UniRef90 BOKK32
Uniefo- 2 FJRC UniRef90-F2JRC9
UniRef90 G703S UniRef90 C8X20 UniRef90-L1QBN8 UniRef90-U2DOY2 UniRef90_D8GPU3 UniRef90_G8LTZO UniRef90-R5J6B8 UniRef90 ${ }^{-E 0 E 2 V}$ UniRef90-O895V7 UniRef90-B5EGB1 UniRef90 Q8GDP2 UniRef90_W0EFV9 UniRef90-E3PT29 UniRef90-I3VTT6 UniRef90-N1Z1Q4 UniRef90-UPIOOO4792684 UniRef90-TOID06 UniRef90_S1NE77 UniRef90-E5Y613
UniRef90-M7U319 UniRef90_B1C776 UniRef90-S6EY63 UniReffo-WOJKR8 UniRef90 P03833 UniRef90_A8MKY3 UniRef90-R6PMK9 UniRef90-F7NM90 UniRef90-UPIO004797F63 UniRef90-R9M3R1 UniRet90_EOQKL4 UniRef90_SOFNH2 UniRef90-UPIOOO3826944 UniRef90-S7TWU2 UniRef90_UPIO00424A6F9 UniRef90-M2CB67 UniRef90-D7JFG9 UniRef90-C3J9P3
UniRef90 D4JZFO UniRef90_UPIooo3B40682 UniRef90-R5X2E0 UniRef90_UPIo0047587CC UniRef90-G1UUO2 UniRef90 R6GSY7 UniRef90-E3CV28 UniRef90-Q2LYH6 UniRef90-G9YH166 UniRef90 R5SES5 UniRef90-B6YR89 UniRet90-U2F6Q6 UniRef90_GOVLA3 UniRef90-R6CW84 UniRef90-F2N971 UniRef90 A6NQU4 UniRef90-EORNLO
UniRef90 LOF353 UniRef90-D1ARG3 UniRef90-R5IQ41 UniRef90-EGUB54 UniRef90-R6TB62 UniRef90-C5EHC1 UniRef90-D1BNW1 UniRef90-R5AWT3 UniRef90-Q24860 UniRef90_Q3YODO UniRef90-GAAO10ZMM5 UniRef90-A5TU51 UniRef90-R6RDE5 UniRef90-F1T485 UniRef90_K9T5S1
UniRef90 G4D243 UniRef90-Q3A7K7 UniRef90-KOB1Z5 UniRef90-D4TRE4 UniRef90-M7N7T3 UniRef90-×1FCP8 UniRef90-U2CPP9 UniRef90-C4UFL2 UniRef90-1018Z1
UniRef90_R5H7N6

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## GTIS <br> G $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ $G$ <br> G

GADGT VGANK ${ }^{20}$ QAT

TGDNTDLFAQGYFS GDNTDLFAQGYFSY GNHTDKYAQAYFAY


GTVRCKFWGGGGSDGT GTTACKFWGGLGSDGT
$G T V Q C K F W G L G A D G T$

G





## QUERY UniRef90_BOK324 UniRef90-F2JRC9 UniRef90 C8X201 UniRef90-L1QBN8 UniRef90-U2DOY2 UniRef90 G8LTZO UniRef90-R5J6B8 UniRef90-FJJGA1 UniRef9-EOE2VO7 UniRef90-B5EGB1 UniRef90 Q8GDP2 UniRef90_W0EFV9 UniRef90-E3PT29 UniRef90-I3VTT6

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UniRef90-P03833 UniRef90_A8MKY3 UniRef90-R6PMK9 UniRef90-UPIo004797F63 UniRef90-R9M3R1 UniRet90_EOQKL4 UniRef90_SOFNH2 UniRef90-UPIO003826944 UniRef90-S7TWU2 UniRef90_UPIO00424A6F9 UniRef90-M2CB67 UniRefofo-D7JFG9 UniRef90-C3J9P3
UniRef90-D4JZFO UniRef90-UPIO003B40682 UniRef90-R5X2E0 UniRef90-UPIO0047587CC UniRef90-G1UUO2 UniRef90 R6GSY7 UniRef90-E3CV28

UniRef90 G4D522 UniRef90-Q2LYH6 UniRef90-G9YH16 UniRef90-R7EWK7 UniRef90-R5SES5 | UniRef90 B6YR89 |
| :--- |
| UniRet90 - $2 F 606$ | UniRef90-GOVLA3 UniRef90-R6AAL9 UniRef90-R6CW84 UniRef90-F2N971

UniRef9O-A6NQU4 UniRef90-EORNLO UniRef90-LOF352 UniRef90-D1ARG3 UniRef90-R5IQ41
UniRef90 E6UB54 UniRef90-D3LT36 UniRef90_R6TB62 UniRef90-C5EHC1 1
UniRef90 D1BNW1 UniRef90-C8W8G1 UniRef90-R5AWT3
UniRef90-Q24860 UniRet90_Q3YODO UniRef90-G4Q701 UniRefolo-AOOO 10 ZMM 5 UniRef90-A5TU51 UniRef90-R6RDE5 UniRef90-F1T485 UniRef90_K9T5S1
UniRef90 G4D243 UniRef90-Q3A7K7 UniRef90-KOB1Z5 UniRef90-D4TRE4 UniRef90-M7N7T3 UniRef90-×1FCP8 UniRef90-U2CPP9 UniRef90_C4UFL2 UniRef90-I018Z1
UniRef90_R5H7N6

DSKKSGGTT ${ }^{50}$ SHTRFGEKP ${ }^{60}$ DSKKSGGVTVSHLRFGKKP -ーー
 STYYVNRAD

70 VA C CHNPAY
$\stackrel{80}{V}$

## S Y V

[^0]S K K S G GI TV S H L R F G K K P
$S K K S G G I V G H L R F G K N P$
SKKSGGATMSHLRRGGRTP
SKK SGGSTVSHLRFGRSP
SKKSGGUTVSHLRFGKSP

SKK S G GUT I S HLARFGKK P
St

SKKSGGVTVSHLRFKGKKL

SKKSGGTTISHLRFGQKP


SKKSGGFTVSHLRFGKSP
SKKSGGITI SHLRFGKVP
SKKSGGVTVSHLRFGEEP

SKKSGGVTV SHLRRGKKP
SKKSGGTTISHLRFGKKP
SKKSGGDTMSHLRFGKKP


SKK S G GVVTVSHLRFGDKP

SKKSGGVVTMSHLRFGKTP
$S K K S G G V T V S H L R F G K T P$
DSKKSGGVTVSHLRFGKQP
SKKSGGFTCSHLRFGDHP
SKKTGGVTISHLRFGDKP
SKKSGSMTVSHLRFGPNP
SKKSGGYTSSHLRFGDCP
SKKSGGFTCSHLRRFGDCP
SKKSGGFTVSHLRFGKQP
SKM
SKKSGGVTVSHVRFSPNR
AKKSGGVTVSHVRFSPNR
AKKSGGVKSHRFGKNP
TKKTGGUT DSHLRFGDNP
SKKSGGYTCSHLERFGDAQ
SKKSGGFTSSHLRFGDKP
SKKSGGLTVSNLRFGKAP
SKKSGGVTISHLRFGPDP

SKKTGGVVTISHLRFGOKA
SKKAGTVTVSHLRFGKKP
SKKSGGITISHVRFGKKP
SKKSGGVTRSHLRFSKDP
GKKSGGVTRSHLRFGKKP
GKKSGGVTVSHLRFGKTP
SKKTGGVTMSHLRFGDSK
GKKSGGVTKSHLRFGNSP
SKKSGGVTMSHLRRFGKNP
SKKTGGLTDSHLRFGDHK
SKKSGGFTCSHLRFGNHP
AHKSGGVTVSHLRFGQKP
SKKSGGLTVSHLRFGDTP
SKKSGGITVSHLRFGPDP



| $S$ | $K$ | $K$ | $G$ | $G$ | $V$ | $T$ | $V$ | $S$ | $H$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $F$ | $G$ | $D$ | $A$ | $P$ |  |  |  |  |  |
| $R$ | $S$ | $G$ | $A$ | $V$ | $V$ | $S$ | $H$ | $L$ | $R$ | $G$ |

    S K K S G G V \(T\)
    KKAGSITTSHLREGKA
    Skk igisivshlafgk
    S K K S G S V TV \(V\) S H L \(L\) R F G S Q P
    SKKSGGVTMSHLRFGKSP
    KKAGAQTVSHLRFGKEP
    
SKKS G GLL I S HL RFGNS P
D S K K A G GLLTVSHLRDSPTP
SKK S GARTI SHLLRFGPRP


## QUERY

UniRef90_B0K32 UniRef90-F2JRC9 UniRef90 C8X20 UniRef90_L1QBN8 UniRef90_U2DOY2 UniRef90_D8GPU3 UniRef90_G8LTZ0 UniRef90_R5J6B8 UniRef90_F0JGA1
UniRef90 E0E2V0 UniRef90_Q895V7 UniRef90_B5EGB1 UniRef90_S7TFN4 UniRef90_Q8GDP2 UniRef90_W0EFV9
UniRef90- E3PT29 UniRef90-I3VTT6 UniRef90-N1Z1Q4 UniRef90-UPI0004792684 UniRef90_T0ID06 UniRef90_S1NE77 UniRef90_E5Y613 UniRef90-M7U319
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UniRef90_R9M3R1
UniRef90_E0QKL4 UniRef90_S0FNH2 UniRef90_UPI0003826944 UniRef90_S7TWU2 UniRef90_UPI000424A6F9 UniRef90_M2CB67 UniRef90_D7JFG9 UniRef90_C3J9P3 UniRef90_D4JZF0 UniRef90_UPI0003B40682 UniRef90_R5X2E0 UniRef90_UPI00047587CC UniRef90_R6GSY7 UniRef90_E3CV28 UniRef90_G4D5Z2 UniRef90_Q2LYH6 UniRef90_G9YH16 UniRef90_R7EWK7 UniRef90_R5SES5
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UniRef90_Q24860 UniRef90_Q3Y0D0 UniRef90_G4Q701 UniRef90_A0A010ZMM5 UniRef90_A5TU51 UniRef90_R6RDE5 UniRef90_F1T485 UniRef90-K9T5S1 UniRef90-G4D243 UniRef90_K0B1Z5 UniRef90_D4TRE4 UniRef90_R9K0A8 UniRef90-M7N7T3
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UniRef90-U2DOY2 UniRef90-D8GPU3 UniRef90_G8LTZO UniRef90-R5J6B8 UniRef90-FOJGA1 UniRef9-EOE2VO7 UniRef90-B5EGB1 UniRef90 STTFN4 UniRef90_Q8GDP2
UniRef90 WOEFV UniRef90-E3PT29 UniRef90-I3VTT6 UniRef90-N1Z1Q4 UniRef90-UPIOOO4792684 UniRef90_TOID06 UniRef90_S1NE77 UniRef90-E5Y613 UniRef90-M7U319
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UniRef90 WoJKR8
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UniRef90_R5H7N6


170
180
190
200


## QUERY

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UniRef90_E6UB54 UniRef90-D3LT36 UniRet90_R6TB62 UniRef90-C5EHC1 UniRef90_D1BNW1 UniRef90_R5AWT3
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UniRef90 D4TRE4 UniRef90-R9K0A8 UniRef90-M7N7T3
UniRef90-X1FCP8 UniRef90-U2CPP9 UniRef90-C4UFL2 UniRef90-1018Z1
UniRef90_R5H7N6

210
220
230
240
FKYPDSWKDAPAETKAEPMTNEFFKNVVKPDLTQQGDKLP VEVP AS WADAEDEPKEERQAPDFVKNVADVMNRLEGDKLP
 $V A Y P E S W K D A Q D E A R P E S G E P D F D K N V A R P I L A Q K G D D D P$ $\checkmark$ A $V$ V

 $V$ K V P E E WA S LLE P E T A K V D E NP E F V K K L ML P I N S L K G D S L P

 I E YPES WRDAD DERRLDAQQMP DYMREMVFP ILLRQK GD D L P P V A Y P A S W A D A A D D A A K A L N E P E F V S K V M K P ML A Q K G D A L P
 $V$ EVPA A WA S V A A D S A K NE D E P D F I K N I LDR PVNA Q A G D D L P




 I 1 D V Pr Pr A $V$ V $V$ V P E S W W K H P V $V N V P$ A S WA NAE E E K LDPA K E LDP D F I K R I QLPMA RHK G D E L P


-


| $I$ | $D$ | $V$ | $P$ | $D$ | $S$ | $W K$ | $D$ | $A$ | $K$ | $E$ | $D$ | $G$ | $K$ | $I$ | $E$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $A$ | $M$ | $P$ | $D$ | $F$ |  |  |  |  |  |  |  |  |  |  |  |
| $A$ | $V$ | $P$ | $A$ | $A$ | $W$ | $A$ | $N$ | $A$ | $E$ | $D$ | $S$ | $Q$ | $V$ | $C$ | $N$ | $S$ |
| $H$ | $L$ | $L$ | $P$ | $P$ | $Y$ |  |  |  |  |  |  |  |  |  |  |  |

