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## $P$ Y P

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| UniRef90_UPI00047E |  |


| UniRef90 L2F5S4 |  |
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| UniRef90-SoGox4 |  |
| UniRef90-F5S9M |  |
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| UniRef90 | B3QF |
| UniRef90-G9ERD |  |
| UniRef90-W6L078 |  |
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| UniRef90- B48886 |  |
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| UniRef90-E4NV |  |
| UniRefoto G5 |  |
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| UniRef90-GOIUNO |  |
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| UniRef90-F8GG |  |
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| UniRef90-LOIGH5 |  |
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| UniRef90-D2PSX7 |  |
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| niRef90-UP100022CAA |  |
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| UniRef90-V7HTM4 |  |
| UnRef90 | UPI0003FD67AF |

 $L V G I L T N R D L R F V K D Y S T V I E T V M T T E E L V T A$
 DEGNLKGI I T N R D L K Y REDL S DNKLEGIVVTNRDLRFEKSMEK QISSEVMT

A Y T F D D V L
$L \vee \operatorname{P} N$ K A S R D I R
D D NKL



## LT F D

 D K GQLD D VLL



RFEHN QVSSLKTNLLT R K I S SLC
 D RLVGILTNRDVRFVEDQAVHVADVMTSENLVTV L V $\quad$ G
 VV GI I T N R DVVRFS D D L S M P V S E L M T $\quad$ T K L V TV

D D
LDFKDVL L
V


RPKRST

D N K

| $L$ | $V$ | $G$ | $L$ |
| :--- | :--- | :--- | :--- |
| $G$ | $L$ |  |  |

D R K L $\vee G 1 / T N R D R R$


| $K$ | $D$ | $V$ | $M$ | $T$ | $S$ | $E$ | $N$ | $L$ | $V$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $K$ | $V$ |  |  |  |  |  |  |  |  |  |
| $K$ | $E$ | $S M$ | $T$ | $T$ | $E$ | $N$ | $L$ | $V$ | $T$ | $A$ |

LDFKDVLI RPKRSTLQTRAEVDLTRDYTFKHSQCSWKGV
D N T L I
L V GILTNRDVRFASNPRQRIAELMTHENLVTV
D E G Y L V G I V T N R D L R F E K D F E R S VV E E V M T S E NVI T T

LD Y S D VL F R P K R
S T L L

| $\llcorner$ | L | G | I | V |
| :--- | :--- | :--- | :--- | :--- |
| V | T |  |  |  |
| G | I | V | T |  |

LV
D DGKLV
D T NKLVGG

$L D F K D V L I R P K R S T L A S R R D V D \square R R D Y D F K W S K K S E H G D$
D S GL
L V G L
K D R R
D G R
$L V G$

A GI I
L V G I
E D Y E L
T EKD GK L
L
K D H S L $L \vee G$ $\checkmark$ T NRDVRFE

E D N NL I G I V T G R DL R F E N K L D Q P V S S V M T K E R L V T V
$L S Y G D V L V V P Q R S D V D S R S N V D L S T \quad R L T D G \| E A T$


L M G I V T S S R D F R Y A D D T D A EII A T I M T K E K L I T

F D Y E D $\backslash Q L I P N K C \square V K S R S E V D T S \square K F G P M T F K$
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UniRef90 L2F5S4 UniRef90 K0A8R8 UniRef90_M1GGE0 UniRef90_C7NBM7 UniRef90 UPI0003775EE6 UniRef90_R8AT62 UniRef90_L8IEK9 UniRef90_T0T4X2 UniRef90_M5JAH1
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UniRef90 B8ERA9 UniRef90_UPI0003708971 UniRef90 H8L6R6 UniRef90_A0LRTC UniRef90_F8GG2 UniRef90_C5BLU4 UniRef90_G5GGH9 UniRef90_UPI0003B3B4D8 UniRef90_E8RS27 UniRef90_F8AUY1 UniRef90_G2KQP8 UniRef90_B3T6J2 UniRe 90 _B9KHK UniRef90-W9HDGs
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UniRef90_V7HTM4
UniRef90_UPI0003FD67AF

REGESTENI KR|LLHEHRIEDDDGRLKGLLINDFSKAENNPN KVGTS LEEAE QILHKHRIVDENGVLKGLI T TKDDEKVEQY P V G T T L D E A K H HL H M H RI E K L L G QL A GLL L TMK DI D KI Q K Y
 RQT TAEILLQQYKI EKLPVVDSNNKLVGLITYKDITKDKP F
 PIIVAANMDVGGFEMAVVMSQHSMFTALHKHYTLDDWKLF PIVNDSGELLGLITMKDIL

 KQGAKAILAKSRKEKLPIVDDNFNLKGLI TIIKDIEKMIGY
 REGVS QGEAKKLLLHQHRI EK LLVVDDQYRCDMEKAVAHP L K E GAGREEVRSSLLHKHRIEKKLLVVNKAFELCGQKA KENP Y P L M S A S M DTVTESKMA IAMAVVHGGIG LIHKNMSIKDQGK】 REGASREEIVTHLHKHRIEKDRFQLRGMVTVKDIQQKSSDF H Q Q T A Q I L Q E NKI E K L P V V D K D N HL VGILI T YK D I T K DK P M PMGTS LA EAK QHL HEHRIVDEEGHLVRGLITMMKDI DKVQKY $P L G T S Q D E A R R L L H A R R I E K L L V V D G D Y R C V G L I T V E D M E$ QKGTSNDLQEYKIEK LPIVVDDNNKLIGGVTYKDKRKSHPN K E GA S L E EAK A L M H K H KVVNDA F E L R GLMTVVKD DT K Q T N F A E GAD K E EVLDSLLHKHRI EK LLVVVNDDFHLDRGMKSRDYPN REGVVSQDDARRLLHQHDVVDDKERCVGTVKDMEKAASNPN

 QE GAE E I L Q Q H K I E KL P I V N K Q H K L V G L I T Y K D K R R D M P N
 PE GTE E I LQQD Y KI E K LDPVID A Q GHLLAGLI TF K DI Q K Y K N Y
 P LVISAAMDTVTEDEMGDELSREGGFGVI HRFLDPEEAAAQ P I I A S N M D H T G T F E M T E S L A K H Q L L T A G K F A C L Q D WE N F



 ENVAK RLHQHRIVKLVVVDDAYCCTGLITVKDKAK DHP
 $P$ I I A S N M D GVGEELNVAK SLA EF NI MT ALTTK QH DLD QI N N F REGASHEEDQQLLHQHRIEKVLVVNDGFVKDMQKARDNPF



 $P$ VGVSA DDARHKIEKLPLVDDRGRLRGLI TVVDFTKREQY $P V I A A N M D G V G T M A M A R A F H V Q G D G L T V A L H K H Y A L D Q L V$




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 PLGGTSLEEAEKLFHKHKIVVEYFQLKGLITYKDKRDQYPYKEGEARDME PDGTSLEEAEKLEHKHKIVDENYFLKGLITYKDVLKRDQY LLEEAKNDLLKERIEKLPIVDNYNKLVGLITDRDIDNLIEY SVGVAKEDARNKIEKLPLVDDQGRLKGLFTVKDFTKTEQY SPGTSGEEAMRLLREHKIVDGDGRLAGLTTLKDFTKTEKY PLLSAPMDTVTEAETADAMDEAGGMGTRHRGTIEEQAAE PVGTTLDEAIHKVEKLPVVDEEGYLKGLDTFKRKRRKHPN PVVDDAGRLVGLI TYKDITKVQDHPNA
NESVTQKEAKRLLHQHRIEDNQGFCDGLTTVKDKSQLHPM RDGVSQAEAKRLLHQHRI EKLVVVDENQNCIGEKAQLHPH PEGAPLAQAKALMHRHRLDAFELRGLITVKDILKATEHPD PVVPANMQT IDDEPDA WWLAENHYFYVMHRFQP EKRPAF PIIGANMDTVGTFEMAKVLCKFSLFTAVHKHYSLDQWQEF KQGISADDAKHKVEKLPLVDEAGKLTGLITLKDFVKRDQF NEGADRDEVLQLLHKYRIEKVLVVNGEFKLRGMITKDNPN HEGSQDEARACOR EAYRAGLIKDMEAQAHP伿 QVVTAQMDMKHRDERLVVVDHDGRCLGTVKDMDKAAVBPH KEGADLESVKELLHRHRIEKDNFQLRGLVTAKDIQKSKDY SEGASQDEVKKLMYENRIGDGKGCLSGLVTMKDIDKSAEH





## UniRef90 L2F5S4

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D T A H GHS K G|VI |D R|V|SW|V|KKNFP Q|V|Q|VI|GGN|I|ATGNAA|L|A|L D T A H GHSEGVLVKV RELRDEYPNLDII A GNVATAEATRDL






 D T A H GHS Q GVIDRVRWVKTNFPDVQVI GGNIATAAAARDL | $D$ | $T$ | $A$ | $H$ | $G$ | $H$ | $S$ | $A$ | $R$ | $V$ | $L$ | $D$ | $A$ | $V$ | $T$ | $R$ | $I$ | $K$ | $R$ |  |  |  |  |
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| $D$ | $\square$ | $A$ | $N$ | $N$ | $Q$ | $V$ | $Q$ | $V$ | $I$ | $A$ | $G$ | $N$ | $I$ | $A$ | $T$ | $R$ | $D$ | $G$ | $A$ | $Q$ | $A$ | $L$ |
| $D$ | $Q$ | $G$ | $V$ | $I$ | $D$ | $R$ | $V$ | $R$ | $W$ | $I$ | $K$ | $K$ | $H$ | $Y$ | $P$ | $D$ | $V$ | $Q$ | $V$ | $I$ | $G$ | $G$ |
| $N$ | $I$ | $A$ | $T$ | $A$ | $A$ | $A$ | $A$ | $R$ | $D$ | $L$ |  |  |  |  |  |  |  |  |  |  |  |  |


 D T A H GHSSKGVVVEKLK QVK KA A FPNVDVVVGGNVATGAAAKY L D S A H G H S V N V I K A I R M V K A S F P N C Q L V A G NV A T Y D G A K A DTAHGHNRDVAKAVDRVKRLSNTVQVIAGNIATAEAAKAL D T A H GH S K G V I D A L K T V K A A K F P P E L D D V I V G N V A T G E G A K A L




 D T A H G H S Q G V L D S I L L K L R S T Y P P E L Q I I G G N I A T G D A A D A L D T A H GHSSKA V GD M V DSAHGHSGNVIKCVMSLKDKFPDLQUIAAGNVATGKATEDL DVAHGHLERTLTAVETLADEFPETPLIAGNVATPA GVEDL

D T A H GHS TGVVMSMVERVVRESNS TRI MAGNVATGEAVRA L
D T A H GHSAGVLGAVERLKAFDANVQIVAGNVATPEAAHAL


D T A H GH S S G V L D S V R R I
 D $\square$ A NGYSEHFSK FI S SVVREEMPTKTII A GNVVTAD MT QE L DTAHGHSQGVIERAAWVKKHYPQVQVVAGNIVTADAAKALL
D T A H G H A R A V L E MVA R L K R D T P

