QUERY
UniRef90_K9XSE6
UniRef90_UPIO0034ACF16 UniRef90-A9NZ16 UniRef90_004683 UniRef90-G7L8U4
UniRef90 14 IFAY8 UniRef90_K4D4V2 UniRef90 K9YN42 UniRef90-UPIOOO3454FOE UniRef90-B7KDF6 UniRef90_K9ZGH2 UniRef90-ROGSIO
UniRef90 A3QMD8 UniRef90_C5XQJ3 UniRef90-UPIOOO4011242 UniRef90-B1XQ02 UniRef90 N9M8B6
UniRet90_Q7WTJ2 UniRef90-K9VJK7 UniRef90-Q2JXH6 UniRef90-Q4UAN6 UniRef90-K7VVU7 UniRef90-P09735 UniRef90-UPI00046E5735 UniRef90- M4ITQ8 UniRef90-UPI0002DBBD31 UniRef90_P83583 UniRef90-Q2HZ25 UniRef90-A0A023H9P1 UniRef90-B4VQS4 UniRef90-P00225 UniRef90-B1N6F5 UniRefolo-BOJU83 UniRef90-A9PEJO UniRef90-B7KG64 UniRef90-B8LNJ9 UniRef90_BOKIP3 UniRef90-F4Y458
UniRef90 JoBGN2 UniRef90- F7UDF5 UniRef90-UPI0003635F2C UniRef90-M4QRZ2 UniRef90-UPIO0034B2841 UniRet90_UPIO00346BA56 UniRef90 MOD1D9 UniRef90-K9RHD7 UniRef90-UPIOOO36B8D02 UniRef90-A7YXT3 UniReffo-D3P505 UniRef90-A8HRE6 UniRet90_B8KT77 UniRef90-W8HZS2
UniRef90 K9T438 UniRef90-H5×029 UniRef90_A3U623 UniRef90_UPIOO0474F2EC UniRef90-J1EMS8 UniRef90-12GR97 UniRef90_UPIo0041A4F69 UniRef90_G8RIG1 UniRef90 LomiJo UniRef90-01GKX1 UniRef90-V9U9R5 UniRef90 UPI00039F77CB UniRef90-UPIO002E32F20 UniRef90-UPIO003631F01 UniRef90-E4N1E6 UniRef90-B5IMG9 UniRef90 GaIZC4 UniRef90-X5EC13 UniRef90-A1K270 UniRef90-W6MBS7 UniRe90 - O T674 UniRef90-UPI00042A6BDF UniRef90-UPI000471B8F7 UniRet90_D5SWI9 UniRef90_Q4K9X7
UniRef90_K4BDU3 UniRef90_UPIO00289B98A UniRef90 M8BDT5 UniRef90-UPIO0040DF69A UniRef90-K2Q6M3 UniRef90_UPIOOO36965E8 UniRef90_LOIUC5
UniRef9O_UPIO0036059E7
474F2EC MYKTQLVNQKEGTDVTTQCAGDQYTLDAAEEQGVDLPYSC HKITVHYRQQGKIYTVEVPEDEYILQTAEKQGVELPFSC

$\square \mathrm{Y}$
$Y$
$Y$
$\square$


$\square$
HK I T I N Y R Q
Y E V T I

VYQVRLVNEALDALDRTISVPDDQYILDMAEDAGIRLPNGC
$V Y Q V T V H H R$ GQTYRFTAAADQTVLDAAEDAGLRELPNGC

Y K|  | $K$ | $V$ | $T$ | $L$ | $E$ | $M$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Y$ | $D$ | $G$ | $P$ |  |  |  |  |
| $K$ | $L$ | $V$ | $L$ | $P$ | $E$ |  |  |YKVVTLINTPDOGTKT1

| $F$ | $K$ | $V$ | $T$ | $L$ | $N$ | $T$ | $P$ | $T$ | $G$ | $Q$ | $S$ | $V$ | $D$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $H$ | $V$ | $V$ | $K$ | $V$ | $V$ | $L$ | $D$ | $G$ | $S$ | $S$ | $T$ | $E$ | $V$ |

    YNVTLIMME
    YKVK L IT P E G P
    

Y T $V$ V
FKVKLLTPDGPKE F FECPDDVYVLDQAEELGULELPYSC
Y K V
F RVEI L H Q
$H K V K L H Q \quad G Q T Y T F E A S A D K P L L R S A T A A G I D L P S S C$


Y QV T I EPTGE
TVEF NHE GNTY T I E V V P E D Q KI L E A A Y G A GI D L P S S C

EVTVI N L E E
HKFEVKPDQSILDA GLLD DGLDMPFSC

$F T R L A F T L D G R T T T V D T D P D E P L L T A A D R V R A D A P Y A C$
FTVKFERLGS EVVACGGGQTVLEAARAAGMRDPVSC
VTITTIPKDGRTFEI EVSADETILAAARRE GVWLPADC

FKVEFTRTGGRTIECDADTSLLAAASRAGLSLPASC

VHRVIE $\underset{F}{\text { F }}$ R K S
$M C K V T I V N D G R A N Q V D$
$K V V \mid F T M R A N G V D$
$K \vee V F T M S G K$

EAAD GENLLDA GLDLGGIDLPYAC
EVTVKLDGRTTTVVSVSKETAVLDGAQRSRPDLPBAAC
V Y K V
E V V V V
T QSTG

D GE EQQFK
GKRREVP
VE FN CP

HRVKII S P D G N E K E I


## QUERY

UniRef90_K9XSE6 UniRef90_UPI00034ACF16 UniRef90_A9NZI6 UniRef90 O04683 UniRef90-G7L8U4 UniRef90_14FAY8 UniRef90_K4D4V2 UniRef90 K9YN42 UniRef90_UPI0003454F0E UniRef90_B7KDF6 UniRef90 K9ZGH2 UniRef90_R0GSIO UniRef90_A3QMD8 UniRef90 UPI0004011242 UniRef90_B1XQ02 UniRef90_N9M8B6 UniRef90 Q7WTJ2 UniRef90-K9VJK7 UniRef90_Q2JXH6 UniRef90_F8LSW7 UniRef90_Q4UAN6 UniRef90_K7VVU7 UniRef90_P09735 UniRef90_UPI00046E5735 UniRef90-M4ITQ8 UniRef90_UPI0002DBBD31 UniRef90 P83583 UniRef90 Q2HZ25 UniRef90_A0A023H9P1 UniRef90_B4VQS4 UniRef90 P00225 UniRef90 B1N6F5 UniRef90_B0JU83 UniRef90_Q8DLK4 UniRef90_A9PEJ0 UniRef90_B7KG64 UniRef90-B8LNJ9 UniRef90_B0KIP3 UniRef90_F4Y458
UniRef90 J0BGN2 UniRef90_F7UDF5 UniRef90_UPI0003635F2C UniRef90-M4QRZ2 UniRef90_UPI00034B2841 UniRef90_UPI000346BA56 UniRef90_M0D1D9 UniRef90_K9RHD7 UniRef90_U5QLT0 UniRef90_A7YXT3 UniRef90_D3P5Q5 UniRef90_A8HRE6 UniRef90_B8KT77 UniRef90-W8HZS2 UniRef90_K9T438 UniRef90_H5X029 UniRef90_A3U62 UniRef90_UPI000474F2EC UniRef90_J1EMS UniRef90 I2GR97 UniRef90_Q390N9 UniRef90_UPI00041A4F69 UniRef90_G8RIG1 UniRef90 LOMIJ0 UniRef90_Q1GKX1 UniRef90_V9U9R5 UniRef90 UPI00039F77CB UniRef90_UPI0002E32F20 UniRef90_UPI0003631F01 UniRef90_E4N1E6 UniRef90_B5IMG9 UniRef90_G2IZC4 UniRef90_M7MVB1 UniRef90_X5EC13 UniRef90_A1K270
UniRef90_W6MBS7 UniRef90 B6B4E4 UniRef90 H0T674 UniRef90_UPI00042A6BDF UniRef90 UPI000471B8F7 UniRef90_D5SWI9 UniRef90_Q4K9X7 UniRef90_K4BDU3 UniRef90_UPI000289B98A UniRef90 M8BDT5 UniRef90_UPI00040DF69A UniRef90_K2Q6M3 UniRef90_UPI00036965E8 UniRef90_LOIUC5
UniRef90 UPI00036059E7

RAGACSTCAGKLVKGSVNQSDQSFDDEDQDSKGF LTTCVA RNGACTSCAVRI SS GEIIEQPEAMGLSPKLKKQGYALLCVS R A GACS T C A GK L Q S G T I N Q D D Q S F L D D D Q $R A G S C S S C A G K V T S G S V N Q D D G S F L D D D Q \square K E G W V L T C V A$ R A GA C S S CAA A KVVVE G E V D N S D N S F L D D D Q L S A GF V L T C C V A


 K Q GECSACDAK LIS GEI DQSEQKFLRPQE』QAGYVI TCVT RAGACSSCAGKVVSGSIDQSEQSFLDDDQMSDGYVLTCLA
 RAGACSTCAGKMVSGTVNQSSQAFLNDNQDKEGYVLTCVA
 GHGTC GTCKVQQVTDGF YDVVGEPFALMDDERDENKVLACCC $K$ Q GECS A CVAAKLLS GE I D Q S E Q K F L K P SEELQA GYAV T C V A Q A GVC T T C A G R L K S G S V A Q P D A M G I G P E L K A Q G F V L L C V A RGGSCSTCAATLVSGEIDNSEQSYLDDDQVKKGYCLDCTS
 $R A G A C S S C A G K V V A G E V D Q S D E S F F L D D D Q M D E G Y V L D T C D A$

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

 N A GVVC T T C A A A Q L S Q G S V E Q G E G M G L


 $T$ A GVVCTTCCAA RV A E G S V D Q T D G M G L G P E L Q A E G Y V L L C V A
 Q S GL C T A CRRCR KL E GE VIKMTES D GLLS E S EII E E G Y I L A CVVG R A G A C S T C A GK I E S G TVVDQE D Q S F L D D D QL E A G F V L T C V A
 TKGMCGTCKTRMLS GQVDMRHAGG\|RQRE』DQGWILPCCS Q Q GWCTTCAGRVVDGEVTHPHARRYHDEDREAGFALLCTA
 A Q GMC GTCKTTLVSGSVDMRHNGGIRPRE\|AQNKILLCCS R S G S C S T C A G I V E GTV D Q S E G S F L D D E Q M E K G F V L T C V A K S GVVC C T C R A R V R E G K V E M A E N Y S L E P W E V E A G Y V L T C Q S T K GILC GTCKCKLAE GTVEMKHGGGIIRQREIIDAGMVLICCA K G GVVCSTCKALLIE GEVEMD DQRGLTVEEVANNMILTTCS
 K G GVVCGTCRARVVEGEVDMRRNFALEDEEVAAGFVLTTCS
 TS GVVCGTCRAKCVQGEVRMERNFALDKAEVAAGFVLTTCQC

 Q S G I C GT CVAT CTS GDYEMGRTE GL S DVVRAARKILTCQT K G G V C R A GVC RVGGC GTCKCKLKS G K K G GVCSTCRCKVLE GEVVEETA YLL EREVSDGFILAC Q S A G G VVC G T C R A R L V V G A V S M T E N Y A L E P D E L D R G Y V L T C Q S
 CSGVCTTCAARI SEGTVHQPDAMGVKDDLKEAGYALLC

 K G GVVCCT C R A K V L E G K V R M D K N Y T L E Q P D I D A G Y V L T C Q A
 KA GVVCSTCKCKVI E GEVEMVSNHALDEYEVEQGFVLVSQS
 RTGACSTCKGKVVAGEVDAGVYPALSPEDLAEGYTLFCQA $R$ S GVVGQCRVRLI S GEVVMDVHEALTPQERAQGHILPCQA
 $K$ LGVCMTCPA KLLSSGNVDQSE GMLSNDVVERGYAL LCAA

 E S GLLC GTCKVMKLS GEVEMDHNGGILDDEIDDEGYILACCS RNGACGSCKGRVLQGEVDHTKPPGI TEAELADGMALECQA T H G T C GT CK A E I L D G E V D F G D P Y A L L D S E R A E G C A L L C VA

|  |  |
| :---: | :---: |
| QUERY | Y P T S CVVI T HQE |
| UniRef90_K9XSE6 | YPRSDLVVETQD |
| UniRef90-UPI00034ACF16 | Y A T S D CKI E T |
| UniRef90_A9NZ16 | YPTSDCVIHTHKEGELY |
| UniRef90-O04683 | YPTGDVTI ETHKEEEL |
| UniRef90-G7L8U4 | YPRSDLVI ETHKEED |
| UniRef90-I4FAY8 | YPTSDCVILTHQEDA |
| UniRef90-K4D4V2 | Y PKSDCVIHTH |
| UniRef90-K9YN42 | YPRSDLVVETQDEDEV |
| UniRef90_UPI0003454F0E | Y ARS DLEVVETQDEDEVY |
| UniRef90-B7KDF6 | YARSDLEVETQDEDEVY |
| UniRef90-K9ZGH2 | YPDS DCVLETH |
| UniRef90-R0GSIO | WPTSDVVVETH |
| UniRef90-A3QMD8 | Y P T GDCVVHTHEEGD |
| UniRef90-C5XQJ3 | YPRADCVIYTHKEE |
| UniRef90-UPI0004011242 | YPTSDCVI ETDKEEDLY |
| UniRef90-B1XQ02 | HAKSDLVVETQDEDEVY |
| UniRef90-N9M8B6 | IPPQSDLTI EVEDDED |
| UniRef90-Q7WTJ2 | KPQSDMVI EADVDED |
| UniRef90-K9VJK7 | YPGSDCTLLTHQEQVLY |
| UniRef90-Q2JXH6 | YPTSNLEEVETDQEEEVY |
| UniRef90-F8LSW7 | YPTSDCVI KTHQEDEM |
| UniRef90_Q4UAN6 | Y AKS D CTI ETHKED |
| UniRef90-K7VVU7 | YPTSDVTI ETHREE |
| UniRef90-P09735 | YPTSDLTI |
| UniRef90_UPI00046E5735 | HPL ${ }^{\text {L }}$ S DVIVD |
| UniRef90-M4ITQ8 | YPTSDCVIKTHQEEELY |
| UniRef90_UPIO002DBBD31 | R P T S A R VV |
| UniRef90-P83 | Y PK S NVTI ETHKED |
| UniRef90-Q2HZ25 | YPTSDIVILTD |
| UniRef90-A0A023H9P1 | YPKSDCKI AV |
| UniRef90-B4VQS4 | LP R S NLK K V E S G |
| UniRef90-P00225 | YPRSDVVIETHKEE |
| UniRef90-B1N6F5 | RPTGAALAVDYDQ |
| UniRef90-B0JU83 | YPRSDIKLESGKEEVVY |
| UniRef90_Q8DLK4 | RPCSDLKLISSEKEEVV |
| UniRef90_A9PEJ0 | Y P T S DVVI |
| UniRef90_B7KG64 | Y P R S D C T |
| UniRef90-B8LNJ9 | FPSSDLEVETQDEDEVY |
| UniRef90-B0KIP3 | QS DLV |
| UniRef90-F4Y458 | YPRSNLKFDTSKEDEVY |
| UniRef90-J0BGN2 | FPVTDRVVIDFDQE |
| UniRef90-F7UDF5 | YPLSDKVVVSYDQ |
| UniRef90-UPI0003635F2C | HPTSDVVIRV |
| UniRef90-M4QRZ2 | YPTSDVVVLTEQEESLY |
| UniRef90-UPI00034B2841 | RPTSEAVTVDYD |
| UniRef90_UPI000346BA56 | R PL L D V T |
| UniRef90-M0D1D9 | R PRSDVTVVT D Q Y DEL |
| UniRef90-K9RHD7 | \P T S D CKI E |
| UniRef90-U5QLT0 | YPRSDLKVEELQAEDEVY |
| UniRef90_UPI00036B8D02 | K P L E DVVI |
| UniRef90-A7YXT3 | Y PTS DVTIKTHQEEELIF |
| UniRef90-D3P5Q5 | R P LT ERV |
| UniRef90_A8HRE6 | RPTSDL |
| UniRef90-B8KT77 | HPDSDKVVVDFD |
| UniRef90-W8HZS2 |  |
| UniRef90-K9T438 | R PLCDLKI ESEKEEAVY |
| UniRef90-H5X029 | R PVSDRV |
| UniRef90-A3U623 | HPTTPKVVVDFDE |
| UniRef90_UPI000474F2EC | VPR R C D T T E |
| UniRef90-J1EMS8 | R P LT D S V |
| UniRef90-I2GR97 | YPESDGVIV |
| UniRef90_Q390N9 | TLQADTVIEADVDEE |
| UniRef90-UPI00041A4F69 | HPTSPELRVDFDD |
| UniRef90_G8RIG1 | FAESDCEID |
| UniRef90_LOMIJ0 | WPKGDGVTLD |
| UniRef90-Q1GKX1 | Y P L S D ALVVSYD |
| UniRef90-V9U9R5 | RLRS DVKI ELDREGA |
| UniRef90-UPI00039F77CB | FPVTDKVIVDFD $\mathrm{V}^{\text {P }}$ AE |
| UniRef90-UPI0002E32F20 | HPTTDRVVVDYD |
| UniRef90-UPI0003631F01 |  |
| UniRef90-E4N1E6 | RPV V D R V T |
| UniRef90-B5IMG9 | FPTSDLTLTAGME |
| UniRef90_G2IZC4 | KPQGDLTI |
| UniRef90-M7MVB1 | RPTTARVLVDYD |
| UniRef90-X5EC13 | R P TS DAVSV |
| UniRef90-A1K270 | HPLTERVVISYDD |
| UniRef90-W6MBS7 | RPRSDLVI EA |
| UniRef90-B6B4E4 | FAFTQKVIVDYD |
| UniRef90-H0T674 | K A K S C V I R I P A S A V |
| UniRef90_UPI00042A6BDF | HPMSDDVI |
| UniRef90_UPI000471B8F7 | RAQSDLVIESTE |
| UniRef90-D5SWI9 | RAFSHLV |
| UniRef90_Q4K9X7 | R ALGGDCVVRVPA S S QV |
| UniRef90-K4BDU3 | Y PRSDCHIR V $\mathrm{C}^{\text {P }}$ |
| UniRef90_UPI000289B98A | FPTSENV |
| UniRef90-M8BDT5 | KPSSDCVI AVP |
| UniRef90_UPI00040DF69A | RPESDDVI |
| UniRef90-K2Q6M3 | RPKGDIEI E |
| UniRef90-UPI00036965E8 | VAVDDLEIEVRE |
| UniRef90_LOIUC5 | RPRGDLVVEA |
| UniRef90_UPI00036059E7 | K P L S D M \( |
| ) V I E A K E |  |




