## QUERY

UniRef90 - 087622 UniRefi90-090090
UniReiso
BTTE19 UniRe e90- P89904 Unirefi90-O900994 Unirefi90-O69999 UniRef90 I6Lbu1 UniRefi90-V5KB48 UniRefo9-How 389 UniRei90-O03261 UniRet90-P05897 UniRetio-GOYYP2 UniRef90_E0XKA6 UniRef90_-I3IRT2 UniRef90_U5LRL8 UniRef90_E5LLG2 UniRef90_F6LY17 UniRef90-C9DJX6 UniRef90-C1KCY5 UniRef90_Q7XRV6 UniRef90_UPI0003D283AB UniRef90_M9VRK2 UniRe90-_а9тов7 UniRetio-O84ZV5 UniRef90-M5C611 UniRe90-Q2R1M0 UniRef90-UPIOOO3DEAE2E UniRef90-H9CGR3 Uniref9-O6ATV9 Unizeforo-O9YK44 Unirefio-V2WMU4 UniRe90-O6UU73 UniRefio-UPIOOO2A47E24 UniRef90 DIGEG7 Uniret90-11CPR9 UniReforo-UniRefi90- UPIOOO23B2B00 UniRefi90-LTM MA7 UniRe e90-O7XF15 UniRef90_UPI00042B4D14 UniRef90_UPI0002BCC04D UniRef90-UPIO0032ACE96 UniRef90_A0A034V458 UniRef90 M0ZDF4 UniRef90_V2WVG2 UniRef90_Q6WAY3 UniRef90-UPI00042B8B71 UniRef90_UPIO0034FAB23 UniRealo-OxxPW2
UniRef90_UPI0002BC9CCE UniRef90_UPI0002C34269 UniRef90_W4XIZ7 UniRef90-Q7×M76 UniRef90_L7LWL7 UniRef90_Q101F5 UniRef90-A0AO15IYE
UniRef90-A5C3U5 UniRef90 UPI0003D284BD UniRef90-D3IVQ8 UniRef90-E9DYR7 UniRef90-W4XDF9 UniRef90-H1ACC3
UniRef90 W8B595 UniRef90-W8B595
UniRef90-UPIO003DEA3CE UniRef90-UPI0002BC9AAF UniRef90-A0A015JAK6 UniRef90-×1×3W2 UniRef90-U6MSYO UniRef90-UPI00046DDDF4 UniRef90-K9GZW1 UniRef90_UPIO0017580F7 UniRef90- Q01HC7 UniRef90-UPI000462AB47 UniRef90-K7FOU4 UniRef90-Q2QTQ7 UniRef90-Q69MZ1 UniRef90-V2WB58 UniRef90-UPIO003C47C53 UniRef90-U6JXZ7 UniRef90-LOP3P1 UniRef90-W4Z106 UniRef90-Q5EWG0 UniRef90-E3L134



FPTSPTETVPVKLKPGMDGPRVKQWXLTEEKTKALTETC FPIIAKI EPI KVTLKPGKDGPRLRQWPLTKEKIGALKEIC

M V
 $F P \square S P \square E T V P V R L K P G M D G P R V K Q W P L$
VPPDRSDPFT $\quad$ ELEPGTTP\SKAPYRMAPAEMAELKE LPPTRNHDHHI VLHS GAKPVCVGPYRYPYFQKSEIENTV FPIDSRHDHA M

MPPKRE $\square E F$
$\qquad$
1 VQHH
 LPPSRSYDHT\PLIAGAAPV LPPERDIDFAIDLEPGTRPISIPPYRMAPAELTELSVQL LP PKRPDDHCLPLQ

HRDN TGDANPVHRRPYVSSTERRVIWVVV
 RIVKHR A


H H
PDRD $\square \mathrm{EF}$

NAS

EIQLID
PG

$H V N T N V N$

$\square$ P P K R L H
LP P H R S Y D H K MVL QE D K P L L P F G P L L Y P M S R N E L L E V L
M P P K R D


M P P K R E I E F



IE LQEE KP $\quad$ RRQKCRPVPLA LHDK LKAML

QUERY
UniRef90_Q87622
UniRef90_Q90Q90
UniRef90_B7TF19
UniRef90_P89904
UniRef90_Q9Q094
UniRef90_Q699V9
UniRef90_I6LBU1
UniRef90_V5KB48
UniRef90_H6W389
UniRef90_P05895
UniRef90_Q03261
UniRef90_P05897
UniRef90_G0YFP2
UniRef90_O71128
UniRef90_E0XKA6
UniRef90_I3IRT2
UniRef90_U5LRL8
UniRef90_E5LLG2
UniRef90_F6LY17
UniRef90_C9DJX6
UniRef90_B2MK43
UniRef90_C1KCY5
UniRef90_Q7XRV6
UniRef90_UPI0003D283AB
UniRef90_M9VRK2
UniRef90_Q9T0B7
UniRef90_Q84ZV5
UniRef90_T2AWJ2
UniRef90_M5C611
UniRef90_Q2R1M0
UniRef90_-_P10003DEAE


SQLEQEGKTSRVGGENAYNTPTFCTKKKDKSQWRMLVDFR EDMLKAGQLEKASPTNPYNTPVFVIRKKDKKKWRMLIDFR EKMEKDGQLEEAPPTNPYNTPTFA』KKKDKNKWRMLIHFR

## TEMEKEGK $\square$ SK $\square$ GPENPYNTPVFA $\square K K K D S T K W R K L V D F R$

AEMEKEGKDSR $\square$ GPENPYNTPXFA ITKKDSXKWRK LVDFR EKMEKEGQLEEAPPTNPYNSPTFAIRKKDKNKWRMLIDDFR NRLLEE GKI GEAPPHWTWNTPIFCI KKK S GKWRMLI DFR

 RELQEKGGVVRPSSSPWGAPVLFVKKKD G SMMMCVDYR
 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX





HEMLQS G VVRPGQSPFSSPVLLDVRKHDGSWRLDVVDYR






-

## ,

,

## Q

## -



E LINKRTQDFWEVQLGUPHPAGLKKKKSVTVLDVGDAYFSV
ELNKRTQDFWEVQLGDPHPAGLKKKKSDSVLDVGDAYFSV ELNRVTQEFTEIQLGI PHPAGLAKRKRITVLDVGDAYFSII ELNKQTEDDTEAQLGLPHPGGLQKKKNVTVLDIGDAYFT




 ELNKRTQDFWEVQLGDPHPAGLKKKKSVTVLDVGDAYFSV KLNETIKDVYPLPRQDDLMAKLRDAKIFTKLDLRWGYNNV





## L

## ス



ALLNEVTDKNYP

A 1 N NI T 1 RRYMP


$\begin{array}{lllllll}R & L & N & D & T & I & K \\ N & H & F & P \\ L\end{array}$



ALWNAT

| $R$ | $L$ | $N$ | $N$ | $V$ | $T$ | $K$ | $D$ | $A$ | $F$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $P$ | $P$ |  |  |  |  |  |  |  |
| $N$ | $D$ | $V$ | $T$ | $I$ | $K$ | $N$ | $Y$ | $P$ |  |


| $A$ | $L$ | $N$ | $D$ | $V$ | $T$ | $I$ | $K$ | $N$ | $Y$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $N$ | $L$ | $N$ | $K$ | $V$ | $T$ | $K$ | $D$ | $V$ | $Y$ | $P$ |

D L N K K V

| $D$ | $L$ | $N$ | $K$ | $C$ | $P$ | $K$ | $D$ | $D$ | $F$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Q$ | $L$ | $L$ |  |  |  |  |  |  |  |  |
| $N$ | $L$ | $T$ | $I$ | $Q$ | $D$ | $S$ | $Y$ | $P$ |  |  |
| $N$ | $N$ | $C$ | $P$ | $K$ | $D$ | $S$ | $F$ | $P$ |  |  |

$N$ L N N CPK D S F P L
웅
E

## A




Query UniRef90 - 887622 UniRefi90-0900990 UniRef90-P89904 UniRefi90-O90094 UniRef90_Q699V9 UniRef90_16LBU1 UniRef90_V5KB48 UniRef90-H6W389 UniRef90_Q03261 UniRef90_P05897 UniRef90-G0YFP2 UniRef90_E0XKA6 UniRef90-I3IRT2 UniRef90-U5LRL8 UniRef90 E5LLG2 UniRef90_F6LY17 UniRef90-C9DJX6 UniRef90_C1KCY5 UniRef90-Q7XRV6 UniRef90_UPI0003D283AB UniRef90_M9VRK2 Unirefi90-09T0B7 UniRef90-Q84ZV5 UniRef90-M5C611 UniRef90_Q2R1M0 UniRef90_UPIO003DEAE2E UniRef90_H9CGR3 UniRef90_Q6ATV9 UniRef90_Q9XE44 UniRef90_A5BEK1 UniRef90_V2WMU4 UniRef90-Q6UU73 UniRef90-UPIO002A47E24 UniRef90_D1GEG7 UniRef90_11CPR9 UniRef90-O53KC5 UniRef90-UPI00023B2B00 UniRef90-L7MFA7 UniRef90-Q7XF15 UniRef90-UP100042B4D14 UniRef90_UPI0002BCC04D UniRef90-UPIO0032ACE96 UniRef90_A0A034V
UniRef90-M0ZDF4 UniRef90_V2WVG2 UniRef90_Q6WAY3 UniRef90_UPI00042B8B71 UniRef90_UPI00034FAB23 UniRef90-Q7XPW2 UniRef90_UPI0002BC9CCE UniRef90_UPIO002C34269 UniRef90_W4XIZ7 UniRef90-Q7XM76 UniRef90_L7LWL7 UniRef90_Q10IF5 UniRef90-A0A015IYB9
UniRef90-A5C3U5 UniRef90_A5C3U5 UniRef90_UPI0003D284BD UniRef90_D3IVQ8 UniRef90-E9DYR7 UniRef90-W4XDF9 UniRef90_H1ACC3
UniRef90 W8B595 UniRef90_UPI0003DEA3CE UniRef90_UPI0002BC9AAF UniRef90_A0A015JAK6 UniRef90_X1X3W2 UniRef90_U6MSY0 UniRef90_UPIO0046DDDF4 UniRef90_K9GZW1 UniRef90_UPI00017580F7 UniRef90_Q01HC7 UniRef90_UPI000462AB47 UniRef90_K7F0U4 UniRef90_Q2QTQ7 UniRef90_Q69MZ1 UniRef90-V2WB58
UniRef90-UPI0003C47C53 UniRef90-U6JXZ7 UniRef90_L0P3P1 UniRef90_W4ZIO6 UniRef90-X1XU34 UniRef90_Q5EWG0 UniRef90_E3LI34
UniRef90_Q55TA8
 REMI EKLRQHLQVWGLETPDKKHQKEPPFQWMGYELHPDK NKMVNRLREHLREWGLETPDKKFQKEPPFEWMGYVLHPOK RAKLEELRDHELKWGFTTPDKKHAKEPFEDMGYEL HPDK DEKVVKERELLMTWNLETPEKKFQAEPPYHWMGYVLHPDR DQAVKELRELLMTWNLETPEKKFQAEPPYHWGYVLHPDR REIVGELRGLLEKVG QTPEAKFQEKPPIKWLGYELYPDK RAKI EELREHLLKWGLTTPDKKHQKEPPFRWMGYELHPDK RTKI EELREHLLKWGFTTPDKKAKEPPFGWMGYELHPK QKIVGQLVTALLKVGFKVPKEKWQDQYPMQWLGYTLHPDK DRVVGQLKELL NSDGFSTPEEKFQKDPPFQWMGYELWPTK RTKIVELREDELRWGFTTPDQKHQKEPFGWMGYELHPDK RTKI EELRZHLLRWGFTTPDKKHQKEPPFLWMGYELHPDK DKM, KELRDHLEFWGFETPDKKAQDPPYLWMGYELHPKS DRVVLQLKELLNGLGFSTPDEKFQKDPPFQWMGYELWPTK RRIVEDLAMQUAKGFMLDPEKRQEGYPANWLGFELHPNT REK EELRAHLLKWGFTCPDKKHQKEPPFLWMGYL APDK DRVVLQLKELLNDLGFSTPDEKFQKDPYYWMGYELWPTK EHLRLVLEKLRKHKLYAKFSKCEFWLKEVAFMGHVISAGG YHLRLVFKLLSDHLFLKOSKCSFATEUAYLGHLI TADG RTKLEELRQHLLRWGLLTPDOKHQKEPPFLUMGYELHPDK VHLRRVMEKLREQKLFAKLSKCSFWQREMGFLGHIVSAEG KHLESVLQTLKQHQLFARLSKCSFGDTEVDYLGHKVSGLG NHVREVLQRLARNQLFCKPSKCHFHVTTVEYLGDRISPLG CHLKSVLTVLQQHQLYTKRSKCSFSQPSLEYLGHUIGALG RIXIXELRXXLXXWGFTTPXXKXXKXPPXXWXGXXXHPXX ETFDNLRRRDREHELFAKLSKFSFWQRSVGFGGMEENPEK EHLRAVGERLREHELFAKLSKFSFWQRSVGFLGHVISDQG ERSRRLLQRLKEQDLYDKPHKCEFDVTEVIFLGLVIRPGT EHLRLALEKLREHQLYAKFSKCEFWLSEVKFGGUVISAGG QHVRAVLQRLDENQLYCKAEKCEFHTTQTRFLGHVVSPGR
 KQTDQVLERLRLHDLFLKPEKCKFDVTEDDFLGMITRPGY DALERFFERI RKFRLRLNPKKCTFGVTSGKLLGHMVSDRG SRLDTVLNCIRNAGLVLNSKKCHFGDRQTLVLGHLVDKDG GHLRAVFDALRDERLEGNLEKCTFCTDRVSFLGYVVTPQG EHLKKVFKVLRENQLYVKREKCEFAQPKUHFLGHMISQGE VNLQKLFERLRKFKLRLNPAKCTFGVRSGKLLGGMVSQKG
EVFQRIASAGLRLNPKKSLWKKQVTYLGHKVSTEGIHTE EVFQRIASAGLRLNPKKCSLWKKQVTYLGHKVSTEGINTE LRTRHVLERLQENDLYLKLEKCEFKVTKTLFLGMVITPGH VNLQKLFDRLRKFKLRLNPNKCTFGVRSGKLLGFIVSEKG QHLQRVLERIRQAGLTLKPGKCHFGMAEVQYLGHVVGSAG NHLRQVLSTLTHAQLKVKLSKCSFAQQSLAYLGHIIGAGG QHLRUVLQTLRDQQLYAKFSKCEFWLASVAFLGHVVSKEG THLEEVFRQLRQNLLKLKESKCVFAQPQVQYLGHVISGKG EHLRLALEKLREHQLYAKFSKCEFWLSEVKFLGHVISAGG ERLSTILSVFRKAGLQLNSSKCHFGRRQLTVLGHLVDSSG PEKCVFGVRAGKLLGFLVSERGDEANPEKIDAIQQMKP
 LHLLQEVFHLLRKYGMKLDPSKCAFGVSAGKFLGFMVSQRG GHLRVVLQRLREEKLYAKYEKCEFWLREVAFLGHVVSGGG EHLTHEVLGLLRQHQLLEAKENKCVFAVSQVTYLGHVISGDG VRLRKVFEQLKNAGLKLKPEKCHLFQQSVAFLGHVVSPEG EHLRUVLIQTLKEKKLYAKFSKCEFWLKQVSFLGHVISGDG RNLEEVFQRVAGAGLKLSPKKCSLFKKEVNYLGHQVTMKG VNLRKLFERLKKYQLRLNPAKCTFGVKSGKLLGFVVSQKG
EDLRKFARLKKYNLKLNPAKCVFGVPAGKLKGFIVSRRG EDLRKFFARERKYNGKLNPAKCVFGVPAGKLLGGFVSRRG NKLDDVFERLRTHNLKIQPDKCEFVKRECLYUGHVISETG RAFLRMRQHKLKMNPKKCVFGVQAGNF LGFLVHQRGIEDD EHVRKVLQRLREAGLFAKLSKCEFCVSETKFLGIIIGEDG NNLRTVFQLLRQFGLTLKLSKCCFFGSQMEYLGHEISAEG EHLRLALEKLREHQLYAKFSKCEFWLSEVKFLGHVISSGG KATKELLHLLNERGYKVSKNKAQLCKTSIKYLGFRVSQGE RHRKAVLGALATAKLMANPSKCHFGQREVSYLGYRVGRGR ADLRLAFERMRRYGLKMNPLKCAFGVSVGKFLGFMVHKRG ERMEQLMHRLKKHDLF LKPEKCKFDITSVVFLGMVGVPGY QHLEAVLKALEDANLTANPGKCHLGGREVTYGGYTVGRGT QLLKQVLGDFLRHQFYPKLAKCRFGQRELTYYGYRIKPTA ADLHLAFERMRRYGLKMNPLKCAFGVSAGKFLGFMIHERG KKLQEVFERLRQFNLRLQPTKCEFMRKEVNYLGHVITDQG RTKDEELRAHLLSWGFTTPDKKHQKEDPFLWMGYELHPDR ADLAKVLRR RDCGGKGKAQKCKDAQKSVEYGGHV1DEDG



## QUERY

UniRef90_Q87622 UniRef90-Q90Q90 UniRef9-P89904 UniRef90-Q9Q094 UniRef90-Q699V9 UniRef90_I6LBU1 UniRef90_V5KB48 UniRef90-H6W389
UniRef90- P05895 UniRef90-Q03261 UniRef90-P05897 UniRef90-G0YFP2 UniRef90 EOXKA6 UniRef90-I3IRT2 UniRef90_U5LRL8 UniRef90-E5LLG2 UniRef90-F6LY17 UniRef90-C9DJX6 UniRef90-C1KCY5 UniRef90_Q7XRV6 UniRef90_UPI0003D283AB UniRef90-M9VRK2 UniRef90_Q9T0B7 UniRef90-Q84ZV5 UniRef90-M5C611 UniRef90-Q2R1M0
UniRef90_UPI0003DEAE2E UniRef90_H9CGR3 UniRef90-Q6ATV9 UniRef90_Q9XE44 UniRef90-V2WMU4 UniRef90-Q6UU73 UniRef90_UPI0002A47E24 UniRef90_D1GEG7 UniRef90_I1CPR9 UniRef90-Q53KC5 UniRef90-UPIOOO23B2B00 UniRef90_L7MFA7 UniRef90-Q7XFI5 UniRef90_UPI00042B4D14 UniRef90-UPI0002BCC04D UniRef90-UPI00032ACE96 UniRef90-A0A034V458 UniRef90-MOZDF4 UniRef90-V2WVG2 UniRef90_Q6WAY3 UniRef90_UPI00042B8B71 UniRef90_UPI00034FAB23 UniRef90-Q7XPW2 UniRef90-UPI0002BC9CCE UniRef90-UPI0002C34269 UniRef90-W4XIZ7 UniRef90-Q7XM76 UniRef90_L7LWL7 UniRef90_Q10IF5 UniRef90-A0A015IYB9 UniRef90-A5C3U5 UniRef90-UPI0003D284BD UniRef90-D3IVQ8 UniRef90-E9DYR7
UniRef90 W4XDF9 UniRef90-H1ACC3 UniRef90-W8B595 UniRef90_UPI0003DEA3CE UniRef90_UPIO002BC9A
UniRef90_A0A015JAK6 UniRef90-X1X3W2 UniRef90_U6MSY0 UniRef90-UPI00046DDDF4 UniRef90-KgGZW1 UniRef90_UPI00017580F7 UniRef90-Q01HC7 UniRef90_UPI000462AB47 UniRef90-K7FOU4 UniRef90-Q2QTQ7 UniRef90_Q69MZ1 UniRef90-V2WB58 UniRef90-UPI0003C47C53 UniRef90_U6JXZ7 UniRef90_LOP3P1 UniRef90-W4ZIO6
UniRef90- X1 XU34 UniRef90_Q5EWG0 UniRef90-E3LI34P