D T A H G H S K N N V L

D T A H GHSSSLVGQAVERLKREYNHVQIVAGNVATYEATARALL
DTAHGHSRAVLDMVRCIKADVPTLDVIAGNVATABABRAL
DVANGYSQPFVD FIIKRMRDKLPTTTVMAGNVVTGEMTEEL

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

D T A H GHS R R V ME Q I E K V R RLL S N Y T Q VVVA G N V A TAA A A A K A L


D T A H G H S Q GVI EMVA WTKEKYPELDVIAGNVATPQAVKAL

DSSHGHSEGVLDQRIRETRAKYPDLQIVGGNVATGSGAKALL
D T A H GHSQRVLDTVRSVKKEFPEQELIAGNIGTAEAARDM

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

DVAHGHLERCLDAVAAIRDAFPDVDLIAGNVATPA GVA DL

D S A H GHHSCN N V I



D I A H GHS Q V VI D M I Q H I





DSAHGHSVVGVLDMIAK LRREVGDVQLIGGNVATRQAAAACL
DVANGYSEHFVVEVKDVRKRFPKHTVMAGNVVTGEMVEEL
D TAHGHSRGVLDRVRWIKEHYPELQVIGGNIATAEAALAL
 D T A A N G H A R R G V




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E G|I|E G R|V|P Y K G P|V|A G|I V|NQM|VGG|L|RSSMGYTGCAT|I|E E M W EGI EGRVAYRGKLGDSVYQLVGGI RSGMGYCGSASLEELR EGUVGRVAYRGPVSDTVYQQVGGLSSGMGYCGASDGKTLF EGIEARVPFKGTLQEVVYQMVGGLRSGMGYCGAANIKKLH
 EGKTVEVPYKGDVENTVLDLLGGLRSTCTYVGAAKLKELS

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UniRef90_Q4N8V1
 REGVSSEEARNKVELPIVDETGQLRGLITVKDFAKREEF PVVPANMQTVMNESKAEWFAQNDYFYGMHRFDEAARLPF QVGVSAEAARHKI EKLPIVDGNGKLRGLITVKDFVKTEQY PETTDLKEAERILRKLLLVNDRYELRGLITVKDIDKNLQF
 REGVTQDEAKRLLHKYRIVDDAYRCIGLVTVKDDEKSTTY PFLSSAMDTVTESQMAEILAPKQELEAPEIYKNAEYAEDF QEGVTAEAARHKDEKLDPVDGSGKLRGLITVKDFVKTEQY PVTTAAMDTVTEAEMARAVGEAGGLGVLHRFLPAEEQAAM KVGDSREETVRLLSEHRTVDDHNRLKGLTTVKDFDKAEQY QEGAEREETLTLLHRHRI EKLLVVNGDFKLRGMUTEDFPN PVVPANMQTIDDEK AVYLAENGYFY $\ M H R F Q P$ ETRDSF LEGTALEEEKTELKKHR1EKMLVVDGNFHLRGEKAKTYPL KKGISLQDATGLGKKPVVDEDNKLVGLITYKMKDKDNPI REGASLEDAKRLMHQHRVVDKDFNLTGLMTVKDIIKEHPN EDTSEDEALETMVERLPIVDDEGKLIGIVTLRD!LKKRRY PVVPANMETVINDDLALWLAENGYFYGMHRFQP EKREGF RVGVTTDEALDLLRKLPVVDGGGKLRGLITVKDFVKTEQY PVGПSHEDATLLLRQHPIVDDAGKLAGLITVKDFVKGDF PVGASNMQTVILDEQAKHVADANGYFYGLHRFKDFVKSEQF REGESKENIQALLQKHRIEKVLNELKGLITDFRKAESYPN KSNTPRDEปEKLMHAHRIEKVLLTDDNFKLCGMUTEQKPN PTVSSARDKKHRIEKLPVVDAKGLLTGLITVKDMEKHARY LEGGAGVLQEHKIEKLPIINKSGLLMGLITYKDKKKDKPN KVGISGEDAVALLRRHKIVDDEGRIKGLITVKDFVKAEKY QEGASREEVLGLLHKHRIEKVLFELRGLITVKDIQKAKDF PVVPANMQTVLDEELS IWLAENDYFY IMMHF DEEARRSF RENESRENVQSLMQKHRIEKVLVVDDAFHLKGQKSSNKPN $P$ IT GPQDISHEEERLPLVDGEGRLTGLITVKDFVKSEQF PVVPANMQTVIDESLSEKLAKKGYFYVMHRFQP EKRLGF QEPADRNQATDLMKARRIEKLLITDGAGKLTGLLTLKDTE PVVPANMETVDDEKLLVVWAONGYFYVMHRF DEPGRLPF PTGVSREDAKALLAEHRVVDAAGRLTGLITVKDKTEQYPH EEGVSKEEALHKYEKLPLVNESRKLVGLITVKDFVKKEQY PVIPANMQTDMDEKLAEQLAQAGYFYIMHRFEEQKRKTF


PGVAKDILHKHRDEK\P\|VDDSGIQGLITSKD\TNNTDY PLITGHVGISREEAKAPLVDDEGRLAGLITVKDFVKTEQY MARGI AVAGGLGVVAKNLTVNEQVQVV EEGVDPDEVRNLLRKHRIEKLLVDSAFKLQGMKAQTHPN GEPDTNWEELNRGEKLPLVDAAGHLAGLITKQDGEKRQMF P PVVGPSTVKHKLERLPLVDADGRLAGLITVKDFVKSEQF PVVPANMQTIINEEGAEKLAEDGYFYYMHRFEPERRMDF

PSLASAKAKQYKПEKLPVVDEQGHLTGLITVKDMEKHSLF PDEACRLLHEHRIEKLVVVDEDNVCVGLITVKDMEKAETY DDEAKAMMKARRIEKLLVTDGHGKLTGGLTLKDTEQAVLN PCLSSPMDTVTESSMAVAMARAGGUGFMHYNSSPAEQASL REPADRDEAMSLMKARVVNADGKLTGLLTLKDSEHSHPQ KEDS DNEMQKNRKKVLPIVGEDGQLGGMYVYSDDKRIISG PVVASNMDTVGTFEMAEVLAKFSLFTT\|HKHYHVDEWKAF REGAGREETLGLFHEHRIEKVLFELRGMLTVKDIQKSSDF PIIDSNGNLVSMLSRTDLMKNKNFPLA
EDVDPEQMYEHKLERVPVVDDDDRLVGLVTMQG LDQRREY PAGANETLQRSKKGKLPIVNKEGSLVAIIARTDLKKNRDF LEAAAQILQEYKGEKLPVVDKDNKLVGLITYKDITKDKPM PVEALDMAYENKVERLPVLSSDKKMAGLVTGRDILNHKKE P VVDKGNLVSLISTTDLQKNHDFPNASKSFHSKQL
PLSAANDLLKKSKKGKPIVDKEGNLVALLSLTDLQKNHDY EDVSAREALEHKDERVPIVDTENRLQGLVTMQGILQRREY
 LVVDNHFHLKGMITVKD FKKAERKPN KEGVSKEEALELLEKLP IVDGNNKLVGLITVKDFVKTEQF PVISANTQWCTEDRMAMEMARMGGLGIVHRMCSUEDQVAF PAGTTDIDWNKDNQLP VDDEGRLQYLVFRKDYDSHKEN PIVNDQDELVATI ARTDL
PVVNEKDEKVTVARTDVLDANGYFYAMHRFG
PIVNENDELVSLISRTDL
KKHREFPL



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G|V|D A|LVill $1^{120}$ PDKDDSGRLRVGAAIGVGEEQYARAGQLVEAGADLD LVV VKKMQSKGLYASDSVGVKDGEFEFDDALKAENLTPEYVTV PNKDPDGRLICGAAVGVGEDSYSRAMSLAEA GVDVLMV PRASKDGRGRLRAGAAVGVLDFERVEALLQS PTKDDEGRLRVGAAlGFFGDGWERAMRLIDA FKAELAANVFYAALGTTRDDLDKLAAVRARVP PHASKDPSGRLRVAAATGVGKDGLARAEALLA SNKDLNGRLRVGAAVSDDVDTEERVEELVKAHGVDLLVV VASVADDGVPVAAAVGlAEPHTERAAALVEA VGVDMLVV PAKDEEGRLRVGGAVGFFGDGYERSMALVEAGADVVVV ACKDEFGRLRAGAAVSTGEGTEERVEALAEA GVDDLVV VKEMKERGLYASISTGVKPEEYAFVEELATRNDEPEYIVIV ASKDSQGRLRVGAAVGTGADTGERVEA LDA ASKDSKGRLLVAAAVGVKSDTLDRDEMLVSAGA PSKDKKKSLIVGAAVGVGEDGLKRAKSLISAN AAKDSHGRLLVGAAVGVGAGTEERTELMLEA AAKDGDGRLLAGAAVGTGPETPDRLAALAEA PQAARDRKGRLIVAAACGPHDFKRAEALIEA ПEMMHAKDLYASISVGTKDDEYKFIDELAEHNNK
 $P N K D A Q G R L L V G A A V G Y F G D A W E R A T T L I D A$
$V K S M Q S E Q L I S G S V G G K P E E Y Q F I D D L K S A G L$ ACKDELGRLRVGAAVGAGAGNEERVAALVAA

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 PNKDAGGRLLVGAGVGYLSDSWERAGALAEE

 PNKDASGRLLVAAGI GTGEESYQRAGQLVDA MQQDEHGRLLVAAAIGDSKDTDTRAQKLVEA PNKDKKGRPLVGAAVGVKGDFLERSESLLNAGA
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N GV VDSNPQIMSQIGI SSGISTSDFDKLRTVCDMIP PNKDAQGSLRVGAAVGPGPETFARVQALAEA SKSATTKQLLCGATVGTMPADRERLKLLAEAGL DDAARDDEGALRVGAAVGPGEMDR ACKDSKGRLRVAAGVGVTADTLERMQALVDAGA FKKCKGPVF VSVGCTENELQRAEALRDAGA ANAARDKKGRLLVAAATGPFDLDRAMALDEAGAD PNSSKSPETLCGAALGTRPDDRERLEKLVAAGLI PDASKSFDSLCGAAIGTLDADRERLDKLVAAGL PSKDANKQLLVGAAlGGRPNDRERCTELVKA
ACKDEHGRLVGGAGGAGAGNEERVAALVAA ACKDEHGRLRVGAAVGAGAGNEERVAALVAA VHADSQGRGKVGGSIGGGTGDYSQRAGLMLVAC KNELLDAQKRYVVGAGINTRDYERVPALVEA ASKDSHKQLLCGAAVGTREDDKYRLDLLTQAGA ASKDSKKQLLCGAALGTQEDDKYRLDLLVGQAGL ASKDSKKQLLCGAAIGTHESDKNRLDLLVQA