| UniRef90_S6CEC5 | HPHSDLVLE A REVES L |
| :---: | :---: |
| UniRef90-Q7XYQ1 | R P T S D M T V R T HVVENELL |
| UniRef90_UPI00034D664F | K P L S D L V V D |
| UniRef90_A9DST4 | HPTTATI AVDFD D |
| UniRef90 Q0SCS6 | F P V S D N V TVI F D |
| UniRef90-V5X8S7 | R P T S A TV |
| UniRef90-Q47CC1 | Y P Q G C V VRVP A S S DV |
| UniRef90-K0W5U0 | K P L S DLV I E |
| UniRef90_C2CT24 | HAKTPNVTIDFD |
| UniRef90_UPI000368A17E | R P A A G TVIEI |
| UniRef90_D8QYW7 | YPTSDLVVITHAEDELL |
| UniRef90-W4HIE1 |  |
| UniRef90_I3ZA97 | KPAS D 1 KI I DE |
| UniRef90-14YLN5 | YPVS DKILVDF D |
| UniRef90_U1ZXA4 | VP K G D V V I D |
| UniRef90-Q2HZ22 | YPRSDCTI LT HQEERL |
| UniRef90-Q2JJF1 | Y ARSELLWVETQDEDEVY |
| UniRef90_Q46PA4 | TADL NVCI EAD $\square$ D E E |
| UniRef90-10RK77 | VP TS P TVVHVVYE |
| UniRef90-W4HT52 | HP T T P FVSVDY D |
| UniRef90-A5FYA9 | $\square$ A Y S D M EV EL Y D E EVL |
| UniRef90_Q3AZL8 | FPRADLTLK TGQEDAL |
| UniRef90-A4G362 | R P H G DVVI EARE |
| UniRef90_UPI000381CD2E | HATTLKVVLDYD |
| UniRef90-UPI000467481B | HPKTDSVEVTFDE |
| UniRef90 ${ }^{-}$N6YCL3 | Q PVS DLVIEAR |
| UniRef90-J2VF00 | K P L S NVEVEA |
| UniRef90_C4S7L6 | K P K S Di Ei NVK Y Y P ELL |
| UniRef90-B9R4I5 | $\square \mathrm{P}$ V S D K V V I S Y D E |
| UniRef90_UPI0002E89598 | RPLLSALEI EA |
| UniRef90_X71809 | LP K S A VVVVD F D |
| UniRef90_UPI00036F440C | R P T G |
| UniRef90_G8M970 | H P V S E R V VVS F D E |
| UniRef90-E1ZAW6 | YPTADCVI QTHQEESLY |
| UniRef90_U4T960 | $\square \mathrm{P}$ ES D CVI K VP S S S E |
| UniRef90_A1WA47 | QPLT DVVLESRQ |
| UniRef90_D3VFX6 | WPK G |
| UniRef90_C6W6M0 | Y V D S DVVVEFRQQ |
| UniRef90_G7GWW4 | T P T A D RL |
| UniRef90_UPI00036F3B4C | K PQEPLV ${ }^{\text {L }}$ L |
| UniRef90_D6B1N8 | $R P V S E Q V T V D F D$ |
| UniRef90-W4HQ31 | R P V T D C T L El GVES |
| UniRef90-B7QVP4 | HPIGGVVEVEV |
| UniRef90_J3HAU8 | K P T S DLVI D |
| UniRef90-J2X3L6 | Q V VD DL Q\|E T F D |
| UniRef90-UPI000255A15B | V P K T A RV |
| UniRef90-M2WBS2 | K P L T D L El E |
| UniRef90-J3AQ77 | VP T S A L R R F P D |
| UniRef90_UPI00031D1C6E | V P Q S D C I I T V |
| UniRef90_D0KE90 | YP T S DVTMY THLLEKNLY |
| UniRef90-E2SCG8 | R P T T S RV |
| UniRef90-D5BQ44 | R A K T D C T L E $\square$ G VES |
| UniRef90_UPI000378370D | TP HS DVVIEARE |
| UniRef90_UPI0003448D4B | LP Q T D TV TV ${ }^{\text {P F D }}$ |
| UniRef90_R9AY16 | LPTSANVRLSFDE |
| UniRef90_UPI00047D5D0E | VALLT DVVLESRQ |
| UniRef90-V2GXU8 | NAASDI TI E C R E |
| UniRef90-M7A9F0 | FPVS D TVTVVD D |
| UniRef90-J4SFN1 | LP T S P TVRRVVYE |
| UniRef90-UPI000474D878 | TPHSDLVLRI PS S S A |
| UniRef90_UPI00037DE81D | TVT G N CVI E V P EP D EV |
| UniRef90_UPI000415D612 | Y V D S DVSIDI |
| UniRef90_L0MIW8 | V P T G DVVVE |
| UniRef90 B5WAF0 | R V R S D |
| UniRef90-G8M5B7 | T A Q T D LT D D VRE |
| UniRef90_UPI00036F1D99 | R P K T D L V D |
| UniRef90_A9AT08 | RARTPRLV |
| UniRef90_C0EL40 | T A K S DLKINVP |
| UniRef90_D0J4F7 | TPHSDVVLESRQ |
| UniRef90-14JNY9 | R\D G DLQQVELF D |
| UniRef90_UPI0004771BD5 | V A R S D EVSVTY |
| UniRef90-G2L8D0 | RVLG D V L Q P F P P |
| UniRef90_Q397M4 | $\square \mathrm{P}$ Q S DV TIIA V |
| UniRef90-UPI000050F99D | FPVS DEVTVVY D |
| UniRef90-UPI000255926A | RVES D CAVRFDFDS S L |
| UniRef90_D3F5G0 | HPVS D TVTVD F D Q |
| UniRef90_UPI0002375AB6 | QPLSDVVLEARQ |
| UniRef90-A1UCP3 |  |
| UniRef90-R7WTN3 | R P V S D A V |
| UniRef90_UPI00034C1925 | Y P R N CVIR T H Q A Y L |
| UniRef90_UPI0003138D55 | HP吅T E EVEV |
| UniRef90_Q1HCP4 | \PPTEDLEI K V R |
| UniRef90-UPI0002FC1A43 | R P R S PLT |
| UniRef90-W5WJY2 | VP E S PVVKVS Y D |
| UniRef90_L8LW50 | FPTSNCTILLTHQEEE |
| UniRef90-Q2JA06 | HAFS DLSV ELLY D E D M I |
| UniRef90-F4XI28 | H P V G Q V V V S A |
| UniRef90-D7G5N8 | Y P ES DV HFAVVDEEDL |
| UniRef90_I2IS64 | R A A S ALVVST |
| UniRef90-A7IPX7 | TPS S DLEINVRAGDALL |
| UniRef90_F7YRL2 | IP E T DI EVV |
| UniRef90-UPI000262977F | $\mathrm{R} V \mathrm{MS} \mathrm{DV} \mathrm{E} V \mathrm{E}$ A |

UniRef90_UPI000380C52C UniRef90-U2A642
UniRef90_H5UE38 UniRef90-H5UE38
UniRef90 S5YZ89 UniRef90_UPI000475A937 UniRef90-AOAO23BQG5 UniRef90-F4LVQ4 UniRef90_10K3V2 UniRef90-M1X450 UniRef90-K6WEU2 UniRef90-F6CZ82
UniRef90-L7KPA5 UniRef90-D4X6D5 UniRef90-H1SCU9 UniRef90-W0L8Y6 UniRef90-F4DGX8
UniRef90 D5X4U3
UniRef9-
UniRef90-IOH298 UniRef90-H5WHV8 UniRef90-UPIOOO3698962 UniRef90-XOUZF1 UniRef90-LTFSE6 UniRef90_UPI00035EB6B4 UniRef90-A5EUK9 UniRef90_UPI000377DB03 UniRet90_W7TCV6
UniRef90-I3R9R1
UniRef90-UPI000378DC4F
UniRef90-LOJOK6
UniRef90-UPIOOO46466B5
UniRef90-L7VWFO
UniRef90-F81876
UniRef90 W2D8X5
UniRef90_LoIWDO
UniRef90-UPIO0046A5047
UniRef90_U3HKC4
UniRef90-Q51603
UniRef90-UPIOO047B2395 UniRef90-B5JT40
UniRef90_G8M7K5
UniRef90-HOTHO3 UniRef90_AOP4V1 UniRef90-UPIOOO22608ED UniRef90-C5CU56 UniRef90-A0A013XRF9 UniRet90_A3PT96 UniRef90-A3VF65 UniRef90-R4T229 UniRef90-UPI000381F8F5 UniRef90-COBL19 UniRef90-R1158Z0 UniRef90_R1KRQ4 UniRef90-MODWM5
UniRef90 U1NNR9 UniRef90-UPIOOO3F58567 UniRef90_ 5 KKIG2 UniRef90-K9DT80 UniRef90-UPI00037BDD80 UniRef90 A1WIR3 UniRef90-UPIOOO4204F60 UniRef90-G8MND9 UniRef90_J31XF2 UniRef90_HOPT96 UniRef90-N6Y8C3
UniRef90 U2J8L9 UniRef90-C3VA08 UniRef90-R8B1K3
UniRef90 A2SDZ2 UniRef90-XoT2W0 UniRef90-UPIO003A21EAE UniRef90-UPIO003734747 UniRef90-AKX6AO UniRef90-K8NN19 UniRef90 O12EV8 UniRef90-K7LTJ2
UniRet90 G8T6X0 UniRef90-닌.82 UniRef90_L7LAE6 UniRef90-U1NAD4 UniRet90_M1FAK1 UniRef90-A0A017BVS8 UniRef90-IOWZG9 UniRef90-Q9RAL1 UniRef90-R7XXX4 UniRef90-UP10002EAE1C0 UniRef90_T2H402
 HQVTV QPSG HQYAAEADETLLDAANKQGVELP WSC FQVTLTNPKRSLNQTVRVSSEDYILDAAETKGVKHPASC QVTVVL DDEEYALTMGKNDVVLDAVLKENIDAPYSC VTAEVSDDGRTHVIAWPAGKRLLDVIIDAGLNPPYSC MLKVEFA GKGMSVQLAPGETLHTAATKDDLLIPKAC KVKFSPEGK

TAKVQAGETILEAARKANAY NSAC MYKVAL NFADGKTLIFCPVQPNE\|LLDAALKSG\|KIPLDC TLTATLAGRSGSWPLRPGEKLLDAVLRARPDAPYAC TALIRFSKSNKVAPLPPDKSVLEVAESVGVPDDYSC TVDVSLDGVRKRLAWPSHKRLLDVLLDSGLDAPYSC FTAR T TTDHIDRKKAEVPRVPGETLLESARRAGVSPPFSC
 EP GG R E WEVVE RHWSVSTGSNL
TVTVQPFGE MLRVEFIQAG

TFPVEPGEL FQVEVDASGAGFEKSVQVVAEGQSILDALAGGGGIMIVMAC HSIALRFEDDVTYFITSSEHETVADAAYQHGIRIPLDC
 FEDRLASTGESQT VAADESVLTALRRLRPNTPYSC
TATMRFATSGKVAALAS PNASVEEVAESAGVPDDYSC
V VHKAY EVILARS
 RK $\mathrm{D}_{\mathrm{F}} \mathrm{V} \mathrm{KAD}$ RVTFARS VS A A L RVDLDGRQHGLRWPREETVLEAAEGAGVEDPYAC VEVTDDGETRNLAWPRRTKLLDLLLEKGFDAPYSC EVTVLLDDEEIVFTMKQTDDILAAALRADVDAPYSC K TAVEVTVDGETASLEMDAKTDLLDADIKADUDAPYSC

```
FCVEFDDEG
                    MSVTVTENET
```

    YSVEEVVDEG
        FEVEFTKEGE
            GTVARIDGEALAI ATPPHQTLLDSLELGGVDWPSSC
            VTVIADDDEYSFHLNSKKESSLEDKALKKQLPVPFAC
    
## QITVQPSG

FEVRFAESG F TVRLAETGG F SVTLARQG FQUSLTPGGQ HFESLAGSESS YETTLRFN GQDHLMACAADDTLLRAGLRQGLGLAYEC VFQVRUGSTGQGQDHMFIPYTKKNVIDVGLEAKGKLPYSC A $\square H D D G C S A V V Q V F Q K E T L L H A A L R E N I D F P H S C$ TTTFHPDNKK VKVPKGTDILNAAUAAGVYINSSC RVSFTRSKKET $\qquad$ REFYAPVSD TAAKKGLHPSAC TRTRLEVSNGQTILEAALAAGISYPAGC VKVETKTGEFSYACSPDETLLAAGLSAGFSLPYEC FKVVVHYARQTYEQEFECPDDVCHELDAAEEKGLELPYSC RVTVMPAG