YDPSKDLIA
330
340
350
360
QKQGQGQWTYQDYQEPFKNLKTGKYARMR YQPGLPLKATIQKQGSGQWTYQIYQNEGKLLKAGKYARPT
 YDPSKD LAAE Q Q
 YDKEKPLEAELDKLARGQWGYVIGRQTKGLLKTGKFSKDK YDPSKDLIAEVQKQGDDQWTYQI YQEPYK LLKTGKYAKRG
 YDPKKPLEAHI TKLGSQQWGYMIQEQKGPPLITGKTAKTF YQEGKPLEATVIKSQDNQWTYKIHQE DKDLKVRKFAK IK YDPSKDLIAELQKQEQGQWTYQIYQEPFKNLKTGKYARMK YQEGKPIEATVIKSQDNQWSYKIHQE DKVLKVGKFAKVK XXXXXXXXXXXXXXXXXXXXXXYEPXKNLKTGKYARTR YDEKKPLVAKVQKLEGGQWAYQDEQDKGRPLKTGKYAKQK Y D P S K
YQEEKEDEATDQKSTDNQWTYK\HQE EK GLKVGKYAKVK YQEEKDIYGQLT WGNKVIEY VVFQEKGKPLWVNVVHQIK YDPSKDLDAE IQKQGQ

Y QENKELEA
PDDRKDFVIYCDASRQGLGGVLMQDGKVVAYASRQDRPHE $P D F S Q P F V I E C D A S D L G L G A V L L Q N K Q P I A F F S R V L A R R H$ Y DPSKDII AE $\square$ QSCCI
P EHGQPYMVYTDASRVGLGCVLMQHGKDVAYASRQLMKHE PDFSQPF ILLETDASGUGVGAVLGQNGHYFSKKDAPRMQKQ X T P
S DPDKPYFLETDASGVALGATLSQRSNDGRLHPDAYMSFN PDFNQQFVI ETDASDKGIGAVLMQAGHFLSKALGPKAQGF PDFHLPFTVETDAS GDGMGAVLSQQGHPGAYFSKPFTARS YDPAKD
PQPNEEDF LY DAATPYSESTVIIVERAKVQRLVYYVSAALD
PEEGEPYTVYTDASVVGLGCVLMQKGSVI AYASRQLRKHE
$P D F S \square P F T I Q C D A S G I G V G A V L M Q Q G R P L A Y M S Q A G H G K A$
PDSSKPFVI EADASKWASGAVLIRQKGTDGEWHPCGYISHA
PDPKKGFQVYCDASQLGLGCVLMQDGKVVAYASRQLRPHE
PDSSKQFVVEVDASESGVGAVLSQRAADNKVHPCAYFSCK
$P N F E K P F V I E S D A S G F G V G A V L M Q D G K P D A F F S H E R E Q L K$
PDFNKPFILDTDASKLGLGAALTQLDDNGYEHPVIYAS RK

PDTEKSFL ECDASKWATGAVLRQQGTDGEWHPCGYMSHS
FSPSAPTELHTDAS GMGIGAVLIQRYGDSEHVIAYPEQNY
 PDFTKTFEDHTDASDFAGGGVLMQEKHTUAFEDWKLNEAE
 PNFDKPFSI ETDACDTGUGAVLVQEGH
LDDEKPFIIEADALKWATGAVLKQQGSDGELHPCGYDLHA PVPGRPLIMY DSVTENSMGCVGRHDESGRKEHADYYLSKK $P V S G K E F V V Y S D A S K D G L G C V L M Q D E K V I A Y A S R Q L K K H E$ PNFSRGFFVVETDASTYGUGAVLSQVDEKGGEHPIIYLSRY PNFQQPFVVETDASDKGIGAVLMQNSH
$P D E G E G F M I Y C D A S G V G V G C V L M Q Q G R D I A Y A S R K D K V H E$ PDFSKPFVVETDTCGSGI GAVLSQEKRPVAYALSPSHQTL PDPEKSYVLDTDASNVGUGAVLSQEVGGKERVIAYASRAL

 $P P P G S E L L L G Y A A S P V A B G A A L V Q E T E S G Q K P V Y F A K T R Y$ | $P$ |
| :--- |
|  |

## P <br> P

PEVFDNY DVYT DASGQGLGCVLMQAGKVIAYASRQLKVHE P E S GRP L L L Y DSVLDNAFSCIL GQHDETGRKEQAIYYYMRY

 F D WS K E IVLE TVA S DFVVA GVL SQ Y D DA GILLHPIA F F S K K
 $P D S R K G F Q V Y C D A S R H G L G C V L M Q E G K V V A Y A S R Q L R P$ H E
 P K A GKPFRLY $\quad$ RASEDKVI GAVLTQEEDGK
PDTRKDFMVYCDASRQGLGCVLMQDGHVVAYASRQLRPHE P DVDK P F I E A D T S K WA TG A VL R QK GT D S E WHPCGY L S K S PDFAKDFILQTDASERGLGAVLAQ EVDGEEHPVLYMS
PDPSKP YKL YTEASGYA GAVL E QPVVGF LSSQVMSPTQQRY

$P D F N Q T F N L T C D A S E Q$
$P D F E R P F C D F T D A S G Y G \square G A V L A Q V G L D G K V H P D A F A S K T$ Y D P T K QLIL E T DA S D YA I A GI LIS HEIDDK K LEP VAF F HK ML
ouery
UniRef90_Q87622 UniRef90-Q90090
UniRef90- B7TF19 UniRef90-P89904 UniRef90-Q9Q094 UniRef90-O699V9 UniRef90 -16LBU1 UniRef90-V5KB48 UniRef90-H6W389 UniRef90-P05895 UniRef90-Q03261 UniRef90-GOYFP2 UniRef90_O71128 UniRef90- EOXKA6 UniRef90-I31RT2 UniRef90-U5LRL8 UniRef90 E5LLG2 UniRef90_F6LY17 UniRef90-C9DJX6 UniRef90 ${ }^{-}$C1KCY5 UniRef90-Q7XRV6 UniRef90_UPI0003D283AB UniRet90 M9VRK2 UniRef90-Q9T0B7 UniRefo-Q84ZV5 UniRef90_T2AWJ2 UniRef90-M5C611 UniRef90-Q2R1M0 UniRef90-UPIOOO3DEAE2E niRet90 H9CGR3 UniRef90-Q6ATV9 UniRef90-Q9XE44 UniRet90_A5BEK1 UniRef90_V2WMU4 UniRef90-Q6UU73 UniRef90_UPIO002A47E24 UniRef90 D1GEG7 UniRef90 - I1CPR9 UniRef90-Q53KC5 UniRet90_V2YOUO UniRef90 UPI00023B2B00 UniRef90-L7MFA7 UniRef90-Q7XF15 UniRef90 UPI00042B4D14 UniRef90 UPIOOO2BCC04D UniRef90-UPIO0032ACE96 UniRef90-A0A034V458 UniRef90 MOZDF4 UniRef90-V2WVG2 UniRef90-Q6WAY3 UniRef90 UPI00042B8B71 UniRef90-UPIO0034FAB23 UniRef90-Q7XPW2 UniRef90-UPIO002BC9CCE UniRef90 UPI0002C34269 UniRef90 ${ }^{-}$W4XIZ7 UniRef90-Q7XM76 UniRet90_L7LWL7 UniRef90 Q101F5 UniRef90-A0A015IYB9 UniRef90-A5C3U5 UniRef90 UPI0003D284BD UniRef90-D3IVQ8 UniRef90-E9DYR7 UniRef90-W4XDF9 UniRet90_H1ACC3 UniRef90-W8B595 UniRef90-UPIO003DEA3CE UniRef90_UPI0002BC9AA UniRef90 A0A015JAK6 UniRef90-×1×3W2 UniRef90-U6MSYO UniRef90 UPI00046DDDF4 UniRef90-K9GZW1 UniRef90-UPIO0017580F7 UniRef90- $001 \mathrm{HC7}$ UniRef90 UPI000462AB47 UniRef90-K7FOU4 UniRef90-Q2QTQ7 UniRef90 Q69MZ1 UniRef90-V2WB58 UniRef90-UPIO003C47C53 UniRef90_U6JXZ7 UniRef90_LOP3P1 UniRef90-W4Z106 UniRef90-X1XU34 UniRef90 Q5EWG0 UniRef90_ ЕЗLII34


NAHTXGVRLLAQVVQKTGKEALVIWGRTPKFHDPVERETW N LSLAQQIIKAAQKLTQEVIIRTGKVPWVMLPGKEEDW

ENYPTHDDEMADVHALKDWRHYLIGNH QPLPAYEKELIGLVKAURQWRSYLWGQH

GNYPTHDGEMAAVIFADK DWRSY LY SAYTRELLADTEALSKFRHY

DAERNYDTHDKELLA I
STYEKECLA I LMA AV DWW QYLQY
STYVRELFA TVAAVKKWRQYL LGHPFT IVTDHRSGKELLT
HDAKTRYPQIQKLLYAVIMTSRKLRHYFQAHR
KNYPTHDDEMAAVVFALKDWRSYLIRLAQERDEEDKGWTL पQ
FDATERNYEIY
KNYPTHDLELAAVIHADKПWRHY乌FGTC
LT
PAYEREDMAVVLAVQKWKHYLLGRQFVVHTDHRSL
STESNYAPTKLECLAVIW
GNYPTHDLELVAVVHALKDWRHY
LTPTERNYEIY
MYEMRYVMIERMCLALVWATRRपRHYMTEYSVCLISRLDP $T V T E Q E C L A V V F A I Q R F R S Y D Y G R P F K V V T D H H A L$
LNYSTYDKELFALVRTLETWQHYGWPKEFVIH
 RWYTVQEKEMTVIVHCLRTWRHYL

FTATERNYKTYDRELLATTNALKAWEHYLLGGAHPVTVLS FTDCKTCCALA WAARRLRQYMDPVKYDFEKPALTGRVARW TNYPTHDLELAAVVFALK
AT $\square E K E C L A \| V W A K K L Q P Y \square F G S A F T V V T D H N P$
RNYPTHDGELAAVV
STYDKEMMAILFAVGKWRHYLLGNRFT LLTDHQTDRHLLT SKYCVTRRELLAVVVYLKHFRQYLYGSKITVRTDHGALRW KNYPTHDDELAAVVHALKDWRHYLF
SDTERECLAALVWAVGKFRPYLYGRPFTVVTDHHAL
DEMEKLAYALVMASRKLKHYFQANKVIVPSQYPRLSKWAA GAEKRYP TELECLAVIWGVKHFHKY
SKMELMALALRSAAQKLRPYFQAHPKILHKPDDTGKMLQW KNYPTHDLELAAVVEALKDWRHYLYGV/H AAMSTYDREALAI IESLKRWRHYF
GPELNYGDHDKELMADIECFKEWRHY
SKYCVTRRELLAVVHFIKYFRQYLYGRKFTVRTDHGADRW KNYPTHDLELAAVVFALKQWRHYLY
KPERNYCVTRRELLALVDCIVKHHKYGYGQHFRVRTDHAA
 KHERNYGVTELECLAVVWAVRYFHHYLHSSDHRD STTELDECLALVYGIKQFRPYLYGRK
SA ADERLCDALYFTAVKLRHYMDKYMDTRPMDRGR GGKWTD HSAAECNYEYYDKELLALIRCFEEWRPELEGTPSPVKVIT TSKEEQRYHSYELETLAVVCSLKHY
NNY
LRADVATALLVQEADKLTLGQELIVKVPHDMEYKGHHWFT LLPBEQQYATI EKVALAAKW EYIITYYSRRLLDVETRP【LSGRपGKWAYALIEY GNYPTHDLELAB
STYDQELLALTTALHKWRHWRGVIF
YACTKLRHYLLSSTCVVVCQTDVIKYMDQQPDLSGRTGKW SNYCVTRRELLAVVFYLKYFKQYLYGRKLTVRTDHASLQW

PAEKNYHVSDKEALAVL
P A E L N Y P I H D K E ML A IVVS A F K E WR HY

E T WWT E Y WQA T WIP E WEFVNTPP LVK LTWYQLEKEPTVGAE DAWWSDYWQATWI PEWEFVNTPPLI RLWYNLLADPIPEAE
 ETWWT DYWQATWI PEWEFVNTPPLVKLWYQLEKEPAITGAE E Q WWS D Y WQVT WLPEDEFI STPPLIKLWYNLVKDPI PKAK


 ETWWT DYWQATWI P EWEFVNTPPGVKLWYQQEKDPDAGVE E Q WWA D Y WQVS WI PEWDFVSTPPLLKLWWYTLETKEPDIPKED

 ETWWXEYWQATWI PEWEFVNTPPLVKLWYQLEKEPIVGAE E QY WQD H WQVS WIPE WEFVSTPPLIRLWYNLVKDPIPGEE

E QWWD N Y WQVT W $\square P E W D F V S T P P L V R L T F N L V G D P D P G A E$ ILLEQTGNDTWMPPFWSCYRGSPRWKRRNITEEVVEGPTY
$\square R Y \square F D R P A L T G R L M R W E S R P V D D D F P D E E F \square A M T S L S G W$

QQRDLNLRQCRWMELLKDYDCT ILYH
KPA $\square T$ GR $\square A R W Q M Q S M Q C E F P D E D \square M N L V E E D E S S D K E K W$ LLQFKNPEGQDARWDERपQNYDFETEHRKG\HHKNADADS

DHKNLTYFR
QM LLTEYD $\square$ QD Y QPMMFEFPDED $\square M Y \square K M K D C K P D P D D K W$

## QR】STPSQHRW

 LLN F R DP QA QMARWLQVIAEYD $\square$ E $\square$ VHRAGRSHSNA


LK WLLQFKNPEGQLARWDERLQSYDFADEHRKGNTHGNAD EKPALTGRDARWQQPMHPEFPDED DMALFEERLDEDRDKW KPMPTGKLAKWQDYRPLKTYFPDEEVAFVGEDUSEEYDGW
$A \square T E F A F R Y \nabla P Q K A \square K G Q A \nabla A D F \square A D H P G E E \square E N H T C \square N N$ DHRNLEYF

NS R M L K Y Q T L LCENCSTLNPASLLPVEGELLQHDCLETMD D पPYEPGKSMKGQ【VCDF乌VYHH【D【AYEGEVCLVEVIPW
 TFYVDGAANRNSQLGKAGYVTDRGRSRVKHLQKTTNQQAE VYYVDGAANRNSKEGKAGYYTARGKSKV 1 TFYVDGAANRETKLGKAGYVTDRGRQKIISLTETTNQKTE VYYCDGACNRNSKLGKAGFLTNTGESQVIELEDTTNQQAE TYYVDGAAEKVGKTGKAGYVTQSGKEKVKELTDTTNQQAE TYYVDGAASRDSKEGKAGYVTDSGKEKVIGLSDTTNQKAE

TFYVDGAANRETK DGKAGYVTDRGRKKDVSDTETTNQKTE VYYV GACNRNSKEGKAGYI SQYGKQRVETLENTTNQQAK TFYVDGAANRDSKTGNAGYVASDGTQRVQYLEQTTNQQAE

 TFYVDGAANRETKLGKAGYVTDXGRQKXVXLTDTXN $V Y Y V D G A A N R N S K Q G K A G Y V T N R G K E K V K E L E E T T N Q K A E$

T Y Y T D GSCNRQ
YT DGGGKKNG $\square$ GSFGY $\square$ S STGEKFRKHEDGTNQQLE
$R M Y F D G T A N Q S G Y G \square G V L L V S P Q G D H \square P R S R H P A T N N \| V E$
$R \square V F D G A S N A \square G H G \square G A \square L I S P E N Q F T P K D C F Y C T N N \square A E$ RRPCPLECKHCSKSEGKEG\| IDVRLLNDEPEDDWTPH

T $\square$ M F D G A $V$ NMNGNGVGAVLINPKGAHMPFSARDVTNNEAE

D S L S R R P CVACKQCGGGEPPLEEQQK

VMCSDGSWSHKGAG■ATVLFSPNGRYAARLQFDTTNNVAE T $\square R \square D G A S R S S G S G V G L L L Q S P T G E H L E Q A \square F P A S N N E A E$

AMSRRPCSDECKHCSKA
$T V W F D G A S N I L G H G V G A V L I S P D N Q C V P R L G F D C T N N M A E$ $R$ MFFDGAKNLNGCGIGAVLISPTGQHYPVSAFLCSNNMAE

P $\square$ Y S VH $\square$ A P WK $\square$ Y F D G S K T D $\square$ T S G A G $\square V L E E P Q C T N N R A E$

E VY S S R P D $\square$ K D QP WP KA DA T LIF T DGSSF $\square E N G Q R S A Q K A E$ $R \square Y F D G S S C K E G Q G T G V V L F S P N G M C Y E R L E Y Y C T N N E A E$

LQATYLALDQDSGLEVNTVTDSQYALGTIQAQPDKSESELV
LQAI LMAALEDSTGPVNIVTDSQYALGVLQGTPDQSESPLV

L Q A I YLA L Q D S G S E VNIV T DS Q Y ALG I I QA QP DK S E SEELV


LQA TY $\square A L Q D S G P E V N T V T D S Q Y A L G \square I Q A Q P D K S E S E L V$ LTAI KMALEDSGPNVNIVTDSQYAMGILTAQPTQSDSPLV LEGLLMAGQDSKDKVNIVVDSQYSYGILMTCPTNTEHPIV


$\square E A V L L A \square K D S G P K \square N \square V T$ D S Q Y VYG GLEAQPEFSDSP\|V
$\square R A \square E E A C K N G P E K \square N \square V T$ D S RYAFEFMKRNWDEEKNP】Q