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D TAHGHSAG|VI|RKV|KETRDAYPD\||A|I|AGNV|ATAEGTRA|L DSSHGHSRGVIDMIASISKDFGDVDIVGGNIVTAEAAAA DCAHGHSRRVIDLLKKVKVQFPDDDVVVGNVATEEAARML DSAHGHSANVIATVQEIKKQ WDIDVIAGNVATLEGAKAL DTANGHSQGVLEMIRRLKSDAAHVDVIGGQAATREGAQAL DVANGYSQHFLEVVTEVREKNPDAVIMAGAIVTGEMAEAL DTAHGHSAGVMTAVRE:KRTSNEAQVIAGNI ATPEAAKAL DSAHGHSTRILELVKTIKNKYPNLDLIAGNIVTKEAALDL DTAHGHQSGVLQMVSKVKAEVGDVQLVGGNVATRAGALAL DVAHGHMERTLDVTAELASAFPETALCAGNVATPDGVADL DTANGHTQGVLDMITARLKDSQHVDIIGGQAATYAGAKA DTAHGHSRGVLDRVSWIKQHFPQVQVVGGNDATGDAAEALI D $\mathbb{C A H G H S N A V I D M I H H T K K H D P E T F V I A G N V G T P E A V R E L}$ DTAHGHSRGVIDRVRWVKENFPQVQVIGGNIATAEAALD DTAHGHSVGVLEVISKACEAFRDI QIVAGNVATGEGAKAL DTAHGHSKAVLDIVKKIRNLSKKITLIAGNI ATEEAADDL DTAHGHSQGVLDRVAWVKKNYPQLQVIGGNIATAEAARAL DCAHAHNLKVVENTKKFKEDGTDTKLIVGN:ATKEAAEDL DTAHGHSKAVAETVATLKQELGDVDVIGGNVATKSGAQSL DTAHGHSKGVIDRVAAIKKQYGDLQVVGGNIATGDAALAL DTAHGHVRLLLEMCERLKKDTRHVQIVIGGNVATREGAQAF DTAHGHSAGVI ERVRWVKQNFPQVQVIGGNIATGDAALAL DSSHGHSQGVLDRIKATRLAFPDLDVIGGNVATGDGALAL DTAHGHSKGVIDTATRIKKAYPDLEMIVGNIATPEAAKAL DTSHGHSHNALSWISKIKAAVP VDVVGGNVATRDGARAL DITAHGSENAINTVKNIKKAFSDCELIAGNVATANGAEDL
 D SSHGHSQGVLDRLKWLRKEYPELPII GGNVATAAGALAL DVANGHARLMLDMI KRLKSDTKHVQLLAGNVATRAGAQAL DIAHGHSNFVIEMIHH1KHHLPNSFVIAGNVGTPEGVRELI DTAHGHSAGVLKAVERVKRMSNSVQVIAGNIATPEAALAL DTAHGHSAGVAKAVERVKSFSNSVQVVAGNVATASAAKAL DVAHGHSDGVIRMIKFVKKHLPDSFLIAGNVGTPEAVRDLC DSAHAHSRGVLEMVSRVKAEFGDADII GGNLATRAAAQAM DSAHAHNNRVLEMVSRVKKEWGDVDVVGGNLATRGAAQAM DSANGEAKLALDMI RRLRSDFDGVEIVGGNVATREGAQAL DIAHGHADSVIKMIKHIKKEMPETFVI AGNVGTPEAVREL
 DTAHGHSKGVIDQVKHIKKTYPEITLVAGNVATAEATKDL D DAHGHSENAISTVRNIKKAFPDCELIAGNIATAQGAEDL DTANGGAKLALEMISKIKAQFAGMDIVGGNVATTEGAQAL
DTAHGHSKGVIDRVAWVKENFPQVQVI GGNI ATAEAAIAL DAATGHTSRVMNVISRLREADGDTPVVAGNVVTKDGAKDL DTAHGNVRMLIEMVERLKKDTRDVQVIGGNVATREGAQSF DVAHGHAQSVIDMI HYIKEKLPAAFVI AGNVGTQEGVREL DTAHAHNMNVVNSIREMRKKINNDDIIAGNIATGDAAND DTAHGDSRNVVETIKLIKARHPXLPVVGGNVATGAGTRRL DTAHGHSAGVLQAVADIRKMSNTQUVGGNIATADGAQAL DSSQGDSDYQREMLGYAKKWFPEVDVIAGNVVTMQQARNL DTAHGHSEGVAKAVERMKLFAPGVQVCAGNVATAEATKAL DCAHAHNMTVVNNVKПLKKEGTNDKLIVGNIATKEAADDL DVANGYSEVFVDFIRRVREQFPTHTIFAGNVVTGEMVEELC DSSQGNSVFQU EMUKWIKENFTEVEVIGGNVVTREQAASL DSSQGNSDFQI NMDKYIKEKYPSLQVI GGNVVTAAQAKNL DTAGGHSKGVIEKLKEAKAHFPHIDVVGNIATGEAAKAL DVAHAHAKYVGKTLKSLRQLLGSRCIMAGNVATYAGADYL DSSNGSSTFQINMLKWMKEKYPELQVIAGNVVTREQAALL DSSQGNSDFQi EMIQWIKKTFPDLQVVAGNVVTREQAASL DSSNGSSDFQLNMLKWIKSKYPELQVI AGNVVTREQAALL
 DSSHGHSEGVLQRI RDTRADYPNLPII GGNVATAEGALALL SAHAHNNRVLEMVSRVKKDFGSIDVIGGNLATRSAAKAM D DSSEGY S E WQKMM L D WV R E T Y G DV K I GA
 $D S S Q G N S V F Q \| N M I R Y I K E K Y L E L Q V I G G N V V T A A Q T K N L$
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## UniRef90 K1LBD1

 UniRef90-UPIo004797DEE UniRef90-E8SGN9 UniRet90 W7T453 UniRef90-FoSMO6 UniRef90_A9WN11 UniRef90 K9HKW9 UniRef90-COR829 UniRet90-W7ZNOO UniRef90_Q31QG5 UniRef90-UPIO002255F1F3 UniRef90-R4V876 UniRef90-A5CWWO UniRef90-F7YZ12 UniRef90-14CQK8 UniRef90-A9HID1 UniRet90_R5RZN3 UniRef90-DoRPI9UniRef90 R7KSY2 UniRef90-Q1QZL7 UniRet90-D5VTDO UniRef90-C2CZW8 UniRef90-UPIO003663F04 UniRef90 UPI00037A40CD UniRef90-K1E5Z3 UniRef90-17KGB5 UniRef90-A0A010BWM7 UniRef90-A1SYT7 UniRef90_UPI00025552EA UniRef90-E4TLP7 UniRef90-E4NCl3 UniRef90-UPI00036D65F5 UniRef90-D3RQ06 UniRef90-A0A011RQ42 UniRef90_R5EWC1 UniRef90-A3TQ49 UniRet90-D2MN71 UniRef90-D5RMA1 UniRef90_S5Y1M6 UniRef90-UPlooo3675976 UniRef90-W1VIY5 UniRef90-M1NVUO UniRef90-DowP22 UniRef90-UPI00046AF808 UniRet90-UPIIO003FCED67 UniRef90-UPIO00045EBD82 UniRef90-C3PL74 UniRef90-YOI3D0 UniRef90-COWOVO UniRef90-S4LA74 UniRef90_Q2BK62 UniRef90-UPIo00174463A UniRef90-D1BXB66 UniRef90-D4YHH8 UniRef90-Q03GJO UniRef90-Q6L1U7
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UniRef90 Q4N8V1

FDVGVDVVI ${ }^{170}$
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FDVGVDVVKVG\| GPGSI CTTRVVIAGVGAPQLTAIIYEAATA IDAGCDGVKVGVGPGAICTTRVVAGVGAPQVSAIMDTVRV ENAGADATKVGUGPGRVCDTKIKTGFGTGGWQAVNHCSKA IVDAGADGVKVGVGPGSICTTRVVAGVGVPQISAVYEADQA LDAGVDAVKVGIGPGSICTTRIISGVGVPQLTALSEAARG IDAGADGIKVGVGPGSVCTTRVVAGVGVPQITALYESAKA I EAGADAVKVGIGPGSICTTRDVAGVGVPQLTAIMEVVQE INAGADCLKVGVGPGSICTTRIVAGVGVPQUTAMCDVYEV VEAGVDAVKVGVGPGSICTTRVVAGVGAPQITA AEAGADC VDAGADAVKVGVGPGSDCTTRVVAGVGVPQTTAIYEAAKA AKAGADAVKVGI GPGSICTTRVIAGVGVPQITAIDNVAKA DKAGADCVKVG\|GPGSICTTRIVAGVGIPQISAISEVADA EHAGADATKVGI GPGKVCDTKIKTGFGTGGWQALRWCAKA VKAGADAVKVGUGPGSICTTRIVAGVGVPQDSAIANVSAA I EAGADCVKVGIGPGSVCTTRVVAGVGVPQFSAVLETSAA AKLKVDAVKVGGOGSICTTRVVAGIGFPQFSAIMNVKKA VDAGADGVKVGUGPGSVCTTRIVAGVGVPQMAAVSDVAQA DKAGADALKVG GPGSICTTRVVAGVGVPQLTAVADVADV ENAGADATKVGVGPGKACDTKLKTGFGTGGWQALRLCSKA VAAGADAVKVGIGPGSICTTRIVAGVGVPQISAVMEVARA UDTGVDAUKVGVGPGS ICTTRIVTGVGAPQUTAVHDASLA ENAGADATKVGVGPGKACDTKLKTGFGTGGWQALRDCAKA VEAGCSSVKVGUGPGSVCTTRVVGVGVPQDTAISDAVAA I EAGADAVKVGIGPGSICTTRVVAGVGVPQFTAVWDCAEE VAAGADAVKVGVGPGSICTTRVVAGVGAPQBSAVYETYKA LDAGVDGVKVGVGPGSI IKAGVDAVKVGVGSGS
A $A D A G V S A V K V G L G P G S V$
 EN A GADATKVGGIGPGKVCDTKL KT GFGTGGWQALRWCSKA IEA GADAVKI GI GP GSIMCTTRIVAGVGVPQLTAVMESAAA VEAGAD AI K V GI G P G S I C T T RIVA GVGVPQLTAIDDAVS G EN V $\operatorname{V} A$ I EA GAD AVVKVGI GP GS I CTTRVVVAGVGAP QITAAIMEAASVA




## A

 A I E A G C D A I E A GAD II KV GVGPGS I

I E A GAD A L RVGMGS G S
$\perp G A G A D A V K V G \square G P G S$

I N A GADALKVGGGPGSI



## V

I D A G V D A $L \begin{array}{llllll}K & V & G & G & P & G \\ G & S & G & G\end{array}$