VSFEVKPGQSILEAGLAAGYAMPHSC
$\qquad$
FEDEFSKQGE
VEVTLLRSGE
HSVALNFADGKTFVLHVT

VKVEVELDGEEHVFDWQPGEKLLDFLESKGVKAPYSC
TAKVVVFAKSGKEATWWWQPGEKLLDFLESKGVKAPYSC


UniRef90_U2A642 UniRef90-H5UE38 UniRef90-UPI000475A937 UniRef90-A0A023BQG5 UniRef90-F4LVQ4 UniRef90_IOK3V2 UniRef90-M1X450 UniRef90-K6WEU2 UniRef90-F6CZ82 UniRef90-L7KPA5 UniRef90_D4X6D5 UniRef90-H1SCU9 UniRef90_J9S7P9 UniRef90-WOL8Y6
UniRef90 F4DGX8 UniRef90-D5X4U3 UniRef90-T2J8T3 UniRef90-A4AP32 UniRef90-IOH298 UniRef90-H5WHV8 UniRef90-UPI0003698962 UniRef90-XOUZF1 UniRef90-L7FSE6 UniRef90-UPI00035EB6B4 UniRef90-A5EUK9 UniRef90_UPI000377DB03 UniRef90_W7TCV6 UniRef90-I3R9R1 UniRef90_UPIO00378DC4F UniRef90-LOJ0K6 UniRef90-UPIO0046466B5 UniRef90-L7VWF0 UniRef90-F81876 UniRef90-W2D8X5 UniRef90_R9PMD1 UniRef90_LOIWD0 UniRef90_UPI00046A5047 UniRef90_U3HKC4 UniRef90_Q51603 UniRef90-UPI00047B2395 UniRef90-B5JT40
UniRef90 M3TI75
UniRef90-G8M7K5
UniRef90-HOTH03
UniRef90-A0P4V1
UniRef90_UPI00022608ED
UniRef90-C5CU56
UniRef90_A0A013XRF9
UniRef90-A3PT96
UniRef90-A3VF65
UniRef90-R4T229
UniRef90-COBIW5
UniRef90_UPIO00381F8F5
UniRef90-COBL19
UniRef90-R1F8Z0
UniRef90_R1IKQ4
UniRef90_MODWM5
UniRef90- U1NNR9
UniRef90_UPIO003F58567
UniRef90-X5KIG2
UniRef90_K9DT80
UniRef90_UPI00037BDD80
UniRef90-A1WIR3
UniRef90-UPI0004204F60
UniRef90-G8MND9
UniRef90_J3IXF2
UniRef90_HOPT96
UniRef90-N6Y8C3
UniRef90_U2J8L9
UniRef90-C3VA08
UniRef90_R8B1K3
UniRef90-A2SDZ2
UniRef90- X0T2W0
UniRef90-X0T2W0
UniRef90_UP10003A21EAE
UniRef90-UPI0003734747
UniRef90-A6X6A0
UniRef90_K8NN19
UniRef90-Q12EV8
UniRef90_K7L7J2
UniRef90 G8T6X0
UniRef90-12JQ82
UniRef90-L7LAE6
UniRef90-U1NAD4
UniRefgo M1FAK1
UniRef90-M1FAK1
UniRef90-A0A017BVS8
UniRef90-IOWZG9
UniRef90-Q9RAL1
UniRef90-R7XXX4
UniRef9-UPIO002EAE1C0
UniRef90_T2H402

60
70
K GVC GTCLTKLS GTPEHRDSYLLTDE ERARNDQMLLPCCS
 $N Q G T C G T C K V R V I D G T A P P T P D S V L S D A E Q Q Q G Y V L S C Q S$
$T H G L C G T C K I K K N S G E V H M V H N G G I S D E D D E D G Y I L A C C S$


 RSGGCSSCVVKVVEGEIDQSDQNFLDDEQVEKGFALDCVT TQGTCGTCKLKVLVGEEVDHSPEYTLTTAERADGLADLGCMA KNGQCGVCKATLLKGDVELQAQLALSDRERNDKKILTCCC REGDCGSCMARLVTGDVEPGDGVALEPEDLDDGYILTCQA TFGGCGTCRIKLESGAVGYEEFPALTPEEAAEGYALACQA $R F G G C A T C R I K L V E G T V A Y E E Y P G L T P E E E G Q G F A L A C Q A$
$R E G R C S A C K S Y M L D G D V Q M D D Y S A C N D A E E A E G Y V L C R T$ REGVCATCRGRCESGEMEYVDDDALSASELEQGYMLACQT

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

 RAGUCGVCKTQLI EGKVTMEVQEALTADEKAHGLILACQA
 RTGACATCVGRLI DGAI LYDRP PALK TRHI EAGYVLCCDA
 RYGGCITCAARMISGSVRQPKGTALNKRQSEEGYVLLCVAA
 $K E G Q C A S C K S I L L D G D I D D L R Y S A L P E Y E R D Q D Y L L D C R T$
$R A G S C H A C L V R C$
$R$ RGGFCGSCKVK LQSGEVEVLEDSGLTDDEKQQGYILSCSC $K H G G C S T C R A E V V E G D F T Q S D S F S L S D A D R D A G V V L D C S T$
$G M G I C G T C K V R K I S G A V D M E H N G G I S D A D V S E G F I L D C C S$

 QGGVCSSCMAK/VEGKAEMMMNQILTDKEDADGFILTCQA QQGFCGTCKLRVSDGEVDHRDGS LMEPEREAGYFLPCVS RNGTCRACMCRLVDGEIAYREWPGLTAEEKAEGWDLPCVA RAGDCGDCKTHLLEGRVTMEVQDALTEDDKSGGDILACQA RNGGCGSCKGKVIS GEVFCEEYSAMTHEEKTNGSTLCCQC
 $R V G Q C G V C V V K L L E G E V T M A V E T G L A P S D K E Q G Y V L A C Q A$ REGQCGSCAATLRSGRVDMPDTDILEPEDIEAGTILGCQA

 Q G GVCSSCLGKVTQGSAVMVKNNILTDDEVNDGFILICQAA




 RGGVCGTCRARVVTGEVAMQRNFALETEEVEAGFVLTCQS

 RDGACGACKGKVVSGDVALGSGSALSEADRSAGMTLFCKA
 $K S G M C S T C D S Q V Q E G A V R M D Y N E T L T D R E V A N G R C L I C T S$
$E Q G \square C G T C L T R V L E G V P D H R D M F L T A A E H A Q N D V F T P C C S$
 GGGDCGRCKVDVKKGQVVSEPSGRLSKEEDQKGYVLACRS
 $R S G R C G S C K S R L D E G E V Q Q H S R F A L T E E E K S D G L I L E A C C A$
$A T G T C G T C H A R V M D G T V D W A E A P G Y R T L R R D K G D V L M C Q A$ MAGRCGTCRCKVVEGHVDDSGREAQRPLVTEDRYVLACQT RAGSCSVC AGKVEQSDGNFLDDDQIVAGFVLTRVA NTGRCATCAAHCRKGSVDMSNNEVLTDGDLQQGGLVLTCTG




 $R A G S C H A C L V H C L D G L P A D A L P E A L A L E K H A Q G W R L A C Q C$

|  | R A $\square$ S PRTV ${ }^{90}$ |
| :---: | :---: |
| UniRef90 |  |
| UniRef90-H5UE38 | T P IT D 1 AVEPPA A E |
| UniRef90_S5YZ89 | HPMGA ${ }^{\text {P S }}$ SVV |
| UniRef90-UPI000475A937 | RARSGRLV |
| UniRef90_A0A023BQG5 | HPT S A SITVVD |
| UniRef90-F4LVQ4 |  |
| UniRef90-IOK3V2 | YPETD |
| UniRef90_M1X450 | Y P R S N C T I K T N Q P Y L |
| UniRef90-K6WEU2 | TPRSDLIV |
| UniRef90-F6CZ82 | A AVT DI El D A VDL S A L H |
| UniRef90-L7KPA5 | TPSSESV |
| UniRef90-D4X6D5 | R A Q S DLCl S V |
| UniRef90-H1SCU9 | RPTSDLVISTERPGE |
| UniRef90-J9S7P9 | YAYS D CDILELF DEDELL |
| UniRef90_W0L8Y6 | RLT S P |
| UniRef90-F4DGX8 | VPLT DLEET |
| UniRef90-D5X4U3 | KALT DVVI QS H |
| UniRef90-T2J8T3 | SPTSDCTILTHQEEE |
| UniRef90-A4AP32 | KPTTPSLTVDYD D |
| UniRef90-10H298 | 1 P R T N |
| UniRef90-H5WHV8 | LPQTD LVVQAR |
| UniRef90-UPI0003698962 | V PKT DVVLD |
| UniRef90-X0UZF1 | V VQS DLELEVPEEA Q |
| UniRef90_L7FSE6 | RVQS D |
| UniRef90_UPI00035EB6B4 | HPVTEQV |
| UniRef90_A5EUK9 | K S I G NLVVE |
| UniRef90_UPI000377DB03 | RARTAVALE |
| UniRef90-W7TCV6 | LP VTI D EVEVTYED |
| UniRef90-I3R9R1 | RPRTDCRIEV |
| UniRef90_UPI000378DC4F | CLR S DVEI EVVRME E |
| UniRef90-LOJOK6 | IPDTP SVTVHYED |
| UniRef90-UPI00046466B5 | RPNEDCVFDVGVES |
| UniRef90-L7VWF0 | R AKY YVEIE |
| UniRef90-F81876 |  |
| UniRef90-W2D8X5 | QVT G DVQVEAFD |
| UniRef90-R9PMD1 | 1 P K E DVC |
| UniRef90_LOIWD0 | YPEGDLVVDVSD |
| UniRef90-_UPI00046A5047 | T P L E D I V L D |
| UniRef90_U3HKC4 | R A K S |
| UniRef90_Q51603 | QARTDCVVRI |
| UniRef90-UPI00047B2395 | H A T P P Ti K V D Y D |
| UniRef90-B5JT40 | RACSDLELEVRE |
| UniRef90_M3T175 | RCDSDLTI DV |
| UniRef90-G8M7K5 | LARSDVTI D QPETRE |
| UniRef90-H0TH03 | KSVEDLVVEA |
| UniRef90-A0P4V1 | YV S S DVGLL $\square$ |
| UniRef90-UPI00022608ED | R AKTD |
| UniRef90-C5CU56 | EAQSDLTDD A P Q F S VF |
| UniRef90_A0A013XRF9 | K G T GPLVVEA |
| UniRef90-A3PT96 | T PASD |
| UniRef90-A3VF65 | HP\GAVEVDA |
| UniRef90-R4T229 | LPLTT D EVTVT Y E |
| UniRef90_C0BIW5 | 1 A Q T E |
| UniRef90-UPI000381F8F5 | HPTS |
| UniRef90-C0BL19 | MVT S |
| UniRef90-R1F8Z0 |  |
| UniRef90-R1IKQ4 | KPLDDVSI ET |
| UniRef90-M0DWM5 | KPRSDLRI R T DE |
| UniRef90-U1NNR9 | YPMADFTVETGE |
| UniRef90-UPI0003F58567 | YPESDLVLE |
| UniRef90-X5KIG2 | HPTTNVLMLNYD |
| UniRef90-K9DT80 | LARS DLVVDLP |
| UniRef90-UPI00037BDD80 | $\checkmark \mathrm{P}$ V $\mathrm{S}^{\text {D }}$ |
| UniRef90-A1WIR3 | QPLT DVVLQVT DESA |
| UniRef90_UPI0004204F60 | R A A G C |
| UniRef90-G8MND9 | RACSDELV |
| UniRef90-J3IXF2 | RACSRLVVD |
| UniRef90-H0PT96 | HARSDLVIEAR |
| UniRef90-N6Y8C3 |  |
| UniRef90-U2J8L9 | HPTEDTVIEV |
| UniRef90-C3VA08 | RSKSAVLV |
| UniRef90-R8B1K3 | VP T S DI Si EV |
| UniRef90-A2SDZ2 | V PTSDLTI RVRSDP |
| UniRef90-X0T2W0 | T I H S DVEI EVVPPGSRLL |
| UniRef90-UPI0003A21EAE | NPLGEVVID |
| UniRef90-UPI0003734747 | HPQSDLIL |
| UniRef90-A6X6A0 | LPPQTDVAVAVSDEKAV |
| UniRef90-K8NN19 | R PLL D C S L R V |
| UniRef90-Q12EV8 | F LTESCTVEIP EPDEV |
| UniRef90-K7L7J2 | YPTSDVVVETHWEEEL |
| UniRef90_G8T6X0 | Y A T A DLELEV |
| UniRef90-I2JQ82 | A L K S D AVVE |
| UniRef90-L7LAE6 | RAADDLVI D |
| UniRef90_U1NAD4 | Y PKADLTIETSE |
| UniRef90-M1FAK1 | RAKGNSLV |
| UniRef90-A0A017BVS8 | R V K S D |
| UniRef90-I0WZG9 | R A S DLK R |
| UniRef90-Q9RAL1 | YPVSDLEVVEVP |
| UniRef90-R7XXX4 | VP ATAETVKV |
| UniRef90_UPI0002EAE1C0 | KPQT A QVV |
|  |  |



UniRef90 A5VBS3 UniRef90_UPIO0047800EO UniRef90-UPIOOO30B49B5 UniRef90-F2LPK8 UniRef90_-Q2BG70 UniRef90-G2D9U8 UniRef90-A0A059ISU1 UniRef90 F6AJ53 UniRef90-MOMR62 UniRef90-MOHW07 UniRef90_LOM804 UniRef90-UPI00041ED6AA UniRet90-F5RHA9 UniRef90-O5QJ566 UniRef90_D9QQM4 UniRef90-UPIO003755500 UniRef90-Q65VW1 UniRef90-Q1LNT2 UniRef90_12N259 UniRef90-G8MNF5
UniRef90-E8YPD6 UniRef90-E8YPD6
UniRef90 G4F4F6 UniRef90-R9MK00 UniRef90-J3CH93 UniRef90-U2NST1
UniRef90-G2FKI3 UniRef90-D8HQY8 UniRef90-HOJRE3 UniRef90-H6RMM9
UniRet90 D2K2E7 UniRef90-J3F0V3 UniRef90-M1 XPU8 UniRef90-B6A5MO UniRef90_Q0FUL1 UniRef90-R9W2S1
UniRef90 V5XAZ0 UniRef90-AOROF8 UniRef90_UPIOOO255ABA5 UniRef90-O08KE9 UniRef90_N8ZJC3 UniRef90_UPIO00471E6CE UniRef90-UPIO004663494 UniRef90-UPIOOO3
UniRef90 B8K422
UniRef90-A0A058XQ90
UniRef90-UPIOOO3489586
UniRef90-A4EYH6
UniRef90 ${ }^{-}$K5BlI 8
UniRef90_UPIOOO3828943
UniRef90 QORUSO
UniRef90-X1MC81
UniRef90-A0A024QVQ6
UniRef90-UPIOO03629691
UniRef90 D81Z57
UniRef90-B8N7B8
UniRef90-A0A024QRJO
UniRef90_UPI0002558BBF
UniRef90-B1J756
UniRef90_UPIO0016A6E22
UniRef90-Q46RT9
UniRef90-Q3S110
UniRef90_UPI00037C5F8A
UniRef90-A0AO10Q1T2
UniRef90_R5ZZ57
UniRef90-Q5X1Z1
UniRef90-X2KD41
UniRef90-UPIO0047EC985
UniRet90_H1SBC8
UniRet90_P94680
UniRef90-M5DXG6
UniRef90-M3F6Z7
UniRef90-D3RZH9
UniRef90-G8AZO1
UniRef90-H5X5D2
UniRef90-UPI0003783651
UniRef90_U5WJ11
UniRef90-X5DQ48
UniRef90-UPIO004786DB4
UniRet90_E5RY12
UniRef90-H5WYW1
UniRef90-M2YQQ0
UniRef90-HOTT81
UniRef90-H1S7H8
UniRef90_R9ASY3
UniRef90-V5UHL7
UniRef90-A0A016XKP8
UniRef90-LODZV3
UniRef90_M4ZBP0
UniRef90-U5VFK3
UniRef90-10WH89
UniRef90_D9WKX2
UniRef90_Q15XJ1

786DB4

## KP8

 RTGACESCRITVRGGEFAH




 RAGVCGCCKTKVVSGDYTVTSTMTLSEQEDADGYVLACSC


GK C O


 $M S G R C G T C R C R V A W G R V L T G G G N A E S N A R V N N G E A V L A C Q T$ CE GLDC GT CEVVAV AE GHIVDHR D LVLSS LVERDANNRMMVCC S

 GS GSCGACKVVVLS GEPLVT GTGNLTPEQQSEGVRLACQT

 KHGGCGTCKVRLVDGDVEQGPTFALDAEDQANDLILDPCS


## R

## N

N
M



R

## R <br> R

S GLC GTCRTRYLA GEPEHHDY!LLT
$R K G V C S S C Q G W L D D G D V R Q R S R E V S G P$


## ,

,

## ,

R

Q
 K Y G GC $\square$ T CA A KL L K GKVDQSS QVALNNRQ DKNGYVLLCVA

R REGI C GTCEAPVLEGEVQHDDYVLSP
,

REGTCGTCETDII A GUPDHRDSLLSSEERESGETMLDCVAS
RMGLCNTCACHKVSGSTQHLISGESQHDENPALRV CVVS
 $R E G T C G T C E A A$
$E Q G W C L A C A$