YEACVMG $\square$ KAA $\square$ E F $\square E V Y$ GDS LLVIH QTKGDWETRDSKLI

YEAC $\square \mathrm{MA} \square \mathrm{D} \square \mathrm{R} \square \mathrm{KT} \square \mathrm{D} \square \mathrm{F}$ GDSALVVNQVNGDWNTNQPHLI

YEAVLLGLRKAKRRLLIRTDSKLVAGHVDKSFEAKE EGM


Y EALI IGGE ILIQS VE ILGDSMLVLKQDAGEYKCSLAVYL
 YNALLFGLQVMEKYVEAFGDSELVVQQVAGDYKCLDESL

QUERY
UniRef90_Q87622
UniRef90_Q90Q90
UniRef90 B7TF19
UniRef90 P89904 UniRef90_Q9Q094 UniRef90_Q699V9 UniRef90 I6LBU1 UniRef90 ${ }^{-}$V5KB48 UniRef90_H6W389 UniRef90 P05895 UniRef90 Q03261 UniRef90_P05897 UniRef90-GOYFP2 UniRef90- O71128 UniRef90 E0XKA6 UniRef90_-I3IRT2 UniRef90_U5LRL8 UniRef90 E5LLG2 UniRef90_F6LY17 UniRef90_C9DJX6 UniRef90 B2MK43 UniRef90 ${ }^{-}$C1KCY5 UniRef90_Q7XRV6 UniRef90_UPI0003D283AE UniRef90_M9VRK2 UniRef90_Q9T0B7 UniRef90-Q84ZV5 UniRef90_T2AWJ2 UniRef90 M5C611 UniRef90-Q2R1M0 UniRef90-UPIO003DEAE2E UniRef90 H9CGR3 UniRef90-Q6ATV9
UniRef90_Q9XE44
UniRef90 A5BEK1
UniRef90 V2WMU4
UniRef90-Q6UU73
UniRef90_UPI0002A47E24
UniRef90 D1GEG7
UniRef90-I1CPR9
UniRef90_Q53KC5
UniRef90 V2YOUO
UniRef90 UPI00023B2B00
UniRef90_L7MFA7
UniRef90-Q7XFI5
UniRef90 UPIO0042B4D14
UniRef90- UPI0002BCC04D
UniRef90-UPI00032ACE96
UniRef90-A0A034V458
UniRef90 M0ZDF4
UniRef90-V2WVG2
UniRef90-Q6WAY3
UniRef90_UPI00042B8B71
UniRef90-UPI00034FAB23
UniRef90-Q7XPW2
UniRef90-UPI0002BC9CCE
UniRef90 UPI0002C34269
UniRef90-W4XIZ7
UniRef90-Q7XM76
UniRef90_L7LWL7
UniRef90 Q10IF5
UniRef90-A0A015IYB9
UniRef90-A5C3U5
UniRef90 UPI0003D284BD
UniRef90-D3IVQ8
UniRef90-E9DYR7
UniRef90 W4XDF9
UniRef90 H1ACC3
UniRef90-W8B595
UniRef90-UPI0003DEA3CE K A Y $\square$ K E $\square$ A K F DE $\square$ S F H HVP ECVHRLCKRFVKTEFRHVP

REENQMADALAT RVQNEFADALAT

K K Y L E A VR S MEKCFTG GTVK HLPRDQNEEADALAKS


| HAY LIELVTRFD D L R Y V | H $\square$ P R A Q NRFA D A $\square$ A T |
| :---: | :---: |
| T H $\square$ K E $\square$ T E Q F E K $\square$ T F H H $\square$ P | REENQLA D A $\square$ A T |
| P Y R D R $\square_{\text {L }}$ T F F K K V K L Y H V P | R DENQMADALAT |


 UniRef90-A5BRB4 UniRef90-A5B9Q1 UniRef90_UPI000350B709 UniRef90-A0A016W340 UniRef90-K9FA30 UniRef90-M1WIRO
UniRef90_UPIooo2038F03
UniRef90-Q6UUL9
UniRef90- Q7F9P3
UniRef90-Q2QP03
UniRef90-LOP117
UniRef90-Q7LHG5
UniRef90-M5С9Н3
UniRef90-UPIOO0329E3E1
UniRef90-E9ENJ3
UniRef90-UPIOOO3503516
UniRef90-A5BBP7
UniRef90-Q8S718
UniRef90-W6NQJ2
UniRef90-W4YWK8
UniRef90-W4XLB8
UniRef9-M59976
UniRef90-G4V615
UniRef90 ${ }^{-}$W4XI40
UniRef90-K01XD4
UniRefo-K714G2
UniRef90-UPIo003F08BDA
UniRef90-Q2QUB3
UniRef90-V5GGK9
UniRef90 -11EBF7
UniRef90-W8C8Q1
UniRet90-Q7XS19
UniRef90-W4XWN2
UniRef90-Q6UUL1
UniRefifo-D7GY52
UniRef90-Q7XVBO
UniRef90-E3MHE6
UniRef90-A5BZS6
UniRef90-Q2AA42
UniRef90-K7EYA7
UniRef90_W6NWUO
UniRef90-A5B5E9
UniRef90 A5BJJ2
UniRef90-UPIOOO2C2EA60
UniRef90-Q75LT9
UniRef90-A0A015IZV2
UniRef90 GoMLE3
UniRef90-UPIooo3D275B0
UniRef90-U6PVC6
UniRef90-UPIO0046DF48E
UniRef90-V2X5X6
UniRef90-A0A016 6 W528
UniRef90-O817Q2
UniRef90-UPIOOO46DBCEF
UniRef90-Q4QQF4
UniRef90-Q2R6U9
UniRef90_M5C4N7
UniRef90-W4XSZ5
UniRef90-A0A016STT2
UniRef90_UPI00034FE794
UniRef90 A0A015J1NO
UniRef90-K7EW47
UniRef90-V5GN60
UniRet90_A7THT9
UniRef90-A5BWK7
UniRef90_UPIO00258F40E

LLIDEQPVYERPRRVPHADKAFDEEQV
HS $\square K T V D D \square P \square K \square P Y R \nabla P P S Q W E E V K F \square$
RPYRMAANELAEVKKQV
HHLAVKSDTKPVYYRPYRLLSHSERAVVRQKV

IHPITSHR KLKPDAKPVFRKCRPVPYATGSAVSEEL
THPTASHRLNVGSTARPVRQKIRRFHPDRQSVIRNE
IHPTASHRLNVESARPVRQKIRRFHPDRQTVIRNEI
HELDTEPGKR VRNPGRPLPRKLWEPVKQEL
TSPVCTHHTYMEEDAKLVRQPQRRLNPMMEVVRGEV
SPVCTHHYYMEEEAKPVRKLQRRLNPHMQEVVRAEVV
HKLMVRPDAKPVKQKLRRFAPDRKQADREEL
पQLKADVKPVFRKARPVPYAALPVVSAE
HKLSUNSGFNPVKQKTRKFKPELSLRIKEEV
HR LLEEGAKPTREPQRRLNPHMKEVVRAEV
HR TDLVENA IPPTRK DYRVPDEKRDETERQ
P $\square$ SANNFYKQKLRLGKTPVYDKNYRMADSQKPEIARQV
GDSPTKCMHRILLEGESKPTREAQ


THK

$R G \square T V K \ N T K P G S Q P K Y$ LIKARTVPYA $\square R P K V E A D L$


UniRef90-I1BZS5
UniRef90-UPI0003501CB2
UniRef90-V2WGR3
UniRef90-A5APP4
UniRef90-A5AlU4
UniRef90-11GB16
UniRef90-E3M1T4
UniRef90-A5BKR4
UniRef90-L7MM80
UniRef90-A5C645
UniRef90_UPIO00388C862
UniRef90-UPI0002C34AF7
UniRef90-UPIO003C47A0D
UniRef90-A5AQ82
UniRef90-A5BA01
UniRef90-A0A016S258
UniRef90OQOZCDO
UniRef90-UPIOOO39?
UniRef90_UPI000395DD36

## $\square T$ VNS DAKP $\square \mathrm{FH}$ KPRPपPYAKEPVEKE

HPPASHR NVESARPVRQRDRRFHPERQVVRNE HPUVSHKLNVLPTARPVRQRVRRFHPNRQKIIREEI
 IVQHHLLPLDPHARSKQKLRRLHP
IVQHнLPTLPDQPVRCKLRPVNAKKKAIMDSCI HSUQTLPHARPVKQKLRWLHPRWSLQUKEEVIV DMKPRRDSQRRLNVIMQEVVRKEI
$P P \| V V Q L T S S A T P V R V R Q Y P M S Q K A R A G I A K H I$ VCTHHIGMEEEAKPVRQPQRRLNPHARAGVVREEV



UniRef90 U6MEN9
 UniRef90-W4XVSO UniRef90-UPIIOOO2A4B27E UniRef90-A5BRB4

## UniRef90-A5B9Q1

 UniRef90-UPIO00350B709 UniRe990-A0A016W340 UniRef90-K9FA30 UniRef90-M1WIRO UniRef90- Q7XWF5 UniRef90-UPIO002038F03UniRef90-Q6UUL9
UniRef90- Q7F9P3
UniRef90-Q2QP03
UniRef90-LOP117
UniRef90-Q7LHG5
UniRef90-M5С9Н3 UniRef90_UPIOOO329E3E1 UniRef90-E9ENJ3
UniRef90-Q8S718
UniRef90-W6NQJ2
UniRef90_W4YWK8
UniRef90-W4XLB8
UniRef90-M5X976
UniRef90-G4V615
UniRef90-W4X140
UniRef90-KOXD4
UniRefo
U714G2
UniRefo-K714G2
UniRef90-M5C810
UniRef90-UP10003F08BDA
UniRef90-Q2QUB3
UniRef90-V5GGK9
UniRef90-I1EBF7
UniRef90-W8C8Q1
UniRef90-Q7XS19
UniRef90-W4XWN2
UniRef90-Q6UUL1
UniRef90-D7GY52
UniRef90-Q7XVB0
UniRet90_A5B903
UniRef90_E3MHE6
UniRef90-A5BZS6
UniRef90-Q2AA42
UniRef90-K7EYA7
UniRef90-W6NWUO
UniRef90-A5B5E9
UniRef90- A5BJJ2
UniRef90-UP10002C2EA60
UniRef90-Q75LT9
UniRef90-A0A015IZV2
UniRef90- GOMLE3
UniRef90-UP10003D275B0
UniRef90-U6PVC6
UniRef90-UPI00046DF48E
UniRef90-V2X5X6
UniRef90-A0A016 W528
UniRef90-Q81702
UniRef90-UPI00046DBCEF
UniRef90_Q4QQF4
UniRef90-Q2R6U9
UniRef90-M5C4N7
UniRef90_W4XSZ5
UniRef90-A0A016STT2
UniRef90-UPIO0034FE794
UniRef90-A0A015J1NO
UniRef90-K7EW47
UniRef90-V5GN60
UniRef90-A7THT9
UniRef90-A5BWK7
UniRef90 UPIOOO258F40E
UniRef90-l1BZS5
UniRef90-UPI0003501CB2
UniRef90-V2WGR3
UniRef90-A5APP4
UniRef90-A5AlU4
UniRef90-l1GB16
UniRefe90-E3M1T4 4
UniRef90 A5BK
UniRef90-L7MM80
UniRet90-A5C645
UniRef90-UPIO00388C862
UniRef90-UP10002C34AF7
UniRef90-UP10003C47A0D
UniRef90-A5AQ82
UniRef90-A5BA01
UniRef90-A0AO16S258
UniRef90-QOZCDO
UniRef90_UPI000395DD36


ETQCS DGVIRPS DSPYAAA MVLVKKPNGK DRVCGDFR DEQLQKGYI RPSTSPWDAPVIFVEKKDK QSLLDGDVI RESNSNYASPILLVPKKT QKLLRAGVIQEIDHPEWLANLVLVRKS DKLLEAGFSSEKLI IWD DRLTLQGVLTPVDHSSWAAPTVTVKKKNGSGKWRVCVDYT DKLLEAGFIREVAYP VIQNEANEL TPTR DQTGWRVCTDYR QLMLQWGVVEESHSDWRSPVVLVPKAK TRRFIDFR
 VVRNDAGEIYPUSDPWVSPIQVVPKKSRUTVGWRVCIDYR DKLPKAGFIREVLHPEWLANPVMVRKATVGKWRMCIDFT QRL $\operatorname{KKAGLIVPSNQWTSPV}$ VVVEKKNGKKRDCVDYR DRLMNTGVITPGEHAEWAAPVVAVSKKNGTTRLCADFSTG TKQLESQVVEVTQYPTWLANVVPLKAKKDGKLRMCVDYR KKLLDVGUYPDSDSKWVSAVHVVPKRRPAGSLRRVCTDYR
 RRLNPVMKEVKSGDTVVKNEDNELVPQRDQTGWRVCIDYR ERLQKLGVIEPVNFSEWTAPVVVVKKTNGSGRLCADYSTG KSELAAGKI RPSTSPAGAPNVMFVKRADGRLCLMVVDYCC DKMLKAGVIRPSISEWASPP VVLIVKRDGSVRWCLDYR QKMLDQKII QPSLSPWSSPDWIVPKKTDGQKKWRIVVDYR MLEQGLIKPSTSPWSFPVVVVKKKN GGGKMRFCVNYP ERLVKNGVLIPVTHSPWATPIVPVLKKDGSIRICGDFKVT
 LKLLQAGII YPDSDPWVSPTQVVPKKTRLTGGWRVCIDYR D Y R ERMEHYG $\square V$ R VKYSSWAAP VVVPKKDKT DR $\square C G D Y K V T$ ASPFFFVSKKEKRAFRPCQDYR DKLLEAGCDREVSYPDWLANVVVVPKKEGKWRVCVDYT D KFMKDNGLI EESTSPYTSPLLSIP PKSKANGETRIVGDYR RWSLQWLS DPEWLANVVLVPKK DGKVRVCVDCR ADLLEHELIRPSTSQWTSAPVLVAKKS GGFRLAIDYR QKMLQACGVIEPSQSEWHSPV VLVSKPDGTVRFCIDFR MKLLDVGVI YPDSDS KWVSQVHVVSKKSGMTWRVCIDYR KRLREAGILIPCQ SAWNTPLLPVQKPGTEDFRPVQDLR
 DRLLEMNVI APVTHSEWAAPIVCVRKSNGKGRVCADFSTG

Unelougus


UniRef90_U6MEN9
UniRef90_UPI000393EF75
UniRef90_W4XVS0
UniRef90_M5X4A3
UniRef90_UPI0002A4B27E
UniRef90_A5BRB4
UniRef90_A5B9Q1
UniRef90_UPI000350B709
UniRef90_A0A016W340
UniRef90_K9FA30
UniRef90_M1WWIR0
UniRef90_Q7XWF5
UniRef90_UPI0002038F03

 A RLG G EVFNRLVVKHGLNLKGGKCQLFKREVAHLGHVVSEKG H HI A QKCEF GKQHLVYLGF IVGA GELKMDLEKVVHVI SHVRSVLQRLAENHLGVKAEKCAFHTTSVPFLGYI FEAGS QHL



 Q H L R L L V L G K L L R E H Q L Y



 EVLRHL QDMQLDCKGSKCEFHQTTVEYDG\|IVVDK GFSLD S I L A E V A H E L R R R A G L T I N V G K S K F C I R EVVK YL G Y VV G N GT



 R R M K V L D R L DS Y G L K V S P E K C Q L C C N S V K Y L G HVVV S D E G
 A NLKAVLHRLQQHNLKVKPSKCRLLQKEVVFLGHRDTADG D TLLREVEERLRRANLTARPTKCTVGCVSI EFLGHRIGQGE E GTTK A L L K T L G S K GYR A S A K K A Q I C CLDQ K T Y L G Y S L L E D G Q

  03F08BDA
 K HL E R V L L R L R E A GLL T A K P Q K C I L G T D H C S Y L G H I I G G G K

 H HL R LVVLE KL QE H QL Y A K F S K C D FWWLSEVVK F L G H V I TA Q G

D MKLNPSKCAF G VSVGK F LGGM
DR LMKVMSRDNE FGLKKMKLEKCNF LMMQEVRFDGFIVDKNG L L L Q EVVFHLL RKYGMKLNPSKCAF GVSA GKFLGGMVS QR G HHLK L V LEERCREKNLTLNWEKCHFMVKQGVVLGHVVSNRG

 X NL L A V L H R CI E K DL V L N WE K C H F M V C Q GIV L L G H I I S E K G


 H R V H A V M Q K L Q E F GF R I RME K CS F L Q HE I K Y L G F I I N K D G $K F F D R L R R Y N L K L N L A K C A F G V P A G K L L G F I V S R R G I E L D$ $K V L R A V L E A M K R A N L K L K P Q K C M L L G R K V A F L G H E V D D E G$ $N H L F L V L Q Q C Q E T N L I L N W E K C Q F M V K Q G V V L G H V I I S S K G$ E R TE R L M H R L K K H D L F L K L E K C E F D V T E V V F | $A$ | $D$ | $D$ | $E$ | $V$ | $L$ | $T$ | $K$ | $I$ | $E$ | $Q$ | $\square$ | $G$ | $M$ | $E$ | $L$ | $K$ | $A$ | $S$ | $K$ | $C$ | $E$ | $F$ | $A$ | $R$ | $K$ | $E$ | $I$ | $K$ | $S$ | $L$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $K$ | $N$ | $L$ | $L$ | $S$ | $K$ | $D$ | $G$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | HNLS LVLKRRCQECNLVLNWEKCHFMVQQGIVLGHIIISCRG

 Q HVTEVTY IGLLVT K N L Q E V L G R F Q S Y Q L K L K P K K C T L F R K E V E F L G R NV G D S S Q N L E A L F F R R DM S Y G F R V R DE K C T F M M S E I R Y ENLGAI F DRLLRKFNLKLQPDKCEFLLRKEVGYGGHII SEEG Q H L E EVLNRI RKANLRLKAEKCYFAAAELQFLGHVVGKEG K N L E A T L Q R L E E Y G L R V R K D K C A F F Q P S V E Y L G H I I D H K S




 $H L L R K Y G M K L N P S K C A F G V S A G K F L G F M V S Q R G Q E V V P D Q Q$ QHLRLVFDCFREYGVLLHPDKCEFGVTSLQFLGHII NS QG
 K A L E R F F E R I I R K F R L R L N P K K C T F G V T S EK LLLGHMVVER G E HI Q CVLLE RI R K A GLLTINPAK DQLCRNSLLKFLGHVI SPGB D A L E R F F E R I Q K F RLLRLN P K K C T F G V T S EK L L G H MV S E R G