 VA K G A D G L K VGI G P G S M C T T R I VA G V G V P QLLTA V S D V A D V IEAGADALRIGMGSGSI IVAGADGLRIVMGSGS|

 AECGADFVKVGGGGGS 1 DAGVDGLRVGMGCGS 1 DAGVDALRVGMGSGS ENWGADATKVGVGPGKVCI

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## UniRef90 K1LBD1

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UniRef90_-17KGB5 UniRef90-A0A010BWM7 UniRef90 A1SYT7 UniRef90_UPIO0025552EA UniRef90-E4TLP7 UniRef90 E4NCl3 UniRef90-UPI00036D65F5 UniRef90-D3RQ06 UniRef90-A0A011 RQ42 UniRef90_R5EWC1 UniRef90-A3TQ49 UniRef90-D2MN71 UniRef90-D5RMA1 UniRef90_S5Y1M6 UniRef90_UPIooo3675976 UniRef90-W1VIY5 UniRef90_EODCW5 UniRef90-M1NVUO UniRef90-DoWP22 UniRef90-UPI00046AF808 UniRef90 UPIOOO3FCED67 UniRef90-UP100045EBD82 UniRef90-C3PL74 UniRef90-YOI3D0 UniRef90-A9A5Y7 UniRef90-CoWovo UniRef90-S4LA74 UniRef90_Q2BK62 UniRef90-UPIO00174463A UniRef90-D1BXB6 UniRef90-D4YHH8 UniRef90_O03GJO UniRef90-O6L1U7 UniRef90-R6SHNO UniRef90_UPIO003604EBB UniRef90-G5ZYR4
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UniRef90 COAQW2 UniRef90-W5XR76 UniRef90_Q11AJ4 UniRef90-R6QAC4 UniRef90_UPI000154EB84 UniRef90_H3A423 UniRef90-UPIOOO2375373 UniRef90_UPI0003F059F4 UniRef90-Q6FM59 UniRef90_F2UFU1 UniRef90_Q4N8V1

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DESPGEFEIVYQGRRYKSYRGMGS|L|AAMKHGSSDRYFQMV|P AESPGELIYMNGKQFKSYRGMGSLGAMQTRGQAKSYSKVP
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## UniRef90 K1LBD1 UniRef90_UPIO004797DEE UniRef90-E8SGN9

 UniRef90-W7T453 UniRef90-FOSMO6 UniRet90-A9WN11UniRef90-J6J593 UniRef90-K9HKW9 UniReffo-COR8299 UniRef90- W7ZNOO
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UniRef90-Q6C897 UniRef90-D8J3H4 UniRef90-G8YSI8 UniRef90-G4YYT3
UniRef90 COAQW2 UniRef90_W5XR76 UniRef90-Q11AJ4 UniRef90-R6QAC4 UniRef90-UPI000154EB84 UniRef90_H3A423 UniRef90_UPIO002375373 UniRef90_UPIO003F059F4 UniRef90-Q6FM59 UniRef90-F2UFU1 UniRef90_Q4N8V1



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EG|IEGRIV|EYKGSVIEDMLLFQM|GG||RSGMGYTGSRT||EDLJR EGVEGQVPYRGTLA QVVYQLVGGLRIDAMGYTGAGTIEAMH EGKKMFVEHKGSLQDTLVEMQEDLQSSDSYAGGKDVDAMR
$E G I V G R V Y K G L S E T V Y Q V G G L R G M G Y C G A A N L E T M$ EGLEGRVPFRGPLSQVTHQLIGGLRAGMGYTGSSSVAELQ
 EGKTVQVPYRGPVKGTMQEVTGGLRSMMTYDGATR KKEVP
 EGVEAVTEYVGPVNERLDEFAGGIRAGMGYAGAQTLPDLQ EGI EGQVPYRGPLSAVVHQLVGGLRQTMFYTGARS GELK EGIEGRVPYKGAMNVIVHQLLGGLRASMGYCGCGDVEEFR
EGVEGRVPKKGSIRPIIVQMIGGVKSMGYIGCDTLEKMR EGKKMYVEYRGPLQDTLKEMEEDLQSADSYAGGNKLADIR EG\|EGRVPYKGSLAATYHQMMGGLRASMGYTGSATVDEMR
 EGUEGRVPYRGPVKNVIDQLAGGLKSSMGYLGAKNIVEFK

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 Q GVV G A VQ D K G S I H K F V P Y L L A G T Q H S C Q D I G A K S L T QLR E GII A A R V $V P$
E GVVA T E V V P F K E N P D
 Q GVVS G S V I D K G S I T K F V P Y L Y N G L Q H S L Q D I G I Q S I T E L R



 E GIV E A C F E Y A G P L R R A Y L Y Q Q L I G G V $\operatorname{C}$ Q S G F S Y C C G A S D Y Q Q L L
 Q GVVS G A V Q D K G S I P H K F I P P Y L I A G I Q O H S C Q Q D I G A K S E GK R IL L E P V K G R L A D T L V E M E Q D L Q S S D S Y A G G K R L M D V R Q G V


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| UniRef90-W7T453 | TK QLVR |
| UniRef90-Fosmo6 | TEAKF |
| UniReef90 A9WN | AKGKFVR1 |
| UniRef90-J6, 593 | KRTTFVMV |
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| UniRef90-COR829 | TNSNFV |
| UniRef90-W7ZN00 |  |
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UniRef90_U7KZ55

FLKPEESNMTGRDKADTSVTLQEDLSQSKKGKLL


 AFDYED $\square$ QLIPNMCVVNSRSECNTSVTLGKHTFK LVG V V TARD DQF HSQDETPLK D IMTTELVVKLL LT F D DVKLVM DQ QD HVENNELL IV TSRDYRVSR MDLNTKVSTHMT D DVQ DVMSRDLIVAKE GCTLS QAND DMK VNKETS
 VTAQS GVTLTEANHILE KSKLKGKL

LLG $L$ VS S R D Y R S RM E L



 D T VL G I I S G T Di R P Y L E E V G E A D D V


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


$\square \mathrm{V}$ T S R DETDRATP LAEVMTKRRDL $L L G \square V T P R D T Q F H S D Y D A P V T E I M S K S Y K G K W$ LA G I IT ERDFRNRCESGAKVCDYMTPEK LIDA $L \mathrm{~V} T \mathrm{D}$ K D Y R V S R D NLDD A P I D N YMT P K E E E G I VD R F T Q Q A A A F L L A D E G L D Y A A $L L G M L T N R D \square D F V K K F S T P V C E V M T K R$ $R L G D T L S E A N D D I$ WE HK L N T L L $D V M T \quad S A S D L L V G S A T D G V A A L E E L L L K S K K G K M$ LT Y N D F L V L $\quad$ P G Y $\quad \square$ G F $\quad$ P A S E E V





 ED GKLVGIVVTSRDYRSRMDLKTKVKE FMTPENLVWA


$D G L L A G \square V T H R D M R F E T E L D D P V R H \square M T K D R L V T V$ E D DL S R PVVSA YMTPDVENVGV

LT F E D VA
LPENNVNQQDKI S T I LTTPTLKKLNQ

DD GA LVGGITN RDMRF E V D D Q S K QQV A E V M T K A P L I TA MI P R ELVITTASASVTLDSAYQTLQ ENKRGKL F D F N HVMMLL



F M T P F D S L VY A Y D G $\square$ S $L$ S E A N D K $\square$ WE N K VN QL $L L G \square V T S R D \square D F L T D V H T P L S E V M T S D L V V K L$
$D V D R F A R L S T V A D A N F V S A$
D $\square$ D M F T D LR SAMT P $\square P \vee V L$ RFTQVLDVMHTDVVVLPEDDGPQEAF ERRLQSEAKKGML


UniRef90 F6USH9 UniRef90_U5NE33
UniRef90-IOHZ71 UniRef90-T0S952 UniRef90-UPI0004671C62 UniRef90-C6AOH4 UniRef90-D7FXH2 UniRef90-Q6F1U6 UniRef90-S2K2C7 UniRef90-D5TOZ6 UniRef90-R6IEQ5 UniRef90-L1JLM0 UniRef90_UPIO0036705C3
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UniRef90-N6T9C7 UniRef90-G8QVF1 UniRef90-B4MJ75 UniRef90-M2CDV3 UniRef90-R6IC36 UniRef90-W7BNT1
UniRef90-R9NZF9 UniRef90-R9NZFs
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UniRef90-W6JUF6 UniRef90-E1RDR8 UniRef90-W2C1W9 UniRef90-E01618 UniRef90_UPI000378E16C UniRef90-X1XQX3 UniRef90-R5QTX5 UniRef90-H6LF34 UniRef90-F6Y0F8 UniRef90_J0XF50 UniRef90_E7MPW4 UniRef90_A0A059C7C8 UniRef90_UPI0003C11C7F UniRef90_U7DAC0 UniRef90-A3DD87 UniRef90-C5RAX2 UniRef90_Q8I2U5 UniRef90-A6W7D0 UniRef90_F2V4N5 UniRef90-E5SID0 UniRef90_L0AY93 UniRef90_UPIO00376D638 UniRef90-S2Z6L2 UniRef90-UPI0003651FC0 UniRef90- X1J5J5 UniRef90-Q4UCL4 UniRef90-S9WIH0 UniRef90_D3R253 UniRef90_UPIO002377A24 UniRef90-Q4VRV8 UniRef90-B3T647 UniRef90-10H944 UniRef90_UPIO00466DB1F UniRef90-W8ABI1 UniRef90-UPIO00273F5A7 UniRef90-M3UGR9 UniRef90-W4XR11 UniRef90_W9G8V0 UniRef90_JODPR4 UniRef90_U7KZ55

P\|VDADDRTVVIS LIARTDL ${ }^{60}$



PVVPSNMVTVVNEELCEQLADKGFFYVMHRFN VDADKF EEIMM LM I ENS DDRVPDVDDDGKLVGI IT DGDLLARKKH PVGLEEANATSKKGKLPVI NAEGNLVALI SRTDLIAKNRDF
 PLLSAAMDTVTESRFADELAKLGGLGVVHKNMWDADNYPN LQEANDII WDNKLNTLPII DDEGRLLYMVFRKDYATHKEY PIVNGNGELVALISRTDLLKNRDYPNCSVDKTSKQL PAGLAPREAFDRLHDAPLVDGDGRDVGITRTGADRATDYQ SEETSD I WWEHKINCLDPLVNDKQELVYGVFRKDYDTHKKN $P \| V N A Q G N L \square A L M A R T D L$
PVVDKDNHLKYFVFRKDYDSHKENP
PDGANNDLEKSKKGKLPIVNQAGELVAMDARTDLKKARSY E EGDSDI I WEFKLNSLPILDKKGCLVAFVFRKDYESNTEN PEGTSDI I WDHKLNSLPIVDAAGRLLYFVFRKDYAEHKNN KE ANNI WDHKLNALPLI DDDQHLAY IVFRKDYDSNKEN P VVDAE GRLVA LLAARSDLLKNQNYPLA SKQPDSKQL
A YGTTLMEAKSKKGKLP I TDDRE GNLVSMISRSDLDTKNLHF KEGTTDDIWEHKLNSLP I DDKEGNLQYLVFRKDYAEDKEN P IVDENQKLQHLVFRKDYDAHKENP
EDVGAREALELMYDHKDERKGAGKLVGLVTMQGDLQRREH PIVDASGNLVSLLSRSDLMKNLHYPLASKLPDSKQL
PLTANKLLSEIKKGULPIVNNKGELIS IVVRSDVKKNKKF
 TLKEANMI WEHKLNCLPI I DSEQKLVYLVFRKDYDSHKEN PIVDAEGNLVSLLARSDLLKNQNFPLASKLPESKQL
PREAFNTLDAANRRYAPAVDADGKLVGDTRKGALRATLYS
EQAPDHLEEAMEVLNRSRHGYLP ILNDKDEVVYLCRQYPN
P IVDEAGNLVALLSRSDLMKNLNFPLASKLPDSKQL