M E GVVC GA CETRRVL E G CP D H R D SVVLSAA E R A SN KVVMMICCVS
RNGTCRTCVGRLLSGGVRYE EWPGLSREEKDEGYVLPCAA

 $G G G G C D Q C K C R V L D G E A L D T E T P H F T R K E L A E G W R L G C Q Q$


| UniRef90 A5VBS3 | RALLSPLLID |
| :---: | :---: |
| UniRef90_UP100047800E0 | 1 PLS DLEL |
| UniRef90-UPIO0030B49B5 | $\checkmark A C A D S E$ |
| UniRef90-F2LPK8 | RPTGATV |
| UniRef90-Q2BG70 | KPLSNLETEWGTEDA |
| UniRef90-G2D9U8 | TAISDLV |
| UniRef90-A0A0591SU1 | TPIGTVEI |
| UniRef90-F6AJ53 | RAKSARL |
| UniRef90-M0MR62 | KPRSDCHVEV |
| UniRef90-MOHW07 | KARSDLK |
| UniRef90-LOM804 | HPQGDLV |
| UniRef90-UP100041ED6AA | RSRGPRL |
| UniRef90 F5RHA9 | RSKSALL |
| UniRef90-D9QQM4 | EVIEDVRIEIPPESRL |
| UniRef90_UPIO003755500 | HAYEDLTVELYDEE |
| UniRef90-Q65VW1 | RVKADMTVE |
| UniRef90-Q1LNT2 | RAKGNDQIKVRVEAD |
| UniRef90 -12N259 | HPMTPEV |
| UniRef90 G8MNF5 UniRef90 E8YPD6 | GAKSQRLVV |
| UniRef90-G4F4F6 | RAKGKR |
| UniRef90-R9MK00 | FALSDLEIEVP |
| UniRef90-33CH93 | RSKGPKL |
| UniRef90-U2NST1 | QLQSDVT |
| UniRef90-G2FK13 | MIQGDMTVEVPLESRL |
| UniRef90 D8HQY8 | RACSPRL |
| UniRet90-HOJRE3 | QPTTDVVI |
| UniRef90 H6RMM9 | RSKSDRLV |
| UniRef90_D2K2E7 |  |
| UniRef90-M1XPU8 | TPETDCRIR |
| UniRef90-B6A5M0 | RAAGDIEIDA |
| UniRef90-QOFUL1 | RALISGRL |
| UniRef90-R9W2S1 UniRef90- V5XAZ0 | APASDLKJVAR |
| $\begin{aligned} & \text { UniRef90_V5XAZO } \\ & \text { UniRefo_AROFB } \end{aligned}$ | RALGN |
| UniRef90-UPIO00255ABA5 |  |
| UniRet90-Q08KE9 | TA DDDLEICODDRVF |
| UniRef90-N8ZJC3 | RSKSEl ${ }^{\text {c }}$ |
| UniRef90-UPIOOO471E6CE | RSKSRRLV |
| UniRef90_UPIO004663494 | RALTDEL |
| UniRef90-88K422 | VPETDL迫 ${ }^{\text {V }}$ |
| UniRef90-A0A058XQ90 | RAKTPTL |
| UniRef90-UP10003489586 | TPKSDLTV |
| UniRef90 A4EYH6 |  |
| UniRet90-K5BII8 | RAAGDRL |
| UniRef90-UPIOOO3828943 | KPESD |
| UniRet90-QORUSO | RSRTPRLI |
| UniRet90-×1MC81 | RVLIT DL V V VPrVESRL |
| UniRef90-A0A024QVQ6 | DPEGPLTV |
| UniRef90-UP10003629691 | RAKSDLL |
| UniRef90-D81Z57 | EAASDLELLVPD |
| UniRef90-B8N7B8 | RGLGTVVLD |
| UniRef90-A0AO24ORJO |  |
| UniRef90-UP10002558BBF | RAKSSRLVV |
| UniRef90 B1J756 UniRef90 UPIOOO16A6E22 | RAKTPLLV |
| UniRef90-UPI00016A6E22 | RAKGRLV |
| UniRef90 Q46RT9 NiRet90-03S110 | GAKTRKLV |
| UniRef90-UPI00037C5F8A | QAIT TClFEVGVEDKLY |
| UniRef90-A0A010Q1T2 | RAVSDR LEV |
| UniRef90-R5ZZ57 | KVKGDLEIKVP |
| UniRet90-05X1Z1 | KPSTSLYVASPDNA |
| UniRef90-X2KD41 | YARGELVIDAFDAARV |
| UniRef90-UPIO0047EC985 | T LKS |
| UniRef90-H1SBC8 | RALT P |
| UniRef90-P94680 | RCGGGRLV |
| UniRef90-M5DXG6 | YPKSDVEIV |
| UniRef90-M3F6Z7 |  |
| UniRef90- D3RZH9 UniRet90 G8AZ01 | RFYGDVVVFVPEES |
| UniRef90-G8AZO11 | RARSARLV |
| UniRef90-H5X5D2 | RSCGPRL |
| UniRef90-UPI0003783651 <br> UniRef90-U5WJ11 | SVVENLD AVCD |
| UniRef90-X5DQ48 | RAKTD |
| UniRef90-UPIO004786DB4 | RASSDLVLD |
| UniRet90-E5RY12 | KPVSDVVSLDFDAD |
| UniRee90-H5WYW1 | RAKGGRLV |
| UniRef90_M2YQQ0 | R S C T |
| UniRef90-HOTT81 | KPCSDLILMLDERQA |
| UniRefo- ${ }^{\text {H1S7H8 }}$ | RAKTTRLL |
| UniRef90-V9ASY3 |  |
| UniRef90-A0A016XKP8 |  |
| UniRee90-AOAD16XKP8 | YPCSDVV |
| UniRef90-LODZV3 UniRef90 M4ZBP0 |  |
| UniRef90-U5VFK3 | VA |
| UniRef90-10WH89 | KVKQDMVIEVPEE |
| UniRet90_D9WKX2 | RSRSPlt |
| UniRef90-Q15XJ1 | RS LTT DTL |

UniRef90_UPIo003FCA766 UniRef90-M5RTQ6 UniRef90-E5XPV6
UniRef90-S6KSC1 UniRef90-UPIOOO262E37E UniRef90-V8QMW5 UniRef90-R7BTV2 UniRef90-E3HVZ3 UniRef90-H5TM30 UniRef90-1817E4 UniRef90-L1LU76 UniRef90-A6TOZ9 UniRef90_UPIOOO371318B UniRef90-UPIOO03745CD2 UniRef90-A6UUL4 UniRef90_UPIOOO35D7215 UniRef90-11S3Y0 UniRef90-C6DF38 UniRef90-ㄴ8MLJI
UniRefefo - 13 Y 736
UniRef90-W7XYB2
UniRef90 E3HNT5
UniRef90-UPIOOO36582AA UniRef90-Q222L5
UniRef90-C7Q1M5 UniRet90-V5C8R9 UniRef90-W5WZH5 UniRef90-AOOTW5
UniRef90_UPIO003650B1E UniRef90-M7A8V8 UniRef90-UPIOOO2557D72 UniRef90-A0A052JDA1 UniRef90-UPIOOO3720621 UniRef90-E8LRI4 UniRef90_UPI00036224D7 UniRef90_H6N3Y4 UniRef90-H8JQQ4 UniRef90-B1K175 UniRef90-MOQIT7 UniRef90-DOL8H5 UniRef90-A0A023C5X6 UniRef90_-17BHZ9 UniRef90-G9YBS6 UniRef90-UPI0002DBAB73 UniRef90-K8W3J7 UniRef90-D014C5 UniRef90_UPIO00380FB05 UniRef90-A8TMD1 UniRef90-J3HWW7 UniRef90-UPIOOO374CD80 UniR Refo-E6PSV6 UniRef90-B4E9V6 UniRef90-MOB2M8
UniRef90-W8HGN1 UniRef90-UPIO003B3DFDO UniRef90-UPI0003B3207B UniRef90-F3NIO3
UniRef90-S6JX84
UniRef90-UPI0001FFE355
UniRef90_UPIO002F4B8E2 UniRef90-UPIooo3772FDC UniRef90-S3AVWO UniRef90-UP10002FD6C8E UniRef90-MOLN27 UniRef90-10DY43
UniRef90_C7Y2B3 UniRef90-S3HBX2 UniRef90-UP100035DD747 UniRef90-MOLVN2 UniRef90-F2LC85 UniRef90-O5YQT8 UniRef90-W8H3E9 UniRef90-D5CMDO UniRef90-F9Q8X9 UniRef90-D01771 UniRet90 R5ALN1 1 UniRef90-J3DHM8
UniRef90 UniRef90 L7LBZ3 UniRef90-AOAO28V5C7 UniRef90-H2FWN6 UniRef90-FOGOC3 UniRef90-HOSPG3
UniRef9O_UPIOOO2F83B69 UniRef90-T1XML2 UniRef90-D4B6D8 UniRef90-J2FOP5
UniRef90_MOM6T5
${ }^{1} \mathrm{FRV}$ RVVRD ${ }^{10} 20 \quad 30 \quad 40$ FRVRVRDQGTGALTEFVIPRDRSMLDVLDEAGHEVVMSDC

 FKVTLNHQKE DVHVTVEDGENLLSAAAAAGVY| HAYC YSVELKKS THTVPPDRSVLETVEKAGVAVDESC FSVRIIASTGOGL

VFKLKV
TVRLARSGGCH
FTVQLARSG
FSVTLARSGQ
F QVEL DTGE
$\qquad$ OVPADKSVLCALERAGVVVNVCC VVVASSGK THTVADKSIAEVLEDNGVPLDTSC MYNDTYルKEDGTKKSIKVKEGTTILEGAIKAGVYIDAPC

QLTLTISRPLKNLRVPVGVSLLAALEANGDKLPYSC YEVQLARSA KVIEVPSGKSLLDALLESGI EVDCS NVKLIPSGNGHDFFVEGNESSLDASVRAGLKLSYGC FDVRVASSGQ
 FDVTARSGEGTNQTFECGSTSLEALAEAGGYALPHGC FTVRTASTGEN FDVELARSKKKAYTFRSRYPLNLLQSARQAGIAVPYSC

QVTFSKSKKTATWTPEAGTLLDLAVSEGVDVAYSC FQVELRRSG LFGEVPPSDSVLDVVRAAGIQVESAC
 FTVCLASSG GKVDVGADQSILDALEAVGVSPVTSC MPQVRVDVELDGRRHHLCWPHGQTLVETLLEAGIADPHSC

```
FTVALASTG
FTVALASTG
```

$R G A V V P V$ ARIEVGETLLE ARIEVPAGVSLLQRLLDHGVAVPNLC
$P D G R T$
D HTYAVREDETVL
 FQ\|RDRRSG RLVTVPPDRSVLEALQLAGTPVLSSC TATVTFRRSGVTAAWT-PESGSLLELAEAHG1DAPYGC FVVETDGESY QS $\square T V_{D}^{P}$ PAGKSLLDALLDAG|NVDHSC VTFTKSGVSARWS SATPSLLDFAEEQGLFPDYSC TVEVRDAGSGHVLNVPPGTSYLDAMDEAGLDPLYDC TLEVSRDEYVLDAAEAAGHSWPFHC VPVPSGTSLLEALLDKGMNVPNLC FQ $\square$ Q $\quad$ NTNDGQTHVLSLKPGEPLLPALRAQGLPISYSC

DAVSPSGKTFD FEVEFVASG GKTVAVVGPDRSVLDVEEAGI RADWSC VDVGPGESVL
DQSFECEAGDVMLRSALRAGVAFPYEC
HDVTVTERRTGREAAWTVADGESLEGLAEAQRIDVPFEC
TVTVTF ENHDYEGNNQEVILEQLESKGITLPYSC
FNMTVKTRD QDQVIPARSDESLLVAMERAGIUAPSSC

DAFKSGKETFEVAPDEYVLDAAEAEGLDWPYYC
$T V T F G K T G K R S W E V D G A T S L L E A G E Q V G V Q M P F G C$
VDARPDETVLDALLREGHPVNYSC
NQQFNVPVGMTLLAABEEHEQPVVSGC
VF Q TV KQGANETVVAASANEPI LVALERAGLKAPSRC
 VSSVPVVFRRTGRDAAWTPAGGTLLEFAEGQRVAVPSEC

FTVELARSGQ FEVQTASSG FR\RLE RPDGM

ELRLARSG
TLVLARSGRE
VKVLFASSGKEARWE P

40  -




GQRISVGPDVSVL

## VVCDRSGTR <br> FEVTVVCDRSGTR

 $R T V P V P A D A S L L$$Q S F E C E A G D V M L$ LLDVPGDHSLLEALEAVGVEVPNLC LSFELRAGETLLDGLERTGHAVEYQC YSFDGAADEYLLYAMIDAGUGSPYIC

$\quad F V V E P G E S L L E A A E N R G F A W P Y A C$

UniRef90_UPIO003FCA766 UniRef90-M5RTQ6
UniRef90_E5XPV6 UniRef90-M1P7N3 UniRet90_S6KSC1 UniRef90-UPIOOO262E37E UniRef90-V8QMW5 UniRef90-R7BTV2 UniRef90-E3HVZ3 UniRef90-H5ТМ30 UniRef90_1817E4 UniRef90-L1LU76 UniRef90-A6TOZ9 UniRef90-UPIOOO371318B UniRef90-UPI0003745CD2 UniRef90-A6UUL4 UniRef90_UPIOOO35D7215 UniRef90-I1S3Y0 UniRef90-C6DF38 UniRef90-L8MLJ1
UniRef90_-13Y736
UniRef90-W7XYB2
UniRef90-E3HNT5 UniRef90 UPIOOO36582AA UniRef90-O222LL UniRef90-C7Q1M5 UniRef90-V5C8R9 UniRef90_W5WZH5 UniRef90-A0QTW5 UniRef90-UPI0003650B1E UniRef90-M7A8V8 UniRef90_UPI0002557D72 UniRef90-A0A052JDA1 UniRef90-UP10003720621 UniRef90-E8LRI4 UniRef90-UPIO0036224D7 UniRef90_H6N3Y4 UniRef90-H8JQQ4 UniRef90-B1K175 UniRef90-M0QIT7 UniRef90-DOL8H5 UniRef90-A0AO23C5X6 UniRef90_-17BHZ9 UniRef90-G9YBS6 UniRef90-UPI0002DBAB73 UniRef90-K8W3J7 UniRef90-D014C5 UniRef90-UPIO00380FB05 UniRef90-A8TMD1 UniRef90-J3HWW7 UniRef90 M7A4J4 UniRef90-UPIOOO374CD80 UniRef90-E6PSV6 UniRef90-B4E9V6 UniRef90_MOB2M8
UniRef90-W8HGN1 UniRef90-UP10003B3DFD0 UniRef90-UPI0003вз207B UniRef90-F3NIO3 UniRef90-S6JX84 UniRef90-UPI0001 FFE355 UniRef90-UPIO002F4B8E2 UniRef90_UPIOOO3772FDC
UniRef90-S3AVW0 UniRef90-S3AVW0 UniRef90_R4WRV8 UniRef90-UP10002FD6C8E UniRef90-MOLN27
MiRe 0 -
UniRef90-S3HBX2 UniRef90-UPIOOO35DD747 UniRef90-MOLVN2 UniRef90-F2LC85
UniRef90-Q5YQT8 UniRef90-A8FUC0 UniRef90 W8H3E9 UniRef90-D5CMDO
UniRef90
F9Q889 UniRef90-D01771 UniRef90_R5ALN1 UniRef90-J3DHM8
UniRef90 U2GYF6 UniRef90-L7LBZ3 UniRef90-A0AO28V5C7 UniRef90-H2FWN6 UniRef90-FOGOC3 UniRef90-HOSPG3 UniRef90-UPIo002F83B69 UniRef90-T1XML2 UniRef90-D4B6D8 UniRef90-J2FOP5

RRGECGVCAVVGVDGETDH ${ }^{60}$ VDFFSTHQKQESRKTCACV ${ }^{80}$ GGGGCAQCKVKVESGEILATEKGHDNKKEAAEGERLSCQV KQGFCGTCKVRVLGGEPDHRDATLTEAQRAKGEMLDCVS GGGVCGKCKVTLENGDVESDSAASLKKGEYDKGVRLACKA REGVCGSCETRVLEGEIDDHRGVLSKAERAANRSMMVCVS REGTCGTCETDVLDGTPDHRDSLLTEDERAAGETMLICVS VSGLCCTCKVRYLEGEVDHQDYILGDAQEQSEYLTACVS REGECRSCEAGVLSGAVDHRDYVLSDEERAANRSMMVCVS


