | NAA 1 T Y SVVA GK |
| UniRef90_S7JAD6 | NVSMNYSVS G G |
| UniRef90-J8VNC5 |  |
| UniRef90-TOIVZ9 | A P A G N |
| UniRef90-F2LK28 | PGALYYSVAGK |
| UniRef90-Q4JML6 | P $\square \mathrm{DGNRSKRE}$ |
| UniRef90-C7MRJ5 |  |
| UniRef90-V3T6C1 | N Q QVIVY S VA G K |
| UniRef90_UPI0002D86FFC |  |
| UniRef90-H2IKE5 |  |
| UniRef90-H0A7T4 |  |
| UniRef90_J2LKE7 |  |
| UniRef90-H6RX67 |  |
| UniRef90-G8AX38 |  |
| UniRef90-A6AKT8 |  |
| UniRef90-A0A024H280 | H F G |
| UniRef90_W9UST0 |  |
| UniRef90-S4MT84 | N F G |
| UniRef90-W9VHP6 |  |
| UniRef90-B0RUG9 |  |
| UniRef90_S7HYN7 |  |
| UniRef90-N6Y511 | G 1 |
| UniRef90-U8BIF7 |  |
| UniRef90-Q9L3A5 | S P Q G VR S $\square$ R E K |
| UniRef90-W1RR08 |  |
| UniRef90_UPI00037AFB67 |  |
| UniRef90-E8RUG8 | NQQVVT Y S V A P K |
| UniRef90-A5EDW4 | K VP MRYSVA G G |
| UniRef90-W1RZX0 | KVSMTYSVGKK |
| UniRef90-G2IR62 | N |
| UniRef90_UPI0003699ABF |  |
| UniRef90_UPI0003609CFB | K F G |
| UniRef90_W8X2Q5 | K VPP M Y S V A G G |
| UniRef90_V5PWX9 |  |
| UniRef90-F6CYC1 |  |
| UniRef90-UPI00036C7D69 | G |
| UniRef90-A1VQV8 |  |
| UniRef90-W6KBP1 |  |
| UniRef90-Q0KJL0 | G |
| UniRef90-F4CY47 | T |
| UniRef90 A0A009FFM7 |  | MNPQLQGVEELTGTYPFD $\square R Q S M K A M R L N R F F W Q M R E A$

 I PGTVVFDGEQARKGYALNKMCYSFNTA MPGYDDI PGTTI FDGKQAMKGYALNKMCYDFNRA
 MNP QVVGMEEI GGTYVFDLRVSNKAFKLNRFFWKMDGT
 MADQPQIPGTTLFDGRQARKGYALNSMCFSFNEL
 MPD D F GT TLF DGRMARRGYALNRMCYSFNTA F CMSLMKA WA GT LLLFDGELASRGFELNAMCFSFNDT

 | $P$ | $L$ | D G D L A T R G Y E L L N A M C F S F N E K |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $L$ | F E R E R S K N G Y R M N K M A M S L G K |


 Y L LD L S A S RR GYA I NRMCGS L A DE
 $D \square F G T P$ F GPEAA QK GYALNKMCFS FNSA

 MIH H
FNLDAALGGYALNKMCHSLNRA $\square F D G V A A R E G Y A L N K M M F S L N S E$ Y A L S K L L F D L N R N Y Q L S K L L Y E L N R D MK GY L I N K F CR RLL L D K Y A V N R MCHNLMHD D T
D $R$ D R
LE K L L Y D L S T S YAMQKFL FALNE P $\square$ P GT T P F D GDMAK K A TP E Q DVL YYTQKVLYDLNRD

 S Q S A Y WL NKVLFEVHHN \begin{tabular}{lll|ll|llll|llll}
A \& $Y$ \& $R$ \& $I$ \& $G$ \& $R$ \& $L$ \& $F$ \& $D$ \& $V$ \& $H$ \& $D$ \& $R$ <br>
$A$ \& $Y$ \& $A$ \& $I$ \& $N$ \& $R$ \& $L$ \& Y \& $R$ \& $V$ \& $H$ \& $D$ \& $R$

 

A Y \& $A$ \& $l$ \& $N$ \& $R$ \& $I$ \& $L$ \& $Y$ \& $R$ \& $V$ \& $H$ <br>
F \& D \& $R$ <br>
\& $V$ \& $E$ \& $R$ \& $L$ \& $C$ \& $H$ \& $R$ \& $I$ \& $H$ \& $D$ <br>
\hline
\end{tabular}