 D PVAPA GVTVKEANEELQRSKKGKLVIVNTDGKKNREHPA

EAGIS LDDADHKINQLPIVDKNGNLQS LVFRKDDENREEH NLGEANDKWETKKECLPIVLTKEGNLKYLVFRKDYEERKNN PLVSEEGEVIDLITNKDVERGRSYPKLGKPTLGADGKFV

$P \vee V N A E G E L V G L I T R A S I$
QFFRKQKLLRPP GA LAVDEEGGTHGLERFSPVVSDGRDVGVLTRVGALRSSDYT
 PIIDKEGRLVSLLARSDLLKNQSYPLASKNPETKQL IVGANDII WEHKLNNLPIIDKNQNLLYFVFRKDYDDHKEN PDGVSPELASVRHRLAPVVRPDGTLVGLTRQGADRATVYR $P$ VVSEGTKT
 VVGANDIIDWKKLNQLPIVDEDRHLKAFVFRKDYEQHKEN

KEANDLDWDNKLNALP! DDDDQKLAYFVFRKDYETRKSN PDNTTDDI WEHKLNCLPLIDSKQKLVFMVFRKDYDSHKEN PVIAANMDTVGTFEMAKELCKTLFFIAC
$P E G D D S R E A F A R L R A A P V V D D G G R L V G L T R D G A V R S T \square Y A$
$P V V D E N D E D Q Y L V F R K D Y S H K E H P$ PVVDENDHLQY LVFRKDYDSHKEHP
KEGAASAEVLQLLHRNRTEKVLVV
SLHEANCLLKYRKDCLDVVNAEGHLDSLVFRKDFDEHTDN V VGKLGGSLSEANDLI WENKDNCLPDVDDEQRLHY V V F R PILSAAMDTVTESPMAIALAKFGGLGVIHKNMLIADQDPN NLSDANKVLCDEKKVLPIVNKNNELIVCRNDMHKNRDFPH A DVAEADLEAARRRFAPVVRDLGDVGALTRKGADRSTVYA QEGVSASAALGLLRRDPVVDGRGRLTGLDTVKDKTEQHPLL P V VDDENRLVSLIARTDI DAKRNYFYVMHRVDKRRVYPLL

 PLDTKPREVFEKLHQALATDGGGVLGUMTRRGALRSEIVT PVGTSDAKAKHKIEK LPIVDKKGYLKGLITMRDIKK I EEF VVGKHPMKL NDANELLFMSKKGVLPIVNEDYELMSIYYY

## P $\|$ VT S E H H L VGLVF R K D Y D E H K E N P D

P IVNDNFELVALISRNDL
KKNREFPL


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UniRef90-RGSNE2
UniRef90-NGT9C7 UniRef90-G8QVF1
UniRef90_B4MJ75
UniRef90-M2CDV3
UniRef90-R6IC36
UniRef90 W7BNT1
UniRef90
UniRef90-R9NZFS
UniRef90- N1JLI6 UniRef90-UPI00031F1563 UniRef90_UPIO00289BC60 UniRef90-G2MKW2
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UniRef90_C8PNY6 UniRef90-UPIOOO395C313 UniRef90_Мзв2D3 UniRef90-J3Q5E6 UniRef90_U2KPI4 UniRef90-R6HGM6 UniRef90-IIGMN6
UniRef90 V6K501 UniRef90-T2MG64
UniRef90-R5GES2
UniRef90-C1MX96 UniRef90-D5UEF5
UniRef90-G1XEF3 UniRef90-×4ZDA7 UniRef90_V2WUL4 UniRef90-I4DOJ9
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UniRefoo- W4XR11 UniRef90-W4XR11
UniRefgo- W9G8V0 UniRef90-JODPR4 UniRef90_U7KZ55

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PAVDDRGRLRVAAAVGVNGDVAAKAKELLEA ENELDDDSKRYMVGAGINTRDYERVPALVEAGA NEDLDAQKRYIVGAGINTRDYERVPALLLASGADVDVVIL PNKDSNKQLLVGAADGTRHEDKVRLQLLVANGGVDVI IL P LELLDEKKRYMVGAGTNTRDYERVPALVEAGADV P NEILDDHKYVVGAGINSRDYERVPALIEAGADV
 PLASDSKQLICAAAIGTRPDDKTRLQKLVDAGLDI VIL SRALLDSEKRYMVGAGINSRDYERVPALVEA GVDAVCI
 CNADEND PSKNNNMQLLVGVAISTKE PNELLDQNKRLVVGAGLNT STLDSSGRLICAAATSTREEDKYRVSSLLAA SAAATGTRP PLIASKSKQLYAAAAVGTRPADRDRLTLLVEAGLD VIGL QQAARDSNGRLRVGAAVGPFEDERAEQVADAAGVDVVFL PSKDAKKQLLCGAADGTHEDDKYRDDLLVQS PNELLDEKKRYLVGAGLNTRDYERVPVLVAAGADV ASKDGRKQLRVGAADGTREDDKYRLDLLVQAGTDL
ASKDGRKQLRVGAA GTRED
PDETHDAQKRYTVGAGTNTDYMERVPLLLDAGADV PNSLLDENKRYIVGAGINTRDYERIPALVEAGA VAASHGTREDDKQRLEQLVAA PATDAAGRLRVAAAVGDNGDVAARARTLLDA ASKDSKKQLLVGAA STHDDDIPRLAALVEA ELSDKVNKQLLVGAGIUNTRDYKERVPALVEA PSLDKKGRLLCGAAIGTRPADRDRAVALAAE PALDAQGRLRIAAAVGПNGDVRAKAAALLDA VRKVKRYENGFIDPVVLSPSHCVKDVREVKEKQ
PLALMDGNKSYIVGAGINTKDYERVPLLVEAGADI YAAAADGTRDNDRNRLDLLVKAGLDI
PSESLDSEKRFVVGAGTNTRDYERVPELVKAGADI
PNTDAHGRGRDAAADGINGDDPGKARALAEAGA PDELSDATKKLLVGAGINTRDYKRVPALDEA KDYDDENKSYIVGAGINTKDYGERVPALVAA
PNEVLDDHRYLVGAGINS RDYDRVPALVEA PNEVLDDHKRYLVGAGDNS
PNELLDDSKRYVVGATNT
ENELIDDFKRFVVGAGVNTRDYERUPALVAAGAA
PALDAAERLRVGAA
NELDDSEKRLLVGAGIDSRDYAERTPALVAA
SVDANGEWMVGAAIGTTEADKERLQHLIKA NDSTCRPACWSALPSACDTDRRVEALVAA PLEDLDSEKRLIAAAGINTHDYERVPALVAA


 SSVDKYGRLLVGAAI STREESKDRLKLLVEAGVDI VAKMKS LIGLFTSTAIGTKKPFHDLIDKLHAEGLVPDYVTI PALDASGSLRDGAAVGUNGDVAAKAKD LLAAGVDVLVV PAVDASGRLRVAAAVGVSGDVAGKAAALLEAGAGVDLLVA ASKDDNKQLLVGAA\STNVNGLEVAKKLIDAKVDV ILV

## ELLDDNKR पMVGAGपNTRDYAERVPALDEAGADロ ■C\|

ASKDSNKQLLVGAAVSTKPHDTERAKALQEAGADV LVV
SNESVDDDKQFRVGAGVNTHDYER DPALVEAGADV LCL PTVDAAGQRVAAABGNGDVGAKAAALVAGADL LVAD PAVDANGQLRIAAAVGINGDVPAKAKALVDAGADV ARQNPDCLEHLAASSGTGSFDFEHLEQLLETVPQVNY ASKDPRKQLLCGAAIGTREEDKHRLDLLVQAGVDVV PAVDADGHLRVAAA GDNGDVADKAKQVLDTGADV SSYDSKGQLRVGAAI NTRESAKEAVKKLVAAGADV
VRTMHSLGLYASIDSLGKPADCQTVEQLAAEGLIPQYTT
ASMDEQGRLLVGAAGGVKPGELQRAEALLKAGADVVVVL SKDQNKQLLVGASIGTRPNDRERAAALIAA GVNLEVI
 DKKMKEKKLISSAAVVGVKEQDFKMLNELTELNLIPDYIVTI


## 



## D A $\mathrm{V}^{\mathrm{M}}$

DML V I
L V
L$\checkmark$ V PADDKNGRDRПAAAVGDNGDVAGKAKQLLDA GVDTLVI
 $\checkmark \operatorname{V} L$ VIL C GVV


## UniRef90_F6USH9 UniRef90_U5NE33 UniRef90-IOHZ71 UniRef90_UPI0004671C62 UniRef90_C6A0H4 UniRef90_D7FXH2

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UniRef90-M2CDV3 UniRef90-M2CDV3
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UniRef90 F1RDR8 UniRef90_W2C1W9 UniRef90_E01618 UniRef90-UPIO00378E16C UniRef90-X1XQX3 UniRef90_R5QTX5 UniRef90_H6LF34 UniRef90_F6Y0F8 UniRef90_J0XF50 UniRef90_E7MPW4 UniRef90_A0A059C7C8



$D \square A H G H S L A V K D M I K H I R K H M T K T F I \quad I A G N V G T P S A V R D L$
 DSS Q GDSMY QHEMVKFI K S TYPADDVVVGGNVVTARAAANL $D \square A H G H A N S V K E M I E H I R K M G D Q T F I I A G N V A T P Q A V R D L$
 DSSEGYSEWQKLLTLDWVREHYGDVKVGAGNVVDAE GFRYG DSAQGDSTY QADMVRHIVKNYPHIVV DAGNVVTSRQAAHL

$D$
$D$
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## D

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## D <br> D

## D





 D T A H GH QE K M I E A L T A V R A LDD L GV P I A A G N V V T A D G T R D L DCAHGHNLDVVVKSVKEMK E SVVSADVVA GNI ATSAAAA E E F