I $\operatorname{P}$ V $V$ K A E W WA $N$ L

 VEVP ME WAVI ETVADTSNDAPEFI RKVVRPVNAQRGYGLP V K Y P A S WA D T T E GADVCHCCD D D Y I R E I V R P I LA Q Q G D K L P I E V $V$ P D E WK N A V A N E K F E V V K V P G E V T S S S F D K P P V V S P E A P A F V I E V P E E WK S A D DVA D Y IVK GAS E FVVN N I LVVPVNRQE GN D L P


 $V$ EVPA H WA QAA GE ERDQPEMERYLLRDIQDPIAAAQR GD S L P $V$ V P A A WA DA VID E P V D M S K H T K F FFR E F S DP V N A L E G D D L P
 $V$ K V K K P E WT $N$ N L T G K A




 | $V$ | $T$ | $V$ | $D$ | $P$ | $A$ | $W$ | $S$ | $N$ | $P$ | $V$ | $D$ | $K$ | $D$ | $I$ | $V$ | $D$ | $S$ | $G$ | $K$ | $P$ | $E$ | $F$ | $V$ | $K$ | $R$ | $I$ |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $E$ | $P$ | $I$ | $N$ | $A$ | $V$ | $K$ | $G$ | $D$ | $E$ | $L$ | $P$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $A$ | $V$ | $P$ | $A$ | $R$ | $W$ | $A$ | $D$ | $I$ | $I$ | $P$ | $E$ | $E$ | $K$ | $I$ | $D$ | $E$ | $N$ | $L$ | $P$ | $K$ | $W$ | $I$ | $R$ | $K$ | $I$ | $Q$ |
| $M$ | $P$ | $V$ | $N$ | $A$ | $M$ | $K$ | $G$ | $D$ | $N$ | $I$ | $P$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



 $V$ DVPA S WK D N H A A K P G C E S C C P S F F V Q N I A A P L $V$ K V P A E W A N A P L E T V


 $V$ N V P E A WK TAAE DN R V
 I $\operatorname{V}$ L D D A S WLLE G E D T L A A E K D L


 $V$ D YPRQTTNSRAFKPDMSGGTDFVTDVLGRILAGAGEELPB $V$ K IIP G K A D S K L A K H L S V P E A P E F V



250

QUERY
UniRef90_B0K324
UniRef90_F2JRC9 UniRef90 C8X201 UniRef90_L1QBN8 UniRef90_U2DOY2 UniRef90_D8GPU3 UniRef90-G8LTZ0
UniRef90-R5J6B8 UniRef90 F0JGA UniRef90 E0E2V0 UniRef90-Q895V7
UniRef90-B5EGB1 UniRef90_S7TFN4 UniRef90- Q8GDP2 UniRef90_W0EFV9 UniRef90_E3PT29 UniRef90 I3VTT6 UniRef90_N1Z1Q4 UniRef90_UPI0004792684 UniRef90_T0ID06 UniRef90_S1NE77 UniRef90-E5Y613
UniRef90-M7U319 UniRef90-B1C776 UniRef90_S6EY63
UniRef90 W0JKR8 UniRef90_P03833 UniRef90 L7ES37 UniRef90_A8MKY3 UniRef90_R6PMK9 UniRef90_F7NM90 UniRef90_UPI0004797F63 UniRef90_R9M3R1 UniRef90_E0QKL4
UniRef90 S0FNH2 UniRef90_UPIO003826944 UniRef90_S7TWU2 UniRef90_UPI000424A6F9 UniRef90-M2CB67 UniRef90-D7JFG9 UniRef90-D4JZF0 UniRef90_UPI0003B40682 UniRef90_R5X2E0 UniRef90_UPI00047587CC UniRef90-G1UU02 UniRef90_R6GSY7 UniRef90_E3CV28 UniRef90_G4D5Z2 UniRef90_Q2LYH6
UniRef90_G9YH16 UniRef90_R7EWK7 UniRef90_R5SES5 UniRef90-B6YR89
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UniRef90-R6CW84 UniRef90-F2N971 UniRef90_A6NQU4 UniRef90-E0RNLO UniRef90 D1ARG3 UniRef90_R5IQ41 UniRef90-E6UB54 UniRef90-R6TB62 UniRef90_C5EHC1 UniRef90-D1BNW1 UniRef90_R5AWT3 UniRef90_Q24860 UniRef90_Q3Y0D0 UniRef90_G4Q701 UniRef90_A0A010ZMM5 UniRef90_A5TU51 UniRef90_R6RDE5 UniRef90 F1T485 UniRef90_K9T5S UniRef90_G4D243 UniRef90 Q3A7K7 UniRef90-K0B1Z5
UniRef90-D4TRE4 UniRef90-R9K0A8 UniRef90-M7N7T3 UniRef90-X1FCP8 UniRef90_U2CPP9 UniRef90 C4UFL2 UniRef90-1018Z1
UniRef90_R5H7N6

VSAFEADGRFPGG $\left.\begin{array}{lllllllllll}V & S & A & F & R & E & D & G & F & P & P \\ V & S & A & F & N & E & D & G & T & F & P\end{array}\right]$ G | $V$ | $S$ | $F$ | $N$ | $E$ | $D$ | $G$ | $F$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $P$ |  |  |  |  |  |  |
| S A F A E N G S |  |  |  |  |  |  |  | $V$ S A F E P D G T F P V

 TSAFME DGTFPDLG

$V$ SAFME DGT F PA G $V$ SAFKEDGTFEMG $V$ S A F T E D GTVPDLG V S AFSHDGTMPS V SAFREDGHFPQG $V$ S S FME D GTFPDVG $V$ S A F S P D GVF P V S A F T P D GI F P T | $V$ | $S$ | $V$ | $F$ | $T$ | $A$ | $D$ | $G$ | $T$ | $F$ | $P$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $L$ | $G$ |  |  |  |  |  |  |  |  |
|  | $S$ | $A$ | $F$ | $V$ | $E$ | $D$ | $G$ | $T$ | $H$ | $P$ |
| $L$ | $G$ |  |  |  |  |  |  |  |  |  | $\begin{array}{lllllllll}T & S & A & F & V & E & D & G & T\end{array} H_{P} P L G G$ $V$ SAF ME DGTFP LG

 | $V$ | $S$ | $A$ | $F$ | $R$ | $E$ | $D$ | $G$ | $F$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $N G$ |  |  |  |  |  |  |  |  |
| $V$ | $A$ | $F$ | $R$ | $E$ | $D$ | $G T$ | $F$ | $P$ | $Q$ | $V$ S A F MVA GEMP LG $V \begin{array}{lllllllll}V & A & F & E & P & D & G & V & P \\ V & L & A & G & T & P & A & G & F \\ V & P & T\end{array}$

 $V$ SAFMEDGTFMAG V S T F RENGEFPS G V S AFMEDGTFPSG $\vee$ S AFMEDGRFP L G \begin{tabular}{l|lll|l|lllll|lll}
$V$ \& $S$ \& $A$ \& $V$ \& $E$ \& $D$ \& $G$ \& $S$ \& $F$ \& $P$ \& $V$ \& $G$ <br>
$V$ \& $S$ \& $V$ \& $F$ \& $V$ \& $E$ \& $D$ \& $G$ \& $T$ \& $V$ \& $P$ \& $L$ \& $G$

 

$V$ \& $S$ \& $V$ \& $F$ \& $V$ \& $E$ \& $D$ \& $G$ \& $T$ \& $V$ \& $P$ \& $L$ <br>
$V$ \& $S$ \& $A$ \& $L$ \& $V$ \& $E$ \& $D$ \& $G$ \& $T$ \& $F$ \& $P$ \& $L$ <br>
$G$

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

$V$ \& $S$ \& $T$ \& $Y$ \& $E$ \& $D$ \& $G$ \& $N$ \& $V$ \& $P$ \& $S$ <br>
$V$ \& $S$ \& $A$ \& $F$ \& $V$ \& $E$ \& $D$ \& $G$ \& $T$ \& $L$ \& $P$ \& $N$ \& $G$
\end{tabular} $V \operatorname{S}$ A F V E D D G TLLPN G

 V S A F MTD GTFMSG V S T F V E D G R M P N \begin{tabular}{l|lllllllll}
$V$ \& $S$ \& $F$ \& $K$ \& $E$ \& $D$ \& $S$ \& $F$ \& $P$ \& $S$ <br>
$V$ \& $S$ \& $A$ \& $F$ \& $V$ \& $E$ \& $D$ \& $G$ \& $T$ \& $W$ <br>
$V$ \& \& $G$

 

$V$ \& $S$ \& $A$ \& $F$ \& $V$ \& $E$ \& $D$ \& $G$ \& $W$ \& $W$ <br>
$V$ \& $S$ \& $A$ \& $F$ \& $V$ \& $A$ \& $N$ \& $G$ \& $E$ \& $W$ <br>
$V$ \& $Q$ \& $G$

 $V$ S A LIPVDGT FP T 

$V$ \& $S$ \& $F$ \& $K$ \& $E$ \& $D$ \& $G$ \& $W D N G$ <br>
$V$ \& $S$ \& $A$ \& $F$ \& $R$ \& $E$ \& $D$ \& $T$
\end{tabular} $V$

$V$
$V$
S A M M D P A G F
$V$ $V$ S A F H A D G T 1 P Q G $V$ S A LPVD GTYPS G V S TFMEDGSFPNG $V$ S A L P P D G $\square F P$ T $\begin{array}{lllllllll}V & E & F & Y & A & D & S & Y & P \\ V & M \\ \text { S A F K A D G T Y P Q G }\end{array}$ $V$ S A F K A D GTYP Q G $V$ SAFYED GTWEQG $\begin{array}{llllllllll}V & S & A & R & E & D & G & L & P & Q \\ V & S & G & I & D & D & R & W & T & G\end{array}$ $V$ S T WKE D GTFPSG

 \begin{tabular}{l|lllllllllll}
$V$ \& $S$ \& $A$ \& $F$ \& $Y$ \& $A$ \& $D$ \& $G$ \& $E$ \& $F$ \& $E$ \& $L$ <br>
$V$ \& $G$ <br>
$S$ \& $A$ \& $F$ \& $H$ \& $V$ \& $D$ \& $G$ \& $T$ \& $F$ \& $C$ \& $Q$ \& $G$

 $V$ S A L P D D GTYYP C G $V$ S A F K E D G T V P V $G$ V A F Y E D GTFENG $V$ S D F V SAFREDGTMPSG V S A F S A D GTYPQG 

$V$ \& $S$ \& $F$ \& $Y$ \& $E$ \& $D$ \& $G T$ \& $M P Q$ \& $G$ <br>
$V$ \& $S$ \& $T$ \& $F$ \& $Y$ \& $E$ \& $D$ \& $G T$ \& $L$ <br>
$V$ \& $A$ \& $G$

 

$V$ \& $S$ \& $T$ \& $F$ \& $Y$ \& $E$ \& $D$ \& $G$ \& $T$ \& $L$ \& $P$ \& $A$ <br>
$V$ \& $S$ \& $A$ \& $F$ \& $H$ \& $V$ \& $D$ \& $G$ \& $Q$ \& $F$ \& $E$ \& $L$ <br>
\hline

 $V$ STF K ED GT WP L G $V$ SKFAA DGFMPMG V GT LVA NGMMPLG V GQLMANGTFPSG $V$ S AL P E D GTYYPS $V$ S A F Y E D G T F E N G 

$V$ \& $S$ \& $V$ \& $F$ \& $H$ \& $V$ \& $D$ \& $G$ \& $T$ \& $A$ \& $P$ \& $Q$ <br>
$V$ \& $S$ <br>
$V$ \& $V$ \& $F$ \& $H$ \& $A$ \& $D$ \& $G$ \& $Q$ \& $Y$ \& $E$ \& $L$ \& $G$
\end{tabular}

 $V$ S A FVVE E G $\square M P T G$ | $V$ | $S$ | $A$ | $\square$ | $P$ | $A$ | $D$ | $G$ | $T$ | $F$ | $P$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $S$ | $A$ | $F$ | $K$ | $E$ | $D$ | $G$ | $T$ | $F$ | $P$ | $L$ |
| $V$ |  |  |  |  |  |  |  |  |  |  |  |

 | $V$ | $S$ | $A$ | $F$ | $Y$ | $V$ | $D$ | $G$ | $S$ | $T$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $G$ | $G$ |  |  |  |  |  |  |  |  |
| $V$ | $S$ | $A$ | $F$ | $P$ | $V$ | $D$ | $G$ | $T$ | $F$ | $P$ |

 | $V$ | $S$ | $A$ | $F$ | $E$ | $D$ | $G$ | $T$ | $F$ | $P$ | $L$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $S$ | $A$ | $F$ | $P$ | $P$ | $D$ | $G$ | $T$ | $W$ | $P$ | $L$ |
| $G$ |  |  |  |  |  |  |  |  |  |  |  |