LEKVLTYDLTNR Y Y VQKAI YELLNRS IE R GK Q MYSLHKLL WE I RKP H A V E RLLL Y E L NRP Y Y V N K F L Y T I R D P Y M I DKFMHSVMSN Y Y V N K F L F T I R D P L E K V L Y DL S T S | $Y$ | $Y$ | $V$ | $N$ | $K$ | $F$ | $L$ | $Y$ | $T$ | $V$ | $D$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Y$ | $P$ |  |  |  |  |  |  |  |  |  |  |
| $Y$ | $V$ | $N$ | $K$ | $F$ | $L$ | $Y$ | $Q$ | $V$ | $D$ | $D$ | $P$ |

M S R

M S R | $Y$ | $M M$ | $N$ | $K$ | $F$ | $R$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Y$ | $V$ | $M$ | $S$ | $T$ |  |  |
|  | $L$ | $N$ | $K$ | $F$ | $L$ | $F$ | $Y$ LLNKF LYTVRRP Y Y L Q K A I Y HANRP



[^0]

## UniRef90_A3VK30

UniRef90-B1Y5Q6 UniRef90_E1TEE1 UniRef90-F2K360 UniRef90-F3KPB5 UniRef90-AзVMX5 UniRef90_UPI00036F0037 UniRef90_M3AGF7 UniRef90-R9VFL2 UniRef90-A4BGY1 UniRef90-UPIO00373BAA4 UniRef90-A9BQF1 UniRef90-B7X317 UniRef90_W8WX85 UniRef90 ${ }^{-}$A0A059KGP9 UniRef90-UP10003759DD9 UniRef90 UPIOOO3B3637E
UniRef90-UPIOOO3450D48 UniRef90-UP10003450048 UniRef90 Q2G8z5 UniRef90_UPIO0046382CA UniRef90-K2MTZ4 UniRef90-UPI0004638144 UniRef90-L7EUC2 UniRef90-UPIO0025596B0 UniRef90_UPIo0031854CC UniRef90 ${ }^{-} 2 \mathrm{~J} 190$ UniRef90_UPIOOO3785966 UniRef90-UPIO00262CA06 UniRef90-W1EFJ2 UniRef90-ROFAC6 UniRef90-A1WHM7 UniRef90-S9T7G3 UniRef90_W1RQG0 UniRef90-C6XPK3 UniRef90-J2PST9 UniRef90-A5VED4 UniRee90-UPIO00369FD25 UniRef90-I2QDY2 UniRef90-UPI00036C813E UniRef90-F2IZ11 UniRef90-D2B537 UniRef90_UP100037BC334 UniRef90-UPI000360A4F1 UniRef90--13TTN4
UniRef90-J2SZ77
UniRet90_W7WV59
UniRef90_UPIO003B600F7 UniRef90-A3VDM2 UniR Refo-BgJo83 UniRef90-ROEM85 UniRef90-UPIOOO32008E1 UniRef90_UPIO003B4A682 UniRef90-R4LD06 UniRef90_UPI00046D39B3 UniRef90-UPIO003B7A70D UniRef90_UPI0003FB4A6A UniRef90_UPIO00288FD34 UniRef90 UPIO003B48820 UniRef90_UPIooo3B352A3 UniRef90-A4AEC8 UniRef90 A0A010Q182 UniRef90_UP100035E2DB3 UniRef90_UPIO0047B6FD8 UniRef90-UPI00034D13E7 UniRef90-T5KAD5 UniRef90-W2EQP7 UniRef90-N6WVD7 UniRef90-UPI0003606B46 UniRef90-U9ADII
UniRef90-UPI0003B7508E UniRef90_E5RY16
 ANRTAFLADEDGYCARYGLNGQQREAI RNRNVLQLLAAGG
 VGR D E F S K D E A GY C D K F G L T E D D K K K A V L
 ENREGFKA DEE GWMEKYGLLNDQQKTAVVRERNVLGGI EAGG QCRDEFNADPAAYCDKFGLNAEQKKLVVEQQFLGNLLRAGT ENRQAFLADREGYCARFGLNAEQTKAVLDLSVLAMLAAGGG
 SNREEFAGDMDAYCRKF QLSDEARAAVVA GDFLSLMRLGG ANRQAFLADEEAYMRSYGLNQEQADAVRARNVLQMIAAGG
 E C R E A F L R D E E A Y M T R Y N L T A A A Q K E A V