## UniRef90 U6MEN9 UniRef90-UPIO00393EF75 UniRef90-W4XVS0

 UniRef90_UPI0002A4B27E UniRef90_A5BRB4 UniRef90-A5B9Q1 UniRef90_UPI000350B709 UniRef90_A0A016W340 UniRef90-K9FA30 UniRef90-M1WIR0 UniRef90_Q7X10F5UniRef90_UP10002038F03 UniRef90_Q6UUL9 UniRef90-Q7F9P3 UniRef90-Q2QP03 UniRef90_LOP117 UniRef90-Q7LHG5 UniRef90-M5C9H3 UniRef90-UPIOOO329E3E1 UniRef90-E9ENJ3 UniRef90_UPI0003503516 UniRef90_A5BBP7 UniRef90-Q8S718
UniRef90-W6NQJ UniRef90-W6NQJ2
UniRef90 ${ }^{-}$W4YWK8 UniRef90-W4XLB8 UniRef90-M5X976 UniRef90_G4V615 UniRef90-W4XI40 UniRef90_K0IXD4
UniRef90-K714G2 UniRef90-M5C810 UniRef90_UPI0003F08BDA UniRef90-Q2QUB3 UniRef90-I1EBF7 UniRef90-W8C8Q1
UniRef90 Q7XS19 UniRef90-W4XWN2 UniRef90-Q6UUL1 UniRef90-D7GY52
UniRef90-Q7XVB0 UniRef90_Q7XVB0 UniRef90-A5BMHE6 UniRef90_A5BZS6 UniRef90-Q2AA42 UniRef90-K7EYA7
UniRef90-W6NWU0 UniRef90-A5B5E9 UniRef90-A5BJJ2 UniRef90_UPI0002C2EA60 UniRef90_Q75LT9 UniRef90_A0A015IZV2 UniRef90 G0MLE3 UniRef90_UPIO003D275B0 UniRef90-U6PVC6 UniRef90_UPI00046DF48E UniRef90-V2X5X6 UniRef90-A0A016W528 UniRef90_Q817Q2 UniRef90_UPI00046DBCEF UniRef90_Q4QQF4
UniRef90-Q2R6U9 UniRef90-M5C4N7 UniRef90-W4XSZ5 UniRef90_A0A016STT2 UniRef90_UPI00034FE794 UniRef90-A0A015J1N0 UniRef90-K7EW47 UniRef90-V5GN60 UniRef90-A7THT9 UniRef90-A5BWK7 UniRef90_UPIO00258F40E UniRef90-I1BZS5 UniRef90_UPI0003501CB2 UniRef90_V2WGR3
UniRef90-A5APP4 UniRef90_A5AIU4 UniRef90-I1GB16 UniRef90-E3M1T4
UniRef90 A5BKR4 UniRef90_L7MM80 UniRef90-A5C645 UniRef90_UPI000388C862 UniRef90_UPI0002C34AF7 UniRef90_UPI0003C47A0D UniRef90-A5AQ82
UniRef90 A5BA01 UniRef90-A5BA01 UniRef90_A0A016S258 UniRef90_Q0ZCD0
UniRef90_UPI000395DD36




 LSMDPAKVEWRAPTNKKEVQRFLGFANYYRKFI PDF VAVDPSNTKWTPPKTVSQI RSFLGLVGYYRRFI ENFSD

 KLKIQAVQEWPTPTTVKQVQSFLGFANFVQQFVANFSQIA LRTDPDKISAVSNYPVPTSRRFLGMAGWYRRFVDNFAA
 I AVDHSKVEAVQEWQRPTNRSFLGLAGYYRRFVED

## 

 I K A DP DKVKK IA QYPAPRLRTFLGMASYYRKFI AGFSLGE
 $\begin{array}{ll}L R P D Q D K V D A V Q P K T K K Q L & R S F L G G L V G Y Y R R F V P N F A A D A \\ R W L T K A R K E A P V P E N P R Q V R E F L G T A G Y C R D W I P G F A\end{array}$


\section*{| K |
| :--- |
| P |
| P |}







 QEKVKA I QE WPEPRNVKQVQS FLGFANFYYCFVHDFS


$$
1>0
$$

| V |
| :--- |
| P |
| V |

## o



 | $I$ | $R$ | $M$ | $P$ | $I$ | $I$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $D$ | $W K$ | $P$ | $P$ | $T$ | $T$ |
| $K$ | $A$ | $V$ | $M$ | $E$ | $T$ | $P$ |

V K A V M E TP P P R N K K E
$V$ R P A E T K V S VI K D F P R P DS QR QLL R E F F G M $\quad$ V N F Y H R F DP H C






UniRef90_U6MEN9
UniRef90_UPI000393EF75
UniRef90_W4XVS0
UniRef90_M5X4A3
UniRef90_UPI0002A4B27E
UniRef90_A5BRB4
UniRef90_A5B9Q1
UniRef90_UPI000350B709
UniRef90_A0A016W340
UniRef90_K9FA30
UniRef90_M1WIR0
UniRef90_Q7XWF5
UniRef90_UPI0002038F03
UniRef90_Q6UUL9
UniRef90_Q7F9P3
UniRef90_Q2QP03
UniRef90_L0P117
UniRef90_Q7LHG5
UniRef90_M5C9H3
UniRef90_UPI000329E3E1
UniRef90_E9ENJ3
UniRef90_UPI0003503516
UniRef9__A5BBP7

PDTTKPFELBH0
340
350
360
CDASGYAVGAVLEQAGQPYRFLSQAMTPTQ

 LD P D R QF IV EVDAS D S GVGGVL SQREVG
$P I S G E E L F T I V C D A S T V G G L G C V L M Q Q Q K V V A Y A S R Q L K Q H E$

 $P$ D RTK P F Ti ETA A S E WA I G F V L GQE GQDDGKMHP VA F
F NPSVPVVVEADASDFALGGVLSQQSSDQKLHPVAFHSRK PDTRKDFM
 PDQTKDFQVYCDASRHGLGCVLMQEGRRTWLELIVEYDMS

 F NANYRLLTDASKDGDGAVLEEVDNKNKLVGVVGYFKSLE A DPSKPYF LET DALGAA LGSVVLSQRQEDGCLHPIGY LS ES


PHPQEPLLLYVSATSQSMVLVVEREEEGHTQKVQRPDYFD PNVTRPFIIYTDASKEGVGAVLCQMGDDQLDHPIFFASKT A DLQKPFVLQLDASGDGLGAVLCQDCDGQLVRVAYSERNY PDFEKTFMLKVDASDVGI GAVLMQEHDGEDFKLLPREQRY

03
UniRef90 A5BBP7 UniRef90-Q8S718 UniRef90-W6NQJ2 UniRef90_W4YWK UniRef90-W4XLB8 UniRef90-M5X976 UniRef90-G4V615 UniRef90-W4XI40 UniRef90_K0IXD4
UniRef90 K714G2
UniRef90-K714G2
UniRef90- M5C810

UniRef90 U6MEN9 UniRef90-UPI000393EF75 UniRef90-W4XVS0 UniRef90 M5X4A3 UniRef90 UPI0002A4B27E UniRef90-A5BRB4 UniRef90-A5B9Q1 UniRef90_UPI000350B709 UniRef90 A0A016W340 UniRef90_K9FA30 UniRef90_M1WIR0 UniRef90- UPIO002038F03 UniRef90-Q6UUL9 UniRef90 Q7F9P3 UniRef90- Q2QP03 UniRef90-L0P117 UniRef90-Q7LHG5 UniRef90 M5C9H3 UniRef90- UPI000329E3E1 UniRef90-E9ENJ3 UniRef90-UPI0003503516 UniRef90 A5BBP7 UniRef90-Q8S718 UniRef90-W6NQJ2 UniRef90 W4YWK8 UniRef90-W4XLB8 UniRef90-M5X976 UniRef90 G4V615 UniRef90 W4XI40 UniRef90-K0IXD4 UniRef90-K714G2 UniRef90 M5C8IO UniRef90-UPI0003F08BDA UniRef90-Q2QUB3 UniRef90 V5GGK9 UniRef90 I1EBF7 UniRef90-W8C8Q1 UniRef90-_Q7XS19 UniRef90 W4XWN2 UniRef90_Q6UUL1 UniRef90_D7GY52 UniRef90-Q7XVB0 UniRef90 A5B903 UniRef90-E3MHE6 UniRef90_A5BZS6 UniRef90- Q2AA42 UniRef90-K7EYA7 UniRef90_W6NWUO UniRef90_A5B5E9 UniRef90 A5BJJ2 UniRef90-UPI0002C2EA60 UniRef90-Q75LTS UniRef90-A0A015IZV2 UniRef90 G0MLE3 UniRef90_UPI0003D275B0 UniRef90-U6PVC6 UniRef90 UPIO0046DF48E UniRef90 ${ }^{-}$V2X5X6 UniRef90-A0A016W528 UniRef90_Q817Q2 UniRef90 UPI00046DBCEF UniRef90-Q4QQF4 UniRef90-Q2R6U9 UniRef90_M5C4N7 UniRef90 ${ }^{-}$W4XSZ5 UniRef90-A0A016STT2 UniRef90_UPI00034FE794 UniRef90 A0A015J1N0 UniRef90-K7EW47 UniRef90-V5GN60 UniRef90 A7THT9 UniRef90 A5BWK7 UniRef90_UPIO00258F40E UniRef90_I1BZS5 UniRef90 UPI0003501CB2 UniRef90-V2WGR3 UniRef90-A5APP4 UniRef90-A5AIU4 UniRef90 11 GB16 UniRef90_E3M1T4 UniRef90-A5BKR4 UniRef90 L7MM80 UniRef90-A5C645 UniRef90_UPI000388C862 UniRef90 UPI0002C34AF7 UniRef90 UPI0003C47A0D UniRef90_A5AQ82 UniRef90-A5BA01 UniRef90 A0A016S258 UniRef90 QOZCD0

$\square N Y P T Y D K E L Y A M H Q A V K H W R A Y L L G K E V V V H S D H K P L Q F$
RNYPTHDLELAVVVFALKTWRHYLY
SKMELTAALAR RSVAQKLCPYFQAHPVHKPDLT GRMDQWAD
LDP WPPCLRI LAA AVA MLLDKEAKKLHSLETLIDKSPPEKWS LTKAERNYHVTFALKKFHFF $\square Y G L R T I V R T D H K P L T$
PAE $\square$ NYE $\square$ HDKELL A $\square V \mathrm{~V}$ CFKRWRPC
TAERNYT $\square$ WEKE LLA $\square$ KAAFENWRHW
1 HYHP
VNYPTHDLELAAVVHALK TIWRHYL
FQ AHRVTVVSSFPLGEVVTNKDVVGRTAKWVV YPHQKLLYGLLMSSRKLRHYFQAHKVVVPTGYPR】AKWAV SAQKNYPA GELELLGTIKALHHFRYMLHGKH

PAECNYS $\square H D K E L L A D I D C L E H W$
KAECNYSVTEKECLA I V
S EVLADSKTRYPQVQKLLYGVLITVRKDSHY
PTKAEKNYHITFALRKFHFFVYGLDVVIRTDHQPLT
PAHKLEFLALKWAV
STVEKECLAI DWAVKKFDYY LIFGRVFEDHTDHKPDTYLQT STYDKEFYAIVRALRYWQYYLLPNEFVLYSDHQALRYLHS STTRREMLALVKFLQHFRHY
CVMERECLAAVVWGVQKFEPY $\square Y G K H F E D E T D H Q P D Q$
L RMVA A DA LLVKDAGKLT LGQPGTVLTSHLVRQPPNKWLS
LTPAETRYHVTDLEALAMMF
KAEVNYA VIEKECLALIW

TKHSYELEALAVVEAK\ITDCNAFALTLRKREVPPRVSRW CNYPTHDLDEAAVVHALK $\square W R H Y$

GNYPTHDLE LIAAVVHALK $\square$ WRHY L
TTPQEQVYH
IEMEKLAYALVMASRKLKHYFQAHKVIVPSQYPRLSKWAA
 AA QK LR PYFQAHPVIVLTDQPLHN ILHKPDLIGRMLQWA
 WNYTTTEKELLAAVFALDKFRAYL
EAQRNYTTTEKELLAVQDAKARLIRWLLLLQEFDLQ D A QQNYT T DEKELLAVI
SEADHDAKTRYPQIQKL
LNRHERNYGITELECLLVVWSVKYFHHYLH
SQ QEKEAFGLDTAVTKFHRFIHGRHFTLRTDHKPLL FTPYEKADKAQALVDHLAENLVDEKYEPLKTYFP $\square P K A E R N Y H \square T D A L R K L H F F V Y G M H V I V R T D H \square P L T$

PTERNYE $\square$ Y DRE $L L A \square Y R A \square M E W R H Y \square M$
TVHESRYPA!
STTEQELTA I HWA $\square$ NHFRPY $\square$ YGKHFMVKSDHRPL
S Q $\square$ E K E A $\square$ S $\square$ I A $\square$ KRFHKM $\square$ F GRQF T LLT DHKPLL
SAELDNYDTHDKELLA $\square$ I CAFEHWR $\square$ F
$\square T \square E K E G \square A L V Y A V R K F H R Y L L G R H F T L L T D H E P L L$
KCEDNYSTTEKELLA IVWGC
$\square P A E K E C D A \square V W A V K Y F R H Y$
FTHFKH
T NY
TTTEKELLAVVFALDKFRAYSFIIIFTDHSALKYLLTKQD LTKTQRKY
$\stackrel{L}{P} N E A N Y A P T K L E C L A V \square W A V K L F R P Y L H G K K F M \square \square T$
LT P TEQNYETY

STYDGELLTI Y LDALKHFRHFIEGYVFSVYTDHKPL TPVEQRYAAI
MLEYEVKYVMIERLCLDALVWVTGRDRH
TVQEWECLAVVWAVDKFRPYLEFTEFEDHCDHSSL
VMDERLFLALVWATRRLRHYMTEYSVHLIDRLDPLR
 S KMELTAALAGRSVAQKLRPYFQAHPVVSPTREHLKQ

UniRef90 U6MEN9
UniRef90-UPI000393EF75
UniRef90-W4XVS0
UniRef90-M5X4A3
UniRef90 UPI0002A4B27E
UniRef90-A5BRB4
UniRef90-A5B9Q1
UniRef90-UPI000350B709
UniRef90-A0A016W340
UniRef90_K9FA30
UniRef90-M1WIR0
UniRef90 Q7XWF5
UniRef90_UPI0002038F03
UniRef90_Q6UUL9
UniRef90 Q7F9P3
UniRef90 Q2QP03
UniRef90-LOP117
UniRef90-Q7LHG5
UniRef90-M5C9H3
UniRef90-UPIO00329E3E1
UniRef90-E9ENJ3
UniRef90-UPI0003503516
UniRef90 A5BBP7
UniRef90-Q8S718
UniRef90-W6NQJ2 UniRef90 ${ }^{-}$W4YWK8 UniRef90_W4XLB8
UniRef90-M5X976
UniRef90 G4V615
UniRef90-W4XI40
UniRef90-KOIXD4
UniRef90-K714G2
UniRef90-M5C8IO
UniRef90-UPI0003F08BDA
UniRef90-Q2QUB3
UniRef90-V5GGK9
UniRef90-I1EBF7
UniRef90-W8C8Q1
UniRef90-Q7XS19
UniRef90 W4XWN2
UniRef90-Q6UUL1
UniRef90_D7GY52
UniRef90_Q7XVB0
UniRef90 A5B903
UniRef90-E3MHE6
UniRef90-A5BZS6
UniRef90- Q2AA42
UniRef90 ${ }^{-}$K7EYA7
UniRef90_W6NWUO
UniRef90_A5B5E9
UniRef90 A5BJJ2
UniRef90_UPI0002C2EA60
UniRef90_Q75LT9
UniRef90-A0A015IZV2
UniRef90 G0MLE3
UniRef90_UPIO003D275B0
UniRef90-U6PVC6
UniRef90_UPI00046DF48E
UniRef90-V2X5X6
UniRef90_A0A016W528
UniRef90 Q817Q2
UniRef90-UPI00046DBCEF
UniRef90-Q4QQF4
UniRef90-Q2R6U9
UniRef90-M5C4N7
UniRef90-W4XSZ5
UniRef90-A0A016STT2
UniRef90-UPI00034FE794
UniRef90 A0A015J1N0
UniRef90-K7EW47
UniRef90-V5GN60
UniRef90 A7THT9
UniRef90-A5BWK7
UniRef90_UPIO00258F40E
UniRef90-I1BZS5
UniRef90 UPI0003501CB2
UniRef90-V2WGR3
UniRef90-A5APP4
UniRef90-A5AIU4
UniRef90-I1GB16
UniRef90-E3M1T4
UniRef90_A5BKR4
UniRef90 L7MM80
UniRef90-A5C645
UniRef90-UPI000388C862
UniRef90 UPI0002C34AF7 UniRef90-UPI0003C47A0D
UniRef90-A5AQ82
UniRef90-A5BA01
UniRef90_A0A016S258
UniRef90-Q0ZCDO
UniRef90_UPI000395DD36

LQ QL
$\square T$ T QSK $\square$ QHARHMKWMSY $\square Q Q F N$

E $\square$ SEFG $\square E F Q P R \square S M K G Q V M A D F V M E Y S R K P S Q R Q E S S E K$ NAR【LHYMPDDNPENQQMPLHECAD乌LELQQNDQPFKDAY

ELS QF DVHFVPRTADKSQVLADFDADWTMPDNNQGDNETW ELGAFDLHF LSRTA LKSQA LAEFLAEWTNPEPTYEHHDEW D H R N L E Y WK E S R T F NRRHAHWHLLLAGFHFQ $\square$ M Y

M K M
QRNDSSRH $\square K$ WTEY $\square Q \square F T F V I R H R P$
NARMTHYQAMGNHHDC LQ $\square$ AAETHGTRPD $\square$ T DQP $\square$ PDAD $\square$

A LI $\square$ Q D Y D Y S $\square \mathrm{EHRSGSRMKH}$

ETFDLHFVARTATKSQVLADFVAEWTPVFAPEPEPVEQFW ELSEF GDEFQPKLSMKGQVMADFVLEYARTPNQHQESNEK D
E LS K F G $\square E F$ QPRLSMKGQVMADFVLEYSRRPSQHHESSKQ

DEEVAFVGED $\square$ SEAYPGW

AKARLVIAHNSHP $\square$ P $\square$ NDDFPEES $\square$ MF $L V K T P W Y A H \square A N Y$

E LSEFGDEFQPRLSMKGHVMADFVLEYSRRPSQHHESSKQ ELSEYGIEFQPRLSMKGQVMADFVLEYSRRPTQRKESSRE

Y MTEYSVHLISRLDPL

NARDTQYQVEAP $\square H D C E E T \square T A L T S \square R E D L V D Q P \square Q N P D E$ KARLDRW