## UniRef90 M3J4A8

 UniRef90－UPIO003B3C5DD UniRef90－B4VQVOUniRef90 C 6 O UniRef90－A0KN14 UniRef90－V61Z11 UniRef90－T2JPL5 UniRef90＿UPIO0034B33C0 UniRef90－H5T585 UniRef90－W6RWG5 UniRef90－A0A023WLQ3 UniRef90－UPI0004796C13 UniRef90－WOTK45 UniRet90－R7K5HO UniRef90－Q968X7 UniRef90＿B1CC22
UniRef90＿AOZHT4 UniRef90－K9U6D6 UniRef90－E3YND6 UniRef90－Q3A5S3
UniRef90 A1AKR2 UniRef90－R6QRJ1 UniRef90 B3EH25 UniRef90－A0A011A8D2 UniRef90－G5GJR7 UniRef90＿LOMGI6 UniRef90－W2BRT4 UniRef90－E6MIS3
UniRef90 K9S80 UniRef90－Q01R11 UniRef90－H6SNN1 UniRef90－K2A760 UniRef90－R6Y374 UniRef90－D3L5N4
UniRef9O－R6HU61 UniRef90－C1F2M6 UniRef90－R6YIM2 UniRef90－X00103 UniRef90－UPIOOO4690285 UniRef90－R6QTF5 UniRef90－DOYVK7 UniRef90－M2Q3V0
UniRef90 - U7P999 UniRef90－S1NVS4 UniRef90－UPIOOO3315741 UniRef 90 －D6Z235 UniRef90－Q1K475 UniRef90－XORSI2
UniRef90－B5JMS9 UniRef90－G5GHN6 UniRet90－D1B493 UniRef90－C6Q029
UniRef90 AORN11 UniRef90－UPIO00464A5D2 UniRef90 E6LGM7 UniRef90－DOZBMO
UniRef90 O47C61 UniRef90＿O47C61
UniRef90＿F4GLW2 UniRef90－W7DLB1 UniRef90－W9G935 UniRef90－U2Q2R9
UniRef90－U2KPA7 UniRef90＿B5IPB4 UniRef90－L8B958 UniR Ref90－U2SA26 UniRef90＿U4KS96
UniRef90 UP10003 UniRef90－UPIOOO37A2B46 UniRef90－F7VC78 UniRef90－K9V614
UniRef90 V5WL43
UniRef90－B8EIT1
UniRef90＿R5VMY5
UniRef90－A1TCI6 UniRef90－UPIO00366763B UniRef90－K7SD19 UniRef90 UPIIOOO37A957A UniRef90－R7H6Z2 UniRef90－B1BYM2 UniRef90－UP100032A1A9D UniRef90－S3WUM5 UniRef90－SOL637
UniRef90＿LOKAA6 UniRef90－D4H8V8 UniRef90－B4RIA2
UniRef90－L8GS75
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UniRef9O－D8LXQ8
UniRef90－U5WNJO

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 | $A$ | $Y$ | $L$ |  | $D$ |
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| $A$ |  | $L$ |  |  | $\begin{array}{ccc}A & N & F \\ A & D & F \\ A & A & C \\ A & C & Q \\ A & C & H\end{array}$



 SA Y HVV S QA E F V A A C H M M P A Y M K S S Y L I D Q A

 S TYY Y V $V$ \begin{tabular}{lll|l}
$T$ \& $Y$ \& $L$ \& $N$ <br>
$T$ \& $Y$ \& $L$ \& $V$ <br>
$N$

 

$T$ \& $Y$ \& $L$ \& $V$ \& $N$ <br>
A \& $Y$ \& $L$ \& $I$ \& $Q$

 

$P$ \& $Y$ \& $L$ \& $V$ \& $S$ \& $N$ \& $A$ \& $D$ \& $F$ \& $V$ \& $A$ \& $C$ \& $H$ \& $N$ \& $F$ <br>
\hline
\end{tabular}

 | $P$ | $Y$ | $L$ | $I$ | $D$ | $N$ | $A$ | $E$ | $F$ | $I$ | $A$ | $C$ | $H$ | $N$ | $F$ | $S$ | $F$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $S$ | $T$ | $Y$ | $L$ | $I$ | $N$ | $K$ | $A$ | $D$ | $F$ | $V$ | $A$ | $C$ | $H$ | $N$ | $P$ | $A$ |

 | $S$ | $Y$ | $F$ | $V$ | $K$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $Y$ | $L$ | $I$ | $T$ |
| $A$ | $Y$ | $L$ | $V$ | $S$ |

    AP YLVNKA GFI GCHHWS
    HSPYLI QAADFVACHNPS
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 DTKKSGGLTVSHLAFGKK SkAGGLTVSHLRVER
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## UniRef90 M3J4A8

TQYDLLKGLIKPGGTFJLLNTVWNEDKLLERHILPAQMKRNLIA

 DKFDLLEPAAEESTFLINSPYEPEEVWQQLPRTVQEHEL RTYDLLRGAKKDGDFLLNTTW KDEQLEKHLPGELKNYLV YKYNLGNDVKEGGTFLLNTVWNEKELESKGLPAHYKRVLA EKYDVVQDTKPGGTFLLNCPWSAVEELERFLPASAKRYLA ERFNLLEKAAPGAVLLLNTATPPDEVWRNLPRPMQKEML
TRYDMLGEAKEGGTFLLNCSWSDSELKKELPAFVKNQMA


 RKYNMVQDAK KGGTFLLNCDWDMAGLEEHLPGGAKRYY A


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 ERYDMVKNLKKNGVFLLNCPWDTDQVLWDHLPAPMQRKI EKFDLLGAAEPHGVFLLNSPYSP EETWARLPAKLRSQR

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ATLDMLE EHARPGATFFLLNSPY PAEAVWSHLPAAMQRAQIR


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 NK Y D T TE DL K D G GIVFL L NCPWSAEEELET R L P GKMK R DL A





[^1]F K Y D ML K S L K K G G T F L L N T T F T P E E L L E Q N L P P S S F K K Q L A


NSYDLTEGLKENGDFVLNTQYGAEEQGGKLPKEMVHALI
ETLDLLTYAAPGATLLLNSPWGPDEVLHAHLPAGVQQQQLR NQMKTVDVAKVGATVLINSPYGTD TWAHLPREVQQDIV
$H H Y P L L E D L K P G G I F V L N T P W S K E Q 1 L H A L P Q K V K Q Q L A$
 E R D D V L R L A A A D G G VFFL L N T P H G P N V V V W D H L P




## UniRef90 M3J4A8

 UniRef90-UPIO003B3C5DD UniRef90-B4VQV0 UniRef90-C6D945 UniRef90_AOKN14 UniRef90-V6IZ11 UniRef90-T2JPL5 UniRef90_UPIO0034B33C0 UniRef90-H5T585 UniRef90-W6RWG5 UniRef90-A0A023WLQ3 UniRef90-UPI0004796C13 UniRef90-WOTK45 UniRef90-R7K5HO UniRef90-Q968X7 UniRef90-B1CC22UniRef90 AOZHT4 UniRef90-K9U6D6 UniRef90-E3YND6 UniRet90_O3A5S3 UniRef90-A1AKR2 UniRef90-R6QRJ1 UniRef90-AOAO11A8D2 UniRef90-G5GJR7 UniRef90-LOMGI6 UniRef90-W2BRT4 UniRef90-E6MIS3 UniRef90-K9S8D0 UniRef90-Q01R111 UniRef90-H6SNN1 UniRef90-K2A760 UniRef90-R6Y374 UniRef90-D3L5N4
UniRef90-R6HU61 UniRef90-C1F2M6 UniRet90-R6YIM2 UniRef90-x00103 UniRef90-UPIOOO4690285 UniRef90-R6QTF5 UniRef90-DOYVK7 UniRef90-M2Q3V0
UniRef90 - U7P999 UniRef90-S1NVS4 UniRef90-UPIOOO3315741 UniRef90-D6Z235 UniRef90-Q1K475 UniRef90-XORSI2
UniRef90-B5JMS9 UniRef90-G5GHN6 UniRef90 D1B493 UniRef90-C6Q029
UniRef90 AORN11 UniRef90-UPI000464A5D2 UniRef90-E6LGM7 UniRef90-DOZBMO
UniRef90
Q47C61 UniRef90_F4GLW2 UniRef90-W7DLB1 UniRef90-W9G935 UniRef90-U2Q2R9
UniRef90-U2KPA7 UniRef90_B5IPB4 UniRef90-L8B958 UniRef90-U2SA26 UniRef90_U4KS96
UniRef90 UP10003 UniRef90-UPIO0037A2B46 UniRef90-E4PRQ9 UniRef90 K9V614 UniRef90-V5WL43 UniRet90-B8EIT1 UniRef90-R5VMY5
UniRef90-A1TCI6 UniRef90-UPI000366763B UniRef90-K7SD19 UniRef9O-UPIIOOO37A957A UniRef90-87H6Z2 UniRef90-B1BYM2 UniRef90-UP100032A1A9D UniRef90-s3WUM5 UniRef90-soL637 UniRef90-LOKGAG UniRef90-D4H8V8
UniRef90_B4RIA2
UniRef90-L8GS75 UniRef90 K1Z7V1
UniRef90-D8LXQ8
UniRef90-U5WNJO

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EKNIQFYTTNAIIKIAANAGLGRMNTVMQTAFFKLITSIL AKDLKLWTMDAYDVAKATGMGVRDNTVMQTAFFAISGVLP
 QKRARLYT NAAKI ARECQLGNRINTVMQMAFFQLTAHIP KNNGRFTI NADGLAGRDGLSRRINTIMQTAFFKLTEIVP NKNKKVYV NAYEVAKNAGMRSRI NTVMQVCFFALANVLP DKQLKFYV NATRVARESGMGGY:NTVMQVCFFALSGVLP NKKVKFYT: NAVKI AQEI GLGGRINMIMQSAFFKLSNITP EKEVNFY IINATKLARDIGGNRTNTI MQSAFFKLAKII P QNNI HFYTCDATTKARELGLGNRSNADLQAAFFKLAKVI P EKG|KDWVIDAYKVARETGMGRRDNTIMQTCFFAISGVLP
 ENDIQFYTCDAVSI AKKIGGLGRRTNSVLQAAFFKLANII P DKQLKFFVINANQVARESGMGGRTNTIMQVCFFALAGVLP QKHLKFYVI NGYQVARNAGMGGRINTVMQVCFFALSGVLP



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EK N A R L Y L I $\quad$ D A S K I A A K S V G L G G R I I N T I I M Q T A F F K L

QK QVA LYVI NAAEVARANGMGSRリNTIMQTCFFALSKVMA
D R GLL R V HVVI D A A S V A R A A G L G A R I N T V M Q P C F F Y L S G V V D

K K D AKFY I A K QA K L Y Ti N A V D A A E K L GL G QRYNVV L Q



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UniRef90 M3J4A8 UniRef90_UPIO003B3C5DD UniRef90_B4VQV0 UniRef90-C6D945
UniRef90-A0KN14 UniRef90_V6IZI1 UniRef90_-T2JPL5 UniRef90_UPI00034B33C0 UniRef90_H5T585 UniRef90_W6RWG5 UniRef90_A0A023WLQ3 UniRef90_UPI0004796C13 UniRef90_W0TK45 UniRef90_R7K5H0 UniRef90_Q968X7 UniRef90_B1CC22 UniRef90_A0ZHT4 UniRef90_E3YND6 UniRef90_Q3A5S3 UniRef90_A1AKR2 UniRef90_R6QRJ1 UniRef90_B3EH25
UniRef90_A0A011A8D2 UniRef90_G5GJR7 UniRef90_LOMGI6 UniRef90-W2BRT4 UniRef90_E6MIS3 UniRef90_K9S8D0 UniRef90_Q01R11
UniRef90_H6SNN1 UniRef90-K2A760 UniRef90_R6Y374 UniRef90_D3L5N4 UniRef90_R6HU61 UniRef90_C1F2M6 UniRef90-X0Q103 UniRef90_UPI0004690285 UniRef90_R6QTF5 UniRef90_D0YVK7 UniRef90-M2Q3V0 UniRef90_U7P999
UniRef90_S1NVS4 UniRef90_UPIO003615741 UniRef90_D6Z235 UniRef90_Q1K475 UniRef90_X0RSI2
UniRef90_B5JMS9 UniRef90_G5GHN6 UniRef90_D1B493 UniRef90_C6Q029 UniRef90_A0RN11 UniRef90_UPI000464A5D2 UniRef90_E6LGM7 UniRef90-D0ZBM0
UniRef90-Q47C61 UniRef90_F4GLW2 UniRef90_W7DLB1 UniRef90-W9G935 UniRef90_U2Q2R9
UniRef90-U2KPA7 UniRef90_B5IPB4 UniRef90-L8B958 UniRef90_U2SA26 UniRef90_U4KS96 UniRef90_UPI00037A2B46 UniRef90_E4PRQ9 UniRef90_F7VC78 UniRef90_K9V6I4
UniRef90 V5WL43
UniRef90_B8EIT1
UniRef90-R5VMY5
UniRef90_A1TCI6 UniRef90_UPI000366763B UniRef90_K7SD19 UniRef90-UPI00037A957A UniRef90_R7H6Z2 UniRef90_B1BYM2 UniRef90-UPIO0032A1A9D UniRef90-S3WUM5 UniRef90_S0L637 UniRef90_LOK6A6
UniRef90_D4H8V8 UniRef90_B4RIA2
UniRef90_L8GS75 UniRef90_K1Z7V1
UniRef90_D8LXQ8 UniRef90_U5WNJ0 UniRef90_UPIO00475FF62 UniRef90_U2FKM5
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FEEAFQADKDSAVVTYGKKDMR|L|AEKNDRAMDDT|L|AH|L|KK K D E A DA Q I K N A I K K T Y G K R G E A V V Q K N Y A A V D A A L E H L M E