 A NRQAFLADEA GYMARYGLNEEQAAA I RARNVLQLLAAAGG ANREAFKADEEAYLDRFGLTEEEKKAVMSRDWHEMVRLGG A NREAF LLADEEAYCRKFNLTPQQRKAVADRDVLAMLDAGG ENRAAFKADEEAF LDDSFGLGEAEKQAVMRRDWHRMVVALGG DNRAAFAADEAAYCDRFGLSDESKRLVLERDWDGMI R S G G
 ENREAFKADEDAF LAASYGLSDEEKAAVKARDWHGMVALGG ENRSSY LA DEAAYMKAQHLSEAEDRLVLERDWSALLLAGGG A ARADFVADEAAYCARYGLTATQTEAILKRDLLKLLDHGG



 D AK A R F R E A P E SVVAD GY A L T G E E R T A L L Q P D I GL L Y V L GV
 D $\square R$ A RFEA D A A AV A A M P D $L$ R A E LRRTMRF E E S E A T V L A A E Y P
 ELLARFETSEAEVLAAYPLTEEERTAIAARDFRRLYHLGL



 D G Q K R Y L LA S P G E Y L S T V P M P E N L LR E A V R T N D I G A MY L A G A
 $A Y R D A V R S D P V A A V A G F P$ P EVVRAELLS GDVLALVYRGV
 EALDAHWRRDAASYL A DFDLT DE E RMAMSTPDDGGLYVVMGV
 E WV A A Y K E D P R GTII D R WS LT D E E R E A L A T H N YV WL F E NG A A GVVEAYVADTA GFVDA WDFTAEERDAFVAR DYETLYRGGG


 A NV N A YVADP DAV AD DRVLTPEERTAFVNRDYGALYGLGA E LVVAR Y R E D P R A TVVA A R R D Y Y L A D E R E LI A E A GL T Q DER D A I S A R DLVVRDVREN A $\begin{array}{ll}S L V E R Y R A D P R E E L V & T\end{array}$ E V A A Y V GQMEALQS DPETVYDKYNLTEEEKAALRDGSFTALGNGGV
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


## UniRef90_A3Vk30

 UniRef90_B1Y5Q6 UniRef90 E1TEE1 UniRef90-F2K360 UniRef90 F3KPB5 UniRef90 A3VMX UniRef90_A3VMX5UniRef90_UP100036F0037 UniRef90 M3AGF7 UniRef90-R9VFL2 UniRef90-A4BGY1 UniRef90_UPI000373BAA4 UniRef90 A9BQF1 UniRef90- ${ }^{-17 \times 317}$ UniRef90-W8WX85 UniRef90_A0A059KGP9 UniRef90 UPIO003759DD9 UniRef90-UPI0003B3637E UniRef90_UPIOOO3450D48 UniRef90_UPIOO046456CE UniRef90-02G875 UniRef90-UPIO0046382CA UniRef90 K2MTZ4 UniRef90- UPI0004638144 UniRef90-L7EUC2 UniRef90-UPIO0025596B0 UniRef90 UPI00031854CC UniRef90 - 2 J 190 UniRef90-UPIO003785966 UniRef90_UPIO00262CA06 UniRef90 W1EFJ2 UniRef90-RoFAC6 UniRef90-A1WHM7 UniRef90 S9T7G3 UniRef90 W1RQGO UniRef90-C6ХРК3
UniRef90 J2PST9
UniRef90 A5VED4 UniRef90_UPI000369FD25 UniRef90-I2QDY2 UniRef90 UPIo0036C813E UniRef90 ${ }^{-F 21 Z 11}$ UniRef90-D2B537 UniRef90 UPIO0037BC334 UniRef90- UPIO00360A4F1 UniRe990-13TTN4
UniRef90-J2SZ77
UniRet90_W7WV59
UniRef90 UPI0003B600F7
UniRef90-A3VDM2
UniRef90 B9JOQ83
UniRef90- UPIOOO32008E1 UniRef90-UPIOOO3BB4A682 UniRef90 R4LD06 UniRef90 UPI00046D39B3 UniRef90-UPIO003B7A70D UniRef90-UPI0003FB4A6A UniRef90 UPIO00288FD34 UniRef90_UPI0003B48820 UniRef90-UPI0003B352А3 UniRet90_A4AEC8 UniRef90 A0A010Q182 UniRef90_UPI00035E2DB3 UniRef90-UPIIOOO47B6FD8 UniRef90 ${ }^{-}$T5KAD5 UniRef90-W2EQP7 UniRef90-N6WVD7 UniRef90 UPI0003606B46 UniRef90-U9ADI1 UniRef90-UPI0003B7508E UniRet90_E5RY16