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## D

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UniRef90_B4MJ75 UniRef90-M2CDV3 UniRef90_R6IC36 UniRef90-W7BNT1 UniRef90-R9NZF9 UniRef90_N1JLI6 UniRef90_UPI00031F1563 UniRef90_UPI000289BC60 UniRef90_G2MKW2 UniRef90_S7ZP02 UniRef90_I3WTS0 UniRef90-R2Q5I2 UniRef90_F2EC06 UniRef90_F2RCI6 UniRef90-W6LD76 UniRef90-J4IC36 UniRef90_V5A5K2 UniRef90_M7AUD4 UniRef90_C8PNY6 UniRef90_UPIO00395C313 UniRef90_M3B2D3 UniRef90_J3Q5E6 UniRef90_U2KPI4 UniRef90-R6HGM6 UniRef90 V6K5Q1 UniRef90-T2MG64 UniRef90-R5GES2 UniRef90-C1MX96 UniRef90 D5UEF5
UniRef90 G1XEF3 UniRef90_X4ZDA7 UniRef90_V2WUL4 UniRef90-14D0J9
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UniRef90_E5SID0 UniRef90_LOAY93 UniRef90_UPIO00376D638 UniRef90_S2Z6L2 UniRef90_UPI0003651FC0 UniRef90_X1J5J5 UniRef90-Q4UCL4 UniRef90_S9WIH0 UniRef90_D3R253 UniRef90_UPI0002377A24 UniRef90_Q4VRV8 UniRef90_B3T647 UniRef90_IOH944 UniRef90_UPI000466DB1F UniRef90_W8ABI1 UniRef90_UPI000273F5A7 UniRef90-M3UGR9
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UniRef90_U7KZ55

170
190
200
DDAGADALLRVGMGSGSTCTTQEVMAVGRPQATAVVKVSEY ETWGADATKVGVGPGKVCITRLKTGFGTGGWQAVKWCARV
 E Y W GA D A T K V G G G P G K V C ITT K L K T G F G T G G W Q A V K WC S K A


## - |m| <br> 

210
220
230
240
ARRFNVP|VI|ADGG|IQNVGH|V|TKA|LALGASTV|MMGS|LLAAT




 ATK CRRFGVPTIADGGVGNVGHIVKALADGASAVMMGGLLAGT AARRGKTVIADGGAKTPEDVVKALAAGGNAVMLGSMFSGT ARRFD DP DADGGI RSPGHDMKALSGGASCVMMGSMDAGT ARRLGRHVWADGGVRHPRDVALALAAGASNVMVGSWFAGT RDEYYKPICSDGGIVHDYHITLALAMGADFIMMGRYFARF RDEYYVMI CSD GGGVLDVHMMTLGALALGASTVMMGSLLAGT
 RDGVYIPICSDGGLVHDYHMTLALAMGADFLMMGRYFARF RDEYYIPICSDGGIVYDYHMTLALAMGADFLMLGRYFSRF
 RDEYYVPICSDGGIVHDYHI TLAALAMGADFVMLGRYFARF
 AARFGVPCIADGGIVNDGHVVKGLALGASTVMMGGLLAGT AHGNDCPVIADGGI RTSGDMMKALALGASCCMLGGAIAGT RDEYYVPICSDGGIVHDYHIVLALAMGADFVMLGRYFARF ARKFGVPTIADGGIQNVGHI AKALALGASAVMMGGMLAGT AKKYGKHVWADGGVRHPRDVAMALAAGASNVMDGSWFAGT CASRGVPCIADGGIRSVGDICKALADGANVVMLGGMLAGT AARFGVPCIADGGIQNVGHIVKGLAMGATTVMMGGLLAGT

 RDGVYI PI CSDGGIVYDHHITMALAMGSDFCMLGRYFARF ARRFGVPVIADGGI RSPGHAVKALALGASTAPPXXXXAAT AARFGVPCIADGG $\mathbb{Q N V G H V V A} 1$

 ARRHGGHVWADGGVRHPRDVAMALAAGASNVMVGSWFAGT ARRFNVPCIADGGIANVGH\|IKALSLGASAVMMGSLLAGS
 A R RLGKHVWADGGVRHPRDVALALAAGASQVMVGSWFAGT

UniRef90_F6USH9 UniRef90_U5NE33 UniRef90_IOHZ71 UniRef90_TOS952 UniRef90_UPI0004671C62 UniRef90-C6AOH4 UniRef90-D7FXH2 UniRef90_Q6F1U6 UniRef90-S2K2C7 UniRef90-D5TOZ6 UniRef90-R6IEQ5 UniRef90_L1JLMO UniRef90-UPIO0036705C3 UniRef90-R6SNE2 UniRef90-N6T9C7
UniRef90-G8QVF1 UniRet90_G8QVF1
UniRef90_B4MJ75 UniRef90-M2CDV3 UniRef90-R6IC36 UniRef90-W7BNT1
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UniRef90-F2RCI6 UniRef90-W6LD76 UniRef90-K2RER9 UniRef90-J4IC36 UniRef90-V5A5K2 UniRef90-M7AUD4 UniRef90_C8PNY6 UniRef90-UPIO00395C313 UniRef90-M3B2D3 UniRef90-J3Q5E6 UniRef90-U2KPI4
UniRef90 R6HGM6 UniRef90-R6HGM6
UniRef90 I1GMN6 UniRef90-V6K5Q1 UniRef90-T2MG64 UniRef90-R5GES2 UniRef90-C1MX96 UniRet90-DG1XEF5 UniRef90-X4ZDA7 UniRef90 V2WUL4 UniRef90-14D0J9 UniRef90-E1RDR8 UniRef90-W2C1W9 UniRef90-E01618 UniRef90_UPI000378E16C UniRef90-X1XQX3 UniRef90-R5QTX5 UniRef90-H6LF34 UniRef90-F6Y0F8 UniRef90_J0XF50 UniRef90-E7MPW4
UniRef90 A0A059C7C UniRef90_UPI0003C11C7F UniRef90-U7DAC0 UniRef90-A3DD87 UniRef90-C5RAX2 UniRef90_Q8I2U5 UniRef90-A6W7D0 UniRef90-F2V4N5 UniRef90-E5SID0 UniRef90-LOAY93 UniRef90_UPIO00376D638 UniRef90-S2Z6L2 UniRef90_UPI0003651FC0 UniRef90- X1J5J5 UniRef90-Q4UCL4 UniRef90-S9WIH0 UniRef90-D3R253 UniRef90_UPI0002377A24 UniRef90-Q4VRV8 UniRef90-B3T647 UniRef90-10H944 UniRef90_UPI000466DB1F UniRef90-W8ABI1 UniRef90_UPI000273F5A7 UniRef90-M3UGR9
UniRef90- W4XR11 UniRef9O-W4XR11
UniRef90 ${ }^{-}$W9G8V0 UniRef90-JODPR4
UniRef90_U7KZ55


 A RELGGKHVWAD G GI RHPRDVALALAA AASNAMIGSWFA G T A S QYDVPDIDA D G Gll RYS GDIA KA I A A GA D CVMLLG S LLLA G T









 A R E L G A HVVA D G G V R H P R DVVALAALAAAGA S QVVMVGSWF A G T CRPA GVPVIA D G GLLQYS G DIA K K A L A A G T S T A ML G S LL LA G T


 ARELGKRI WA D G GVVRHPRDVALALAA GASSVMVGSWFS GT

 RDEYYIPLCSDGGLVLDYHMTLALAMGADFLMLGRYFARF
 GK DY G I P II S D G GTRNS GDATKALAA A A S S I MMVGS L L G G T RTGEYVP L CSDGGVLHDSHMADAFAFGA DFLMLGRYFARF A A ELGAAHVWAD G GVVRHPRDVALALAA GASNVMVGSWFA GT AKEFGKHVWAD GGVVRHRDVVALALAAGASNVMIGSWFAGT A H GLNGHIDSDGGYSCPGDMAKAWGAGADFV ARERGAHVWADGGIRHPRDVALAVAAGASNAMVGSWLAGH ARSCGVPI IA D G GITTVGHITVALSLGASSVMMGSWLAAGT


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| :---: | :---: |
| UniRef90 F6USHO UniRef90 U5NE33 | A |
| UniRef90-10HZ71 | EEAPGAPVDRDGQKVKVVRGMASLGAVIGRRQQDWDKVVP |
| UniRef90- ${ }^{\text {ToS }}$ S 22 | EESPGQYFFQDGVRLKKYRGMGSVEAQKRYFGSNAVVKVA |
| UniRee90 ${ }^{\text {UPI0004671 } 62 ~}$ | AESPGKTVETDGELYKEFFGSAS |
| UniRef90-C6AOH4 | KEAPGREVTINGRKYKQYRGMGSLGAMMKGGAERYYQFVP |
| UniRet90-D7FX | EEAPGEYFFQEGVRLKRYRGMGSLEAMKRYFASGAKVKVA |
| UniRef90 Q6F1U6 | KNVTVDNVLFKEYYGSAS |
| UniRet90-S2K2C7 | QRLKRYRGMG |
| UniRef90-D5T0Z6 |  |
| UniRet90_R61EQ5 | NKVNDNGNYMKEYWGEGSNRARNWQMGGASKLIS |
| UniRef90-L1JLMO | HEAPGEWFYRDGVRMKKYRGMGSKEAMEKGSSTRYLMQVE |
| UniRei90 ${ }^{\text {R6SSNE2 }}$ | DESPTKRVNIDGSYMKEYWGEGSARARNWQMGGD |
| UniRef90-N6T9C7 |  |
| UniRef90-G8QVF1 | DESPTEKVNDNGSYMKEYWGEGSARARNWQRGGDSKLSFV |
| UniRef90-84MJ75 | SEAPGEYFFSDGVRLKKYRGMGSLEAMERYHNEMDK |
| iRef90-M2CDV3 | KVLINGNYMKEYWGEGSARARNWQRYDS |
|  | DESPTAKLIVNGSYVKEYWGEGSNRARNWQRYDLGKL |
| UniRef90 W7BNT1 | DESPTNKVNVNGTYMKEYWGEGSNRARNWQRGGDKKL |
| UniRet90 R9NZF9 | TESPGDYFYRDGKRLKGYRGMGSEAMQRYFSESDA |
| UniRefg-UPINOO31 |  |
| UniRef90 UPIO002889BC60 | DESPTKKLKLGNNFVKEFWGEGSNRARNWQRYDSGGK |
| UniRef90-G2MKV | HEAPGRVITMNGKKYKQYRGMGSVGAMQSGGGER |
|  | EYFVSNGQLVKSYRGMGSUAAMERY |
| UniRef90 - 3 WTSTS | VESPGEF |
|  |  |
|  | WGE |
| 2EC06 | 俍 |
|  | HDAQGRAYKESFGMASARAVRNR |
| W6LD76 | EYFFHNGHRLKVYRGM |
| UniRef90-K2RER9 | PGQYFVREGQLVKAYRGMGS DAMERYFSEGDRVLVA |
|  |  |
| UniRef90-M7AUD4 | TEAPGEYFFSDGDRDKKYRGMGSLDAMDRYFSETDKDKVA |
| UniRet90-C8PNY6 | DESPTNK LVNGSYMKEYWGEGSSRARNWQRGGDSK |
| UniRef90- UPI00039 | GSLDAMERYFSEG |
| UniRet90_M3B2D3 | DGQLRKTYRGMGSIDAMERYFSEGDKVLVA |
| UniRet90_J3051 | PGEYFYNEGQRLKKYRGMGSLDAMERYFSESGSVRVA |
| UniRef90-U2K | DESPTHKLIVNGNYVKEYWGEGSNRARNWQRYDLGKMAFE |
|  | GNNYVKEYWGEGSNRARNWQRGDKKKLSFE |
|  |  |
| UniRef90-T2MG64 | SEAPGEYFYAEGVRLKNYRGMGSLSAMESKGSQTRYFKVA |
| UniRef90-R5GES2 |  |
|  |  |
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DESPTKK LKVGNNFVKEFWGEGSNRARNWQRGGKSGLVFE EEAPGEYFYHE GKRVKAYRGMGSLEAMQRYRSENSAVVVA
D E
EK DKIRVA