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 VEKAEA LLKEAAEKTYGKKGQAVVAQNRKAIGQGMTKFRK



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 FEKA QEFMKK QA YK T Y HKK GE HIV V L L N Y K A I D V GAN G L V K VD D A DK Y L K D AVVTTSYGKK G Q K V V D M N N A A I D K G V E S I V



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 R Q S A $\square D L A V E E M K Q G N Y N S Y F K K G Q E I V D D N N R A V D V G L T G M T K$ EAEAVEYMKKFDEKSYGKKGADVVQKNDATIDMALAADEK REEAAL E RDR A S I R H T Y G R K G E A V V A M NL A A L D A S L D H L Q P MEK A L A L L K K S I T K A Y E R K GP EVVVA K N H S A V D M A V A A L K K LD M AVVEDMKKNNYNSYFKKGQKIVDDNDKAVDLGISAAVK F E R A QE LMKK YAEKA Y GRK GEA V V K L N WA GI EA G GN H L V E


 R D E AV QR K H



 KERAA A LI K K S DEK S Y L R K G Q AVVVDKNFAAVDAA LA N L H R
 Y DKA QK LMK E YAEKA Y GRKGKEIV EMNWEA DK GAE GLVE F D D A L K S I K D A I V K S Y G R Y GE KVVVK M N S D A AD A GA K E L H E

 V E E V V P I M K K M V E K T Y I K K G E H I V R N N W D C I D N S L E A V H Q $V$ D A A I A Q I K D S V A K T Y A A Q G A D V V A R E L E A $V$ D D R A L A G L L Q MK QVR Q LL K E S I A K S Y G K A G P A I V EA N Q Q A V D E T E Q Y L Q L

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 VK VGEPGSLLRMPPVVSPEAPEFVRTVTAQMIAGRGDSLP V Q L E A N P D S P Q R P P V V S D D A A P D F V K K





 VEVPA SWKDVPDDEPQAKMHTDYLNNILRPTNTLNGDKEP $V$ Ell P V DGGAMVRSSQENQPIPNSAPAFVRDVLGKMMAREGDELP $V$ EVP









 V K V $\operatorname{P}$ P G E V V T S S D F D K P A V
 I EVVKKE WK KLLENIVKTLTQEETH YVKTI QWKMNS QR GDE L P

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 D N E I R F Y TI N A Y K I T Q E VGlL Y G K P G I CMMQAAFF K L T D F L S
 K H R I I R F Y I I D N A Y D I L L N K V G LIP R R E K Q A R L F V V D A D QV A A A A G I P G IV $\operatorname{Si}$


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

 Q R Q A K L

 G Y E G R I
 GYEGAVYTVNAKQI S LLRTLGRNYPNSPMLAAAVAVSNVME


 GYTGRVVVVI DARDDI SEKAALGKNFPNTPMMLAAAVAVVSGVMP













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 P Q G HV $P P G \| K \vee F T V D A$ AT KI ALETLKRPITTNTTMAGALVKATGILN GYQNRIAVVDAGRIAREVLGLPITNTTMVGALVKGTGIMD
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 NFNGKV CIVNATDI ALLQEI K RGVPNTVMIGTLARVTGLVN RTDVKVMEI PANRI A E E L G N GKVANNVILGVLDELTKLVS $\begin{array}{llll}L & G: L V & D \\ V & Y & T & I \\ D\end{array}$
$\qquad$ EKNGK Y MV N T T A L E ELGVPITNTTVMGAFAAATGEI G RTDDIE V H K I P V N D I A I D L G N A R VA N MV ML GA Y L N DT K L V K $R K D \| K V C Q V D A T E E A L H M G N Q K V F N M L V L G G M L K E A P V V K$ $N L N A K V A T V D A V G D A V K H G D G S R A N P V M I G A F A K A T G L V S$ EKNAKVFNVDAFKVSEKCGMGRMDNVVMQAVFFKLAN

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VKDFNKDGSFKPG TKDVMK S GKlP GG VSAFQPGGVSPGG V S DLMANGIFP P G VSAFMNDGTFE VSAFEEDGSFE VSDFYKDGTFEGG V SAFPPDGTWPVG V S MLY R Y GRFP TRDVYEDGT

VS AFPADGCW

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| UniReego-R5 | NVISGMYEDSLVLVNSPKS Pr PGLME |
| UniRef90-R6VHP1 | RFKDRVVPGGTMIVDSSMIPV K CD |
| ONIS2 |  |
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| $\begin{aligned} & \text { UniRef90-M1ZJZ3 } \\ & \text { UniRef90-FGIISB1 } \end{aligned}$ | ALIR WLEY ${ }_{\text {S }}$ |
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| UniRef90-W6k9X8 | GLTKGLKKGGGI |
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|  |  |
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| $\begin{gathered} \mathrm{B8D} \\ \mathrm{RO} \end{gathered}$ | KVGGTVVTSTQKIDPMTGDKAYPQGILEEME |
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V
C
C

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VK

M K

V
${ }^{\text {Q }}$ TFSPEGLEMPMPKRWD $\square$ PVVGYETQA $\square$ GGMVSNPGNS $\square$

VD Y A $\square$ D A F A R $\square \mathrm{DARPAP} \mathrm{\square ADHD}$
IDVPA A WGTEEEDSEPT TLPAD DN $\square$ NSFAPFNR $\square E$
$\square \mathrm{E} V \mathrm{P}$ E S W $\square$ T $\square \mathrm{D}$ LE A N D D $\square$ P P P E D $\square \mathrm{N}$
$\underset{F}{\square} \mathrm{E}$ P QSAWAE $\square$ PED

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


 | $Y$ | $R$ | $R$ | $F$ | $H$ | $G$ | $R$ | $G Q Q G A$ | $R$ | $A$ | $S$ | $K$ | $V$ | $L$ | $G T$ | $A$ | $A$ | $F$ | $L$ | $D$ | $G$ | $Y$ | $Y$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |



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EA L R H L H F L K S G GMVI LN K K K I P A VAENK P Y P Q NVEHLIK EAARCLPYLKKGGKLI TSTQQIDPMPVDAKYPENLVEKLR K $\square$ PRVFATIKEGVILI I V SNHKDDFNNN
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 GKE D R V F VVVDCDQ


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

 K K D Y K V Y D D D A Q K V A L L E L G N A R V F N N NV V L G L A A A H M K F S K
 $K H V H Q L Y V$ I D GEA D C Q K A G S P K V L N V A L L G V A Q GADVDAMDCLDVAEKAGSAKAVNIVLDGRLSRYFD FS
 QRGGIV DEADAGLSKAEDVGGSAKAVNVVDMIGALSKYMNEDK RTEVDVYY IPATKMANDNGTPTMANMIITGKILKEVPQFS

 QK K Y KLY F V P VN S L A ES LGK QML AN DCAL GAFYKVSK I FS
 AT G A K V D A L D C L A L A E QA G S S K A V N I V L M G LAR L S H Y F D EK YKVDSVDAQKEALELGNSRVFNVI I LGVAAS L Y G GNLWCI DALGMSSKIGG TVRNMVLLGADAKAS G G A GCKDHCFIDAL TMA E E I GNVKVVNMMIMI GAYAA Y DG DS
 EKGLE L FVVD S S F SPA E K N V V E L Y V L D T S S S P A $\quad$ L A EVVPNTKCFNAGKVAES LGGNDKA QNVVLLGALVKAMGLED RAVPSAVVVDALGLALECGSARAANVVLLGVLARRLDP
R K
$V R T V A V P A N D I A D K L G N T K M A N M V A L G A V V R A T G V V D$ D NCKDVTVVVNATE EADVKLGNGKVMNDI LLLGTIIAKAMGLED

 R Q D IEV VIEVDAS GI ADELGNMKVANMVALGVLVGRTGVVR

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$\square$UniRef90 UPI0003634198

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M
$\square \mathrm{N} V$

CNDP


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1
K F V 10
10
${ }^{20}, ~ C A E=30$
40 TRNVVAA GFGGQGVMLLGQILA LAATOKOLNATWMPAY $\square F N I V D A G V G G G Q G V L M A S K V L A E S S A D L V S N M D V K Q N E V H$
 $L$ LI S L K G R G G Q G VV TA GE L L A K G A I I E G L




 $M N$ MIVGVGGQGTLLA SRDLGKVA DK E GY DV K V S E V H

 TK S I L L V G V G GQ GTI LAA S K L L TMM GL M E A GYDVVKM S E I H KEVVLI G GF G GQ G VI L S SVVI L G R A A A VV E GILY SVVQTQ S Y


 $A G F G G Q G G M M L G Q L V A \quad Y S G D H Q G R H V T W W P A$ TSEDQLAAGFGGQGULFAGKVLABYCGMLADREVSWLPC Y

$T K S V L L V G V G G G Q G T D T A A K L L T T M G L D L E A G C D V K M S E I H$







 $G Y Y E I L F Y G R G G Q G A V T A A N I L V E A A M F E$ G L GKHGQGFPF F GYYEMRLESDGGLGANLCGKLLGELGAVQLGLNAASBSSY



 $T K N \square M \square V G V G G Q G T L L T S R \amalg L G G G M T K A A G Y D V K D S E V H$ WKVGGQ GVESTGETFA $\square A D N R Q G Y Y V Y S F R H F$
 I I LA GVGGQQGILSIASSIMGDAAAMNENLFLKQAETH

 WKVG GQ GI D S T GEI FA IALDNRLGYYLYGYRHF



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$Y$


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GMSQRGGVVTSHLRFGSEVLSPQILPGEADLLVGFESA


GMSQRGGSVVSSQVRFGDAVASPIIGEGMADILVAFEEMEAA


## 

G GMADKGGHSNDKVRVSLK $G M A Q R E G V V M S Q V R M G S G$
$G P E Q R G G T S D C T V V I S G E$ GVEQRGGVSDAFI QISDEPGGG



GMAQRGGSVEAHLRFDTRVYSPLIE GMSQRFGSVISYVRFG
GPEQRGGTANVNVIVV
GMSQRGGAVQSHLRI
$G M A Q R G G S V S S H L R I$
$G V E K R G A A M C T V V I ~$
GPEQRGGTSNCSVII A GQDVI GSPPVVG


GMSQRGGDVQSNLI I
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GPEMRSGSANCSVTLAHDRIG
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$G P E A R G G K S K A E V V I S D A P D D Y P M K A R$
$G A A Q R G G S V L S H V R F A D R E F S P V V P L$ R LDLLAMNQTAC GAAQRGGSVLSHVRFADREFSPVVPLGQADVLLGFEP SSRDKGGHTNNKIRVST GPEARGGSSRCDLVVSSGPGSYPGAESGLDLLVABLSQEAC GMSQRGGSVS


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K K F EKMV PNGTVILNSTLI TLDE
 - $\quad$ Y P D D $V E$
 E I L R PLE GI KNDGILVINS NS PK S Y WK

$F$ QPRLHPDGVQVVNASLIS
LPYLAKDGWIVTNSTYPFDNDPNYPEPEDVTKGGL
 $D V V D V L Q G L K N G G K V L V N S Q Q K K D F P G F S S$ KFEPA RVGPKGYLLI NQSVVD REPK
 EAMRALPYLKKGGKMDAN TAKMNPMPVIMEYPENDEEKLS





 $\mathrm{KF} \square \mathrm{GA}$ VKAGGYAFVDSDLVESSS

| $N$ |
| :---: |
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|  |
|  | $\square$ RLKENGKLILNTSH


PEKYV
HFAS

 THMPFYTGLKQNGMVI I NTDVD KFlD NVEEGG\VVVDTAMVPS DTEPE QEFNVLNSLRADGSLILKLPGVKDEELESKLSPAFRKALV KEVAIVKSVKAGGKLAVRLPNFKAEEIEKRIPASVRKEIQQ EAVRNLDYLKKDGIVIVNSPVTESLQDTGYDGTEMDRYLN