R

$$
0
$$

REGVCGTCETAVCGGEPDHRDYDYPES RAGVYSSCAGKLVSGTDQQDDQDFLDSDQVEAGYVLVCIA
 REGVCGACETAVLEGEPDHRDGVLTKAEKAANRTMMVCVS GGGGCAMCRCQVNDGSNLPTETGYFTRKEQANHWRLACQV
E KOGTGTCETDVLDGVPDHRDSVLTA RMGI CHTCTAHIVDGSVTDRRSGHVHG
 $R E G V C G T C E D T V L D G E P D H R D S I$
$R M G D C Q S A Q R L I A G R V D H P D M$ RNGSCRACMCKMESGRVAYREWPGVA RSGMCGSCKCKVNKGQVTRNSTETLSEEDDANGYTLACST REGTCASCETGVLEGEIVHRDSVLTAAERQAGRSMMVCVS REGRCGSCVATVVAGEVDMVPCDVLDADDLEEGLILACQA

 RAGVCGCCKTRILSGDYTTTSTLTLTPDEDAQGYVLACSC

 RQGVCGTCETTVLDGVPDHRDAVLDDLERAAGDRMLVCVIS REGVCGACETKVIEGQPDHRDGVLSKSERAAGKTMMVCVS EEGVCGSCVSGVLDGVPDHRDNCLLSAADKAANNEMALCVS KQGECGSCKCVLEQGEVDGHGYTVLPGAQREQGLILACCS RAGGCVNCTAVLLEGELEMD QQRSLSDEEVEEGFRLTCVA RQGVCGECRLSVRGGEVEHRDLFLTE HAGSCGAC AAHHESGDYRLGECSALT REGVCGSCEVTVLDGEPEARDNGAPAS REGTCGTCEAGLLGGRAEHRDSVLDDDERAAADELLLLCQS AEGMCGTCETGVIEGDVDHRDFLLSPAERAENKSMFVCVS QEGUCGTCETRVVSGEVDHRDFGLS REGVCGSCELSSVLDGEPEHRD RSGACGTCATRVLWGQVDYVQTP
 DATVERGRYGGCQS RSGVCGACRSRVVNGKVFIP FPGRRAADSEYNYVNTCVT RVGVCSGCLQGLVSGEVEYDEDPL DEVPEGKILLCCS QAGUCGCCEDTVLAGEVDHRDEVLTQAQRAGHKSMMACCS RAGGCVNCAAVLLEGELEMDQRSLSE RSGSCGSCRARVVEGAVAYPRAP RMGDCQTCVVTVASGHARDDRNG KKGRCKTCLVQHLEGELMAGAQRGLT ASGGCGSCBAQLVDGEVKWPDAAGLS HAGLCQTCLMQAVKGKVPASAQAGLKSTLVAQNFFIMCS RTGLCGLCKTKVLGGEVETVRTGDLTAEEIAEGYVLACSC GMGICGSCKVRLLTGSVNMEHNGGISDEEIEEGYILSCCS RSGECGWCRSHLVSGEVFDPEETDGRRWDKKYNEVHPCAS RSGSCGTCATRVGSGAVDYEQACLSKKEKAANDQICTCVS RMG COTCVVMLDKGCVRDLRTGV EHVEGER QTCVS

 EQGWCIACAARLLAGDVDRSGALTVYPEDVEAGFVLLCST RQGQCGSCEVHVLEGDPEHRDEDLTEAERASNKTMMACCS RGGSCGTCKTRLTRGQVHYMTQPA E EPVAEDEVLICCA

| UniRef90 UPI0003FCA766 | $\text { R A R G T } \square \mathrm{T}\|\mathrm{~V}\| \mathrm{D} \stackrel{90}{\mathrm{~T}} \mathrm{H} \text { R A D A } \square$ |
| :---: | :---: |
| UniRef90-M5RTQ6 | A VK Q D M V V EVPAE |
| UniRef90-E5XPV6 | R A NGGRLV |
| UniRef90-M1P7N3 | $R \mathrm{~V} \mathrm{~V}$ S D T T V R $\square \mathrm{PE}$ |
| UniRef90_S6KSC1 | GCKSPRLV |
| UniRef90_UPI000262E37E | R S R GRRLV |
| UniRef90-V8QMW5 | R A K S Q L V |
| UniRef90-R7BTV2 | Y P $\square$ G DVEI |
| UniRef90-E3HVZ3 | R G C G L ELDV |
| UniRef90_H5TM30 | R S R S D R L V |
| UniRef90-1817E4 | R A L T P R L V |
| UniRef90-L1LU76 | R S L S ES L V |
| UniRef90-A6T0Z9 | R CKG |
| UniRef90-UPI000371318B | R S R S PRLVV |
| UniRef90_UPIO003745CD2 | RAK S |
| UniRef90-A6UUL4 | K V Y G D $\square$ S $\square \mathrm{N}$ V P |
| UniRef90-UPI00035D7215 | R A H S R L |
| UniRef90-I1S3Y0 | YPTSDCITK A N A E D L L |
| UniRef90_C6DF38 | Q L Q G A V L |
| UniRef90_L8MLJ1 | G CKGSRLV |
| UniRef90_13Y736 | T A VT D LV I E A A E |
| UniRef90-W7XYB2 | K VKEDI K M $\square$ ¢ Q E |
| UniRef90-E3HNT5 | R AKS PLLV |
| UniRef90-UPI00036582AA | R A K S P |
| UniRef90-Q222L5 | R AK T A R L V |
| UniRef90 ${ }^{-}$C7Q1M5 | R A R |
| UniRef90_V5C8R9 | R A K S |
| UniRef90-W5WZH5 | T P Q G A VTVR |
| UniRef90-A0QTW5 | R G S D I EV D |
| UniRef90_UPI0003650B1E | F P VG DVELE |
| UniRef90-M7A8V8 | RSLLS D RLV |
| UniRef90-UPI0002557D72 | LP D G D VTV E |
| UniRef90_A0A052JDA1 | HAETDLVLQ |
| UniRef90_UPI0003720621 | RSCTPKLV |
| UniRef90-E8LRI4 | Q $\square$ E T DVEVE |
| UniRef90-UPI00036224D7 | Y A N T S AVL D A |
| UniRef90-H6N3Y4 | R A A S D L V |
| UniRef90-H8JQQ4 | R P A G DV HVE |
| UniRef90-B1KI75 | K L K S DV T L V |
| UniRef90-M0QIT7 | R A V G D Q V |
| UniRef90-D0L8H5 | $R G \mathrm{SDIEV}$ |
| UniRef90-A0A023C5X6 | R G T G P CV |
| UniRef90-I7BHZ9 | S P R A D C R I A V |
| UniRef90_G9YBS6 | QLNGDVVI |
| UniRef90_UPI0002DBAB73 | C PTS DVVFE |
| UniRef90_K8W3J7 | QLQ G D TEI |
| UniRef90-D014C5 | IPCS DLVV SFEESNDY |
| UniRef90-UPI000380FB05 | R A R S |
| UniRef90- A8TMD1 | V P S S |
| UniRef90-J3HWW7 | GCKGQRLL |
| UniRef90-M7A4J4 | R A LTT E LVI E L Y |
| UniRef90-UPI000374CD80 | R P T S L ELEV |
| UniRef90-E6PSV6 | $R \square K G D V Q L R L \square D S D D$ |
| UniRef90-B4E9V6 | R A H G |
| UniRef90-M0B2M8 | T P A S D |
| UniRef90_W8HGN1 | R S A G D RL |
| UniRef90_UPI0003B3DFD0 | S A A E D CA $\square \mathrm{E}$ \P D A GE |
| UniRef90_UPI0003B3207B | Y P NS DLTMTLP |
| UniRef90-F3NI03 | R A L S P RLVV |
| UniRef90- S6JX84 | H A C A D M RLEIP |
| UniRef90-UPI0001FFE355 | RAEQGC |
| UniRef90-UPI0002F4B8E2 | R CRSDLILD |
| UniRef90_UPI0003772FDC | R S S G |
| UniRef90_S3AVW0 | RARSARLV |
| UniRef90_R4WRV8 | A P R G D C Tilk |
| UniRef90_UPI0002FD6C8E | Q P A |
| UniRef90_M0LN27 | T P R T D C |
| UniRef90_I0DY43 | $\square \mathrm{P}$ K S A I K L |
| UniRef90-C7Y2B3 | F P 】S DLTTLQVP\VHD |
| UniRef90-S3HBX2 | R P R S SVVLD |
| UniRef90_UPI00035DD747 | R A K S A RLV |
| UniRef90 ${ }^{-}$M0LVN2 | T P A S D |
| UniRef90-F2LC85 | V P A S P |
| UniRef90-Q5YQT8 | A A G D C T L DV |
| UniRef90-A8FUC0 | RP T Q G L K L K SVLA Q D L F |
| UniRef90 W8H3E9 | $\square \mathrm{P}$ T A N CTV K A P |
| UniRef90_D5CMD0 | HPE E D I EI A LP K |
| UniRef90-F9Q8X9 | R L K S DV SV |
| UniRef90-D01771 | K PVD DV SI E T |
| UniRef90_R5ALN1 | F A L G DLVLEVP GE |
| UniRef90-J3DHM8 | R A R S G ML V |
| UniRef90 U2GYF6 | R P A |
| UniRef90-L7LBZ3 | A A A G C T L D V |
| UniRef90-A0A028V5C7 | R |
| UniRef90-H2FWN6 | R P E G DVQLDVP |
| UniRef90-F0G0C3 | R S K S A RLV |
| UniRef90 H0SPG3 | M P R S L V L R |
| UniRef90-UPI0002F83B69 | TVVD A C T V E IP E $\square$ D E V |
| UniRef90-T1XML2 | R A CSATLVV |
| UniRef90_D4B6D8 | RAK GKRLV |
| UniRef90-J2F0P5 UniRef90_M0M6T5 |  |

UniRef90 V9Vmu7 UniRef90-UPIOOO479C872 UniRef90-F6D9B3 UniRef90_UPIO003616426 UniRef90-L7L295 UniRef90-D4XEG8 UniRef90_UP10003B37F2F UniRef90_K8WCQ7 UniRef90_CON1Q6 UniRef90-J2RVY1 UniRef90-G8PT39
UniRef90-D3L5P9 UniRef90-K2GL10 UniRef90_M9MKH1 UniRef90_J3P110 UniRef90-E3HIM4 UniRef90_UPIOOO36CE22E UniRef90-UPIO003791B26 UniRet90_UPIO002E467F7 UniRef90-UPIo0036094DB UniRef90 L1P122 UniRef90-R5EK01 UniRef90 ROK4Z3
UniRef90 R9N4S2 UniRef90-C7MB60 UniRef90-U0Z6F2 UniRef90-F2ZPP9 UniRef90-1M2H7
UniRef90-X6L30 UniRef90-E9T855 UniRef90-L7QK49 UniRef90_UPI0004631CB2 UniRef90-16Z4C9 UniRef90-F4KS34 UniRef90_G9Z719 UniRef90_R1H5P2 UniRef90-B1J111
UniRef90-H5U5 UniRef90-H5U5B5 UniRef90_UPI00047A7D42 UniRef90-l4D7V8
UniRef90 O2T8G9 UniRef90-Q2T8G9
UniRef90 Q1YU13 UniRef90_M1ZH50 UniRef90_U1QK37
UniRef90 K5CCZ4 UniRef90-UP10003C7ED6D UniRet90-E4NMH5 UniRef90-D6ZD30 UniRef90-X1U5M7
UniRef90-G2MGH7 UniRef90-A0A017HBK1 UniRef90-D1PYT2 UniRet90_R7NHT2 UniRef90_A0A059MHY5 UniRef90-UPIOOO407B2C4
UniRef90- UPIOOO47DD7D1 UniRef90_UP10004 UniRef90-UPIO00316C9BC UniRef90-UPIO00395AA3D UniRef90-B2JWB3 UniRef90_K2JWK1 UniRef90-B8EKVO
UniRef90 HOTW34 UniRef90-U1MSQ0 UniRef90-S9S7A0 UniRef90-UPIO0047E8CD9 UniRef90_V4S810 UniRe990 UPIOOO37E9815 UniRef90_C3XC12
UniRef90 H3SLG3 UniRef90-G3XR73 UniRef90-K41K28 UniRef90-M2T5P4 4 UniRef90-G7GV70 UniRef90_UPI000377CA3C UniRef90_UPIOOO46343D3 UniRef90-A1VLS3 UniRef90-H8L6L3 UniRef90_E3QE31 UniRef90_R9V633 UniRef90-UPI000467FC36 UniRef90 D7A1V7 UniRef90-UPIOOO3680498 UniRef90-A0A037ZM85 UniRef90_K2L1E1 UniRef90_G4STF8 UniRef90-R9JB16 UniRef90-M7TFX0 UniRef90-X117K5 UniRef90-X5J3W6 UniRef90'R8Z6z8
FTARVAPGDQQCDAWPDQPMLDAALENAMDAPYAC F T A RVA P G D Q Q C D A WP D Q P L L V S L E Q G G I D WP S S C MP T $\square T \mathrm{~V}$ VGQG EL RLLR R S G $\square D$


> EFTLTLARTGRTDRVGADETALTADRRELPDVGYSC
> EFTLLTLARTGRTV R V VK I I IN G D D E HPVLVVSP G S S L L S T L S N Q N L F LIP S A C $K V V$ FARS GVTVDWTPAAG TVLELGEKHKIHMAGGC LTLDNKSGKKVKULDPGQTLLAALEAA GER】NAAC



$E$| $V$ | $R$ | $L$ | $Q$ | $R$ | $S$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $H$ | $L$ | $A$ | $Q$ | $S$ | $G$ |
| $G$ | $E$ |  |  |  |  |  |

 | $D$ | $K$ | $E$ | $Y$ | $I$ | $V$ | $D$ | $G$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $N$ | $T$ |  |  |  |  |  |  |  |
| $D$ | $Y$ | $E$ | $L$ | $D$ | $V$ | $N$ | $E$ | $G$ |

EVK $\square \mathrm{KV}$


F LVQENET
$T \vee Q \vee V G A N E S$

| $A$ | $A$ | $A$ | $A$ | $Q$ | $A$ | $E$ | $l$ | $F$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $I$ | $K$ |  |  |  |  |  |  |
| $D$ | $A$ | $L$ | $A$ | $S$ | $\square$ | $G$ | $V$ | $E$ |
|  | $A$ | $L$ | $Q$ | $R$ | $E$ | $G$ | $Y$ | $D$ |


 FEVEL EGETYSCRNDETLLVAMERAGIKAPSLC $V \operatorname{K}$ $K \vee K$ Fiss
EVTIDYQGTA

$M P \mathrm{~T} I \mathrm{~T} \underset{\mathrm{~F}}{ } \mathrm{~V}$ TVV SNNDNKTVEAPENSNLLVRVSLREKGGDP FK H HVTII T R DNGL VEFACGPDEVLIDDAAAAASSIMLPA QC E A E I I F H R T GI R RVVWS P S Q G S L L D LA EAA GI QHP W S C


## V V F T P S G K R G <br> VT I T

 $F$ IVVE P R E S I L E A A E R Y G L F WP
$H K \square S V \begin{array}{llll}V & L & F & A \\ L & K & V & R\end{array}$

| $F$ | $E$ | $K$ | $E$ | $V$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $T$ | $V$ | $T$ | $T$ | $P$ |
| $V$ | $G$ | $T$ | $L$ |  |  |

L

| $L$ | $Q$ | $A$ | $A$ |
| :--- | :--- | :--- | :--- |
| $T$ | $T$ | $R$ |  |
| $L$ | $E$ | $L$ | $A$ |

FTVDVVGPNRKSE
K K G G R D A GFEI G S S C

TVTFGKSGRTAELDGA
T LVLARAGTE
K TLTVGAH


$F D \square T \square A S T G Q \quad T \square R V P A D R S A L E Q L E M Q G Y M P Y S$
$K$ I Q DN A R NRA HN FNVA E GEK I L Y A GL L GD D D L P Y E C
 KVDFSGSDKSADWKPDDGKTMLELLAEDAGLAPEASC
$K$ VTVIS K A E E K R T E L F H D R N K T L L H T L WE G G I S L P S L C
FEAE」KS T G
$K V L Q V P K E K S L L Q V L N E A G F E I D A S C$