UniRef90 U6MEN9
UniRef90-UPI000393EF75
UniRef90-W4XVS0
UniRef90-M5X4A3
UniRef90_UPI0002A4B27E
UniRef90-A5BRB4
UniRef90-A5B9Q1
UniRef90-UPI000350B709
UniRef90 A0A016W340
UniRef90_K9FA30
UniRef90-M1WIR0
UniRef90 Q7XWF5
UniRef90-UPI0002038F03
UniRef90_Q6UUL9
UniRef90 Q7F9P3
UniRef90 Q2QP03
UniRef90-LOP117
UniRef90-Q7LHG5
UniRef90-M5C9H3
UniRef90-UPI000329E3E1
UniRef90-E9ENJ3
UniRef90-UPI0003503516
UniRef90 A5BBP7
UniRef90-Q8S718
UniRef90-W6NQJ2
UniRef90 ${ }^{-}$W4YWK8
UniRef90-W4XLB8
UniRef90-M5X976
UniRef90 G4V615
UniRef90 W4XI40
UniRef90-K0IXD4
UniRef90-K714G2
UniRef90-M5C8IO
UniRef90-UPI0003F08BDA
UniRef90-Q2QUB3
UniRef90 V5GGK9
UniRef90-I1EBF7
UniRef90-W8C8Q1
UniRef90-Q7XS19
UniRef90 W4XWN2
UniRef90_Q6UUL1
UniRef90_D7GY52
UniRef90-Q7XVB0
UniRef90 A5B903
UniRef90-E3MHE6
UniRef90_A5BZS6
UniRef90- Q2AA42
UniRef90 ${ }^{-}$K7EYA7
UniRef90_W6NWUO
UniRef90_A5B5E9
UniRef90 A5BJJ2
UniRef90_UPI0002C2EA60
UniRef90_Q75LT9
UniRef90-A0A015IZV2
UniRef90-G0MLE3
UniRef90_UPIO003D275B0
UniRef90-U6PVC6
UniRef90_UPI00046DF48E
UniRef90-V2X5X6
UniRef90_A0A016W528
UniRef90 Q817Q2
UniRef90 UPI00046DBCEF
UniRef90-Q4QQF4
UniRef90-Q2R6U9
UniRef90-M5C4N7
UniRef90-W4XSZ5
UniRef90-A0A016STT2
UniRef90-UPI00034FE794
UniRef90 A0A015J1N0
UniRef90-K7EW47
UniRef90_V5GN60
UniRef90 A7THT9
UniRef90_A5BWK7
UniRef90_UPIO00258F40E
UniRef90-I1BZS5
UniRef90 UPI0003501CB2
UniRef90-V2WGR3
UniRef90-A5APP4
UniRef90-A5AIU4
UniRef90-I1GB16
UniRef90-E3M1T4
UniRef90_A5BKR4
UniRef90 L7MM80
UniRef90-A5C645
UniRef90_UPI000388C862
UniRef90 UPI0002C34AF7
UniRef90 UPI0003C47A0D
UniRef90-A5AQ82
UniRef90-A5BA01
UniRef90-A0A016S258
UniRef90-Q0ZCD0
UniRef90_UPI000395DD36

EWWTDGASRSSGSGVGLLLQSPTGEHLDRLGFPASNNEAE NYFTDGSSF $\square$ QDGRRVAGAAVTTEKEVLWAEPGTSAQKAE

TMAFNGALNSQGARAGFILTSPSGDQFKHADHRATNNTAE $T L Y F D G S L M L Q G S G A G V V L D S P T G K Y A \square Q L N F P A T N N V A E$

TWYTDGSSF $\square \mathrm{CNGERKAGAAVTTESEVIWATPGTSAQRAE}$

## VMCSDGSWSHKGAG TTTVHDSPNGRYAARDQFDTTNNAAE

 EWWTDGASRSSGSGVGLLLQSP $\square G E H L D R L G F P A S N N E A E$ E WWT DGASRSSGSGVGLLLQSPTGEHLIRLGFSASNNEAE$R$ VFFDGSANHQGKG $\square$ GAVLVAKSGQHYPK LRFNCTNNMAE
$\boxed{L} \mathrm{~T}$ GE $\square$ PSEWNA QDRKHFFAK $\square$ HAYYWE VP F

E WWT LRVDGASRSSGSGMGLLEHLEQADRMGFSASNNEAE E WWXLRVXGASRSSGSGVGLLEHLEQALRLGFPASNNEAE

$T L Y T D G S S F V E G G \square Q Y A G A A V V T Q K E \square L W A Q R G T S A Q K A E$

UniRef90 UPI000393EF75
UniRef90-W4XVS0
UniRef90 M5X4A3
UniRef90 UPI0002A4B27E
UniRef90-A5BRB4
UniRef90-A5B9Q1
UniRef90-UPI000350B709
UniRef90 A0A016W340
UniRef90_K9FA30
UniRef90 M1WIR0
UniRef90 Q7XWF5
UniRef90-UPI0002038F03
UniRef90_Q6UUL9
UniRef90 Q7F9P3
UniRef90 Q2QP03
UniRef90_L0P117
UniRef90-Q7LHG5
UniRef90 M5C9H3
UniRef90-UPI000329E3E1
UniRef90-E9ENJ3
UniRef90-UPI0003503516
UniRef90 A5BBP7
UniRef90-Q8S718
UniRef90-W6NQJ2
UniRef90 W4YWK8
UniRef90-W4XLB8
UniRef90-M5X976
UniRef90 G4V615
UniRef90-W4XI40
UniRef90-K0IXD4
UniRef90-K714G2
UniRef90 M5C8IO
UniRef90_UPI0003F08BDA
UniRef90_Q2QUB3
UniRef90 V5GGK9
UniRef90_I1EBF7
UniRef90-W8C8Q1
UniRef90-Q7XS19
UniRef90 W4XWN2
UniRef90-Q6UUL1
UniRef90_D7GY52
UniRef90-Q7XVB0
UniRef90 A5B903
UniRef90-E3MHE6
UniRef90_A5BZS6
UniRef90 Q2AA42
UniRef90 ${ }^{\text {K7EYA7 }}$
UniRef90_W6NWU0
UniRef90_A5B5E9
UniRef90 A5BJJ2
UniRef90_UPI0002C2EA60
UniRef90_Q75LT9
UniRef90-A0A015IZV2
UniRef90-G0MLE3
UniRef90_UPIO003D275B0
UniRef90-U6PVC6
UniRef90_UPI00046DF48E
UniRef90-V2X5X6
UniRef90-A0A016W528
UniRef90 Q817Q2
UniRef90 UPI00046DBCEF
UniRef90-Q4QQF4
UniRef90-Q2R6U9
UniRef90_M5C4N7
UniRef90 ${ }^{-}$W4XSZ5
UniRef90-A0A016STT2
UniRef90-UPI00034FE794
UniRef90 A0A015J1N0
UniRef90-K7EW47
UniRef90-V5GN60
UniRef90 A7THT9
UniRef90 A5BWK7
UniRef90-UPI000258F40E
UniRef90 I1BZS5
UniRef90 UPI0003501CB2
UniRef90-V2WGR3
UniRef90-A5APP4
UniRef90-A5AIU4
UniRef90-I1GB16
UniRef90-E3M1T4
UniRef90-A5BKR4
UniRef90 L7MM80
UniRef90-A5C645
UniRef90-UPI000388C862
UniRef90-UPI0002C34AF7 UniRef90 UPI0003C47A0D UniRef90-A5AQ82
UniRef90-A5BA01
UniRef90_A0A016S258
UniRef90 QOZCD0
UniRef90_UPI000395DD36 $\quad 1 \mathrm{I}$ G $\square \mathrm{T}$ R A $\square \mathrm{MS} \mathrm{S} \mathrm{GKKVN} \mathrm{\square WTDSKYAFGVVH} \mathrm{\square HGA} \mathrm{\square WKERGL}$


 YEA $\square L S A \square A L S V S K \square R \square Y S D S Q L V V R H V Q K E Y E A K D A R \quad M$

YEAC TTALELD DRQMEVFGDSNLVLRQDQGNWKTRDVK LY

UniRef90 U6MEN9
UniRef90-UPI000393EF75
UniRef90-W4XVS0
UniRef90 M5X4A3
UniRef90 UPI0002A4B27E
UniRef90-A5BRB4
UniRef90-A5B9Q1
UniRef90 UPI000350B709
UniRef90 A0A016W340
UniRef90_K9FA30
UniRef90 M1WIR0
UniRef90 Q7XWF5
UniRef90-UPI0002038F03
UniRef90_Q6UUL9
UniRef90 Q7F9P3
UniRef90 Q2QP03
UniRef90-LOP117
UniRef90-Q7LHG5
UniRef90 M5C9H3
UniRef90-UPI000329E3E1
UniRef90-E9ENJ3
UniRef90_UPI0003503516
UniRef90 A5BBP7
UniRef90-Q8S718
UniRef90-W6NQJ2
UniRef90 W4YWK8
UniRef90-W4XLB8
UniRef90-M5X976
UniRef90 G4V615
UniRef90 W4XI40
UniRef90-K0IXD4
UniRef90-K714G2
UniRef90 M5C8IO
UniRef90_UPI0003F08BDA
UniRef90-Q2QUB3
UniRef90-V5GGK9
UniRef90_I1EBF7
UniRef90-W8C8Q1
UniRef90-Q7XS19
UniRef90 W4XWN2
UniRef90-Q6UUL1
UniRef90_D7GY52
UniRef90 Q7XVB0
UniRef90 A5B903
UniRef90-E3MHE6
UniRef90_A5BZS6
UniRef90 Q2AA42
UniRef90 K7EYA7
UniRef90_W6NWU0
UniRef90_A5B5E9
UniRef90 A5BJJ2
UniRef90_UPI0002C2EA60
UniRef90_Q75LT9
UniRef90-A0A015IZV2
UniRef90 G0MLE3
UniRef90_UPI0003D275B0
UniRef90-U6PVC6
UniRef90 UPIO0046DF48E
UniRef90-V2X5X6
UniRef90-A0A016W528
UniRef90 Q817Q2
UniRef90 UPI00046DBCEF
UniRef90-Q4QQF4
UniRef90-Q2R6U9
UniRef90_M5C4N7
UniRef90 ${ }^{-}$W4XSZ5
UniRef90-A0A016STT2
UniRef90-UPI00034FE794
UniRef90 A0A015J1N0
UniRef90-K7EW47
UniRef90-V5GN60
UniRef90 A7THT9
UniRef90 A5BWK7
UniRef90-UPI000258F40E
UniRef90- I1BZS5
UniRef90 UPI0003501CB2
UniRef90-V2WGR3
UniRef90-A5APP4
UniRef90-A5AIU4
UniRef90-I1GB16
UniRef90-E3M1T4
UniRef90-A5BKR4
UniRef90 L7MM80
UniRef90-A5C645
UniRef90-UPI000388C862
UniRef90_UPI0002C34AF7
UniRef90 UPI0003C47A0D
UniRef90-A5AQ82
UniRef90-A5BA01
UniRef90 A0A016S258
UniRef90-Q0ZCD0
UniRef90_UPIO00395DD36

ARY $\square A K V R D T L Q R F T K W T \square E K \square K R T Q N G R A D A L A$ LQ QLDLLAA A PQQVA I DHCKAHQVI DGNNGADQAAR

SKYLAEVRKDEKRFDG\EVRHVYRKDNVEPDDLAR SSYLAEVRKLEKHFFGFQ\|QH\|PRKENFLVDQLAR

## $\square A L L E A \square F \square P K R \square S \square I H C P G H Q K A K G N R \square A D D T A K$

## KRYLEAVLSMEKCFTGDTVEHLPRGQNVEADALAKS

 ARYLTKVKDTLQRFTEWTLEKLKRTENRRADALAARY $\square$ AK $V R N T \square Q Q F T E W T \square E K \square K R A D N R R A D A D A$

A MKNPK $\square$ T PT
QNELADVLAT


UniRef90 M1W2W0 UniRef90＿Q53RL5 UniRef90＿Q8W0Y2 UniRef90＿Q8TF12
UniRef90＿A5BSW9 UniRef90＿V5H0H7 UniRef90＿A5ADF7 UniRef90 Q60DB4 UniRef90－UPI00045D6252 UniRef90＿A0A016UF53 UniRef90＿A0A016TMZ3 UniRef90 UPI0002C3329E UniRef90－A5AV67 UniRef90＿U6PFB9 UniRef90 G0NS51 UniRef90－Q8I7P9 UniRef90＿Q2R4I1 UniRef90＿V5GNV6 UniRef90 D6X3N4 UniRef90＿A0A023EXQ4 UniRef90＿Q2R9A6 UniRef90＿V2WNN8 UniRef90＿F4QBK5 UniRef90＿V2WSN7 UniRef90＿UPI00045DEDF4 UniRef90 V5I9E9 UniRef90＿Q8S653 UniRef90＿A5AJK5 UniRef90＿A5BQ11 UniRef90＿V2WL36 UniRef90＿A5C895 UniRef90＿H3H6I6 UniRef90＿UPI00046D9E72 UniRef90－U6PJR1 UniRef90＿UPI00046BF222 UniRef90＿H3H8Y1 UniRef90 J9K170 UniRef90＿S4BHQ2 UniRef90＿W4Z554 UniRef90 A5BDG9 UniRef90＿Q60EL2 UniRef90＿V5G273 UniRef90＿Q8NFP1 UniRef9－＿T2MJH3 UniRef90－A5C456 UniRef90－U5EXI5 UniRef90－K7HFU9 UniRef90＿H2ZYF8 UniRef90＿U6H268 UniRef90＿A5ACM9 UniRef90 Q5AY30 UniRef90＿A5B326 UniRef90＿J9KB96 UniRef90 A5ANV UniRef90－I1BL30 UniRef90＿A5BCG2 UniRef90 A5BP88 UniRef90＿Q8S463 UniRef90－K7GVS1 UniRef90－W4VRD9 UniRef90＿D0ABG8 UniRef90＿E3N2U8 UniRef90＿F2UB97 UniRef90＿Q2QXA7 UniRef90＿Q967T5 UniRef90＿UPI000443D944 UniRef90＿W4YLR5 UniRef90＿W4ZAI4 UniRef90 UPI0003890F7F UniRef90＿A0A016TQP6 UniRef90－X1XTW9 UniRef90＿X1XU31 UniRef90 UPI0002657370 UniRef90＿A5CBL5 UniRef90＿V8NGD9 UniRef90＿UPI0002BC8457 UniRef90 X1XTY6 UniRef90＿A0A015L1E1 UniRef90＿B6Q9J0 UniRef90 W8BQZ8 UniRef90－W4ZBK0 UniRef90＿UPI00046E1EC5 UniRef90＿A5AMM8 UniRef90＿UPI000203950A UniRef90＿A5BA48 UniRef90＿UPI000388BE77 UniRef90 B1PJ54 UniRef90＿UPI000443DB8F UniRef90＿X1XPJ2 10 0 20

30
 PR DVV A E H S P P I R R A G A R P V V


【SPFYTHH $\square$ YMEEEAKP $\square$ QEPQRR【NPH $\square$ QEVVRVEV
PPVIVDLKSSADPVRVRQYPTPREARKGTQPHT
 HKLAVSEEKRWVKQAPRRFRSELAVQQIESEVV R P V K K K L R X L H P R WC L Q V K E E I

 DAKPFKK R QYPMSPY LEEHYKEL

$P G L D P S I V Q H H \square P I L P Y A R L V K E E \square$
 $\square S P$ T CMHKILLVENAMPKRDAQRRLNPNMKEVVRKEV

HSVQTEPG KV IRETTRPDPYRMRQEVEEVV LP A D R GVR HE I D LVP GSKYCVTRQWPLPRDQVKAIDD FF
 LP VS RPFDAVI RI DPSKQLRCDPNRKFGRSKEEALKRKYV


NK PKW】P QWPLT QEKLAAVNDIV
V S LVKE DAK R $\square K$ QR L R RFA Q DRKD A I K E E L

TVRAEIKTTTEPVYAKLYPYPANMRREVE IQI

LP PRRPYD H Q

LPP PR GDDHK LELES GKDP PWGPLYN MT QE ELIV L R K T L
PVFEKPRRLSPDKLLAAKKQF

 $\square$ P P E R E V E F $\square$ R

D N A P P D F K R A R P V P Y G S L E A V E K E L VHLTLEAEAKPVVMPPRRVPLSIKEDLKEEL HKI E MVE G A S P V S Q K M Y R S S P Y I Q K K I D E E V

 DEEP IVYAKLYP YPMGAA D F V N G E I $R \| V L D P D V Q P V V H A P R R C P D H L R D E L K R E F$ $P \quad V V V Q L D S S A T P A C V F Q Y P M S R E E A X G I X T H D$







TMD I T $\square K P$ GSEPFATKPYRDSRNEREE』QRHV
$C L P A K H T T Q H H \square A T T P G P P \boxtimes S S K A R R \square A P D K L K \square A K A E F$
$\square S P$ VCMHK $\square$ LLEE NS K A $\square V E A Q R R \square N P N M K E V V R A E V$
$\square P P H R P Y D C A \square D L V K G A P \square P R G H L Y S L T E P E Q K A L R E F L$ $P G L D P F I V Q Q H H L P P I L P H S R L V K E E E I$

PHKKVHI DVEPNAKPVHSRAYPDPRVQLLETFKRELL


UniRef90 M1W2W0 UniRef90-Q53RL5 UniRef90_Q8WOY2 UniRef90_Q8TFI2 UniRet90_A5BSNG
UniRef90_V5HOH7 UniRef90_-A5H0H7 UniRef90-Q60DB4 UniRef90_UPI00045D6252 UniRef90-A0A016UF53 UniRef90-A0A016TMZ3 UniRef90_UPI0002C3329E UniRef90-A5AV67 UniRef90_U6PFB9 UniRef90_G0NS51 UniRef90-Q8I7P9 UniRef90-Q2R411 UniRef90-V5GNV6
UniRef90 D6X3N4 UniRef90_A0A023EXQ4 UniRef90-Q2R9A6 UniRef90-V2WNN8 UniRef90-F4QBK5 UniRef90-V2WSN7 UniRef90-UPIO0045DEDF4 UniRef90-V519E9 UniRef90-Q8S653 UniRef90_A5AJK5 UniRef90-A5BQ11 UniRef90_V2WL36 UniRef90-A5C895 UniRef90-H3H6I6 UniRef90_UPI00046D9E72 UniRef90_U6PJR1 UniRef90_UPIO0046BF222 UniRef90-H3H8Y1 UniRef90_J9K170 UniRef90 S4BHQ2 UniRef90_W4Z554 UniRef90-A5BDG9 UniRef90-Q60EL2 UniRef90_V5G273 UniRef90-Q8NFP1 UniRef90-T2MJH3 UniRef90-A5C456 UniRef90-U5EXI5 UniRef90-K7HFU9 UniRef90-H2ZYF8 UniRef90-U6H268 UniRef90-A5ACM9 UniRef90_Q5AY30 UniRef90_A5B326 UniRef90_J9KB96 UniRef90_A5ANV1 UniRef90-I1BL30 UniRef90-A5BCG2 UniRef90-A5BP88 UniRef90_Q8S463 UniRef9-K7GVS1 UniRef90-W4VRD9 UniRef90-D0ABG8 UniRef90-E3N2U8 UniRef90-F2UB97 UniRef90_Q2QXA7 UniRef90_Q967T5 UniRef90_W4Z5S8
UniRef90_UPI000443D944 UniRef90-W4YLR5 UniRef90-W4ZAI4 UniRef90_UPI0003890F7F UniRef90-A0A016TQP6 UniRef90-X1XTW9 UniRef90-X1XU31 UniRef90_UPI0002657370 UniRef90-A5CBL5 UniRef90-V8NGD9 UniRef90-UPI0002BC8457 UniRef90_X1XTY6 UniRef90-A0A015L1E1 UniRef90-B6Q9JO UniRef90-W8BQZ8 UniRef90-W4ZBK0 UniRef90-UPI00046E1EC5 UniRef90-A5AMM8 UniRef90_UPIO00203950A UniRef90-A5BA48 UniRef90_UPI000388BE77 UniRef90_B1PJ54 UniRef90_UPIO00443DB8F UniRef90_X1XPJ2
 KRLYDACFI RPCRYAEWVSSIVPVIKKNDLNK
HKLMA A GF I KEVVHPE WLANPVLVRKKNDGNK WRMCVDYT SELDASGNVDPSESPYAAPVIF VQKKDGTKRDCVDYR E E
 $\square K L L Q A G \| I Y P \square D S P W V S P$ T Q VVVPKS G $\square T M G W R V C I D Y R$