DLGVVKRSLRENGIVVVNTEKDKV LDPETN H GKLPVNAGVQRHCQVVVNTALEG AAI RERMQ

D
 EAVRYLPLLNKQSTVIVNTQKIAPPTGKMTYPDQCLDALT HKFN REAKDSALLFLDSDLVKPEEKDA
 DLNVGEVREGGVVI ADSKFNPKAPDH
ETVRGLPKLKQGGVVVVNTPVSVSLGDSQYDPDQLISYLQ MEKFASRVREGGIIIIYESSI GEFETP

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140 130 Q 1

150
160 TVVYLKVPANELAEQAGSQRSANMVMLGALIGKTGLFE
 KNE NTY



 EGNFNIIRVPCMELAMKANNPKAANDVAIGALDKKCGLFE

 AKVPD MVVVDG $\quad$ VSVA ERLGNPRVVNVI FLGVLSK YL

 EKNFKVYVLPFTKLAEETGLSLTMNILTLGFLVRLTGIVS

 QK IR VVRLEAAKI A ARAGHVKSANMVLLGALIEVLGLLQ
$V T$ FYAVPFTDIATELGTSLMKNMVAVGASSAVLNLD
 RS DI HEFRVPATRLADENELDKGGANII LI GKII KES GVI S
 LGNFK I TVVA DN I A Q T NQLLGRIVNTTVLVGAFAGLIDNEPK KVGGQVFVINASEEAAKLGSSKVANVILLGMIVKYMGLEH $K L P H K V V L D V E A D A K E V G S V R A A N I V M L G A A A P F D G D E Y$ D NSAEVVYFV D GY S L A E KA G NVVKAVVNVVLLLGAATABVSKMP T


 GKC R CVVI DAEKLCAPFGSSRYFNI AILGVVAAAGTGK

 $K L Y A D V R V I N A T E G A C Q L G N E K V A N M V M F G A L A B K M N D T A Q$ EKEHRVLRVDAMAKAKELGNPKVFNVIVLGVAAAYMDFTK
 GRLYKVAATNDSRNRLNAPMANMVILGAFCRVTEVVS $R G R A R I \quad Y R V D A T K I A R D L G L V I A G W P V V N T S M L G A F V K A T$
 S K D V K $D\|K C F R V P A T Q I A G D L G V T L A A N M V M L G F\| Q Q A T G L F S$
 S Q GIA V V E V D A F A I A R K V G N L K A V N V A L V G V

GK L L F P P A T Q A EKKLGKKIVVANMVI L GF L A RHS G I V T K K H
 $\qquad$
 $E$ Q A D G L K P V H A T A L A R Q A G TTP K A T N MVVM G A L A G L E G L R T L A I P A R K l A K E H GVVK R A A N T A M L L G V I L G L T G L P K

 DRFSTVFEMDAMEMAQKI GNPKVAGMVLLGKLASLLHYE
$A R L F S D P F T G \square A Q D V G L A Q M K N M V A V G A S S A L L G L D L$ K R G $\square$ V $L$ LLDASE
KRGUVLSTLDAEK LALE $R Q G \square A V I P V D A Y A I A T K L G N \square K A A N V V L V G A D S T H L P D P B$




 KKFPEAVFI E GAPLALAAGD DRTLNIVILGAAVGASMLPA
 K GVVNVIM V P A T K I A K D L G V S K A A N T V M L G V L A A I G Y T EL GADVRLFSVPFTEI AEELGTSLMKNMVAI GASSALLGLPA DTNAT LYAVVPFTEIATEELGTSSLMKNMVAVGATCAVL K S K Y K V I DI NAF E EA T NL GK K QVA NVML L G I LA Q HL D DK







 Q NS F Q V F S L KA A D IA M S L G S A K CM N VV L FGA L T H V L K L E Q



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VD
V

VEVPA A WGTVEEDVEP $\square$ RFPSD $\square$ NVNSFAPFDR $\square$ E V EVPATWAE
HEI K
$\frac{\overline{7}}{Y_{H F D D D}}$

VAVPESWGTTEDPSDAQE $\square$ PKD $\square$ ASTSFVPFNKTE

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FETR 10
$K$ Q L R L S G S G G Q GV V T A A DL L A E A A V A E GK E A A Q S Q S Y


FEVRDSGLGGQGILTLGRTMGQADALDHGYEVTQTPSF
G F


WEVKI A GFGGQGIILA GYLLGKAAAVYDRAHATMVQSY NTTKI ALA GEGGQGVQSVADIFAE AANDTEKQADY DPNF

FSI RIA G I G GQGNLIAGLTLAKALV KAGKYVVQTQNY $N T T T V L L C G V G G Q G A L L A A D D L A R C D A M C G D D V K L S E D H$ $N R \square R L V F S G S G G Q G V I$ TAA I L LAEAAVIHEGMNATQSQSY $11 L C G V G G Q G I L S D A T I I G E A A A M K E G[L Y I K Q A E V H$ G T

G
$T D V I A G V G G Q G T I L A S D I I G K A A V K E N M S V R A A E T H$
$T N I I I A G V G G Q G T V L A S K L V A R A A M D A G L Q V R T S E T A$



 A A MAE GY DVR DA EVH LK A NY DVVK G S EVVH



 VKI $V K \square A$ A GEGGQGVQA $\square$ GDILAE A GNEE GKEALY DPNF
 CMFSGSGGQGSALMAK MVCLGA IKENLKVVMTQTY $K Q V R L C G L G G Q Q G V L A A G T I L G H A A G I N D R K W V A G S S S S$
 NREQFTFWDVDNSVSAKFPAAIGTLLSQESTNNVMLFETY
 RVA G GS GDGI DSTSQNFAKAL MRS GLLNVFTHRHY
 DK




$\mathrm{N} \square \mathrm{T}$
M

| $E$ | $L$ | $L$ | $S$ |  |
| :--- | :--- | :--- | :--- | :--- |
| $S$ | $V$ | $R$ | $F$ | $S$ |
| $S$ | $V$ | $L$ | $F$ | $V$ |
| $E$ | $L$ | $R$ | $L$ | $S$ |

$\qquad$ $\stackrel{E}{N} \mathrm{~L}^{\mathrm{G}}$ G
$\mathrm{N} Y$
$\mathrm{G} Y$ F
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F | V | F |
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| V | R |
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 $\square K S V L F V G V G G Q G T I L A S K I L D T I G L I G H G Y D V K M S E V H$
 $M Q F V I V G T G G Q G I L F A S K A L G H I A B M E K G R S V V G S E V H$ $K Q L R F T G V G G Q G V L L A G E \| L A R A Y V R A G K Y G I Q V G T Y$
 $R V A G G S G D G G I A S T S Q N F A K A L M M S G L D D V F T H R H Y$
 $A$ SiLS E G Y D VR DA E V V H $\square K \square K \square Y G L G G Q G V V T M G K V L C \square A Y S I V E N D F A K T M P A Y$ GVGGQGVI RAAQIL SYAALLEDYKVRTAETH
 $\square$



## UniRef90 S7T4A4

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R5EKM6 UniRef90-10GMD3 UniRet90-R6GLP8 UniRef90-K4MBD5
UniRef90 G5HAB1 UniRef90-X11HR3 UniRef90-D6SSW5 UniRef90-G7V9Z1 UniRef90-E6W238
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 GAQVRGGPSYCDLLISSKPIDFPKATVFDLLIILHPSMI GAAARGGATRSDI SDGEINFPADKGEVDYLVSFETT GMSQRGGDVQSNLRLSSSPIHSDTGNGQADVIISMEPMEA DNLVQGGVVRTDIRKADKAVSSPFAVDAADVTVVGEEKLLV GMA QRGGSVVNHI RL GCE L GSMDP MK GA DVLLAALEPS EA GMAQRGGSVVSHLRVSETPISPLMAPGMADVLIGFEPG
 GMS QR G G DV Q S NL RLLSTEEDYSDI PQGQADI I I AMEPMEA GMAQRGGSVSTQI KYGRKIYAPNIGPGEADLLVAFEKA
 GMS QR G G SVV VHV RIG R EVVYA P I VE E G GADFVIA LE




## A


GMAQRGGVVHSFVLVGD





 GMAQRGGSVISHFKIGKYSSPLVKAKEADVLLAFDQN








 GPEARGGSSKAEVVISSEPDD YPMPVQPNLQVILTSQA
 GMAQRGGSVVSHFKVGEY LSPLVKVGEADVLLAFDQN T S QVVRGGPTKVD I L L D DEPD LY P YAVVDEDDFML SVADK S Y
 P S R $\square R G G H T Y T E V R A S S E P V R S R F A R N P R D G A Y Y G N E E S K$ GA A QRGGSVVSHIRDSDKTIVPLISRGQADLLIGME
 GHERKGGAVLTDVDA DKERILTNSF DTDPDCVI VLDDPNVA GMAQRGGSVASYLRFGTEVEGPLVPRGKTDTILAFEAS




## UniRef90 S7T4A4

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UniRef90
K1Y5W8 UniRet90-R5CFF7 UniRef90_U7PKQ5 UniRef90-F6DLH2 UniRef90-W9DZ52 UniRef90-G2EOX3 UniRef90 R6VEZ55
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| UniRef90 | UniRef90-F7XMR1

UniRet90
W8TP

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100
C Y A Y Y R Y I K P G G V L V VD T S L V GP QLLGLLKDDGKIIVNSKNNIED NDDAFLE K KENGKI I LCTKKI



 DEFAF D TKKGGVVI L D DTYVGKEA
$G P L N L I Q G V Q E N A \| V I V N T E R T \quad P A Q \square R E E L B$ $D K F D V Q V K P E G F I L I D Q D L V K P K G L D R D Y$
 DRTE KYVGENTI FVVYDSSLI DMPEERENEGSGL








## $L$ C L E E E E <br> | L |
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SDDYLK DLK KD GUALIN





 QLFK EGVKEGG\|IVYNLVYPSDDD
 PLA E NLD DL R E G GVIVVYD S GLLDEEDSV $\quad$ V P Q L R A A E Q L S A G A L I L I D A $\quad$ K K Q E Q G V QR L P D EAVRAFKYLKPGEVLVVNKR E EVVKLDVEKHKNAVLI L NT

 E VKDKISEETLVI DNSN EVDNYNP D

## UniRef90 S7T4A4

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UniRet90 H5SH65 UniRef90-B2A311 UniRef90-A6LNV6 UniRef90 KOYKQ9
UniRef90
K1Y5W8 UniRef90-R5CFF7 UniRef90_U7PKQ5 UniRef90-F6DLH2 UniRef90-W9DZ52 UniRet90-G2EOX3 UniRef90 R6VEZ55
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UniRet90-X1DEN7
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$F L G L P F T D M T K K \| J T P Q A M N V V V L G A L T R|L L| P F A E$ $V L T F E A E K D A A E F G L P T V N T V M F G L L V G L S S G D A$

 RDDVTFVEIPVDSLAAE NKRGANVYMLGALLPVFKDIT
QGKRKVVGFNATQLAVEAGNAQAMNVVMVGAI GSKWRLALVDATKLARELLGVPIVNTTMLGALLRATGVVK FWGLPFTTMAQKVGLVQTTNIVALGALTHFTPFMR KTDAEVYMVPGVKTAREVGRELVTNMVALGAMAKVLERKG
 EDTVRLYALPATKIAEELGHR GQAKKILGIPANDIAKQEFHPRVFNTMVLGAVIEDSKVLP
 SYGAKVNVPAELLAKQAGSTKAVNVVLLGALSAYDDYPE YANMKAIS D D EKLAKDNGIP LLKQVRLYALDAAVPAAEPHSK VGYVLEEQAFLQVAH D P EETHKVKAFNATELAKEAGHPQVANVVALGALAALSGMVN GCGARLABVDGDAI CAEVGSTKVL NVALLGAAAALGA LRGPHAVAIDIDTLAREAASPRSANMVLLGAAAPFLGIEA NNDARCYFLAAPALAGQAGSHRALLNMVML GALTNL
 HAADNLAVVDAASI GMACGSPK