## UniRef90 VgVmu7

 UniRef90-UPIOOO479C872 UniRef90-F6D9B3 UniRef90_UPIO003616426 UniRef90 L7L295 UniRef90-D4XEG8 UniRef90-UPIoo03B37F2F UniRef90_K8WCQ7 UniRef90_CON1Q6 UniRef90-J2RVY1UniRef90 G8PT39 UniRef90-D3L5P9 UniRef90-K2GL10
UniRef90_M9MKH1
UniRef90_J3P110
UniRef90-E3HIM4
UniRef90-U3TZ23 UniRef90-UPIOO036CE22E UniRef90-UPIO003791B26 UniRef90-UPIO002E467F7 UniRef90_UPIO0036094DB UniRef90_L1P122 UniRef90 R5EK01 UniRef90-ROK4Z3 UniRef90-R9N4S2 UniRef90-C7MB60 UniRef90_UOZ6F2 UniRef90-F2ZPP9
UniRef90
U1M2H7 UniRef90-X6L3U0 UniRef90-E9T855
UniRef90
UTOK49 UniRef90-UPI0004631CB2 UniRef90-16Z4C9 UniRef90-F4KS34 UniRef90_G97719 UniRef90-B1J111
UniRef90-H5U5B5 UniRef90_UPI00047A7D42 UniRef90-I4D7V8 UniReffo-O2T8G9 UniRef90-Q1YUI3
UniRef90 M1ZH50 UniRef90-U1QK37 UniRef90-K5CCZ4 UniRef90-UP10003C7ED6D UniRef90-E4NMH5
UniRef90 D6ZD30 UniRef90-X1U5M7 UniRef90 G2MGH7 UniRef90-A0AO17HBK1 UniRef90-D1PYT2 UniRef90-A0A059MHY5 UniRef90 UPIOOO407B2C4 UniRef90-UPIO0047DD7D1 UniRef90-J2UGS2 UniRef90-UPI000316C9BC UniRef90-UP1000395AA3D UniRef90-B2JWB3 UniRef90-K2JWK1 UniRef90-B8EKV0 UniRef90-HOTW34 UniRef90_U1MSQ0 UniRef90_S9S7AO UniRef90-UPIO0047E8CD9 UniRef90_V4S810
UniRef90_UPI00037E9815 UniRef90 C3XC12 UniRef90-H3SLG3 UniRef90-K41K28 UniRef90-M2T5P4 UniRef90-G7GV70 UniRet90_UPIO00377CA3C UniRef90_UPIOOO46343D3 UniRef90-A1VLS3 Uni Re90_H8L6L3 UniRef90_-R9V6S3 UniRef90_UPI000467FC36 UniRef90-D7A1V7 UniRef90-UPIOOO3680498 UniRef90-A0A037ZM85 UniRef90_K2L1E1 UniRef90_G4STF8 UniRef90-R9JB16
UniRef90 M7TFK0 UniRef90-X117K5 UniRef90-X5J3W6
UniRef90_R8Z6Z8



50
50
60
70
80 KA GVCSTCRCKVLEGEVEMVANHALEDYE RNGTCRTCLAQLRQGSVRYEEWPGLSSEEMAEGCVLPCVA RQGFCGVCRVRVSAGAVEHRDLRLTDHERAAGAMLVCVS GGGKCGQCRVRGAL GGGGCAOCKCVVLEGEPSDEEVDKLGP AEGVCGMCETRLLDGVADHRDSVMTQEEQARGETMMICCS KAGGCGACKVRVCQGEVEYKSNALL REGVCGSCETAVVEGCPDHRDSVLSNSERASNKTMMVCVS REGVCGSCELRVLDGACDHRDQLLEAHERGDGGRFFPCVS GGGACGQCKVKVTEGRVGNPDNYSHFTK

 KGGTCGSCRVRLRAGSVRSDGDFADTPR
RGGVCGQCQTPYLKGDVEHRDHFLA

RQGFCGTCKVRVLSGTPDHRENRLTP GTCSTCVGKVITGEVDQSDQSFLD RQGYCGTCQVRVLGGNVDHRD
 GGGGCAMCKCWVDEGGGDATEDNHLETQRAEGQMLLCVS RAGQCECCAVKLTE GAVE STVGSRADVAEHKRLACQV RAGVCGSCRCTT S GDVTRQSVATLTQGELESGVVLACSC RGGSCGTCKTKVVSGQVHYPNPPAEMP EEAGTVLICCA
 $R V G Q C E S C A M R I V S G Q V V H \quad D S G F D G P S D D C L T C Q A$

 RAGACANCAAIVKEGEDDMDMQQDLSDEEVEDNVRLTCIG
 $R G G A C A N C A V A V F E G E M D T P G D H L L P S T M L D S D V R L S C M G$
$Q Q G F C G T C V Q R V V E G E V D H E H$
 RVGMCLACSAK\| DEGEVEQTEHRALTPEEAEE YALTCMA


 GGGGMCKCVVEDGGGDVLPTEVGHLSRKEQQEKVRLACQV
 RSGVCGACRTRRVSGKVIHSPAA KADHEQNEVLLCCA GGGLCGTCKCRVEEGLAHTDERKHFSDEEFAAGHRQACQT RSGVCGTCAVRLREGAVTYPDRAATSS DAEDVLVCSA RTGVCHTCETGLVAGAVTYRPEPADAP AGGNVLICCC RTGVCHNCESGLVSGAVTYEPEPLDKP AAGNVLVCCS GGGDCSKCQIAPQF GEFPKHGLTATPDRGLEEGRRLGCQA
 RSGNCGTCKTPVLSGAVTYLHQP $\quad$ P PEQPADGHALLCCA RAGUCSSCKCKVETGKLELKTANGTLTLEEEDEEGYTLACSS
 GGGGCCKCDVKDGGGAILPTEEPHFTRKEDAE GWRLGCQV
 RGGACGQCETDVCDGT $\quad$ EEHHDHWL CGGIICGACKVGWLEGKPLHRDRVLSPYEEERARKMMPC


 R A GIVC G S C K VTLI I G DVQP MK K GAV S
 ASGTCGTCKARLLDGELVDAWPEAPGRKYLKEDEFLDCQC





| UniRef90_V9VMU7 | YP\|V|TDNVVVD Y D Q |
| :---: | :---: |
| UniRef90-UPI000479C872 | YPVSDVELQA |
| UniRef90-F6D9B3 | $\square P V G D V E L E$ |
| UniRef90-UPI0003616426 | R A A |
| UniRef90-L7L295 |  |
| UniRef90-D4XEG8 | RAKGHTLV |
| UniRef90-UPI0003B37F2F | R S L S ERLV |
| UniRef90_K8WCQ7 | RAKSKRLV |
| UniRef90-C0N1Q6 | RAKSRLVLD |
| UniRef90-J2RVY1 | R G C GP C |
| UniRef90-G8PT39 | RAKSP |
| UniRef90-D3L5P9 | F VKGNVEVIVDD |
| UniRef90-K2GL10 | NVKQDMKI EVPEE |
| UniRef90-M9MKH1 | GAKTPRLV |
| UniRef90-J3PI10 | R GRGKLKLE |
| UniRef90-E3HIM4 | RAKSARLV |
| UniRef90_U3TZ23 | RSKSELVI |
| UniRef90_UPI00036CE22E | RARDGC |
| UniRef90-UPI0003791B26 | R A L E N G TIEI |
| UniRef90-UPIO002E467F7 | GCKGPRLV |
| UniRef90_UPI00036094DB | R C A G D |
| UniRef90-L1P122 |  |
| UniRef90_R5EK01 | TVKNDCQI ELP |
| UniRef90_ROK4Z3 | RGVER R I V L |
| UniRef90-R9N4S2 | EVTGDI EI E |
| UniRef90-C7MB60 | RGEGDIEIDI |
| UniRef90_U0Z6F2 | Y PA G AVKLEL |
| UniRef90-F2ZPP9 | Y P T S E |
| UniRef90-L1M2H7 | R GCG |
| UniRef90-X6L3U0 | R F V G K T L V |
| UniRef90-E9T855 | RADGGRL I |
| UniRef90-L7QK49 | YPTTDCVI QTHKEEDLY |
| UniRef90_UPI0004631CB2 | RAADDELVV |
| UniRef90-I6Z4C9 | RADGERLV |
| UniRef90_F4KS34 | KVRQDMKI RVP E E |
| UniRef90-G9Z719 | $\triangle \mathrm{PV}$ S D V V D A |
| UniRef90-R1H5P2 | TVRGDVAVE |
| UniRef90-B1J111 | VP |
| UniRef90-H5U5B5 | AAAGDCTLDV |
| UniRef90_UPI00047A7D42 | VPDTPLVLR |
| UniRef90-14D7V8 | 1 I Q G D M I I EVPPESRL |
| UniRef90_Q2T8G9 | RSRSPVLV |
| UniRef90_Q1YUI3 | R AK |
| UniRef90-M1ZH50 | K $\square \mathrm{KEDMR} \mathrm{\ EDPEE}$ |
| UniRef90_U1QK37 | S PDADEVKIVYNAKHLL |
| UniRef90-K5CCZ4 | F PVTDIEI Q |
| UniRef90-UPI0003C7ED6D | R P ES D SVEVT Y D E |
| UniRef90-E4NMH5 | A P L T D |
| UniRef90-D6ZD30 | R S K |
| UniRef90-X1U5M7 | K V L S D M T VTVP K S H A L |
| UniRef90_G2MGH7 | R PQS DLKLD |
| UniRef90-A0A017HBK1 | Q I C S DVVL DVPPES QVH |
| UniRef90-D1PYT2 | KVK G D FRil K I N E |
| UniRef90-R7NHT2 | FPDSDUVIK |
| UniRef90_A0A059MHY5 | RAAGERLVLDY |
| UniRef90-UPI000407B2C4 | KVKQDMHIR |
| UniRef90-UPI00047DD7D1 | RIL LEDSVIEI IDD S EDV |
| UniRef90-J2UGS2 | IP A G D 1 EL |
| UniRef90-UPI000316C9BC | YPMQDIVLD |
| UniRef90-UPI000395AA3D | FVNGDI KV |
| UniRef90-B2JWB3 | TPCSDLELAVPYD |
| UniRef90-K2JWK1 | $\square \mathrm{P}$ A T D L EL |
| UniRef90-B8EKV0 | QPQGDL VI D |
| UniRef90_HOTW34 | QPVGDVVID |
| UniRef90-U1MSQ0 | QPTS DLQV VFNDEQ |
| UniRef90-S9S7A0 | T IE GDIVI DVPPES QVH |
| UniRef90-UPIO0047E8CD9 | KVKQDMELTIPEE |
| UniRef90-V4S810 | V P A |
| UniRef90-UPI00037E9815 | LAYS D 1 EVD LIF DEEIL |
| UniRef90-C3XC12 | RIIDD ITTV |
| UniRef90-H3SLG3 | TVVKDGQVE |
| UniRef90-G3XR73 | R GVGH I VVELLGE |
| UniRef90-K4IK28 | KVKQDMRI QIP E E |
| UniRef90-M2T5P4 | RGIGT V D D |
| UniRef90-G7GV70 | A VA G A C Til ${ }^{\text {d }}$ |
| UniRef90_UPI000377CA3C | R FRGRLL |
| UniRef90_UPI00046343D3 | GSESERLI |
| UniRef90-A1VLS3 | Y PASDVVI |
| UniRef90-H8L6L3 | APSTDLILD |
| UniRef90-E3QE31 | RG】GR】SIEV |
| UniRef90-R9V6S3 | RARTARLV |
| UniRef90_UPI000467FC36 | $\square \mathrm{D} A \mathrm{GDIVLT}$ |
| UniRef90_D7A1V7 | R A RVVGVTL E |
| UniRef90-UPI0003680498 | MAKTDATIAVE |
| UniRef90-A0A037ZM85 |  |
| UniRef90-K2L1E1 | VPA |
| UniRef90-G4STF8 | TVKQNMKIEVVEDSVFF |
| UniRef90-R9JB16 | K PLK ${ }^{\text {d CKV T T }}$ |
| UniRef90-M7TFX0 | RGKGR\MI D |
| UniRef90-X117K5 | K A E G D V VEVPPES |
| UniRef90-X5J3W6 |  |
| UniRef90_R8Z6Z8 | R A K G |

UniRef90_UPIO0036DD1CE UniRef90 W1HXX4 UniRef90_UPIo0028A3EE3 UniRef90_V9XDC7
UniRe90_J2NS67 UniRef90-A4TLX7 UniRef90_UPIo0037227EE UniRef90-B5JU36 UniRef90-x5DN71 UniRef90-UPIOOO47789B5 UniRef90-boNFB9 UniRet90-W6RR48 UniRef90-V9XDS7
UniRef90
K8WVF6 UniRef90-H0тTH3 UniRef90_C7N397 UniRef90-A81LA6 UniRef90-Q1GHA7 UniRef90_R5CU64
UniRef90_U2EPG7 UniRef90-UPIo0035FFEF4 UniRef90-T1VSW8 UniRef90-GOJ1A1 UniRef90-L9WFO1 UniRef90 C C7RVA3 UniRef90-L8LTG5 UniRef90-SgZH39
UniRef90 G7H618 UniRef90-HOQNS9 UniRef90-A6G5T7 UniRef90-X6EP53 UniRef90_Q1H1Z4 UniRef90 A8LLP4 UniRef90_UPI000374FFA5 UniRef90-A5VBE5 UniRet90-G4MHM6 UniRef90-Q5E8HO
UniRef90_S5XVZ7 UniRef90-E4NMBO UniRef90 H5WZK7 UniRef90-H1S5R1 1 UniRef90 E7BAC0 UniRef90_E3GB75 UniRef90-UPIOO04276D67 UniRef90-K8NL70 UniRef90-F2J6BO UniRef90-E7VOT6
UniRef90 - 1 RBL UniRef90-D5P829 UniRet90-WGJWK8 UniRef90-P45154 UniRef90-Q1GLB9 UniRef90-UPIOOO3751633 UniRef90-AOLGE3 UniRef90_Q28K71 UniRef90-W8RXA8 UniRef90-WOE7R2 UniRef90-S3N7S2 UniRef90-B8IJ49 UniRef90-X0T327 UniRef90-B1FTA3 UniRef90-UOEEQ6 UniRef90-UPI00037396C7 UniRef90_LOHHFO UniRef90-S4ZJBO
UniRef90 LOMHC7 UniRef90_L9x3L4 UniRef90_S6H928 UniRef90-C9QL76
UniRef90-W1INU2 UniRef90-B3QZ28 UniRet90_C5AXG6 UniRef90-UPIOOOO44495B UniRef90-S9QN13 UniRef90-V9x159 UniRef90-S3Y983 UniRet90_G2XEP4 UniRef90-S3HK90
UniRef90_U5WUQ9 UniRef90-R4YT84 UniRef90-L8DCQ9 UniRef90-G8AUY5
UniRef90- B5JWA9 UniRef90-ToLDW1 UniRef90-U1JLM8
UniRef90_G7UTU8 $T$ A HLLTRSGVD V DVVAS GVSLLEALGSRGI AVPS LDC TPVVFERSAKEARWKPDSG SLLELLAESRGLRPEFSC EFTLVLARSG VELDNVGCDMTLLQAIENHAAQVECLC RVRFGASGVEEQWDPESGSLLDLADRAGLRLRSGC KVT DDNG EKTHETEPGGKLLGSLASNGLFVASAC
 MASVTVARTA
 KKDSCKEGDNLLKVLLAEGIFVDNPC VLVSFARSGLNVRWNGKYH SLLELAEACDVPARWS HKVTHRVVTVPELDVTTTVGSDESMLDALRRAGVDMMFDC MPTVRVRDGESGSVEVVVPRDRSMLDVLNAAGHEVND
 TVTLKRSGVSFTWTVPEQHSILDSAAAQGGELPSGC TVSFTKSNVTKEFD GGKPULDQAEEAGVIMPFGC FTVHLARTG

VKI IVNGDEKNPLI ASAGSTLLATLSGKKPGGASAC YDVAFLDHDEGKKVKVVTEDEVLLYPALDAGVDIPYTC
 FTVLSFTSSGIT GKAANGRTILDQAEAAGLSPESGC FTVNLVRSG 价DDVPSGASLETLEKAGKT DPNMC VTILINED SSKALKIPAGATLLNTLADNKVFIPSAC VIfTPSGKRG RVPTGTSVLDAARLLDVDLDSVC VTFARSGK TVEADGSQSLLDAGEEAGVIMPSGC FEDEV EGHGADVAVAAGQSAAEALAAAGI R $\square P$ LS C

HFIVR\ASTGQEIEIAKEQTMADALVQAGVAMETSC
$Y K D E V L P A G$
$Y T V E V V G T G N G Q R R$ S QVSDKQTILKACIEEGIAQEYSC FEEVVVGFVQSGKEARWMPG