290
300
310
320


E GVDA YVPASGPLSEVLDVTLAKLRSTMCNVGADSLKDFS E GVDSYVPYAGKLRDNLEITLSKIKATMSSCGAASISEGQ EGI EGKTPYKGTLLDVLRPALNDVAENLNKGGFTSILQAA QGVSASLVDKGSVLNLIPHLFKAVKHGFQSMGIRNIPELH S S RMHLDPARPGVEDLLDQITSGVRSSFTYVGARTVAEYA
 EGRSTLIPDETSLYDKLDEVEEDLQSAVSFSGGTKLEDIT TGKMYLDPARPGVEDLLDELI T S GLLRSSCTYAGARSLAEFS R RKMF E E G DK G GVEDLI DRMIS GLR R S MTYAGADS L E S F H
$Q G V S G L V I D K G S V N N L P N L T Q G V K H G L Q N T G A F S V K E L H$ EGKTVEVPYKGDVENTILDILGGLRSTCTYVGAAKLKELS E GVDSYVPYAGSLKENVDSALAKIRATMCACGSLSLDELDH
 Q VV A A G V GCVVDTVMQLQGVKHGMQD GARTLRDLH E GVDGYVPFAGSLYDNVKVTLAKLRSTMDSCGSTTLRRFH


SSR TR DDPEHPSVEDLIDH पCSGVRSTATYTGATTDQEMH RHYVF GLSVRPSVRPYVDMAVGRPQGTAVY
TARMYIDPARPSVEDVVDETIAGLRSSCTYAGARTLEEFH QGVSATMRDRGSIHKFVPYLVRGVQHGFQDDGVKNMDEDR

| UniRef90_F6USH9 |  |
| :---: | :---: |
| UniRef90-U5NE33 | N Y V |
| UniRef90-IOHZ71 | R T A EF |
| UniRef90-TOS952 |  |
| UniRef90-UPI0004671C62 | K V ${ }^{\text {Y }}$ |
| UniRef90-C6A0H4 | EKSEFVII |
| UniRef90-D7FXH2 |  |
| UniRef90-Q6F1U6 | K K V ${ }^{\text {d }}$ Y V |
| UniRef90-S2K2C7 |  |
| UniRef90-D5T0Z6 |  |
| UniRef90_R6IEQ5 | K N A M T LV |
| UniRef90_L1JLM0 |  |
| UniRef90-UPI00036705C3 | ERAVV |
| UniRef90-R6SNE2 | EKAKLTLV |
| UniRef90-N6T9C7 | T K |
| UniRef90-G8QVF1 | QK A K L T LV |
| UniRef90-B4MJ75 |  |
| UniRef90-M2CDV3 | R D A K I T LV |
| UniRef90-R6IC36 | R D AKLTLV |
| UniRef90-W7BNT1 | QK A K I T L V |
| UniRef90-R9NZF9 |  |
| UniRef90-N1JLI6 | D S V |
| UniRef90-UPI00031F1563 | ENARLT LV |
| UniRef90_UPI000289BC60 | RKARITVI |
| UniRef90_G2MKW2 | Q A E F V K V |
| UniRef90_S7ZP02 |  |
| UniRef90_I3WTS0 | E N T |
| UniRef90-R2Q5I2 | K N A K T T L V |
| UniRef90_S0FH51 | QK A R L T L |
| UniRef90-F2EC06 | EGAD |
| UniRef90-F2RCI6 | EKSVV |
| UniRef90-W6LD76 | E K |
| UniRef90-K2RER9 | Q SV |
| UniRef90-J4IC36 | E GV |
| UniRef90-V5A5K2 | S D A A F VRV |
| UniRef90_M7AUD4 |  |
| UniRef90-C8PNY6 | K N A K $\square$ T L V |
| UniRef90_UPI000395C313 |  |
| UniRef90-M3B2D3 | E G V $]$ R |
| UniRef90-J3Q5E6 | ERAD |
| UniRef90-U2KPI4 | QKAKTTLV |
| UniRef90-R6HGM6 | EKARLTLV |
| UniRef90-I1GMN6 |  |
| UniRef90-V6K5Q1 | E K S V V |
| UniRef90_T2MG64 |  |
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| UniRef90_C1MX96 |  |
| UniRef90-D5UEF5 | E R A V V |
| UniRef90-G1XEF3 |  |
| UniRef90-X4ZDA7 | Q N A R $\square$ T L V |
| UniRef90-V2WUL4 |  |
| UniRef90-14D0J9 | RTARMTLV |
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| UniRef90-E1RDR8 | A NGKFIK\1 |
| UniRef90_W2C1W9 | QRAKITLV |
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| UniRef90-X1XQX3 |  |
| UniRef90-R5QTX5 | EKAKTT LV |
| UniRef90_H6LF34 | K HAK |
| UniRef90_F6Y0F8 | RRTTFIR1V |
| UniRef90_J0XF50 | ERA |
| UniRef90_E7MPW4 | D K A K LT LV |
| UniRef90_A0A059C7C8 | D M K |
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| UniRef90-A3DD87 | K TARLTVV |
| UniRef90-C5RAX2 | ENGHLV |
| UniRef90-Q812U5 | S K |
| UniRef90-A6W7D0 | ERAVV |
| UniRef90-F2V4N5 |  |
| UniRef90-E5SID0 |  |
| UniRef90-L0AY93 | K D H VFTR |
| UniRef90_UPI000376D638 | ERAVV |
| UniRef90-S2Z6L2 | ERA |
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| UniRef90-X1J5J5 |  |
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| UniRef90-S9WIH0 | R R A T F 1 R V |
| UniRef90_D3R253 | QRARLVRV |
| UniRef90_UPI0002377A24 | HRAEF |
| UniRef90-Q4VRV8 | A QL |
| UniRef90_B3T647 | D N A EFIK\1 |
| UniRef90-10H944 | ETATLVQV |
| UniRef90-UPI000466DB1F | ERAVV |
| UniRef90_W8ABI1 | ERATL |
| UniRef90-UPI000273F5A7 |  |
| UniRef90-M3UGR9 | EKVVL |
| UniRef90-W4XR11 |  |
| UniRef90-W9G8V0 | ERA |
| UniRef90-JODPR4 |  |
| UniRef90_U7KZ55 | E R A T V |







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| $V$ | $D$ | $R$ | $F$ | $A$ | $Q$ | $R$ | $H$ | $V$ | $M$ | $S$ | $T$ | $E$ | $L$ | $H$ |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $D$ | $R$ | $F$ | $A$ | $Q$ |  |  |  |  |  |  |  |  |  |
| $L$ | $G$ | $D$ | $V$ | $M$ | $S$ | $T$ | $D$ | $L$ | $L$ | $T$ | $L$ | $D$ |  |  |





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TQAPDTSTK${ }_{\mathrm{C}}^{\mathrm{C}}$

[^1]$D D G A L V G \square I T N R D M R F E V D Q G Q V A E V M T K P$ D D GALVGG I ITNRDMRFEVDQGKQVAEVMTKAPLITA

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UniRef90-UPIOOO2E2564B UniRef90-V9L553
UniRef90_G7PS42
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UniRef90 K9V7V2 UniRef90-M5AOF4 UniRef90-D7HAM2 UniRef90-J9H5B0 UniRef90-W4VNQO UniRef90-Q31M58 UniRef90-UPlooo255E79E UniRef90-DOL8Z0 UniRef90-UPIO003B43CD1 UniRef90-NOEOAO UniRet90_C7NEZ3 UniRef90 V4JJL8 UniRef90 UPIOOO3B5F21A UniRet90-D5UQF3 UniRef90-F5Z3N3 UniRef90-F5XNW9 UniRef90-UPIO003B35D61 UniRef90 $16 \times$ XEE UniRef90_O8DGX2 UniRef90-K6W4X1
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UniRef90_X7YB95
 PRHAFERLYHARRKVAPVVDHEGVLVGIVSRQGALRATLY APVSRDGELLGVLTRTGALRSTIYR
$P \vee G T P P R E \square F E L L E G A V L T E P D G S L G V L T R V G A L R A G \square Y Q$ PLMAAPMDSVMSPETAI AFGKDGGLGVLNLEGLWTRYDDP PLGTEPREHEHGEPLAVGVDGHGRLGVLTQVGALRASDYD $P Q E A F A C D S E A S R K L A P V V S K D G E L K G I M T R K A A L R A T L Y$ $P \square V A A P M D S V M S P A T A D E M G R D G G L G V L N D E G L W T R Y E D P$ $A V I V H P D G T L G V L T R T G A I R D G D Y Q$ PANDEPQEAFSRDRDAPVVDSDGCLGUMTRTSALRATVYT
 $P$ VDTDPRLVEANAELAVLVDDGGRLGVLTRTGALRAGIYR PDTSTPQDVFDLLAEAI AVDGSGALGVMSSRGALRCAIYS
 PIVDADDRGVSLIARTDL
PII ASAMDGVVDVEMATALSS GGALGVLNDEGIQTRYENF PAVLHARDAATHHDAALVVEADGTLGVLTATGVLRSTDYT PADAAAFDALDGSHAALAVAVDEAVGVLTRTGALRATLYT PVHTEPRQVFELLEHAPVDADGALAGVLTRDGAIRAGUYT P I IA S A MDGVVDVRMAVRLSELGALGVLNLEGDQTRYDNP PDVDAEEDGKRRLHVAPVVGDDERLLGVITRKGADRSTDY PVIAANMDSVGSFAMAKALAEHGVMTAVHKHYTVSDWAEF PKAAFEF LTEKRRRLAPVIDKAGKLVGIITRGALRATMYQ
P\|IASAMDGVVDSRMAVLLSELGALGVVNLEGIQTRYEDP $P$ LIA SAMDGVVDVKMAVRLSQLGAIGVINLEGIQTRYEDP PRAAFDQDEQTRAGMAPVVVDGRLAGVLTRTGUVRSGDYT