DLNI AVPALKI AKKEGIKRAANTAMLGA RSG KTYUVPCYDUALELGSVLYENSVMLGFVSKLLGLSM ASPGSFHSUPADEKARELGNPRVVNVVMLGAMIKLCGLDR STSYRLYA DAASEGKKLGSAKVANLFLIGVLAN
 QNARKILVIPADETANKEDHPRVENVLIMGAVIGATGVTT NLKSQPYSSTAESIGSQRVTNMVILGHMLKVTGLME RK
 DADVALFSVPFTEVANEGGTSMMKNMVAGGATSAVLNL SLDVQLIPIPFTETAKELGSQLMKNMVAIGASARLMNLE AKVGRVIAFDARKESLEAGNPLGLNMVMLGALUGAADMPL
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ATVDANRIAGEDFKAPDTNTLLLGAFSAATGLVG RPDCTFHEIPAAEEAKKTLGRVANTVMLGALVGYTRVVS SEKYIVKAFNADDLAYEAGNRLAMNVVMVGAVVGYGPIPK QHAKQVVGMPATDUAQQELHPRVFNMILLGATVRAAGTVD KSGGSLLIVPPSEEA KQVFLPVIDTAVQLGTVRCANMVMLGAVLAGTGLLK NGGKQl Gi PATNGATELNNKQVANMVILGGAVGMTKLVT D
 QAGHVFMRI NFTDPALRIIGKPDVSVSAAAAAAKLCG LR EEGWHVYPI DGRGMAREVGREVMRNTAGVGATAALLD MD RSSVNYLD PIQSMAKSISEKVFGNDVMLGSLITKVMKDS GSLGELFLIDAAALAAEAGNPIVQNVVMLGAASRYLPLKE SNTLTVVVADDNYLALEENLTVDGNPV NTPMLGLLSKAL GEGENFTAMDGEKMAEADDNVRSFNLYMLGAAGGMVPVCS ENDWHVYPDDGRGLAREQGREVMRNTAGVGATCAUTG I KKTHRVTAFNATEKAAEAGSRQAMNVVLVGAV
$A K G V F V Y A V P M S K T A K E D V G A Y D T V V A M A A T F E G F F$ NVLKLPDTKVAHEQGKALFANIVALGAIVSLTKAVS RTTKKIIKVPASQIADEELNKNVANMI GLGVLCSVTEVIS LTVEKLIKRKFSEDAKKLGNPRLTNTVMLGVLSKFLPDVD DQGLKHVA DVDADAK QVASPRAANUVLLGAASPFIGID RVPCIDQMANDLKHAKGAN\|VMTGA VKKMGDFT $K K H V P V W A D A T K$
EVDANLYHLP IVKTAR DVIGREVTNMVSLGMVARVLELEK
YAVPFTETASELGTSLMKNMVALGATCAVMNLE E RRKDEVHPI EGYS:LKEHMGGRFLNVLILGAMCGAVGGVS KAKWKMFAIDIIDUAKEKVGNVITQSVVALABATKMNDID K ANGWHVFPVDLRTMAREHGREVMRNTAGVACTCADTGIEP KYCKNGQVI EATVEASKLGNVQMTNVVLLGALVKMMPFFE WRVPARALAEHHLGSPHANTVLLGDLNGVLSLLP RSGVKTYVVPAADVARELGSVLYENAVMLGFLSQLLGLPM AAFSQCWYTDATKYSLEQVGRNLPNVGMLGALAK NKDQQLFVLNTGVSPDFEKNAQAAKLLLELAFLGQTSQPDD EDGVRAYK EVKKLLSSLGNSRVQNTLMLGFFSRFLD DD ENNWYVYDIDLRNIAREHGREVMRNTAGVAVTCADADIDP


## UniRef90 S7T4A4

 UniRef90-W7UJB4 UniRef90-R5EKM6 UniRef90 R6GLP8 UniRef90-K4MBD5 UniRef90-G5HA81 UniRef90-X11HR3 UniRef90-D6SSW5 UniRef90-G7V9Z1 UniRef90-E6W238 UniRef90 B8FAM9 UniRef90-K8EKJJ7 UniR Ref90-H5SH65 UniRef90- ${ }^{-12 A 311}$ UniRef90-A6LNV6 UniRef90-K0YKQ9 UniRef90-K1Y5W8 UniRef90 R5CFF7 UniRet90_U7PKKS UniRef90-F6DLH2 UniRef90 ${ }^{-}$W9DZ52 UniRef90-G2EOX3 UniRef90-R6VEZ5 UniRef90-Q2RJY8 UniRef90- F9D1H5 UniRef90-UPIO0047862F5 UniRef90-R7PM02 UniRef90-E3GY37 UniRet90_A1RSL8 UniRef90-K4LD55 UniRef90-F7XMR1 UniRef90_UPI0004220A7A UniRef90-A0B5I3 UniRet90_K4LKG6 UniRef90 D5U0L8 UniRef90-B7IEUO UniRef90-I8UE20 UniRef90-C0GDN7 UniRef90-UPI00031BE463 UniRef90-E5Y4V5UniRef90 - $0 \times 447$ UniRef90-X0XL47 UniRef90_UPI00036A4A6F UniRef90-A71685 UniRef90-Q46GE5 UniRef90 CoG.994 UniRef90-CONI38 UniRef90-B8NP92 UniRet90 - FOJCG2 UniRet90-X1DEN7 UniRef90-E6SMC2 UniRet90_HoDIR4 UniRef90_G9P082 UniRef90-C8X2P0 UniRef90-E6N486 UniRef90-G7V821 UniRef90-R4WAAO UniRef90-F9VLVO UniRef90 X 1 T 601 UniRef90-W1UIT8 UniRef90-COODI2 UniRef90-B5Y9N3 UniRef90-V4HL66 UniRef90-Q12WW9 UniRef90_COQQH5 UniRef90-A9BFG3 UniRef90_UPIOOO3B490F8 UniRef90 R61981 UniRef90-R7CWR1 UniRef90-R5BQ16 UniRef90-GOVM98 UniRef90-D2Z389 UniRef90-D2Z3P8 UniRef90-UPIO004633EF6 UniRef90_D7DR85 UniRef90-D7CII4 UniRef90-V4Y776 UniRef90-xosx 38 UniRef90-G7LLF4
UniRef90 G7VHR5 UniRef90-UPIOOO4660942 UniRet90 X1H1A0 UniRef90-M1 W557 UniRef90-E4S9C3 UniRef90-U1NPV9 UniRef90-D9QUU3


180
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PRKL DLNMKAFQLGYEAKKH
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PPHTVEANMKAL QLGWDAAEN PKVIPSN【ECLKAGKAYMEK

AELLEAVVADFFASKGDRIVEMNRLAFRVGREA


PEAVKNADEKKLQRKFEQ NPKLREMNMEAFDRGMELAK LE HL IDDSI KENLNPKYVDKNDE EVWESVI EQRVPARFKDV NLKAFAMARAYMRE
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ELAADDLVR LAAAMNDAAAARACAEALSQALVA
REAVATALLRRVPK
VDTLVDCAKELVPRK
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G KFEAGURD IFARKGEAVVEMNLKAFRAGYEAARK
PEQ $L \quad R A A \square G R \square F A A K G A R V V E D N Y K A F D L G L K E$

$\square E \operatorname{VLK} Q E \square T K K F S K K G E D V V N L N F K A V E A G V N Y$ VR
VEAVTKA
LERLTEEVKSNVSKSYLEDDEK
EKYFFEAAVDDVLPEKKLRTVNA
VDKIEEGURR\FGRKGEDUVEMNDKAFRAGLEHAH
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Y E AAKEALEK C L
E
MEPMRNLIEELSPERF
PAALEKA
PPSLDDRNREAFRR
LIEAVENAVRDYFGKS

GPETMSRLK
EALFKKS IERNVKKEF IE $\square$ NDKAFEDGRRIEMCEVE
G II K S M MDDAM
$K E A D K K V V K K K Y P$
पP $\square$ SGRSWDAAIRKT ${ }^{\text {P }}$ PEK $\mathrm{DF}^{2} \mathrm{~F}$ PNMSVFDDAFETVQS

Unc ANG

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| UniRef90-FOJCG2 UniRef90- X1DEN7 |  |  |
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| UniRef90-H0DIR4 |  |  |
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 $G M S Q R G G S V I S H F K S G D H F G P L V Q S G D A D V L L A F D T D$
$G M A Q R F G S V L S F V R V G E D V Q S P I F G P G E A D Y I I G L E ~$ GVETRGTFAKSDVIVSDQEIVFPGDVTEPDVIVCLAQTAY GMAQRGGSVVNHVRVGCR YSAMGSPGGADVLLAMEPAEA GPEARGGASMSAVIIEDDEVLYPGKRSPDIYVIMSQQGY
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 MSRVRGGINTTEIRVSSRRVRAF VKRDDILVPFNRGTL GMSQRGGSVSCFIKVGDFYTPVIEENQADMII ALEQN ASRDRGGYTAYKVRTADDPVES VVDRLDVLIACTGRTV GAQ RGGEAAAMLRMSTTPVQSH DDHFDMLVADDWQNV DNARAGGLFQAQIVSAGSTAADNEVDAADVALVDDPAVL GMSQRGGAVTTVVRFGAGVQSMVSDPGCADCVVSFETT
 GMAQREGPVTGHVRDGTGUHGPAIPP DARKAGGVTESDLRFSGQEFQQHYKIQDADLVFVSNASLF GAQVRGGLSYCDVLFNSEPDDYP KAHSFELI YSMHQTAV
 MSRVRGGHNFTQURFSTTPIYSHS SKLDVIIALDSQT ASRIKGGHTTFALRIALE DNSVNGGS FQVQISSS ASRLRGGYTAYKVRTS GMSQRGGAVESHLRDADREDHSD GLSQRGGSVEVH RFGKEIYSPLISQGKADLVLGLEMQ
 GPEARGGASKSEVIISDSEIVNFP

## G G

VMARGGSVVSHFKVGDYSSPLVTPGHADVILAFDQN
 GVEMRGGTANCTVTVSDRESGSPVTARPLGLVAMNEPSLV

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K

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$D R Y$ F S A V GERVLLVVVDA T HVQVPTGGRD
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LR Y




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 D R L R



 E A L R A Y P L A S P K T T F L VNR Q VVP IVPLVK NLTEEEVLKNLK EVHR DEMSERGVIL TSSLESDS D


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150
160
ENNWHVV|PMDLRG|I AKEHGRETMRNTAG|I|GATAA|I KY列VVIPVNAEAIAKEDHDSIVSNMVILGVGASVPNFPD EKS NFLDIPLSELAVTYGGSKMANTVAVGAVIGMLGMSP KVKTLKFPVLKTAQEVGKAYVANVVSGGVIAELTKIVS TRAEQFQWVEGNADAQELGNPAVAGVVLLGVLASKLG GS GTGARFVAVDDVALTDAVGSRKVLNSVLLASALLK GND K T Y F A I I P A T RMA E E L
 DKS $\square K L L S L N A G N Y G D S V N G E Y T E T A L I Q L V A L R L D K$ EHDWHVYPLDLRDIIATDHGREVMRNTAGVGATAAL RTGYRTYYVDATSISEK TAGWHIVSTPGLGAVAKVTGVVS KRWKTYEI PIISI AKDEVGNVITTQSVVLGVAVKFTGVMD E IN AQLYYIIDAARIAQELGLNIIKSTHLVWEAVFLILGQ PRSRNFYSLPATKAARVHGSEQSSNVLALGVVASLSGQDP KAHKNSDA: DGDADAKEDGSPRSMNVVILGATCADATPF NSRSKLYKVDALSIAKESGARITKN VVMLGALDA ENGWHVYPLDLRGIAKEHGREVMRNTAGVGATAALTGMES DKITNLLLINAAKTAKEAGNIISENMVLLGAAVA DI PLIKALAEEAGGAI MRNVVALGAACAVADFP LFVVPFTEIAAELGTSLMKNMVALGATASLLNLED DSGVRLI ADAVSMAMEAGNAMAANSVLIGAMSAVPGFPS AKTAGLVALDAMSLAREAGSPMSVNIVLLGALVQGTGADG AAGVKMVVVDDAELVHRLGELKALNVMMLAYAIIIAVNKR KRKIKLFKIKGYDILKNHMGGNFLNVLILGALCASVANVE DKDUKVLSVDGYGLREKMGGRFLNVMIGGALVA LRGEKLLVVPARDLALRAGSARAINVVMLGVFNAHARLFA
 RVASRVRA DATALAAEAGSPQATNVVMLGALARHAP ME ENDWHVFPMDLRGLAKEHGREVMRNTAGVGVTAALLD MD GRKLRLYVIDANKISEEIVGSIIANMAILGYSYAVDPGLQ

- N S L EKLPHAVVLDADAVAKAAMAPRSANMALLGA RSGARSCVVPCFDVALEGGSPVYENAVMLGALARLDGAPQ

R
RKKWKIYE!P!ITIA
 KRRWKIYEIPIISDA QL PMYEAV $\qquad$ $\square$ A
NDYVIDPVATEMA LEGCEAIVKVDAF SGAK
AKGTRRGDIPFKKIAKEDGGGMRNVVALGAACETTDFPF SSFGRAGD SNKSQLVV AAGATL PADALAKTAGSARSANMV LVGAA ELINAKLYTI DAARIAEELGLSTKSTHLIWEAVFLILHQ ARGGRLYLLDTTDLARAAGNIK
$K N V Q V Y K F E A E K L K T D F Q L K K V N F Y V A Q L \quad \square A D F D Q$ MTRKLIQKPVTELTEKKFGSTLANMVGLGLIARAGSFVT
 GTGVNAL KFEEIA $\frac{\mathrm{L}}{\mathrm{K} \square \mathrm{S}} \mathrm{K}$