TQVLCREEHILLEQLEQQNIRIPYSC MS R VT LR LS G

```
mmLVEVVDRK
```



```
FElVEL
```

                            KNMTVVVPPDKTLLNALMDAGVEMDYDC
        EVKTTVNDDWQ
                        EKEF FGVK
        TFARS
                        T
    MPTVTIEPSGE

NTTVIVE VEGG
HPFTLKLARSGRE
ELRLARSGQILT MKSMKVFQPE HDFTLKLVRS
Y Q TTFM
 VRAEQTATDALAEHGIHVDVKC MS KTFM PENRATEIEAGTSLLKAASKAEIYYKSGC TVQVTVRQQGKEKVI DAPEGAVFLQLLKMNGYSLVCCN FTVRDPRLGRE $\qquad$ KGQSILVGLEQQNLKPTHGC

MNRHTVVFEPSGKKG MVVA VFEGNNGTLLEAAHELGDD ESVC TVSIEFNGE $V$ VEGNNQEVLLE
$\qquad$ EFEVVLARSGLALT SPMGKTVT VPA

KAAVVFTPSGLRGE $\square R C P A$
 Y $\begin{array}{r}1 \\ Y\end{array}$
YKVTLSSGRGLSLY
 YQSHP
$\qquad$ E 1 $\qquad$ GERLIDVASYAGTDVNNLC
 CHLLEESETLEGLERTGHKVEYQC
HNFTLRLSRTGK

FDVEVANR
 VYFMRSGKEARWELGSG
FQLELARSR RVLDVPANRSALGMLDRDPATAYSC
VTVIKSQNTNFVIPARDHKTLLEAAEEQG VMEHGC FVLQLDRSGDTVEVGAQETALDALRRSRPDQPYSC


P K I T T L N D V D E P L E F A A H S P

UniRef90 UPI00036DD1CE UniRef90 ${ }^{-}$W1HXX4 UniRef90_UPI00028A3EE3 UniRef90_V9XDC7
UniRef90_J2NS67 UniRef90_A4TLX7 UniRef90_UPI00037227EE UniRef90_B5JU36 UniRef90_X5DN71 UniRef90_UPI00047789B5 UniRef90_B0NFB9 UniRef90-W6RR48 UniRef90_V9XDS7 UniRef90_K8WVF6 UniRef90_HOTTH3 UniRef90_C7N39 UniRef90_A8ILA6 UniRef90_Q1GHA7 UniRef90_R5CU64 UniRef90_U2EPG7 UniRef90_UPIO0035FFEF4 UniRef90_T1VSW8 UniRef90_G0J1A1 UniRef90_L9WF01
UniRef90_U1CXJ3 UniRef90_C7RVA3 UniRef90_L8LTG5 UniRef90_S9ZH39 UniRef90_H0QNS9 UniRef90_A6G5T7 UniRef90-X6EP53 UniRef90_Q1H1Z4 UniRef90-A8LLP4 UniRef90_UPI000374FFA5 UniRef90-A5VBE5 UniRef90_G4MHM6 UniRef90_Q5E8H0
UniRef90_S5XVZ7 UniRef90_E4NMB0 UniRef90_H5WZK7 UniRef90-H1S5R1 UniRef90-E7BAC0 UniRef90_E3GB75 UniRef90_UPI0004276D67 UniRef90_K8NL70 UniRef90_F2J6B0 UniRef90-E7V0T6 UniRef90_D5P829 UniRef90-W6JWK8 UniRef90-P45154 UniRef90_F8L6E4 UniRef90_Q1GLB9
UniRef90_UPI0003751633 UniRef90_A0LGE3 UniRef90_Q28K71 UniRef90-W8RXA8 UniRef90-W0E7R2 UniRef90_F7KE88 UniRef90_S3N7S2
UniRef90 B8IJ49 UniRef90-X0T327 UniRef90_V6MM37 UniRef90_B1FTA3 UniRef90-U0EEQ6 UniRef90_UPI00037396C7 UniRef90_LOHHF0 UniRef90-S4ZJB0 UniRef90_L9X3L4 UniRef90_S6H928 UniRef90_C9QL76
UniRef90-W1INU2 UniRef90_B3QZ28 UniRef90_C5AXG6 UniRef90-UPI000464495B UniRef90-UPI0003B74844 UniRef90_S9QN13 UniRef90_V9XI59 UniRef90_S3Y983 UniRef90_G2XEP4 UniRef90_S3HK90
UniRef90 U5WUQ9 UniRef90-R4YT84 UniRef90_L8DCQ9 UniRef90_G8AUY5 UniRef90-B5JWA9 UniRef90_U1JLM8
UniRef90_G7UTU8

RRGECGLCAMDVVIDGEVDHRDVFLLSEHEKKSATRDCACVIS E Q GMC GSCDT GVLD G DPEHRD SVLTA E EKA GNDQIT LCC S
 R G GSC GT CK T RLI G GTVVTYP QVPA EVV G

 REGICGTCDMEVLDEGVPDHRDNVLTPSEREANETMAVCDS
 $R T$ GlV CHTCETGIV S GSVSYEPSPI $R K G E C G L C E V S V A S G R V D H R D V F F S$ REGYC GS C R V T L L K G K V GYK QHP L A F $R R G E C G V C A V D V I E G E I D H R D V F F S$ NGGTCGKCRVKVVSENPTETERRLLSHRKHENRKLDCPCVS
 G G G $\square$ C S K C Q $\quad$ T PSYGEWNKVE Q R Y K D K R GLIDD GRRELGCQA GGSSCGQCRLQVLEGE LLDSEKPHFTRKQIKDHWRLGCQC RAGQCESCALKKVAGGMDTAVDTSALDEDDCLTCQA
 Q

 R A GldCLT CMCKV E E G E VEYE E P P $\square$ GT P
 $R M G D C F S C T K V K K S G C T R N Q L T G E T D S E A A D K H \| Q L C V N$ $R K G I C G E C V L P V L R G T P Q H R D L Y Q T D Q E K A E N T T M M C C V S$






 R G G S C GS C S T R V L Q G TV A Y A E A P A E E GF C GAC E T K V L E GVP E H H D S I L S D A E R A S CN TMMI C V G RA G $\square$ C G S CR $\square \mathrm{ML}$ I T G EVAP C K Q S A $\square \mathrm{G}$

 QRGECGLCAVEIVVAEVDHRDVFFSEEEKRESHRMCSSCVS
 G G GSC G L C K V KVVEA G Q Y L P T E L P W W I S E E E K A E N I R L S C Q L
 R S G Y C G S C R V K I K K G K VS Y K E M P L A F


 S D GI C G V C K C R L I S G A V E HRRDWV L S K A QRRRD G GAGTC GAKVTVVSGEVETTGTGNLNPDQDAHGVRLACQS GK GTCGRCRIRFCRNGAPDPDRDAFTAEQLRGGYRLACMH

 R A GLLC G S CVI QL D E G DVN A L K A GA I
 E E GYCGTCETPVVTA GLDPDHRDTVIEPS ERPTATTMMMCCVS

 RAASCAN CA GIVVYEGDVVEMDMDLI LT DEEVVE GDVLTTC QA

 G G GACQTCEVVV HE GE DNPTEMAWLTPQKREEGHRLACQA

 S D G L C G V C K C GVVVT G DVVE H R D F V L S N A D R A G A MI LCC S



 RS GMCGSCKTNLVSGEVRGNK IG $R$ QGFCGACVVGFVGGRVEHRDRV GGGGRCSSTC R I R V T T E G P P P N A A T E R R A

 $R M G \rrbracket C N T C A C G K R Q G \square T R D \| Q T N A R S A E P D A$

UniRef90_UPIO0036DD1CE
UniRef90 W1HXX4 UniRef90_UPIO0028A3EE3 UniRef90_V9XDC7 UniRef90_J2NS67 UniRef90_A4TLX7
UniRef90_UPIO003 UniRef90-B5JU36 UniRef90- X5DN71 UniRef90_UPIO0047789B5 UniRef90_BONFB9 UniRef90-W6RR48 UniRef90_V9XDS7 UniRef90-K8WVF6 UniRef90_HOTTH3 UniRef90_C7N397 UniRef90_A8ILA6 UniRef90-R5CU64 UniRef90-U2EPG7 UniRef90_UPIO0035FFEF4 UniRef90_T1VSW8 UniRef90_G0J1A1 UniRef90-U1CXJ3 UniRef90-C7RVA3 UniRef90_L8LTG5 UniRef90-S9ZH39 UniRef90_G7H618 UniRef90_H0QNS9 UniRef90-A6G5T7 UniRef90 Q1H1Z4 UniRef90-A8LLP4 UniRef90_UPI000374FFA5
UniRef90_A5VBE5 UniRef90_G4MHM6 UniRef90_Q5E8H0
UniRef90- S5XVZ7 UniRef90-E4NMB0 UniRef90-H5WZK7 UniRef90-H1S5R1
UniRef90 K8XYM2 UniRef90 E7BAC0 UniRef90-E3GB75 UniRef90_UPI0004276D67 UniRef90_K8NL70 UniRef90-F2J6B0 UniRef90-E7V0T6 UniRef90_E1RBL3 UniRef90_D5P829 UniRef90-W6JWK8
UniRef90 P45154 UniRef90_F8L6E4 UniRef90 Q1GLB9 UniRef90_UPI0003751633
UniRef90_A0LGE3
UniRef90_Q28K71 UniRef90-W8RXA8 UniRef90-W0E7R2 UniRef90 S3N7S2 UniRef90-B8IJ49 UniRef90-X0T327 UniRef90 V6MM37 UniRef90-B1FTA3
UniRef90_U0EEQ6 UniRef90-LOHHFO UniRef90-S4ZJB0 UniRef90-LOMHC7 UniRef90 L9X3L4 UniRef90-S6H928
UniRef90_C9QL76
UniRef90-W1INU2
UniRef90_B3QZ28
UniRef90_C5AXG6
UniRef90_UPI000464495B
UniRef90 S9QN13
UniRef90-V9XI59
UniRef90_S3Y983
UniRef90 G2XEP4 UniRef90_S3HK90
UniRef90-U5WUQS
UniRef90_R4YT84
UniRef90_L8DCQ9 UniRef90 B5JWA9 UniRef90-TOLDW1 UniRef90-U1JLM8
UniRef90 G7UTU8

RAVGTLTLD
RSVGERLV
RANGPRL
VPA
RAKGARLV
VPTSDLTIDA
AVK QDMKI EVPED
RSKSPKLVLDY

EVLGDV EVVE
QPTGDIVID
RVVRD $\qquad$
HPLSDTET
RAHGVVTIDTLE


KVKGNLKIRVPE
VPLTLI LD A
A A AGPCE E
K VK NDMKIRIPEE
SPEDDFELEVHPDDE
TARGDVCVD
RVSGPVVID
K PKTDRLV
$K P$ L SDLVVQAR
TPVGDVEIEV
$K \bigvee K Q N M E D E V E P E$


A ASGPCDI E
RAATPRDV
RAASKVFFV
KADSDVVLKANYYPEL
TVRGDMAVNVPED
RPQSDLKLK
RGHTTLELD
V P A
RARSGLLV
$\square$ P K G DI RIL

AATSALQVK
RVKGHAVI D

VPETDLVLDA

HVESDI EI D
KVKNDLELKVPE
RAADP
RSHGERL
STTGEVEI Y ITPPESR】
RAAEGGVIEV
RAVENSVI EVE
F VQGD LTVVEVPPESRL
RVRQDCCI QVE


VPNGNVKL
RPVSKTLV
APVGDVTVDD
RCDSPVL
HVSGDCEFI 1 PDES
VPVGDVDV

| $V P V G D$ | $D$ |
| :--- | :--- |
| $M P Q A D I$ | L |

LPASDEVKLVY

| $L I L G D L V$ |
| :---: |
| $K A K S D P A$ |
| $M$ |

KAKSDD E: E
$\begin{array}{ll}\mathrm{Y} & \mathrm{P} \\ \mathrm{K} & \mathrm{I} \mathrm{V} \\ \mathrm{R} & \mathrm{D} \\ \mathrm{P}\end{array}$
RPDGDLTV
QADQDLVVEVP
RADEPLVVKV
RA A
TAEGDTEDE
RGVGHI EVVA
RGliGRiVVEV
$\mathrm{V} P \mathrm{~A}$
RAKSDRVV
Y P A S
R
$R P$ VA P $\square \mathrm{S}$ V
AAAGDCELD


| $R$ | $P$ | $L$ | $T$ | $D$ | 1 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $A$ | $A$ | $S$ | $D$ | $L$ | $T$ |




UniRef90_V8DDB1 UniRef90-F6CTS9
UniRef90-R5BAC3 UniRef90-N9EEM5 UniRef90 ${ }^{-}$D1A1D5 UniRef90 UPIOOO37B495C UniRef90-UPIO0047
UniRef90-G7SSQ4 UniRef90-QOVNT3 UniRef90-K2FW43

## UniRef90-W3X4D9

UniRef90 UPIO002D6C8CE UniRef90-A9WDK1
UniRef90 U7GH67
UniRef90_U3CD02
UniRef90-HOE3B6
UniRef90-UPIOOO47C49C8
UniRef90-S5ST82
UniRef90-R719C0
UniRef90-D2PPW8
UniRef90- UPIOOO47
UniRef90-UPIO004715E43
UniRef90 W0AGP6
UniRef90-UPIO0047688CC
UniRef90-O2W2T1
UniRef90-H0TF56
UniRef90-EORXC4
UniRef90
ATMHS7
UniRef90-B5MAD7
UniRef90-DOL766
UniRef90-Q1K661
UniRef90 F5Z096
UniRef90-D4GHS3
UniRef90-UPI0003B38023
UniRef90OUPIOOO423FOOF
UniRef90- UPIOOO36FEE2A
UniRet90-WGKOD2
UniRef90-EOMLQ3
UniRef90-B9K1F1
UniRef90- E2SAU4
UniRef90-UPIOO040B1412
UniRef90-A6GT69
UniRef90-A7MZG3
UniRef90-L7VXW6
UniRef90-U2FNR7
UniRet90 AOAO14NLI2
UniRet90-G7SUX7
UniRef90-G6E3S8
UniRef90 A0A031IFZ0
UniRef90-UPIO0047EB7D8
UniRef90_UPIOOO47E2212
UniRe990 J7ITV5
UniRef90-B9JKU9
UniRef90-X4ZEX8
UniRef90 E6QRO9
UniRef90-JoAYP9
UniRef90-UP100047CCAC6
UniRef90-UP100037FF69C
UniRef90 ${ }^{-}$N9V6Z6
UniRef90-A0A037XP88
UniRef90-12JNV1
UniRef90-C7NSZ2
UniRef90-A0A024F5P5
UniRef90-S6AS45
UniRet90_UPIO004789008
UniRef90-E1SRN6
UniRef90-KOEQ11
UniRef90 N9VPKO
UniRef90 UPIO0035CE090
UniRef90-W2SDZ6
UniReffo-Q1GJ20
UniRef90 Q8VUT6 6
UniRef90-Q12MT9
UniRef90-AOAO24ICK3
UniRef90-C5B7G6
UniRef90_K0V4G3
UniRef90-J4KT02
UniRef90 LOLN46
UniRef90 A5WFS9
UniRef90-LOIPC1
UniRef90-K2JC28
UniRet90_U5WY14
UniRef90 C3UVE1
UniRef90-UPIO0037BE0E2
UniRef90-Q1N1B4
UniRef90-A0A022GBE7
UniRef90-D8GJH3
UniRef90-Е3HUGZ

VPA
TCKTDVV|GVP
SAQSDLVI D
AAAGPVE E
$R P T Q D V T V V$
$A P C G D V E L D$
LVKEDLVVET
VPVGTVTLDPKYS
ATAGDCELD
MPASEMV
VPQTHCEI
RGKGPTAVTTNAEE
VPRGPVQIID
RAKSDVQLD

| $A A V G D V T$ |
| :--- |
| $L I$ |
| $L I$ |

VPKHSCEVEVP
AAAGACDID
VPAGPGTL
RLESD
A A AGPVNDD



APVGDVET

MPVGDVEEL
RAA
RPVADLEV
SADSDVV
AVAGSCDLEV
TVQGPMVVEIPADATV
RPMANLTV
VPVGDVTV
RVKGDLVVEDPK
AAQGPVSLD
TLE SDLEVVD
AAAGDVAVE
RPRGDVQV
QVDEDLD EDSPEGA
KVTEDLVVEIPKYS
A A A GPLSL
RAAGAVEV
RVVSPRT
VPEEGMVIE
EVWGDVRVTVPED
LVLGDATVK
TVLEPMVD
AAAGPVHLDV1
VPTSEI EVE
QAQGT: RL
RPTHDL
QPRGDVSL
RVQGDTTTDA
RVGGDLTVVAMPK
RVCGDFTVVI DDTDD
RVAEDLVVEIP
APVGDVEVIVI.
APTDDMYLSVDDDEAV
MPMS
TPTSALTVK
APQGDVELEV
TPKTDLSL
TVRS
RALT P
$\| \mathrm{VQQDTETD}$
APVTPVVLD
KLNSDLEI ELDPK
LI QGDLVIDVPQD
QVK