QR LLWE GVLKRCRSAWNTP LDP NDLQERRVI EPSRSSWASPVVVLVQKKDGTDRLCVDYR
 RKQLSVGFLSVVEYPEWLANVVPVXKK GDDKVRVCVDFR D RLLAEQVLSPVDYSARAAPIVVVKKSNGTDRLCADFSTG DELLQDGUI RPSNSPYNSPIVWVPKKNKPNKQYRMVVDFR
 DDLI NGGI I RPSNSPYSSPV VVLVRKKSGDVRLCVDSW
 A RLLEAGFI REVVIHPEWLANPV

DNGDRVVHDYR
 DKMLADGVVEPSNSPWASP ILLIKKEDGRYRFVVDFR DK LLEARF DREVSYPDWLANVV,VVPKKEGKWRVCVDYG ERLLEAGFNREVEYPDWLSNRVCV ASPFFFVAKKEAGALRPCQDYR

 QAMLADGVIEPSQSEWRSPVVLVPK PDSTRHFAALYRE
 ERMLSMG\|I ERSRSP YS DP IVPVFKKNGEVRLCLDARK

 TKKLLAEGFI KEVVLHPD WLANPVLVRKKTGQMWRMCVVDYT


 QKMLND GI DRPSKSPYNAPVWVVGKKPDNEKKYRLVIDDK NRLVKQGVYTATDYSDFA TPIVVVDKKDGS RRLVGDYS
 LKLLQAVVPKKSGDTVVQNEKGEEDTTRRLTSGWRVCIDYR
 QNMMNLGDCRPSNSPWASP $\square Q M V K K S N Q E W R P C G D Y R R$ QK QLSVGFISMVEYPEWLANVIPVPKK DSKVRVCVDFR
 QELLDKGF I RPSVSPWGAPVLFVKKKD KEGSMRLCIDYK
ERDQDDGVIEPVTHS K WAS P VVVIKKKDTGKTRVCGDFK CRLEKLQVI EKVEDPSDWVSSL LVVARKPSGKLRVCIDPQ


$T R \square Y D V G F \square R P C R Y A E W V S N D V P V I K K \quad N G K V R V C I D F W$ QELLKNGDI QKSKSPYNNPDWVVDKKGTDNKKMRLVLDFR DDMEGNGVI TKVIEPSAWVSSI AVSRKSNGKLRVCLDLK QRLKEAGLLVPCK SVWNTPLLLVQKPGTNDYRPEQDLR



 ERLVSEDVLEPTAHSKYAAPVVIVQKKDGTIGRLCADYSG

 $N L D K G F \| V P S N A P F A S P D \quad \square M A K K P G G G L R F C V D F R$ DKMMQLGDTQRSKSPWSSPLHLVPKKS GEWRPCGDYR
 ETNLRKGFDRPSQSPAASPV $\quad$ LFVEKKTGELRLCVDYQ QKQLS QAMLDLGVI DPSQSEWRSPD VLVPKPDGTQRFCIDFR MHLVRIGGVLSPQGASEWAS PSFIIPKKDGRVRWISDLR RRLKEAGLLVPCK SAWNTPLDPVXKPGTNDFRPVQDLX


UniRef90_M1W2W0
UniRef90_Q53RL5
UniRef90_Q8W0Y2
UniRef90_Q8TFI2
UniRef90_A5BSW9
UniRef90_V5H0H7
UniRef90_A5ADF7
UniRef90_Q60DB4
UniRef90_UPI00045D6252
UniRef90_A0A016UF53
UniRef90_A0A016TMZ3

HF R WI INTV 170
A $\frac{180}{}$
180
V
V
F
190
200 ( GDEDDH
 TFQRLMNYVLRDYINK ICVVYLDDILIYSKNEKEHS TFMRLMNHALHXFIGR TWQRLIDTVLGPELEPYVFV T
FFMNLMNKVFMEYLDKFVVVF
LFNKALSDNLREYRGQNSQVTLLQYVDDDLVAR

TFQKISNSLIRELRSCTFAYI TYQRRAATYLFADMLHNTVVEC
$\qquad$ V D D


[^0]1
$I$
1
$I$ ー- - - - $<$ ー -
XQ4
 C A A Y L VK TRKKR Q H H L A D L R

UniRef90-A0A023E
UniRef90 Q2R9A6
UniRef90 ${ }^{-}$V2WNN8
UniRef90_F4QBK5
UniRef90-V2WSN7
UniRef90_UPIO0045DEDF
UniRef90_V5I9E9
UniRef90_Q8S653
UniRef90_A5AJK5
UniRef90_A5BQ11
UniRef90_-A5 C836
UniRef90_A5C895
UniRef90_A5C895
UniRef90 H3H6I6
UniRef90_UPI00046D9E72
UniRef90_U6PJR1
UniRef90_UPIO0046BF222
UniRef90_H3H8Y1
UniRef90-J9K170
UniRef90-S4BHQ2
UniRef90-W4Z554
UniRef90-A5BDG9
UniRef90-Q60EL2
Unineftol-V5G273
UniRef90-Q8NFP1 1
UniRef90-T2MJH3
UniRef90-A5C456
UniRef90-U5EX15
UniRef90-K7HFU9
UniRef90 H2ZYF8
UniRef90-A5ACM9
UniRef90-Q5AY30
UniRef90-A5B326
UniRef90-J9KB96
UniRef90_A5ANV1
UniRef90-11BL30
UniRef90-A5BCG2
UniRef90-A5BP88
UniRef90-Q8S463
UniRef90-K7GVS1
UniRef90-W4VRD9
UniRef90-DoABG8
UniRef90-E3N2U8
UniRet90_-F2UB97
UniRef90-Q2QXA7
UniRef90-O96775
UniRef90-UPIO00443D944
UniRef90-W4YLR5
UniRef90-W4ZAl4
UniRef90_UPI0003890F7F
UniRef90-A0A016TQP6
UniRef90-×1xTW9
UniRef90-X1XU31
UniRef90_UPIO002657370
UniRef90-A5CBL5
UniRef90-V8NGD9
UniRef90-UPIOOO2BC8457
UniRet90-X1XTY6
UniRef90-A0A015L1E1
UniRef90 B6Q99J0
UniRet90 W8BQZ88
UniRef90-W4ZBK0
UniRef90-UPIO0046E1EC5
UniRef90-A5AMM8
UniRef90_UPI000203950A
UniRef90_A5BA48
UniRef90_UPIO00388BE77
UniRef90-B1PJ54
UniRef90OUPUOOO443DB8F
UniRef90

## UniRef90 M1W2W0 UniRef90_Q53RL5 UniRef90_Q8W0Y2 UniRef90_Q8TFI2 UniRef90_A5BSW9 UniRef90_V5H0H7 UniRef90_A5ADF7 UniRef90- Q60DB4 UniRef90_UPI00045D6252 UniRef90-A0A016UF53 UniRef90-A0A016TMZ3 UniRef90-UPI0002C3329E UniRef90_A5AV67 <br> UniRef90_U6PFB9 <br> UniRef90_G0NS51 <br> UniRef90_Q8I7P9 <br> UniRef90-Q2R4I1 UniRef90 V5GNV6 <br> UniRef90_D6X3N4 UniRef90_A0A023EXQ4 UniRef90-Q2R9A6 UniRef90_V2WNN8 UniRef90_F4QBK5 UniRef90 V2WSN7 UniRef90_UPIO0045DEDF4 UniRef90_V5I9E9

 UniRef90_Q8S653 UniRef90_A5AJK5 UniRef90_V2WL36 UniRef90_A5C895 UniRef90_H3H6I6 A D L R KV F ERTRKYGLKMNPTKCAFGVSVGQFLGFLVHERG


 V N L E A V L N N R C I E K D L V L N WE K C H F M V Q Q G I V L G H I I S K K G



 A DLQ R FF E R I K Q F R L R L

 A DL R L A F E R MR WY G L K M N P L K K C A F GV N L L R E V Y N N R L V V D A N L T D N L E K C K F C CR E S L N Y L G F T I D S L G E I L A D I F F T R A A A K Y E L E F F R L





 $L$ H L Q E V F H L L R K Y D M K L N P S K C A F GI S A GK F L G F MV S Q R G

 H N L S K V K G I E V $E V L K A V L Q A L R A A N L K L K P Q K C D M M S N K V I F L G H E D A G D G$
 L R HL R Q V F QV M R E N K L Y A N L K K C V V F C A P E C Y V L H V K







 WEKCHFMVRRQGIVLGHIIDSEKGIDEVBAKVELI





 K L L R T T L A D R L R R N A G L L T $\operatorname{L}$
 Q H L R Q V L Q K L R D H R L Y C CKA S K C H H L F Q T E V V



 Y NL H E AME KTRRRAGI K L N VVDKCVI K E DE CK K F G LI I Y S A N G




 E N HLL
F A K R E K C

 K H L R M L F E R L A K Y GlVVI N TAAK C C I L G Q P K V D F
 SNLLT L GI E VDK A K DDLLI A K L P P P
L H L Q E VFF X L R K Y GM KL NP S K CX F GVSAXKF LGFMVS QR G QHVRQVLQWLF

 DLLDDT I LIG RLE DNGFT I N PLLKCE WGI K E T D WLLG Y WL T P H G
 UniRef90_X1XPJ2
E H|V|RT|VLGRFE EFG\|AVNPAKCVFAADSLTF|LGHVV|DAQG

UniRef90 M1 W2W0 UniRef90-Q53RL5
UniRef90-Q8W0Y2 UniRef90-Q8TFI2 UniRef90_A5BSW9 UniRef90-V5H0H7
UniRef90-A5ADF7 UniRef90-A5ADF7
UniRef90 Q60DB4 UniRef90_UPI00045D6252 UniRef90-A0A016UF53 UniRef90-A0A016TMZ3 UniRef90_UPI0002C3329E UniRef90-A5AV67

## UniRef90_U6PFB9

UniRef90_G0NS51 UniRef90-Q817P9 UniRef90-Q2R4I1 UniRef90-V5GNV6 UniRef90-D6X3N4 UniRef90_A0A023EXQ4 UniRef90_-Q2R9A6 UniRef90-V2WNN8 UniRef90-F4QBK5 UniRef90-V2WSN7 UniRef90-UPI00045DEDF4 UniRef90-V5I9E9 UniRef90-Q8S653 UniRef90_A5AJK5 UniRef90_A5BQ11 UniRef90_V2WL36 UniRef90_A5C895
UniRef90 H3H616 UniRef90-H3H6I6 UniRef90_UPI00046D9E72 UniRef90_U6PJR1 UniRef90_UPIOO046BF222 UniRef90_H3H8Y1 UniRef90_J9K170 UniRef90-S4BHQ2
UniRef90 W4Z554 UniRef90-A5BDG9 UniRef90_Q60EL2 UniRef90_V5G273 UniRef90-Q8NFP1
UniRef90 Q7XRV8 UniRef90-T2MJH3 UniRef90-A5C456 UniRef90-U5EXI5 UniRef90-K7HFU9 UniRef90-H2ZYF8
UniRef90 U6H268 UniRef90-A5ACM9 UniRef90-Q5AY30 UniRef90_A5B326 UniRef90_J9KB96 UniRef90_A5ANV1 UniRef90-I1BL30 UniRef90-A5BCG2 UniRef90-A5BP88 UniRef90_Q8S463
UniRef90 K7GVS1 UniRef90-W4YGB2 UniRef90_W4VRD9 UniRef90-D0ABG8
UniRef90 E3N2U8 UniRef90-F2UB97 UniRef90-Q2QXA7 UniRef90_Q967T5 UniRef90-W4Z5S8 UniRef90_UPI000443D944 UniRef90-W4YLR5
UniRef90 UniRef90_UPI0003890F7F UniRef90-A0A016TQP6 UniRef90-X1XTW9 UniRef90-X1XU31 UniRef90_UPI0002657370 UniRef90-A5CBL5 UniRef90_V8NGD9 UniRef90-UPI0002BC8457 UniRef90_X1XTY6 UniRef90-A0A015L1E1 UniRef90-B6Q9J0 UniRef90-W8BQZ8 UniRef90-W4ZBK0 UniRef90-UPI00046E1EC5 UniRef90 A5AMM8 UniRef90_UPIO00203950A UniRef90-A5BA48 UniRef90_UPI000388BE77 UniRef90_B1PJ54 UniRef90_UPIO00443DB8F UniRef90_X1XPJ2

TKIVIDPEKIVIEAII S A WEEPTNRSFLLGFANFYREFAPQFAD IEVTRQRSVNAUKK 1 TPDKEKILA L V D E E K V K A I K E WP T P X V R S F HG L A S F Y R R F V K D F S T


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

 | $l$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | I QPNAQNVQFPVPKNTKETQQFLGLVSYFRKFINQFAV

 I TTM EKKTKAPMPENVKQLRRFLGMDSFYQRFIQGFTLVE RWLTRARKE IPRPSTPHGVQEFLGSAGYCRDWDPGFA LMVDPGKVEAIVK $\square$ PPPRNRRLIGLAS WYRRFVPNFSS $V S T D L G K V K A V Q D W P V P K N R G F L G L V G Y Y R K F I Q G Y G L M T$ I K V S PDQVKAK I EVSPPDQVKAVMETPPPRSKKELGKLVALGGRF
 GKVRVIN EWPTPSNVKELRQ FLLGLATYLCKYVSNYAG VKVVDPMK IVESTEKYVKPKVRSFGLGHAGFYRRFIVKEFS
 PEKVSS ICS WSPPSNPTEDRQWLGGLANYGHKYTKGYAGLI




 L R PDPKKVLADPPKNDREDK SFLGDTSYYRRFIK KFAKDA


$V K \square P S P \square T V K G V R Q F L G H A G F Y R R F D K G F S S$ PEKVKA IVEWETPTTIKGVRGFLGFANFYRRFIPNFSG










 | $R K$ | $P D P D$ |
| :--- | :--- |
| 1 | $E$ |
| $V$ | $D$ |

 FGVPA GN L LGGIVCRRG\|ELDPSK V RTGRA EEFPKPKNEHEVRRFMGLASFFRRFVPKFA E I QTDPEIVREFPDPRDVMQLRGFMALASYYYKFVKGFSS

$\qquad$ $\square E \mathrm{~V} S P D Q \prod K A D M$ PAKVPDQIKAVMETPDK G
 GKVQA ATCPPPATKRQVCQ FLGLAGYYGRFIPQFLAIA


$\bar{V} \quad P L T K L T E K G V K F E W S N D Y E C S F Q E L K N R J V A A P D L T$

 TPDS DLLEKGGDKTKFKWSEAADSALRRLKEALVSPPI L TN
 A








 $\square A T P$ L S T L T Q K GQQQ FV L T A E CE M A F Q H LiK E A L T N P P L L A Y

E P IT C L L R K N Q T
 K PLTVDVGKK E FI WT P EMEKSFKTMKAVVAADALDHY


## UniRef90 M1W2W0

 UniRef90_Q53RL5UniRef90_Q8W0Y2 UniRef90_-Q8TFI2 UniRef90_A5BSWM UniRef90-V5H0H7
UniRef90-A5ADF7 UniRef90-Q60DB4 UniRef90_UPI00045D6252 UniRef90-A0A016UF53 UniRef90-A0A016TMZ3 UniRef90-UPI0002C3329E UniRef90-A5AV67 UniRef90_U6PFB9 UniRef90-GONS51 UniRef90-Q817P9 UniRef90-Q2R4I1 UniRef90-V5GNV6 UniRef90-D6X3N4 UniRef90-A0A023EXQ4 UniRef90-Q2R9A6 UniRef90-V2WNN8 UniRef90-F4QBK5 UniRef90-V2WSN7 UniRef90-UPIO0045DEDF4 UniRef90_V519E9 UniRef90-Q8S653 UniRef90_A5AJK5 UniRef90_V2WL36 UniRef90-A5C895 UniRef90-H3H6I6 UniRef90_UPI00046D9E72 UniRef90-U6PJR1 UniRef90_UPIO0046BF222 UniRef90-H3H8Y1 UniRef90_J9K170 UniRef90-S4BHQ2
UniRef90 W4Z554 UniRef90-A5BDG9 UniRef90_Q60EL2 UniRef90_V5G273 UniRef90-Q8NFP1
UniRef90-Q7XRV8 UniRef90-T2MJH3 UniRef90-A5C456 UniRef90-U5EXI5 UniRef90-K7HFU9 UniRef90_H2ZYF8
UniRef90 U6H268 UniRef90-A5ACM9 UniRef90_-Q5AY30 UniRef90-A5B326 UniRef90_J9KB96 UniRef90_A5ANV1 UniRef90-IBL30
UniRef90 A5BCG2 UniRef90-A5BP88 UniRef90-Q8S463 UniRef90-K7GVS1 UniRef90-W4VRD9 UniRef90-D0ABG8 UniRef90-E3N2U8 UniRef90-F2UB97 UniRef90_Q2QXA7 UniRef90_Q967T5 UniRef90_UPI000443D944 UniRef90-W4YLR5 UniRef90-W4ZAI4 UniRef90_UPI0003890F7F UniRef90-A0A016TQP6 UniRef90-X1XTW9 UniRef90-X1XU31 UniRef90_UPIOOO2657370 UniRef90-A5CBL5 UniRef90_V8NGD9 UniRef90_UPI0002BC8457 UniRef90_X1XTY6 UniRef90-A0A015L1E1 UniRef90-B6Q9J0 UniRef90_W8BQZ88 UniRef90-W4ZBK0 UniRef90_UPI00046E1EC5 UniRef90-A5AMM8 UniRef90_UPIO00203950A UniRef90_A5BA48 UniRef90_UPI000388BE77 UniRef90_B1PJ54 UniRef90_UPIO00443DB8F