 KNHNKLLVVDFSDEANSATKGFSGEFLLDLLAFWRAALPEL D N Q $\square R \mathrm{R}$ CAME GYE ILKRHMGGR

 RAGワRYFVVPAREI AEKVG


 S GKN VI DV S F L K M A Q E I G K S I Y G N II A V G L L S GL L


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200
$\square$ TAAENAVTESVPKGTEKTN $\square$ KAFHKGYDYGMAVLKG $\square E A \square T Q V V Q S K L S K S R K A N A T L M E K N M \square A D E V A R N Y V V$

PDLSVSE\|VDRSADMHSDVSKEVLKALVENLEALVT
 AE IVRKEMLSTVPDKVKEANNKAYDLGMAYASKCL

LD H DED DMS DAMGGD LDDQNDEVLHDAYDQVSEM EFSHD LEQSKRV VT NYFRETLIGRREEIINKN $\square K A L E D G Y K \square M Q M$
$\square E N \square D S A D Q K R F G G K G E A V V E N N K K A R A G L E Y V H D$ AVFQNVVDD $\square F G K K G E E V V Q K N M E A \square T R$
$H N L L Q E A V L N R A P K$
K E K ML Li L LERVPAKAKDVNQKAFEMGYEAADKCL
FD RDVVEEALRRR VKPAF $\square D V N L K A F D L G F K A A A G$
EDCMDNALRGAD
$\square G E V R E A \square K Q L S P G K F A E A N \square K V L N \square G Y D A$
DDVVYEA $\square$ KSVL
AEGVLNARIRFFGSRGEKTVADNDRAFETGYEDGRN G I KDMMADAMPDK GFEPNMDVFDDAYETVTSEFDA EATLLEA LTTETVPAKY $\square E \square N R K$
RGAL EMAVMMDSVPKG TEKLNMDALNAGFELGENCEF LIEHI EDLMSDAMGGDVLESNLEILHEAYE IVNEEYDFEHD ERLEYKHLVKGLERVFRGKVLEELNKKVLATAY K K LLLTSMKK TFPA STV EVVANYAAFESGYETD $\square G \square D A A K L E S G Q R A D F A R K G G Q V V E T N L A A F R A G Y E A A Q K$ PPGLDGRNREAFQRGFN
WESLQHAVERRTPQKY
GETVPNEI LR KTMLSKDPEKDHEDNNKAFDLGLKYAK 1 DTAKQA K KNTKQAFLESNLKKAFDLGFEAA

KESLERAV L L NRVPPATEEDNKRALREGYNLVKM
A DAVKNEMLSSVP DKVREANEKAYELGDKYAKQC
PESIMKVLETRIPKGFLEMNQK
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LP IEFS TMEEAVRERFASKGELVVETNLKA
$N G F I V N K L L Q A N G G G F E L L G A V L V E S G I N T V K E K G L L K S$ LDF SQKA WERVVARR VIPPKTVDANLAAFRAGLAFAR
$\square E A D F S Q Q \square Q Q V L K K$ KH DQ TTENE LTKAFKHDQKY DTK TQSLKEAMTKHI KAKYVEMNAQAIDFGYSLIEKSY EALVKHISEYFKKKSEEVIDANVNAALKGYEDGKE E KVEVVIQKRMRKAEE NVKAFR $\square G F E M G R R$
$E D F L T A \square K A R F A K K S E D I D N K N L Q A F Q L G Y D L V K$
NGF IVNKLLQANGAGFELLASVLDAKFITSVDEKNGLRP

PAS ILKAVKKIIPSRY
KEA KTALKEHF AKKESVIEDNLTLLDQGYETVNE

FSLLAD LLTKRFAAKGDK VVSDNAAAQKGFDAAKG VAN P E SVK RAD DEKVPAGTKELNAQAFEEGYQGFKGAVGH LATVKRALETKLGDKFKA NPELRDMNFKAGERGYEGITK

AVVKAKPFVKPESVFVKNEQACRYGYNEVHL
$R N L V Y E T M \square S K V P A K V V E L N K K$
VEAVAEVLPEVLPE KVVRLDP LDQKA LDEA
$\square Q N I M E Q T L N K W P G N N E A \quad R N L G A A G K A Y N E D K L$
$\square K E E N L L E Y I K A D F T A R G E K \| V E M N L K A F R D G R E S$
D G E F


KES KELLQQFF EDQVLEQNLLALEKGYDLL
\IE GGLE WAKGFCDERFAGKKEDUAEKNKIALGRGYE

K D
GK VE DK WVE QM

FDVPS E WA

UniRef90_10GLP4
UniRef90-B5YKQ1
UniRef90-B2A3W5
UniRef90_Q8RA86 UniRef90-R4KCK6 UniRef90-C8WJ50 UniRef90 D8EYX1 UniRef90-D6TPF6 UniRef90_XOZS79
UniRef90-R4XIQ1
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UniRef90 X1E001
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UniRef90-E1QTQ5
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UniRefon Fo IX8 UniRef90-FOLIX8
UniRef90
DONZ2 UniRef90-E4Q5ZO UniRet $90-A 8 V 3 C 7$ UniRef90-A9A7S0 UniRef90-A8MIM8
UniRef90_E5Y4F6 UniRef90-UPI0003B4BB00 UniRef90-T1A4Z6 UniRef90-O2NFH7 UniRef90-C7LWU6 UniRet90-12F4C8 UniRef90-E6SGE6 UniRef90-HOPU91
UniRef90 F7NKR3 UniRef90-Q9V265 UniRef90-K1WZE7 UniRef90-Q1Q679 UniRef90-A5DGE0 UniRet90-D8K3Y2 UniRef90-W9DUJ6 UniRef90-B8D259 UniRef90-ХоTMX9 UniRef90-C5CIB2 UniRef90-UPI0003B5FD59 UniRef90 UPI0003B4D650 UniRef90-K6U3V0 UniRef90-F8F1S4 UniRef90 D4J510 UniRet90_R6AR85 UniRef90- JoLB91
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UniRef90_UPIO00370A7D4 UniRef90-A0A017RUN3 UniRef90-M0M9E3 UniRef90-F9UDD9 UniRef90-A4WK97 UniRef90-UPIO001FFE3E0 UniRef90-UPIo0037B4249 UniRef90-R7JP37 UniRef90-Q12684 UniRef90-UPIo003B61816 UniRef90-E1V196 UniRef90-W3REK1 UniRef90-K2A5K8 UniRef90-K1ZTM5 UniRef90-I3TEAO UniRef90-UPIO0037A6B0A UniRef90-A7HBJ8 UniRef90-G7WNX6 UniRef90-E6UZE3 UniRef90 ${ }^{-}$K7T060 UniRef90-UP100036CE6E5 UniRef90 UPIO0039E4727 UniRee90-UPI0004741F55 UniRef90_UPIOOO440741F UniRef90_B9TP65
 TSIVVTGAAGQGIQTVEDILGKVL KRSGLNVFATKEY KELRLSGSGGQGGVITAAVIFAEAAAACGMNVAQSQSY LIGGSAGQGMDTAGDFLTESAAKRAGYYVVNFKSF FNMLIVGTGGQGQDTLLQLLAETAGNSKFNYVQSFKELH
 TKQFLFYGFDD VESDTARAGTETNKLFESTVDL $N G V S$ RMAGVGGQGNILLSRVMCQGYTNKGFDVKSAENU $V S$ VLGGAAGQGMQTDEESLTKILAKLSGYVFATKEY $N R \square R \square Y M T G V G G Q G T L T A T T L L A R V A V A Q G V E V V A G E D H$ TNTLIVGVGGQGVITVGR■ DSMAAIMASHNVVMSELH TA GVGGQGNDFFGRVLTQLAYLYDKQNIVKGETH LSIT GGDAGQGVESSGAGFTRALA RSGLHVFSDTDY TVSFVMAGSGGAGVVTAGSLLLEAAARAGWYAYMTRSS

$\square K \prod A G E A G Q G L Q T V G G A L C N M M K N A G F Y$ CIFAAQDY YLVWGHDNGTFVEVSNKVALSLSLDEKKKVLIRNKF LNILIGGEAGQGVVSVGAVLGR AMVRGGYEVFADQDF LI KVGGAAGQGLQTTGMALAKTLKKSGFHVFATQYY
 $\square A \square S$ GEA GQGDQTA GNLAAKALDFRAGYNVFTDKS Y YE $\frac{1}{F I M C G S A G E G T I S A G E L S R F M S G Q G F E I M S F D S Y}$ ITSVLCGEAGQGIQTVEA ILAQAVVKQSGYNIFSTKEY

TKRDFDWKMGGQGVESCGEDGKVLAQE GYS DFSQRDF MRFTGVGGQGVLLAGEUFA AAKIVKGGYGLKTATY

> FNTLVGGAAGQGDDTVGKVLEQU KKDGFEVFSYKDY EITVWARG VINMKNIFAEAAKMEGKHVQPFDNY IGMAGSGGDGIVSAGESLMSAAARDGYYGILTKSF WMVGGAAGINASGEMFSRCFTRGGLNVFAYLEY

 TKQFLFYGFDD SFSVGDGGAAGQGVATPGDTFAKDFSRR GLHLNAYNAY NLISLRFANVNGSGSASANNLFAK AVFRMGVPVSPKNDF NKSFIYWAPAGFGVMSMGPMFAKVL KRSGFYVMGYPEY AVNVCIGGEAGQGLVTVGALLVKALSVRDGQTVSLRTKF IVFTASGGQGVITTALILARAATDFEGKNADQSQSY EASKLVKTLSLEDGKYVSLLRTKF LNVLDGGEAGQGLVTVGELLTRAL IRSGYQVHVTQSY IM WVIGGGGGIDTGANVFMRAMARAGYYVIGDREY
 $R \square A G G S G D G \Pi D S T G L I L A E A A V F D G K Y V V Q A Q N Y$ GSGGSGAVTAGLILLAAVG RAGYYGLLGRSA