APDGDVELEV
KVCRDAVVQVPED
TAVDDVVLD
IVAGDLTIEPK
KVYSD TVGLNQKKEVY


UniRef90_UPIOOO35CAED3 UniRef90_I2H6W6 UniRef90-A0A024Q3J7 UniRef90_V6HFF2 UniRef90_B9TJ52 UniRef90 S3VU37
UniRef90 D 8 EZH UniRef90 T4V929 UniRef90_E6RKU0 UniRef90_I7ACE1 UniRef90_UPI00046F606A UniRef90 F4DDS6 UniRef90_W9XMB3 UniRef90-W4CCM1 UniRef90_B8FUQ7 UniRef90 ${ }^{-}$V5F5J2 UniRef90_K9UNH4 UniRef90_Q2JPU7 UniRef90 I0DPV1 UniRef90_Q139J4 UniRef90-A1T3J7 UniRef90 Q2IT24 UniRef90-UPIO00300FEC1 UniRef90_V8G912 UniRef90-I4A903 UniRef90 ${ }^{-}$F2IVU7 UniRef90-Q46UR7 UniRef90_Q21WE7 UniRef90_G9C9V9 UniRef90_C5WC72 UniRef90_K9P2T7 UniRef90_UPI000466BD1A UniRef90_G4SXT6 UniRef90-B8G4P5 UniRef90_UPI00037EFE6A UniRef90_E9CKH1 UniRef90-IODRU4 UniRet90-QOAZU6 UniRef90-G2LNP6 UniRef90_E3I415 UniRef90-W5IZ82 UniRef90-W7SNJ9 UniRef90_Q1QA65 UniRef90-K6UJ74
UniRef90_A1WLM1 UniRef90-V2UVA7 UniRef90-E8TUN2 UniRef90-X2L822
UniRef90 L8MZL UniRef90-D8F6P2 UniRef90-M1YYQ1 UniRef90-M1PNG2 UniRef90_C8PWI2 UniRef90_A9WGY4 UniRef90_O8LDZ8
UniRef90 E6QRM6 UniRef90-H5SP83 UniRef90-A0A022H5V2 UniRef90_UPIO0036806C7 UniRef90-Q1LPL0 UniRef90_E8Q751 UniRef90-R8B3T5 UniRef90-UPIO0041A92CD UniRef90 UP10003AD38AA UniRef90-HOPVT5 UniRef90-F2SYS5 UniRef90 M1V5U2 UniRef90-Q0BQR2 UniRef90-G2DV00 UniRef90-K9X689 UniRef90 V615C8 UniRef90-UPIO003B55C60 UniRef90_G2QX66 UniRef90_ToSTZ2 UniRef90-D4TNH1 UniRef90-UPIOOO360BDCE UniRet90_T2RGB9 UniRef90-14CCT5 UniRef90-F6IQ09 UniRef90-W0HPF8 UniRef90-E8R543 UniRef90-UPIO0047B9C20 UniRef90-UPI0001D2E1F7 UniRef90-I4B2S6 UniRef90-Q0F904 UniRef90-E8PE90 UniRef90-Q7VFS8


,

ERGDCAQCRTKIVDDGETTPEEKLIRपRKAERQDGYRLLGCQID GGCACSTCHVIV
 GEGFCGSCESTVLEGQPWHRDSVLSAAERASGRRILPCVS GGNACSTCRVLVQEGAEHLLETLLAHRKGFPENVRLACQT GGGLCGKCKVKVLSGNDNPEEDKFLSRDEDDNKVRLGCLV GIGLCHQCQCIKKTGVVRNLLKTGELSDNG WHGACRQCAVKQYSDENDTR DGAGCLMCKVKVEDETAGGVKPPGDTERQLGDRLVMSCMT KSCACTTCHCVVREGSDELEDDMLDKAWGLEPESRLACCA俭 DGAACLMCKVNVDEEHRTEDYPPTDAEKRLEAGTRLSCQA GGGGSCRVKVKSGGGDILPTELDHISKGEAREGERLACQV GGAACSTCRILILEGSQNCREKRLAQRLDLPVHTRLACQT WHGACRQCAVKQYQNADDTR
QDGECGSCLVQVEHFNPKAKSAVALTEKEKEPRYRLACQC HGATCSDCWAEVTEGGQNDSAMGLLSPRLRARDVRLACRA EGSACSTCHVVVEPEWFDDEEDMLDLAFGLTKTSRLGCQI GGRACSTCRIRVGGDPAERPAPSSREAFVLDPSRRLACQLL

## E

## \section*{R} <br> A

## Q

Q
 EMSACTTCHVVVRKGFNSLDEMDLDRAWGLEPDSRR
WH GS CRQCA VTQYA

RMG $\square$ CNKCACNKVSGATKNLNNQ
$R Q G G C G V C K V Q V L E G R Y A K R V M S H V S A E E E$
Y H G $\square$ D G S CRVVVV K VE K M P K L Q T
G G GRCATCHVYVRDGKSEQEIMMTLSF $\quad$ TTSSKANSRLACQA Y H GACRLCAVKFVEGHRKK』D
G GNACVSCRVEVI RGDMGEREYQMLKAKGLDKNVRVSCQV

 ED GECGSCVVVKVTSED K P RMS QALLTEK E R
WHGNCRMCLVELEKMP KLQTACS Y A GNCR A C MV
 KSCACTTCHVIVREGFNSLEDAELDKAWGLEPNSRLSSCAA WHGSCRQCAV KLYKNDT INVHS GRL

 GGGGSCGQTVKS GGGD I LDT E L D H H I S K G E A R E G L R R L A C QV
 G GCACSTACHVIVVESPDMDDENDMLDDLAF GLLTETSSRLLGCQM T S GVVGACTCDMVH
G GCGMCK $\square R$ VLQQ S F R A K RMS K A H $\square$ T E Q DAEA G Y VL A CRV E GSACSTCHVIVDPEWFDRLE QPTEDEEDLQKTSRRGGQT
 LM GSCHACTVELEDGE
GGNACSTCRVLVLENEPEQKEKDLSQKKGFPEAVRLACQA

 $L$ M G T C H A C TVVELGDGE
K S CA CT T C HVVVI R E GP T DK E EDLLDDMA WGLEANSR L S C QV
 WHGACRQCAVKLIFRDEKDTR GQUIMSCVS YAGNCRMCLVEVKPGPPKPQASCALPATEGQE
$G L G K C G L C R V R Y L K D A P E P A R E E L L G R D K L D Q G W R D S C L$ RS GY C G A C R L R L L A G E V K Y H Q E P L A F $\quad$ V

 RRGDCHECKAHKKSGAVKNDLTGKVTQGEED
C G G A C S T C H V Y Vid T S WN E M E E D M L D F A W E P S E L

DMCACTTCCHVIV
$Y$ L S GCSPTMMACK

GMGKCAKCACRVLAGAEHDPPVNWK

|  | R 90 |
| :---: | :---: |
| UniRef90_UPIO0035CAED3 | R |
| UniRef90' ${ }^{\text {A0A0224Q3J7 }}$ | RVYGdTEAVIPED |
| UniRef90-V6H | RVLGD K |
| UniRef90-B9TJ52 | CAGTRLV |
| UniRef90_S3VU37 | K NGDVKVR |
| UniRef90-D8EZH2 | PVKDGVR STQDSEA |
| UniRef90-T4V929 UniRet90 E6RKU0 | YPEGGDLY |
| UniRef90-17ACE1 | PATDNSWI |
| UniRef90 UPIO0046F606A | IVVQGD RVV ${ }^{\text {KAP }}$ |
| UniRef90 W9XMB3 | KPAS LEV |
| UniRef90-W4CCM1 | KVCGSLSVHVPED |
| UniRef90-B8FUQ7 | KPQKGMEI DV |
| UniRef90-V5F5J2 | A K T D M |
| UniRet90-K9UNH4 | RAIJGD |
| UniRef90 Q2JPU7 | RLTGDVTLQ |
| UniRef90_10DPV1 | PATEGTYロS■DDEEA |
| UniRet90-Q139J4 UniRef90 A1T3J7 |  |
| UniRef90-K9H692 | QLNDDL |
| UniRef90-O21T24 | RPTHD |
| UniRef90-UPIO00300FEC1 | VIDGDIE |
| Unip | MADEDVV |
| UniRef90-14A993 | Y P Lig ${ }^{\text {V V V }}$ |
| UniRef90-F21VU7 | R |
| UniRe90_- URT | WARQDVVVETPK |
| UniRef90-G9C9V9 | APQTPVNLE |
| UniRet90-C5WC72 | CVIGD |
| UniRef90-K9P2T7 | TVNGDVTLRTRPDAGV |
| UniRef90 UPIO00466BD1A | RPTADL |
| UniRef90-G4SXT6 |  |
| UniRef90 UPI00037EFE6A | KLSGNV |
| UniRef90-E9CKH1 | MPLT DIELDT |
| UniRef90-10DRU4 | NVKQDLKLEL |
| UniRef90-Q0AZU66 UniRef90 G2LNP6 | LVRGEVELS |
| UniRef90-E31415 | \VRDEDIJVSFVGDE |
| UniRef90-W51782 | YPHSDLEVVE |
| UniRet90_W7SNJ9 |  |
| UniRe990_Q1QA65 | MLE D DL |
| UniRef90 K6UJ74 UniRef90-A1WLM1 |  |
| UniRef90-V2UVA7 | SAQTDLVL |
| UniRef90-EETUN2 | KPSSD |
| UniRef90-X2L822 UniRef90 L8MZL | VCADGMVVQTRTD |
| UniRet90 L8MZL3 | RVWQDIVIEVP |
| UniRef90-D8F6P2 UniRef90 M1YYQ | A AKDGMVVSTTDPEAV |
| Uniref90-M1YYQ12 | HSLRDIVVHMPTSNEL |
| UniRef90_C8P | QVRGAIELD |
| UniRef90-A9WGY4 | VCHHDMVI |
| UniRef90-O8LDZ8 | 1 A R |
| iRee900-E60 |  |
| UniRef90_H5SP83 | TPVSDMVV |
| UniRef90 A0AO22H5V2 | YPAQGMDVETGSERAIV |
| UniRet90 UPIO0036806C7 | RPKVDLA ${ }_{\text {V }}$ |
| UniRef90-E8Q751 | PVEKDMYVSIFEEE |
| UniRef90 R8B3T5 | LARSDLVIES |
| UniRef90-UP100041A92CD | NVKEDMEI QLPEE |
| UniRef90-UPIO003AD38AA | RVLIGDVV |
| UniRet90_HOPVT5 | VIRGNLVVV |
| UniRef90-2-2SYS5 |  |
| UniRef90-W9UXL9 |  |
| UniRef90-Q0BQR2 | EALDGLVVRL |
| UniRef90-G2DV00 | KVAEDLVVELPK |
| UniRet90_K9, |  |
| UniRef90-V615C8 | KVLGDVR\VLDDE |
| UniRef90-UP10003B55C60 | ADQDLVVELP |
| UniRef90-TOSTZ2 | RLKED |
| UniRef90_D4TNH |  |
| UniRef90-UP1000360BDCE | VLDDD |
| UniRef90-T2RGB9 | YPKGNLN |
| UniRef90-14CCT5 | DA पD GMR |
| UniRef90 FoJkW3 | ¢ |
| UniRef90- WoHPF8 | Dote |
| UniRef90-E8R543 | RVLGEVVVE |
| UniRef90-UP100047B9C20 | V VADDLV V |
| UniRef90_UPIO001D2E1F7 | VVRDQDILVTF |
| UniRef90 | Q A VG |
| UniRef90-Q0.904 | RVIEDLS |
| UniRef90-E8PE90 | KVVEDLE |
| UniRef90 Q7VFS8 | KAKEGMN/L LTHTP WLD H Dibelk |


|  | UniRef90_UPI00030 |
| :---: | :---: |
|  | UniRef90-U5DLT |
|  | UniRef90-F7S547 |
|  | UniRef90-B0JHX1 |
|  | UniRef90-UPI00046AED1E |
|  | UniRef90-K7SYG5 |
|  | UniRef90-R7X123 |
|  | UniRef90-E8N318 |
|  | UniRef90-UPI0004089F36 |
|  | UniRef90-B1XIN1 |
|  | UniRef90-B2WHN3 |
|  | UniRef90-R0D673 |
|  | UniRef90-UPI00035C884F |
|  | UniRef90_UPI000469329D |
|  | UniRef90-L8JWS8 |
|  | UniRef90-UPI00035D6F10 |
|  | UniRef90_F9ZYA6 |
|  | UniRef90-C5A9V4 |
|  | UniRef90-UPI0004750743 |
|  | UniRef90_UPI00035EE04D |
|  | UniRef90-N1V3L4 |
|  | UniRef90-UPI00046 |
|  | UniRef90_F1VX22 |
|  | UniRef90-A3PGP7 |
|  | UniRef90_I3RAE9 |



[^0]UniRef90_UPI000308B473
UniRef90_U5DLT1
UniRef90_F7S547
UniRef90_B0JHX1
UniRef90_UPI00046AED1E
UniRef90_K7SYG5
UniRef90_R7X123
UniRef90_E8N3I8
UniRef90_UPI0004089F36
UniRef90_B1XIN1
UniRef90_B2WHN3
UniRef90_R0D673
UniRef90_UPI00035C884F
UniRef90_UPI000469329D
UniRef90_L8JWS8
UniRef90_UPI00035D6F10
UniRef90_F9ZYA6
UniRef90_C5A9V4
UniRef90_UPI0004750743
UniRef90_UPI00035EE04D
UniRef90_N1V3L4
UniRef90_UPI000465471E
UniRef90_F1VX22
UniRef90_A3PGP7
UniRef90_I3RAE9
$\square$ MGSCHACTVDEYEDGK
HGGTCGTCAAWVEESAWREQAR $\square G M P P H N R E R G L R \square T C Q T$ WHGACRQCAVKQYDGPEDQT LMGSCHACEVESDDGTQ
GGGRCTTCRVVVEEGADSQAEARSLAAVGASEGTRLACQD Y LTRCSPTLACR GMGKCAHCACRVLA GQEHLPAPNWKEKKQLDAGYRLVCQL DHGGCRVCVVE
 GGCACSTCHVDKMEEPDDDENDMLDLAFGLTETSRLGCQ CGGSCSTCHVGVEAGGETDPPPEADESDMLEENSRGSCQS EGSACSTCHVIVDQAPTEDEEDMLDLAFGLEETSRLGCQQ
WHGACRQCAIIKQFKNE
 WHGACRQCAVKQFQNAEDTR GGGGTCKVKVHSGGGDDLPTEMSHDTKREAAGGERLACQV


 KSCACTTCHIVIREGFRSLGEPGLDMAWGLLEANSRLSCQA KDGNCASCLI EVVTYEEPSLGKGITTLTEKEKAK
$K D G N A C A S C C$
$R$

[^1]

UniRef90 UPI000308B473
UniRef90_U5DLT1
UniRef90-F7S547
UniRef90_B0JHX
UniRef90-UPI00046AED1E
UniRef90_K7SYG5
UniRef90 R7X123
UniRef90 E8N3I8
UniRef90_UPI0004089F36
UniRef90_B1XIN1
UniRef90_B2WHN3
UniRef90_R0D673
UniRef90_UPI00035C884F
UniRef90 UPI000469329D UniRef90-L8JWS8
UniRef90_UPI00035D6F10
UniRef90-F9ZYA6
UniRef90 C5A9V4 UniRef90_UPI0004750743
UniRef90_UPI00035EE04D
UniRef90-N1V3L4
UniRef90 UPI000465471E
UniRef90_F1VX22
UniRef90_A3PGP7
UniRef90_I3RAE9
lupas_21
lupas_14
lupas 28
jnet
conf
sol25
sol5
solo
jhmm



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

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