PNFSVEFCLQCDASTSGLGAVLTQVQNGEERVIAYSRSLS YSPTAETELHCDASCHGFGAVLLQKQQSGKFHPVFFFSHR PDFNKTFYLTTDASNKA $\square G S V L S Q \square H D G K$
PEPDEPLLLY $\square$ AA APQ
LDVSKPFVI EADASKWAMGTVLKQKGTDGEWHPCGYDSME LDGNKDFVI HTDASNYGVGSVVSQLDEDGEYHPVIFESNY PDDEKDFIIEA
$P N V T K P F H L Y$ Y $\square D E N \quad K G V A K G V V I Q H L G P W K R P V A Y L S K K$ PNFD C P
PDFTQQFVVQTDACDKG■GAH
CPSTKE
QKPDYYVSRADADVETRY PLLGEKFYMY $\square$ AV V E WA $\square$ SAVLFRCPSPKEQKPDYYVSRY PDDEKPFIIEADASKWATGAVLKQQGPDGDDHPCGYI SHA PTPGRPLLLY ADQDRPFHVVVIVW
PDWS LPFELMCDASDYAVGAVLGQRVDKKPHADYYASRNY PDVERPY I YTDAS Q $\square G G G A V L S Q E G K D H F D H P D Y F A S R Y$ PDFHRGF LQTDA
PDDAKPFHVVCDASDFATGCALMQFDNEGCERVTMDH
PDFSQPFYLNTDASTAAI GGELFQNDKGERHTLGYASRRY
$P D T S Q P F E L D A S D L A L G G V L M Q R S E S G D G L H P V A Y Y S R V F$
$Y D Q K K P L V I$
YDQKKPVVI HTDASAHGIGAAMMQDGQPVAYASRDAESR
$P N W Q L P F K V M C D A S D F A V I E V V L G Q R E D G K P Y V I V Y A N K ~$
$P H P Q E P L L L Y V S A T S Q V V S T V L V V E R E E E G \quad 1$
PDFAKRRFTLQTDASEVGLGAVKVYQLGDKE EDGQVISCASSN



 $Y D P T K P L R L A C D V S P Y G V$
$R D D T R P Y T L Y T D A S G Y G$
PNWQLPFELMCDASDFA $\square$ GAVLGQREDGKPYVIYYASKTL FNPSYRTVVETDSSGYNTGGVLSQYNEKGELHPCAYFSKR PNFSKEFII ETDASGQGDGVVLMQEGHPDAYALSDRFQTL
PTSGRPLLLYLSVSDMALGCMLAQDDDSGKERADYYDSKR


PADGEALLVYVAATTQVVSAAIVVQEEGHALPVQRPVYFD FRDDWPI VAADASAYGI GGVLLHTNPDGIEVPVAHEQRY
$F D Q Q L P V E G Q G D A S Q K G L G F V L T Q N D Q P V T Y S S R A L T E A E$
PDFTKKFT! ESDASNDAVGSVLTQETPDGVKP $\square A Y F S K$

F LPNVPVVVAADACDYGDGAVISHRFPDGTEKPDSHRSDN SKKGIPPF RLYY
 $P D Y K K A F D L T T D A S A Y G I G A V L S Q E G R P D T M U S R D R E V N Y$
$F D V N K P T V L Q V D A S L Q G L G A T L L Q D G K G U A F A S K A L S D A E ~$
 YNRHKPVVLQVDASMKGVGAALMQEGRPVAFASKALTSAE
PDVEKPFY VYTDASRSGVGAVLAQEGDDGFLHPDHFASNY F NPSAETELHCDASSMGLSGMLLQRGKDKKLHLVHAVSKK FNPEDQVKLLCDASEYGVGAVLVHVFSDGTEKPI SYASRVV YDPNLP 1 II SADASQSGI GCVLLHEMPNQTQKAI MHASRY PTPGRPLLLY LSVVDDLA GCMLAQLDDSGKDRAUYY LSKR PDPGQPFVVETDTSDVAVGAVLDQ
PESGRP LLLY $\square S V L D N A F S C I L G Q H D E T G R K E Q A \square Y Y M R Y$ FDATRPTEL
PNFEKPF LLYTDASTFALGA LSSQKDEDKRECVIAYASHT
YDPSRPTRVETDASDGVVAAVLSQLCEDGNWHLVGYYSMS
PDTSLP WAI FTDASEYAI GAVLQQRRGQSWEPLAFFSRKH
$P D F E K K F Q L S S D A S G H A V G V V L S Q T Q D G K E R V I S S Y F Q K K W$

$P D P K T P F I V Q A D A S D V A V G A V L M Q P V G E H E Y P C A Y Y S R Q L$
HTPGRPLLLYLSVSDMALGYMLGQDDDSRKERADYYLSKR
PDFDHP
PNHNDPFETYTDASDYQ $\square$ GAC $\square M Q N$


UniRef90 M1W2W0 UniRef90 Q53RL5 UniRef90-Q8W0Y2 UniRef90_Q8TFI2 UniRef90 A5BSW9 UniRef90_V5H0H7 UniRef90-A5ADF7 UniRef90 Q60DB4 UniRef90 UPI00045D6252 UniRef90-A0A016UF53 UniRef90_A0A016TMZ3 UniRef90 UPI0002C3329E UniRef90-A5AV67 UniRef90_U6PFB9 UniRef90 G0NS51 UniRef90-Q817P9 UniRef90-Q2R4I1 UniRef90-V5GNV6 UniRef90 D6X3N4 UniRef90-A0A023EXQ4 UniRef90_Q2R9A6 UniRef90-V2WNN8 UniRef90-F4QBK5 UniRef90-V2WSN7 UniRef90-UPI00045DEDF4 UniRef90 V5I9E9 UniRef90_Q8S653 UniRef90-A5AJK5 UniRef90_A5BQ11 UniRef90_V2WL36 UniRef90-A5C895 UniRef90-H3H6I6 UniRef90_UPI00046D9E72 UniRef90 U6PJR1 UniRef90_UPIOO046BF222 UniRef90_H3H8Y1 UniRef90 J9K170 UniRef90-S4BHQ2 UniRef90-W4Z554 UniRef90 A5BDG9 UniRef90 Q60EL2 UniRef90_V5G273 UniRef90_Q8NFP1 UniRef90 Q7XRV8 UniRef90-T2MJH3 UniRef90-A5C456 UniRef90- U5EXI5 UniRef90-K7HFU9 UniRef90-H2ZYF8 UniRef90_U6H268 UniRef90 A5ACM9 UniRef90-Q5AY30 UniRef90-A5B326 UniRef90-J9KB96 UniRef90 A5ANV1 UniRef90-I1BL30 UniRef90-A5BCG2 UniRef90 A5BP88 UniRef90 Q8S463 UniRef90_K7GVS1 UniRef90-W4YGB2 UniRef90 W4VRD9 UniRef90-D0ABG8 UniRef90-E3N2U8 UniRef90-F2UB97 UniRef90 Q2QXA7 UniRef90_Q967T5 UniRef90_W4Z5S8 UniRef90-W4YLR5 UniRef90_W4ZAI4 UniRef90 UPI0003890F7F UniRef90_A0A016TQP6 UniRef90-X1XTW9 UniRef90-X1XU31 UniRef90 UPIOOO2657370 UniRef90-A5CBL5 UniRef90_V8NGD9 UniRef90-UPI0002BC8457 UniRef90 $\mathrm{X1XTY} 6$ UniRef90-A0A015L1E1 UniRef90_B6Q9J0 UniRef90 W8BQZ8 UniRef90 ${ }^{-}$W4ZBK0 UniRef90_UPI00046E1EC5 UniRef90_A5AMM8 UniRef90 UPI000203950A UniRef90-A5BA48 UniRef90_UPI000388BE77 UniRef90 B1PJ54 UniRef90_UPI000443DB8F UniRef90_UP10004
UniRef90- X1 XPJ2


SPMEKLCLCLYFSCTRDSHYVIKYMDSAPGLKGRVGKWDF LNYPTYDKELY
STTERECLSVIWAVEK LRHY $\square E G T H F T V V T D H A S L$ TATKNELLAVVFALDKFHAC
GNYPTHDLELAAVVHALKDWRHYL
AA GWPPCLRI $\square$ A ATALLVKDADKLTHGQT LKKQP LGKW $\square$ T LT N CEKRYMVT

TPDEKVCLALVFATQKDRHYMLAHSDTLISKADPDRYDMS MLEYECCLALVWATRRLRHYMTEYSFDRPVLTGRLMRWLV LTAEKEALAI TFALLRKFHRY IYGRHFKLLTDHKPLL
LADTETRWALRQF RPYVCMSKI ILLHSDHKPLTFLLQKSKT KTEENYAT $\square E K E M \square A \square I W$
KAERNYPAVEDELLS LLHFC
TSETEAKYH

WNYE $\square Y \mathrm{Y}$ QE LLAA $\square Y R A \square M E W C H Y \square M G G K F K$
STTDRELLAAIHVLQKYRHHFLGRKVT $\square Y$ TDHNNDTYWDS
$\square A G W P P C \square H \square I A A T A L L I K D A Q T L Y T T T P H A \square E G T \square K Q P S$
SKMELTALALRSAAQKLHPYFQAHPVHKPDLTGRMLQWAD SKMELTALALRSAAQKLRPYFQAH
 $\square$ Q Y
STTEKELLAVIFALEKFRSY
HVTDLEALA IVFALQKFHYFVYGMEVVVRTDHDPLT

TKYSVYDKELLAALECDREWRHYVCGSGKDTVWSDHRNDQ AVIDEK MLDA IVFALEKWHQFTFAREVTVYSDHKPD

STERKYHVNEDECLAHIQKVQRPVYFPRTS IGKSALANFL
TQGITAVADLILTAIVKVWEMAGKTVKRCVVPVEAFTRECW S E V L A D S K R SQUEKEALS VVFAVKKLHQYLYGRYFTLVTDHKPLL
KTEENYA $\operatorname{TNEKEMDA\square IW}$
S Q $\square E K E G L G L I F A V E K F H R Y L H G R K F T L R T D H K P L L$
NEAQRNYDHDSRLVIAHNSHPLLINDDFPEESMFLVKTPW PAECNYEDYDKELLAUVRC
STYEKEMLA ILMMAKKWESYLVDRHFVIKTDHQSDKYLLE
MLEYEMGYE LRHMDEYSMH LIS R LDLLR Y LIFDRPALTGRL STTKRELLAVDFALKKFHPF
A A QK $\square R L Y F Q A H P V V V L T D Q P L R N \square L H K P D \square T G R M L Q W A \square$
SEVLSETKDRYPQVQKLLYAVILTRRKDRHYSGRTAKWAV SQUEKEALALVYTVKKCHKFIFGRRFHLQTDHRPLLADFG TRYSQDEKELLAAQVFGLERNHQYDY

SAEKNYSQDEKEGLGLI
A A E L N NYPVRDKEALALI

TRYANDERELLAVV
LRTVAAAAXLVKEATK LTFGQT $\square$ SHNLAS LIHSPPDRWMT TPAEH
TRYANDERELLAVV
$H \nabla T D Q E A \square A V I F A V Q K F H Y F \square Y G V R T \square V R T D H A S \square T$ TTSAERNYH
LTVAERKYAVIQKEALDAFWSVKKFSQYLLGRKFIL
SQIEKEALALVYAVKKFHKFIFGRKFILNTDHKPLL
MLDYETRYVTIERYCLDAKSIRGSIVADHLASLPVS
$S L L E R T C C A L T W V A Q K \square R H Y L L L H T T Y M \square S R M D P \square K Y \square F Q$
$\square$ NKHERNYS $\square$ TE LDEC LAV DWSVRHFHQY $\square$ H
SAEHNYDDHNKEMLAA IKAFREWRPELIGLQRQESFEVLT


 GAQRNYTTMEKELLSVVMVCKEYRSMLLGADLHHFFT

UniRef90 M1W2W0 UniRef90-Q53RL5 UniRef90-Q8W0Y2 UniRef90 Q8TFI2 UniRef90 A5BSW9 UniRef90-V5HOH7 UniRef90-A5ADF7
UniRef90 Q60DB4 UniRef90 UPI00045D6252 UniRef90_A0A016UF53
UniRef90 A0A016TMZ3
UniRef90 UPI0002C3329E UniRef90-A5AV67 UniRef90-U6PFB9 UniRef90-G0NS5 UniRef90-Q817P9 UniRef90_Q2R411 UniRef90-V5GNV6 UniRef90 D6X3N4 UniRef90-A0A023EXQ4 UniRef90_-Q2R9A6 UniRef90_V2WNN8 UniRef90 F4QBK5 UniRef90-V2WSN7 UniRef90_UPI00045DEDF4 UniRef90 V5I9E9 UniRef90-Q8S653
UniRef90_A5AJK5
UniRef90-A5BQ1
UniRef90 V2WL36
UniRef90-A5C895
UniRef90-H3H6I6
UniRef90 UPI00046D9E72
UniRef90-U6PJR1
UniRef90_UPI00046BF222
UniRef90-H3H8Y1
UniRef90 J9K170
UniRef90-S4BHQ2
UniRef90-W4Z554
UniRef90 A5BDG9
UniRef90 Q60EL2
UniRef90-V5G273
UniRef90-Q8NFP
UniRef90 Q7XRV8
UniRef90_T2MJH3
UniRef90-A5C456
UniRef90 U5EX15
UniRef90-K7HFU9
UniRef90-H2ZYF8
UniRef90 U6H268
UniRef90 A5ACM9
UniRef90-Q5AY30
UniRef90-A5B326
UniRef90-J9KB96
UniRef90- A5ANV1
UniRef90-I1BL30
UniRef90-A5BCG2
UniRef90 A5BP88
UniRef90 Q8S463
UniRef90-K7GVS1
UniRef90-W4YGB2
UniRef90 W4VRD9
UniRef90-D0ABG8
UniRef90-E3N2U8
UniRef90 F2UB97
UniRef90-Q2QXA7
UniRef90_Q967T5
UniRef90_W4Z5S8
UniRef90 UPI000443D944
UniRef90-W4YLR5
UniRef90-W4ZAI4 UniRef90-UPI0003890F7F
UniRef90-A0A016TQP6
UniRef90-X1XTW9
UniRef90 X1XU31
UniRef90 UPI0002657370
UniRef90-A5CBL5
UniRef90_V8NGD9 UniRef90_UPIO002BC8457
UniRef90 X1XTY6
UniRef90-A0A015L1E1
UniRef90_B6Q9J0
UniRef90 W8BQZ8
UniRef90 ${ }^{-}$W4ZBK0
UniRef90-UPI00046E1EC5 UniRef90_A5AMM8 UniRef90-UPI000203950A UniRef90-A5BA48 UniRef90-UPI000388BE77 UniRef90 B1PJ54 UniRef90-UPIO00443DB8F UniRef90-X1XPJ2

S LTEFD DRYESPKA TKGQADADF $V$ VEHCDDS $\square$ GSVEVVPW

 K PVLS GRDAKWSAAHPVPDHDELPEDLPDEEVFSTEASTW



KH QLS A RERNW
D X W L S NARLTHYQHDCTD LLARVHGTQADLQDTTLPDAEV E $\square$ S E F G $\square E F Q P R \square S M K G Q V M A D F V L E Y S R R P S Q N H E S S K Q$ D H K N LT Y F

WF TETRELTAREARWCEM

AE WTECQEDMPEEKMEYWTMHFDGSKRLTGTGARVVLISP QWA Y VVLILQ $\square E \square D N H Y P R H P F V N F C T Q V S \square K R V Q K V R R D$ E LDMSLDUSFKPRTS DKSQA LADFVAEWTECQEPTEKUEHW

Y A H $\square$ A N Y LVT GE $\square$ PSEWNAQDRKHFFAK $\square$ HAYYWEEPF $\square$ F QRDT T P T Q Q A WVAK $\square$ M Q Y D Y

MRWLVS QKS $\square K G S \square V A D Y D R P V D D D F P D E E F V A M T S L L G W$ E $\square$ S EF G $\square E F Q P R \square S M K G Q V M A D F V L E Y S R R P S Q H H E S S K Q$
 S SKDLPVHAQNRLVRWAMTLMAYEYPRN
 D A R A $\square$ D D

K P M P T

DHRALEYF

E LSEFG DEFQPR LSMKGQVMADFVLEYSRXPNQHQESNEK $\square R Y \square F D K P T L T G R L M R W E E R P V D D D F P D E E F V A M T S L S G W$ D H K N LT Y H N L N S QR VLR WR C Y LEE Y S P NFHY Y G K D NVLA

UniRef90 M1W2W0 UniRef90_Q53RL5 UniRef90_Q8W0Y2 UniRef90 Q8TFI2 UniRef90 A5BSW9 UniRef90-V5H0H7 UniRef90_A5ADF7
UniRef90 Q60DB4 UniRef90_UPI00045D6252 UniRef90_A0A016UF53
UniRef90 A0A016TMZ3
UniRef90 UPI0002C3329E UniRef90-A5AV67
UniRef90_U6PFB9
UniRef90 G0NS51
UniRef90 Q8I7P9
UniRef90_Q2R4I1
UniRef90 ${ }^{-}$V5GNV6
UniRef90 D6X3N4
UniRef90_A0A023EXQ4
UniRef90_-Q2R9A6
UniRef90 ${ }^{-}$V2WNN8
UniRef90 F4QBK5
UniRef90-V2WSN7
UniRef90_UPI00045DEDF UniRef90 V5I9E9
UniRef90_Q8S653
UniRef90_A5AJK5
UniRef90-A5BQ1
UniRef90 V2WL36
UniRef90_A5C895
UniRef90_H3H6I6
UniRef90 UPI00046D9E72
UniRef90-U6PJR1
UniRef90_UPI00046BF222
UniRef90 H3H8Y1
UniRef90 J9K170
UniRef90_S4BHQ2
UniRef90_W4Z554
UniRef90 A5BDG9
UniRef90 Q60EL2
UniRef90_V5G273
UniRef90-Q8NFP1
UniRef90 Q7XRV8
UniRef90_T2MJH3
UniRef90-A5C456
UniRef90- U5EXI5
UniRef90-K7HFU9
UniRef90-H2ZYF8
UniRef90_U6H268
UniRef90 A5ACM9
UniRef90_Q5AY30
UniRef90_A5B326
UniRef90-J9KB96
UniRef90-A5ANV1
UniRef90_I1BL30
UniRef90-A5BCG2
UniRef90 A5BP88
UniRef90-Q8S463
UniRef90_K7GVS1
UniRef90 W4YGB2
UniRef90 W4VRD9
UniRef90_D0ABG8
UniRef90_E3N2U8
UniRef90 F2UB97
UniRef90-Q2QXA7
UniRef90_Q967T5
UniRef90 W4Z5S8
UniRef90 UPI000443D944
UniRef90-W4YLR5
UniRef90-W4ZAI4
UniRef90 UPI0003890F7F
UniRef90-A0A016TQP6
UniRef90-X1XTW9
UniRef90_X1XU31
UniRef90 UPI0002657370
UniRef90_A5CBL5
UniRef90_V8NGD9 UniRef90_UPI0002BC8457
UniRef90 ${ }^{-}$X1XTY6
UniRef90_A0A015L1E1
UniRef90_B6Q9J0
UniRef90 W8BQZ8
UniRef90- W4ZBK0
UniRef90_UPI00046E1EC5 UniRef90_A5AMM8