## UniRef90_X1FFR5

 UniRef90-D3L075UniRef90-G5H375 UniRef90-B6YXS2 UniRef90_D3DI99 UniRef90-G7MCV8 UniRef90_A0A024FFM8 UniRef90-X1NF59 UniRef90_U6EBY9 UniRef90-U6EEJ2 UniRef90-FOLIX8 UniRef90-E4Q5Z0 UniRef90-A8V3C7 UniRef90-A9A7S0 UniRef90-A8MIM8
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UniRef90-C7LWU6 UniRef90-I2F4C8 UniRef90 E6SGE6 UniRef90-HOPU91
UniRef90-F7NKR3 UniRef90-Q9V265 UniRef90_K1WZE7 UniRef90_Q1Q679 UniRef90-A5DGE0 UniRef90_D8K3Y2 UniRef90_W9DUJ6
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UniRef90 J0LB91 UniRef90_BOCYRO UniRef90_14D1N2 UniRef90-K1Y8P4
UniRef90 B1ZUI6 UniRef90-K2CKP7 UniRef90-R5NDA8 UniRef90-X1E0G8 UniRef90_A0A059DLY9 UniRef90_D3SQ61 UniRef90-F4KZV3
UniRef90_A6MOM2 UniRef90-H3GWL4 UniRef90_UPIO00378B61D UniRef90-E8RHC3 UniRef90-D3PCG0 UniRef90-G8ZZS7 UniRef90_S7TE01 UniRef90-15AYD2
UniRef90_J8LP48
UniRef90-D6SQJ9
UniRef90_Q3B3Z7
UniRef90-E1QTZ6 UniRef90_Q1JYL5 UniRef90_UPI000370A7D4 UniRef90-A0A017RUN3 UniRef90_MOM9E3 UniRef90-F9UDD9
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|  | 120 |
| :---: | :---: |
| UniRef90-D3L075 | NYLK ERISSDTVVIG GDDEEMGKE |
| UniRef90-G5H375 | DKY AGDLDPEGILIVD |
| UniRef90-B6YXS2 |  |
| UniRef90-D3D199 | EFNR KHLRPGT |
| UniRef90-G7MCV8 UniRef90- A0A024FFM8 |  |
| UniRef90- $\times 1$ NF59 | ECLKACYFANSKTAFIINKYIVPILLLQKPLTEKEILKNLK |
| UniRef90-U6EBY9 | EHLK DRTSKDT\IT G G DEETKSSPGSENSLP |
| UniRef90-U6EEJ2 |  |
| UniRef90-FOLIX8 | KRISKNT |
| niRef90_DoNZK2 | R S |
| UniRef90_E4Q5Z0 | AARNVNKI NKDSIVVLND |
| UniRef90-A8V3C7 |  |
| UniRe90-A9ATS0 | YS SKLKTNGILLYDSVISSVEDDKTVIFGEKNI |
| UniRef90-E5Y4F6 | RGLRYLKQGGVVFSSTD |
| UniRef90-UP10003B4 | EALRFVKRAKKETKFIISKDPIAVKEGSANYPDPFFEEMT |
| T1A4Z | EAVFLVNTPSLSMQGK |
| UniRet90_Q2NFH7 | EAIRALEKTSKDTSVIVNTSPSTINQQDVNYPDDILSELD |
|  | FRPGFLDMLRPGGTV LNTA凹MPPLFKAENYPTVEAVREA |
| UniRef90-12F4C8 | TSQLQ |
| E6SGE6 | A PRA |
| UniRef90-HoPU91 | AA ESPRLDADSLL |
| UniRei90-7NK3 | ADRNARFRGRESYA ADAHTATT |
| $\begin{aligned} & \text { UniRe990_Q9V265 } \\ & \text { UniRef90_K1WZE7 } \end{aligned}$ | SMMENDELIDGGILLDN WDQKES |
| UniRef90-Q1Q679 | HR KDiskNGViv |
| UniRef90 A5DGE0 | ANYDVLATAKPGATILLGNKKSUEEDVVPKLIPTGFKRGLA |
|  | L |
| UniRet90-B8D259 | YNYLNDEG |
| UniRef90-B8D259 ${ }^{\text {UniRe90 }}$ | NTAYLKQDGI Al VSDETKKPLVGRVPMPRGARKTLS |
| UniRef90-X0TM | KNVSEKDSLVV YDDQMVELKD |
| C5C |  |
| UniRef90-UPI0003B5FD59 | FALKPGGLLIYDSPLKPHEEDRSVLGQK |
| UniRef90-UP10003 |  |
| UniRet90-K6U3V | RISSDTL |
| UniRe90_F8F1S4 | ( GWLKPEGTLV TAAEPFIDIS |
| UniRef90-D4J510 | FLPTVP |
| UniRef90 R6AF | HG KEVPEGGVI ADDA |
|  |  |
| UniRef90-14D1N2 | S SLSPGGVLV SDESNSGS |
| UniRef90-K1Y8P4 | GMQKGGTLITNTNRS ${ }^{\text {D }}$ D DMDK |
| UniRef90_B1ZUI6 | PVDADTVVI Y EQKTGVEP |
|  | H ${ }^{\text {dil }}$ S GGG |
| UniRet90_R5NDA8 |  |
| UniRef90 X1EOG88 | K EVIKKEENGLLI WDSSTILG DMDRHERASMQRFRA |
| UniRef90- D3S661 | ( |
| UniRef90-F4KZV3 | PQD VKSVRSGGYFVYDSTKロ |
| UniRef90-A6M0M2 | , |
|  | VASSVKQGGKLLVLA GWK S S DVDER AAFKQQVA |
| UniRef90 UPIOOO378B61D | RLLSAGSACLY |
| UniRef90 D3PC | EKEKTEENV |
| UniRef90-G8ZZS37 | DSLQVAATVKEQGTILVISQKSLNDQDMKGПNESFFKAV |
| UniRef90_S7TE01 |  |
| UniRef90 I5AYD2 | NKYA |
| $\begin{aligned} & \text { UniRef90-TOZDM1 } \\ & \text { UniRef90-J8LP48 } \end{aligned}$ | AP ${ }^{\text {d }}$ |
| UniRef90-D6SQJ9 | ELTPGAVA |
| UniRef90_Q3B3Z7 | RRYHERSGTTGSVA |
| UniRet90-E1QTZ6 | D FTHFQDVKRGGYVIVDTSFNTRLDQLQYMEDELIKDRLT |
| UniRee90-Q1JYL5 | VAPREAPPGAVAVVNTSLTPTAAMVGGRPD |
| UniRei90 A0A017RUN3 | NKYK KYIKDDTVVILN DENINADLGNYFKF |
| UniRef90-M0M9 | PLSENDDELREGGVIVYDEGLLDASEI |
| UniRef90-F9UDD9 | ARFADELPLDRNSLILTDAQAGPIPEILVRSGAQVRSLPW |
| UniRei90 UPIO001FFE3E0 | (1) |
| UniRee90-UPI0003784249 | EGH IDSLKESGIVLYDSD |
| UniRef90-R7JP37 | KANR K WLKPGATVILDEDSITEEHLRKAGFADP |
| iRef90-Q12684 | HLDVVT TVEEQGSI ALIS QL DSVESYVKKLPESF |
| UniRet90_UPI0003B61816 | EMVDVLVNVKDGALVVFDADLV |
| UniRef90-E1V196 | SMVRDAQEVEPGGYFUYDSTKPLDP DNTRAMPPGKMRTLL |
| UniRet90-H6SMP8 | RFSAEIPLGEHSLII ADPAQGPVPNTRAMPPGKMAV |
| UniRet90-K2A5K8 | EFHR DELDENSLII YDQEDDNDD |
| UniRef90 K1ZTM5 | A NLRHVRKGAVILVDTDWTESELAKADMPEDPLKTPI |
| UniRef90 I3TEAO | EALRYLSYARRGAVLVVNRLLRLPPPLTRPPGMDVVEEALR |
| UniRef90-A7HE | ADLKPGGMLLVNTPGNLEKAGYKTN |
| UniRef90 G7WNX6 | RHLWRLNEGAVVI |
| UniRet90-E6UZE3 | KFRD |
| UniRef90-K71060 |  |
| UniRet90_UP100036CE6E5 | ASDANLAMAAPDTAAVLINTAVVPTAAMTGRMPATAIVARVR |
| UniRet90 UPIO0039E4727 | ARVAYGSTEATVSIASTSATPTGAMVHDYPEDLLRRLE |
| Uni | KT |
| UiRef90 B9TP65 |  |



UniRef90 X1FFR5 UniRef90 D3L075 UniRef90-G5H375 UniRef90_B6YXS2 UniRef90 D3DI99 UniRef90-G7MCV8 UniRef90-A0A024FFM8 UniRef90 X1NF59 UniRef90 U6EBY9 UniRef90_U6EEJ2 UniRef90-F0LIX8 UniRef90-D0NZK2 UniRef90_E4Q5Z0 UniRef90-A8V3C7 UniRef90 ${ }^{-}$A9A7S0 UniRef90-A8MIM8 UniRef90-E5Y4F6 UniRef90_UPI0003B4BB00 UniRef90 T1A4Z6 UniRef90-Q2NFH7 UniRef90-C7LWU6 UniRef90-12F4C8 UniRef90-E6SGE6 UniRef90-HOPU91 UniRef90-F7NKR3 UniRef90 Q9V265 UniRef90-K1WZE7 UniRef90_Q1Q679 UniRef90-A5DGE0 UniRef90 D8K3Y2 UniRef90-W9DUJ6 UniRef90-B8D259 UniRef90- Х0ТМX9 UniRef90_C5CIB2 UniRef90_UPI0003B5FD59 UniRef90 UPI0003B4D650 UniRef90-K6U3V0 UniRef90-F8F1S4 UniRef90 D4J5I0 UniRef90_R6AR85 UniRef90-J0LB91 UniRef90-B0CYR0 UniRef90_14D1N2 UniRef90-K1Y8P4
UniRef90-B1ZUI6 UniRef90 ${ }^{-}$K2CKP7 UniRef90 R5NDA8 UniRef90-X1E0G8 UniRef90-A0A059DLY9 UniRef90 D3SQ6 UniRef90-F4KZV3 UniRef90-A6M0M2 UniRef90_H3GWL4 UniRef90 UPIO00378B61D UniRef90-E8RHC3 UniRef90_D3PCG0 UniRef90 G8ZZS7 UniRef90_S7TE01 UniRef90-15AYD2 UniRef90-TOZDM1 UniRef90 J8LP48 UniRef90_D6SQJ9 UniRef90_Q3B3Z7 UniRef90 E1QTZ6 UniRef90 Q1JYL5 UniRef90_UPI000370A7D4 UniRef90-A0A017RUN3 UniRef90 M0M9E3 UniRef90-F9UDD9 UniRef90-A4WK97 UniRef90 UPI0001FFE3EO UniRef90-UPI00037B4249 UniRef90-R7JP37 UniRef90-Q12684
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200
FDVDMSLLEQYFDERFGAKDKGLVTKNIDAAKKGYEDARE LDAVKTAVS $\quad$ HRVPPHTVVANMQALMMVGYEAAE

$\nabla Y$ S N N L A Q $\square C \quad$ TK■
PAS ILKADKK\IPEKY
$\square$ LQ NDLK A GEAGY
FHADIKVLEEYपRKRFGGKGEEVVEKNDEAADRGYN ESVVLALLQA QFPETLRSFVSAVWGDVLTLTYSSKEWLIA $\square P F S K E E \| L K A \square E Q V L R P K M Y E M N K \square L V E N \square Y E K Y$
FDCDLELFNNYLENKFSKKGEETVNKNLEAAKEGY S GLLT SLDEKYRAKGQEVVEKNLSTLEEAYH


DKD NEYWDVITTMKDNDPPKSDD DNDKAFEDGYNCCK FP NEYWDRALKN VSPKPA IWQANYAAFLDA
FKVKREDPSKLI E ETFSGK EEIIKANLEALKRGYDLSGS VEYLESVI KENFASKGDRVVEANLKVVREGWKLARD ED IVIGVLQDSLKRK

KESLIEGTKLT\R EK LTWEMNFRAFERGVE LNF SLEFINAALKSEFGRKGEAIVSANDKAAKAGFEFVRK FSYVDNVLRTAFADKKKDLIEKNRETAHAGYDFAKN
 EAVWLDVIRGRVPERFVDMNLK EKSLI SSI QTNVGQRF REDNLKALEVGYTLGKK VE I PQLITD YFTSSEQLLESNI KALKNGYE $D G F T G A D Q N R Y A K K K Q \square V I D S N V N S F L E G F D W$ LDTL
 $\square P \square P A D T M E G T \square C E D F A T K E P A V I D A N I K A F R$
HDAAVAAMNHMFAKKGKSKFNE SNARAFDAGFNAV
 K AVEPETLK TVM M L S KVPPKVHEANLKA AEEAAVLKVTQNEYGEVVQGFSLDKDNAHA WSGLRI AK K WP VL R SLLKEE $\square$ F EMNRRALYGYNLTQSRFKLE K ESLAK
 FTYLEELITKQFQKKGEKVIGLNVTLAKTGYDLIQT
EESADET DKQFVPSSTDEKNDEAFKFGKQKAEEFDTQLK GLASIVRAMEEVGVKVKQNRRAFELGRQMALDEGWASVKT VEPDKESIKAKFGRKGSQVVDMNLRALELGLDFAKR FEVFKGIIADEFKKK EKLIAPNINAMELGRNYVKE S GVKEVLTEKF KE EV ANKNFNAFEQGYKLV EEAQFPAEKHSVLLRSFVS SAVWGDVLTLTYPSSEWLSA FPALESVLEEQFRKKEKAVVDENI SLARSGYDYATQ QVLID SL 1 KQF RKNPKLAEPNDQALRLGHDY
YKI FEDVI KETMPEKHHE IVNSALLKGGYDICKNTFN AESVRRIWSSA
LDVA V V PESA $\square$ SVI QDAMPPAFFDMNKK
$\square A E S T N R \square W K S \square D P N A N \square S A T S \square S E F \square T V A F K E S \square Q E V$ EMPAGC IRSAFEQKKPEAVDKNLEVLDKAYA

FD $\square D Q N L V E E L V K E A F D D K Q A S \square V E K N \square K A L H Y G W$ NDS $\square E K A \square E K N V P R G \quad T F E \square N Y \square A Y K K G Y E L A K T$ D KY $\square$ AE Q $\square$ T KEFGEGK VAEAN $\square$ A VLDDA WRAA QAKYSP $\square A D$ DK LKGLTNEKFKGKNPA TTETA LNAFNAGH DHAKRYLDSKFAKKNPAI AEANKRADDAGYNY
 CPDSEESFIKAI EKAVPSRFDELN

$\square G \square L D Q V I A D V F A G K \quad K E \square \square N D N K A A K A G Y D Y \square Q K$ YDRPMNNTEKMLQRKF AKKPELATANDKADHGGYNYAQT RLISTVKVEEAI DTLFSGRAAEA NLLRAFNQGLK

 | $Y S R P D E A Q L E S$ | $Q R K F A K K P E$ |
| :---: | :---: | :--- |

EE VVEKVLRKEIRK
EVVEKLFGEQYKGK EKLLASNVQALHDGCDFARE

EDEDEEDGKKFAKK
P QFAAANDTT $\square R$ A GYAYAEA

YGTSSASLNLDKLNA D\|EFKVLTDLADQFKSK EKLIVQNVHADELGYHYARD

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UniRef90 D3L075
UniRef90_G5H375
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