NGQ LMHF AAFHQTAWDDY【QAMRDGTE NPYLLRAHCDGVKDPEAESLAALRSLDHEDY HPFLLYSFAGWCMEMMKEYVSRLQGLT NPYLLRAHCLGLRISEQEFLAS NPYLLRAYCLQLRVPEAKYLAABRADE NPYLLRAYCLQLRVPEADYLAALIR
$H P V L V R L A R V F G L T P E L Y R R I T$
HPVLLVRLARVFGLTPELYGRRITS
DQMLLFTSWLALS GFDQVGEYMRRM
NGQLIMHFAAAAGQAWDA YYYOR
HPLLLAPASRFFGLEQADFRAALA
HFFL
HPYL LWHF
HFFL
NTMLTWGFWLQsGRGQRDYMKVM
HFFL
HFF ${ }_{H}$ PY TLT T
HPYLLWHF
HPF

NGQLLMHF
HPYLLWHF
HPVLRMHYQMVL NPDMANH VT $\square$ RDFLLRGEKEKR

[^1]

UniRef90_A3VK30
UniRef90_B1Y5Q6
UniRef90 E1TEE1
UniRef90-F2K360
UniRef90-F3KPB5
UniRef90 M7MM83
UniRef90-A3VMX5
UniRef90_UPI00036F0037
UniRef90_M3AGF7
UniRef90 R9VFL2
UniRef90_A4BGY1
UniRef90_UPI000373BAA4
UniRef90 A9BQF
UniRef90-B7X317
UniRef90_W8WX85
UniRef90_A0A059KGP9
UniRef90 UPI0003759DD9
UniRef90-UPI0003B3637E
UniRef90-UPIO003450D48
UniRef90 UPIO0046456CE
UniRef90_Q2G8Z5
UniRef90_UPIO0046382CA
UniRef90 K2MTZ4
UniRef90-UPI0004638144
UniRef90-L7EUC2
UniRef90-UPIOO025596B0
UniRef90 UPIO0031854CC
UniRef90-Q2J190
UniRef90_UPIO003785966
UniRef90-UPIO00262CA06
UniRef90_W1EFJ2
UniRef90-R0FAC6
UniRef90-A1WHM7
UniRef90_S9T7G3
UniRef90_W1RQG0
UniRef90_C6XPK3
UniRef90-J2PST9
UniRef90 A5VED4
UniRef90-UPI000369FD25
UniRef90-I2QDY2
UniRef90 UPI00036C813E
UniRef90 F2IZI1
UniRef90-D2B537
UniRef90-UPIO0037BC334
UniRef90 UPI000360A4F1
UniRef90-I3TTN4
UniRef90-J2SZ77
UniRef90 W7WV59
UniRef90 UPI0003B600F7
UniRef90-A3VDM2
UniRef90-B9JQ83
UniRef90_R0EM85
UniRef90-UPI00032008E1
UniRef90_UPI0003B4A682
UniRef90 R4LD06
UniRef90 UPI00046D39B3
UniRef90_UPI0003B7A70D
UniRef90-UPI0003FB4A6A
UniRef90 UPI000288FD34 UniRef90-UPI0003B4882C
UniRef90-UPI0003B352A3
UniRef90 A4AEC8
UniRef90 A0A010Q182
UniRef90_UPI00035E2DB3
UniRef90-UPI00047B6FD8
UniRef90_UPI00034D13E7
UniRef90 T5KAD5
UniRef90-W2EQP7
UniRef90-N6WVD7
UniRef90 UPI0003606B46
UniRef90-U9ADI1
UniRef90_UPI0003B7508E
UniRef90-E5RY16
$K \nabla A \square T Y$ G V G G G

G
S F D
GLE QRLEREGGY N

G
GFEQQLHT $\square$ G G Y
NT QALYSVAG
$\mathrm{S} \square \mathrm{N}$ G N R Y $\square \mathrm{H} \mathrm{E}$
A A G
G
A A H G

CPRRDSALPGG K F G

CPRKVSGLDPEG
A P
P $\square$ H GNRS V E E
$N$ Q Q VT Y SVA GK

THGPVRA
AHGPVRA NHGPVRA

G N R S
$K Y$ G P VRA
$K Y G P \vee R$
$\square H$ G P VR
lupas 21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm

87610257889
B

1
$B$
$B$


[^0]:    lupas 21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol5
    jhmm

[^1]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