TSFFDGSVCTHDCGDGLVIISPRGACFKFAYPYATNNQAE

$\square$ C F M D G S S F VQD G $\square R$ Y A GAMVVDNREE $\square$ DAPGTSTRKAE

QLYF D GAARTRGAGAGVIFDTPSRPYSFSLMAVCSNNVAE DEYFD GAANQSRFG $\square G G L L I S P Q G D H \square P K S H H R L T N N G V E$

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

TGERLS YVLWDHFSASH
$N \boxtimes A E Y E A L$
$P \square Q G A V T V F T D G A K G G T G A A \square L N N Q R Y F V L T A C P S P Q H A E$ TMHFDGSKRLS GTGAGVVLISPTGERLSWIHFSASHNVAE

K Y CAD Q I IR K C VP K DEQQG $\square$ LSHCHENACGGHFAS QKTA
$C L Y F D G A A N Q L G Y G \square G V L L V S P Q G N H \square P R S R H P \square T N K \square V E$ E WWT L R VDGASHSFGSG $\square G L L E H \square E Q A \square R \square G F S A S N N E A E$ TMFFDGS LMK T GAGAGLLF $\square S P$ PGGKHRRLHFPASNNVAE

DCYTDGSSFVEDGVRYVGAAVVTNQEVLWAASGNSAQKVE


E WWT DGASRSSGSGVGLLLQSPTGEHLIRLGFPASNNEAE CMYFDGAANQ $\square G Y G \square G V L L V S P H S D H \square P R S \square H P \square T N N \square V E$ DAFSRLPCLHD

UniRef90 M1W2W0 UniRef90-Q53RL5 UniRef90-Q8W0Y2 UniRef90 Q8TFI2 UniRef90 A5BSW9 UniRef90-V5 VOH 7 UniRef90-A5ADF7
UniRef90 Q60DB4 UniRef90_UPI00045D6252 UniRef90-A0A016UF53
UniRef90 A0A016TMZ3
UniRef90 UPI0002C3329E UniRef90-A5AV67
UniRef90_U6PFB9
UniRef90- GONS51
UniRef90-Q817P9
UniRef90_Q2R411
UniRef90-V5GNV6
UniRef90 D6X3N4
UniRef90_A0A023EXQ4
UniRef90-Q2R9A6
UniRef90-V2WNN8
UniRef90 F4QBK5
UniRef90-V2WSN7
UniRef90_UPI00045DEDF4
UniRef90 V5I9E9
UniRef90-Q8S653
UniRef90-A5AJK5
UniRef90 A5BQ11
UniRef90 V2WL36
UniRef90-A5C895
UniRef90-H3H6I6
UniRef90 UPI00046D9E72
UniRef90-U6PJR1
UniRef90_UPIO0046BF222
UniRef90 H3H8Y1
UniRef90 J9K170
UniRef90-S4BHQ2
UniRef90-W4Z554
UniRef90 A5BDG9
UniRef90 Q60EL2
UniRef90-V5G273
UniRef90_Q8NFP1
UniRef90 Q7XRV8
UniRef90_T2MJH3
UniRef90-A5C456
UniRef90-U5EXI5
UniRef90-K7HFU9
UniRef90-H2ZYF8
UniRef90_U6H268
UniRef90 A5ACM9
UniRef90-Q5AY30
UniRef90-A5B326
UniRef90-J9KB96
UniRef90 A5ANV 1
UniRef90-I1BL30
UniRef90-A5BCG2
UniRef90 A5BP88
UniRef90-Q8S463
UniRef90-K7GVS1
UniRef90-W4YGB2
UniRef90 W4VRD9
UniRef90-D0ABG8
UniRef90-E3N2U8
UniRef90_F2UB97
UniRef90-Q2QXA7
UniRef90_Q967T5
UniRef90_W4Z5S8
UniRef90 UPI000443D944
UniRef90-W4YLR5
UniRef90-W4ZAI4
UniRef90 UPI0003890F7F
UniRef90-A0A016TQP6
UniRef90-X1XTW9
UniRef90-X1XU31
UniRef90 UPIOOO2657370
UniRef90-A5CBL5
UniRef90-V8NGD9 UniRef90_UPIO002BC8457
UniRef90 ${ }^{-}$Х1XTY6
UniRef90-A0A015L1E1
UniRef90 B6Q9J0
UniRef90 W8BQZ8
UniRef90-W4ZBK0
UniRef90-UPI00046E1EC5 UniRef90_A5AMM8

YEAVLKGLQLLKEVIE $\square$ MGDS LLVIS QLA GEYECKSDTLM YEALVNGLRIA EE LGGM
$\square I A \square A E A \square E R A G K R \square T V Y T D S R Y A Y A T \square H \square H G V I Y R E R G F$ YEALI $\square A L E M R \| D A L Q A Y G D S Q L I V R Q V N A V R N E N L M P Y H$ YEACITGLET GURQLE $\square H G D S N L V I Q Q T Q G \| W R T R D E K \square Y$

YEA $\square$ LS G $L G L S V S K V R \square Y S D S Q L A K D A$
R M
$\square H G \square R \square A \square S \square G \square R R L I V R G D S Q L V V N Q V M K E W S C N M T A Y R$ $\square A D A T V L R R E S A S M N D L S D S A Y V N A V Q M L K S S S V Y S Y G$ YEALLH GLR $\square A \square S R L I V R G D S Q L V V N Q V M K E W T C L D D N M M$

YEAC $\square$ T A $\square E \square G \square R$ QMEVFGDSNLVLRQDQGGD
YEA $\square L S A L A L S V S K \square R V Y S D S Q L V V K H V Q E E$ YEAKDTRM YEA LVNG GR $\square$ A $\square E L G G I R G D S Q L V I D Q V M K N S H C R D P K \quad M$
$\square I A \square M Q A \square R W A G K K \square N V Y T D S R Y A F A T V H V H G A L Y Q E R G L$ $\square L G \square E T A \square E \square G \square R Q M E V F G D S N L V L R Q \square Q G E W K T R D V K \square Y$ YEX $\square L S A \square A L S X S K \square R V Y S D S Q L V V R H \square Q E X Y E A K D A R \quad M$ YEAC $\square L G L E T G F R H M E V F D D S N L V L R Q \square Q G K T M D V K \square R P Y$

UniRef90 M1W2W0 UniRef90-Q53RL5 UniRef90-Q8W0Y2 UniRef90 Q8TFI2 UniRef90 A5BSW9 UniRef90-V5H0H7 UniRef90-A5ADF7
UniRef90 Q60DB4
UniRef90_UPI00045D6252
UniRef90-A0A016UF53
UniRef90 A0A016TMZ3
UniRef90 UPI0002C3329E UniRef90-A5AV67
UniRef90_U6PFB9
UniRef90 GONS5
UniRef90-Q817P9
UniRef90-Q2R411
UniRef90-V5GNV6
UniRef90 D6X3N4
UniRef90-A0A023EXQ4
UniRef90-Q2R9A6
UniRef90-V2WNN8
UniRef90-F4QBK5
UniRef90-V2WSN7
UniRef90-UPIO0045DEDF
UniRef90 V5I9E9
UniRef90-Q8S653
UniRef90-A5AJK5
UniRef90-A5BQ1
UniRef90 V2WL36
UniRef90-A5C895
UniRef90-H3H6I6
UniRef90 UPI00046D9E72
UniRef90 U6PJR1
UniRef90_UPIO0046BF222
UniRef90 H3H8Y1
UniRef90 J9K170
UniRef90-S4BHQ2
UniRef90-W4Z554
UniRef90 A5BDG9
UniRef90 Q60EL2
UniRef90-V5G273
UniRef90_Q8NFP1
UniRef90 Q7XRV8
UniRef90_T2MJH3
UniRef90-A5C456
UniRef90 U5EX15
UniRef90-K7HFU9
UniRef90-H2ZYF8
UniRef90_U6H268
UniRef90 A5ACM9
UniRef90-Q5AY30
UniRef90-A5B326
UniRef90- J9KB96
UniRef90 A5ANV 1
UniRef90-I1BL30
UniRef90_A5BCG2
UniRef90 A5BP88
UniRef90- Q8S463
UniRef90-K7GVS1
UniRef90 W4YGB2
UniRef90 W4VRD9
UniRef90-D0ABG8
UniRef90_E3N2U8
UniRef90 F2UB97
UniRef90 Q2QXA7
UniRef90_Q967T5
UniRef90 W4Z5S8
UniRef90 UPI000443D944
UniRef90- W4YLR5
UniRef90 W4ZAI4
UniRef90 UPI0003890F7F
UniRef90 A0A016TQP6
UniRef90-X1XTW9
UniRef90-X1XU31
UniRef90 UPI0002657370
UniRef90-A5CBL5
UniRef90-V8NGD9
UniRef90-UPI0002BC8457
UniRef90 ${ }^{-}$Х1XTY6
UniRef90-A0A015L1E1
UniRef90 B6Q9J0
UniRef90 W8BQZ8
UniRef90 ${ }^{-}$W4ZBK0
UniRef90-UPI00046E1EC5 UniRef90_A5AMM8
UniRef90-UPI000203950A
UniRef90-A5BA48
UniRef90-UPI000388BE77 UniRef90 B1PJ54
UniRef90-UPI000443DB8F
UniRef90-X1XPJ2

EKCQELMQEFRLVT LKKVV SREQNDEANDLA EAYRDEVRRDEDKFYGLELNHDARRYNETADELAK

K RLLS A VT R P X MVAVVHTPGHQGHRGNRAADQTAK

QRVKYLMARFQEVHVSHIP HAYLDDLLSDGFDV LRY I

H LP R A E N Q F A D A L A T

NE ILDLLAAPKK $\square$ A $\square \square H C L G H Q K T R G N N \square A D Q T A R$ ARY $\square$ AK $V R N T L Q Q F T E W T \square E K \square K R A D N R R A D A L A$

SENQGLLNQRHA $\square Y$ Y $\square$ G $\square$ RAHSNLPGNMMAD $A$ YRQEAA PSDVFVEH

K T R D L LVARFDD LRYVHMP RAQNRFADALAT
A R Y $\square$ A K V $V$ E T $\square Q Q F T E W T \square E K \square K R A N N R R A D A D A$



HAY $\square E \square L A R F E D L R Y T \quad H L P R X Q N Q F A D A \square A T$

XRYLTKVKDTLQQFTEWXVEK $\square$ RRTENGXADA $\square$ A
HANLEMLVARVD DLRYV HLPRAQNRFVDALASS


lupas 21
lupas_14
lupas_28
jnet conf sol25 sol5 sol0
jhmm
jpssm

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm




UniRef90_A5AT81 UniRef90-M5CH75 UniRef90-Q7XXG9 UniRef90_X1WJU1 UniRef90 A5B004 UniRef90_U6JNG4 UniRef90-UPI0002657538 UniRef90-UPI0003EA91D4 UniRef90_I1EMP9
UniRef90-X1XU52
UniRef90-Q6UUK4
UniRef90 UPI00026519B8
UniRef90_A5ASP0
UniRef90-A5BX26
UniRef90_I3KZM9




[^1]

UniRef90_A5AT81 UniRef90-M5CH75 UniRef90-Q7XXG9 UniRef90-X1WJU1 UniRef90_A5B004 UniRef90_U6JNG4 UniRef90_UPI0002657538 UniRef90-UPI0003EA91D4 UniRef90-I1EMP9
UniRef90-X1XU52
UniRef90 Q6UUK4
UniRef90 ${ }^{-}$UPI00026519B8
UniRef90_A5ASP0
UniRef90-A5BX2
UniRef90-I3KZM9

LHLLQEVVFHLLRKYDMKSNPSKCAFGVSVGKFJLRFMVVQRG EVLQHLQEMQLFCKGSKCEFHQTTVEYLGIIVSDKGFSGD

LERLQSYGLTCQPKKCTFGVAQ $\quad$ KF $\square G H V V D G E G \square D R E$ NHLHCVLI ANLKLVLDRLRDAGLTLNSKKYRFLLRSVTFLGHAVSSNG K NLEAFLSRCREVGLKLNEKKFQYCQPSVKFLGHVVGKDG TNLQAVLACICRAGLRLNPRKCELLRREVTFLGHVVGPRG NQLTDVLKRLDDAGLTMKDKKCTFGARECTYGGYQIGKGG AHFDKVLEWLKRFELTCNTKKCK DGLREDSFLGHQVDQKQ DAD D K KVVERTRKYGLKMN
METAKQEGLVFNSSKCTDKKEADSYFGSMYTRSGПFPPDP S HLQQVMRILRQEKDY $\quad$ NLKKCSFMTSADMF LGLVVSAKG $K V F H L L R K Y G M K D N P A K C A F S V S S G K F R R F M V K T V A N M D A$ ANTMAVLHHLAEHGHKVSQHKLQLWSPKVTYLGHTLTGEG





[^2]

UniRef90_A5AT81 UniRef90-M5CH75 UniRef90-Q7XXG9 UniRef90-X1WJU1 UniRef90_A5B004 UniRef90-U6JNG4 UniRef90_UPI0002657538 UniRef90-UPI0003EA91D4 UniRef90-11EMP9
UniRef90-X1XU52
UniRef90 Q6UUK4
UniRef90 ${ }^{-}$UPI00026519B8
UniRef90_A5ASP0
UniRef90-A5BX2
UniRef90-13KZMs


340
A NPTKHYFLETNASGAALGAVLSQCQEDSRLHPDCY
ANP GK Y Y L L Y PLPGAETELHCNASSQGFGSILSQKQSDGKFHPDFFYSHR PDFSKTFEIECDASEKQP 1 AA YFSEKLNGAALNYPKYD
FDPTCETTLSVDASSYGDGAVLDQNQRPVAFSSTSLTETQ PDPR L P PNFNQTF LLQTDASGVGVGADLSQGEENDDEGPVAYFSKY PDYSKPFCLQTDASEIGAGAVLFQRGDRPEERCI PQKG $\square$ PFRLYLSAGRVGKW
FDPKKETTVEVDASMKGLGACLLQDGKPVAFASKSLSNAQ TDFSKVFEVACDASNVGUGGVLSQEGHPIAFFSEKLNEAK



UniRef90 A5AT81 UniRef90- M5CH75 UniRef90-Q7XXG9 UniRef90-X1WJU1 UniRef90_A5B004 UniRef90_U6JNG4
$\square E M E K \square A Y A L V M A S R K \square K H Y F Q A H K V I \quad V P P Q Y P R \square S K W A A$ T
KELYALVRALETWQHYLWPKEFVIHADH
SRYAQ $\square E K E L L A \square V Y A C E H F K F F \square Q G Q Q$
STVEKECLA I ILA DKHFSAY LIGRSF IIQTDHRALQWDH SYASKKFSEIQTRYAAVERECLA IIWATDKFRPYLETRRF

S NYSNDERETDALVFGlVRFHTY乌FGK QKYSIYDKEFYVVVQTLRYWHHYL
QTALALDRTAAQKLRPYFQAHPDTVFTNQPDRNVQHKSDQ ACAAAAEAYLTHARQLSYVGULLSQSHDSIEKCGQLNPGT
lupas 21
lupas_14
lupas_28

## jnet <br> conf

sol25
sol5
sol0
solo
jhmm
jpssm

UniRef90 A5AT81 UniRef90-M5CH75 UniRef90-Q7XXG9 UniRef90-X1WJU1 UniRef90_A5B004 UniRef90_U6JNG4
UniRef90-UPI0002657538 UniRef90 UPI0003EA91D4
UniRef90_I1EMP9
UniRef90-X1XU52
UniRef90-Q6UUK4
UniRef90 UPI00026519B8
UniRef90_A5ASP0
UniRef90-A5BX2
UniRef90-13KZM9

EPFDLHFDARTA $\square$ KS QVLADFVAE WT LVFAPETELVEQLW

E

TGRM $\square R W A \square E D N E Y G \square D Y Q P R \square S Q K G Q V M P D K K W T P D D W W$ $L L A S P D E G Y P H C C M T K L D E E T K P R A D I Y S T P Q A G F \square D \square F V$
lupas_21
lupas_14
lupas_28
jnet
conf
conf
sol25
sol5
sol0
jhmm


UniRef90 A5AT8 UniRef90-M5CH75 UniRef90_-Q7XXG9 UniRef90-X1WJU1 UniRef90 A5B004 UniRef90_U6JNG4
UniRef90-UPI0002657538 UniRef90 UPI0003EA91D4 UniRef90-11EMP9
UniRef90-X1XU52
UniRef90-Q6UUK4
UniRef90 ${ }^{-}$UPI00026519B8
UniRef90_A5ASP0
UniRef90-A5BX2
UniRef90-13KZM9

VMSSDGSWSHKGAG $\square$ AA VLISPNGRYAARLQFNTTNNAAE

```
YEA\LLGG\RRAKKRRLLIRTDSKLVAGHVDKSFEAKEE G M
```



UniRef90 A5AT81 UniRef90-M5CH75 UniRef90-Q7XXG9 UniRef90-X1WJU1 UniRef90 A5B004 UniRef90_U6JNG4
UniRef90-UPI0002657538 UniRef90-UPI0003EA91D4 UniRef90-11EMP9
UniRef90-X1XU52
UniRef90_Q6UUK4
UniRef90 UPI00026519B8
UniRef90_A5ASP0
UniRef90-A5BX2
UniRef90-13KZM9

K R Y LIEAVRSTEKCFTGDTVEHLPRGQNEEADALAKS
$K Y L L K V Q E S \square S R L G E W V I E K \square P R G E N V Q A D A \square A$ KALLQV1]T LPKKLADCKCAAHQKDEGNNFADQAAK
lupas_21
lupas_14
lupas_28
jnet
conf
conf
sol25
sol5
sol0
jhmm


[^0]:    

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

[^2]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol25
    sol5
    sol0
    jhmm
    jpssm