$P V L A A P M D S V V S P D T A D E M G R \square G G L G V L D L E G L W T R Y E D P$ PAGTDPRTVFDLLDGAVLVETDGRLGVLTRTGTVRAGDYT
 PFLAAPMDSVVSPQTAAMMGQLGGLGVLDLEGMWTRYDDP

 $P V L G A P M D S V V S P R T A V E L G R L G G L G V L D L E G L W T R Y D D P$ PI I A S AMDGVVDVAMAVKLSQLGALGVLNLEGIQTRYPDP PI FAAPMDSFMSPEMAIELGRHGGLGVLDLEGLWTRYEDP PVIGAPMDSVMSPDTAIAL GK LGGMGVLNLEGLWTRYTNY PILAAPMDSVMSPATAI AI GKAGGLGVLNLEGLWTRYENP PIVASAMDGVVDVRMAILLSELGAMGVLNLEGIQTRYHEF
 PII A SAMDSVVDVNTAVDLSKLGAIGVLNMEGIQTRYENP $P V L A A P M D S V M S P A S A L A F G Q A G G L P V L D L E G L W T R Y E D P$
$P V I A A P M D S V M S P A T A T A L G G L G G L G V L D L E G L W T R Y E D P$ PII A S A MDGVVDVSVAVELSRLGALGVLNLEGVQCRYDDP PLVASPMDASISPATAKAVGRLGGLAVLDLEGLWTRHEDA
$P \| L A S A M D G V T D P K F C T E M S R \square G G \square G V I N L E G D Q T R Y K C D$ PI I A S A MDGVVDVRMAVLLSQLGALGVLNLEGIQTRYADP PLLAAPMDSVMSPATAI RLGELGGIGVLDLEGVWTRYEDP PILSSAMDSVASPQTVVEIGRLGGLGVLDLEGLWTRYEDP PVIGAPMDSVTSPATAI AMGKMGALGVLDLEGLWTRYEDP $P$ MA APMDSVMSPDTAI ALGK L GGLGVLDLEGLWTRYEDP PLVAHPTDALVSPRSAVELGRLGGLGVINGEGLWARHADV $P F L A A P M D S V M S P A T A I A F G Q L G G L G V L D L E G L W T R Y E N P$

PREVF DLLES RHDD IA $\quad$ LVVHPDGTLGVLTRRAALRAA $\quad$ R R AASRLSVA PVLRGRADEGVLTQKGAVRSTIYE PLMAAPMDSVMSPETAAAFGRLGGIGVLDLDGLWTRYEDP RENASREEVQALLMQKNRIVDASFHLKGMITVKQKAERTPN PLLAHPSDAITSPAFAIELSRLGGLAVLNAEGLLGRHRDV PI ASAMDGVVDVRMAVLLSQLGAMGVLNLEGI QTRYEDP PLVTHPTDAVVSPATAVRI GELGGLGVLNAEGLWARHENV PAGANEDLQRSKKGKLPIVNEDDELVAI DARTDLKKNRDY PVLGAPTDSVMSPATAIALGRAGGLGVLNLEGVWTRYDDP PVHTPPFDALTDLRQELAVLTHPDSGVLTRVGALRHGVYH $R V V L T K M H E K R$ VEKALVVVDSFHLRGMITVKQKAERKPN
PVIGAPMDSVMSPAAGAGKLGGLGVLNEGLWTRYE

PVVPANMQT LDDENVAEQAKGGYFYDMHRF DEAGRDPF PILNHPTDALGSPESADAMGKLGALGVLNGEGLWARHEHV PVVLSPSHTVGNVLEAKI RHGFSGI PIRETGIMSCKLA PLVTHPTDAVVSPGTAVSIGKLGGLGVLNAEGLWARHADA PCVAHPSDATQSPDSVIALGGRGGLGVLNAEGLWTRYEDP

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Dtahghaermilsallialvirk|lidpg|viplvia agnvvitaeglvirdil DTAHGHQERMI QALHAVRSVHPQVPVVAGNVVTAEGVRDL DTAHGHQRKMDDALRAVRGVVNGVPIVAGNVVSADGVRDL DSSQGNSVYQTTMVHDIKQKYPHLQVIGGNTVTAGQVKNL DTAHGHQERMLAVLGQIADADLGVPLCAGNVVSAQGTKDL RGTAVSAEHVAEPLNLKKFDYNDVPVIVGGCASYQTALHLL DTAHGHQQHMIDVLRKVKALDQGVPIVAGNVVTADGVEDL RGTTVSAEHVDEAENKEFIYRFDVPVLVGGCATYRMALHL DTAHGHQQKMIDVLGALKKADLGVPLVAGNVVSAAGTRDL DTAHGHQDSMI SAVKRVRAMDPGVPIVAGNIVTAEGVRDL DSSQGNSVYQI TMVHYIKQKYPHLQVIGRNVVIAAQAKNL
 DTAHGHQQRMVDALGRVLPVREEIPIVAGNIVTAQGTIDL DSAHGHSKNVIETVKEVKNKAWDIVDVVAGNVATAQGAAD GWGGCCYTGGWVWWMLLYWWVGWI LGNVLLLELIQMILQF TVVSTEHDGPPDRESLDLCKTMNIVVLVGNCVTYEVALKLL DTAHGHQSKMIAALRAVRSVSPKVPVVAGNIVTAEGVEDL DTAHGHQDRMLEALAAVRALAPQVPIAAGNVVSAEGTRAL DTAHGHQDKMLDALKAVSSLDLGVPLAAGNVVSAEGTRDL DTAHGHQTRTLSAIEAVRAAVPDVKIVAGNVVTKDGTRQL DIANGYSEHLVEYVQRVRAAFPDKVI SAGNVVTGDMVEEL DTAHGHQKKMVEALKTIRAANPKVVIVAGNVVTAAGTKEL TVVSTASVESLDLVKLCQEMPM PVVLGNCVTYEVSREL TTDHVAPEGVEPLDLAAFCQSMPTPVILGNCVTYDVTLKL DTAHGHQDKMIDVLEHEARTGVRVAIAAGNVVSRTGTLDL DTAHGHQEKMI AALDTIMSAHLGVPI AAGNVVSAEGTVDL DTAHGHQDKMLDALPHVVASRDAHPVVAGNVVSRAGVQDL RGTTVSAEHVAEPLNLKRF MYEDVPVIVGGVASYTPALHLC RGAHFHNAEAMAAAKVMAKEVSADFVVGNIGTREAAVDAL RGTTVSAEHVAEPLNLKRFITYEDVPVVVGGAGTYTAALHL DTAHGHQAKMFDALEAVAALDLGLPLAAGNVVSAAGARDL RGTTVSAEHVAKAEPLNLKQFDDVPVIVGGCATYQAALHL TTVEHVSKNQEPLNLKKFIYELDVPVIVGGAATYTAALH TVVSPAHLAPEGTDPLDLAAFCERMVILGNCVTYEVALSL RGTTVSAEHVAEPDNLKRFDYEDVPVIVGGAASYTAALHL RGTTVSAEHVSKVAEKKFIYDLDVPVIVGGAATYTAALHL DTAHGHSHGVIERVRWIKHQFPGLQIVAGNIVTGDAARAL TVVSTAHLSPESVTPLDLAQFCQIPVVLGNCVTYDVALSL RGTTVSAEHVSDREPLNLKRFTDVPVIVGGCATYTAALHL RGTTVSAEHVSQNREKKFIYELDVPVIVGGAAGYTPALHL TTVSAHVSGQAEPLNLKQFITYDDVPVIVGGCATHQAALHL TVVSTASSSSLDDLTQFCQEMP TAVSAEHVSQNHEPGNLKKFDYDVPVIVGGAANYTAALHL VMS ANDGMEGNETNLKSLCOVVGGLGT YNGRES RGTTVSAEHVAEPLNLKRFIIYEEVPVIVGGVASYTAALHL DTAHGHQEGMLRALRAVAELDLGLVVAGNIVTADGVADL RLAEDRAAGVTVAGALTPQRTQDVPVIVGGAAGYTPALHL


TVRHTSSRYKTLDLKQFCKN MHDPVLVGNAVTYNVVLEL TVVSTAHLSPESVTPGDLAQFCQMPVILGNCVTYDVALNL RGTTVSAEHVSSAAEKRF!YELDVPVIVGGAATYTAALHL RGTTVSAEHVSQRVEKKFIYELDVPVIVGGSYTYQAALHL TVVEHVSSGQEPLNLKKFLYDLDVPVIVGGASNYTAALH HGTIISAEHVGDGEPLNRKTFIDDVPVVAGGVASHTAALHLL ATVSAEHVSQNREPLNLKKFIYDTPVIVGGAASYSSALHL DTLHFAPHRHLDAVRYIRQSIKRTGII SGNIVHSTDAQLL DTAHGHQEKMLDGLKSVKALGLGIPLVAGNVVSAEGTRDLI DTAHGHQDKAMQALEAVRALDPQVPIVAGNVVSADGVRDL RGSTVSAEHVREPLNLKRFIYEDVPVIVGGVCTDTAALHL DSSHGHSQGVLDRVKATRKAYPNIEVVAGNVATAEGALAL QGTVISAEHVSSNEPLNLKSFUDVPVVAGGVSDHRTALHLC QGTIISAEHVADGEPLNLKRFUDVPVI AGGVGDYRTAMHL DSSQGNSIFQINMIKYIKEKYPSLQVIGGNVVTAAQAKNL QAVQQHYEAVLAALNLKRFDYEDVPVVVGGVVTYTAALHL DTAHGHQERMLAAVSAVAAVGLGVPIVEAGVVSADGTIDLC TTVSAEHVSTQQNPLNLKEFTYDVPVIVGGAAGYTPALHL
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VEAGAD

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MRTGAAGVIVGYGSTEGSTTTEVLGDGVPMATARRDYDDE TNAGGDRLHVGMGCGSTCDTQEVMACGQPQGTALYKVAKY MRTGAAGVIVGHGHSPGVTTDRVLG円GVPMATAIDDYLDE MRTGAAGVIVGVGADEWSTTDTVLGI RVPMATARRDYLDE MDAGVAGLMVGIGPGAACTSRGVLGIGIPQATAMADCSAA MEAGADAVLVGVGPGAACTTRQVVGVGVPQATAIADVAAA AEAGCSAVKVGVGPGSDCTTRVVGVGVPQTAMVDAVEA

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ARE|L|GRH|V|WAD G G|V|RHPRD|V|A|L|L|AAGASN|V|M|ISSWAGT AREMGKHVWADGGVRHPRDVALALAAGAANVMIGSWFAGT A R E L G A Q V WA D G G V R Y P R D V A L A L A A A A S QVVMVG S WF A G T AWHF GVPVVAYGGIQTVRHMVKAPAVGASTVMMGS L ARGSGAHVWAD GGVVRPRDVALADAAGASNVMIGSWFA GT RRGRYVHVIA DGAMGTSGHIARALACGADAAMIGGPLARA AREDGKHVWADGGDRHPRDVALALAAGASAAMVGS WFAGT AREVGVHVWADGGVRHPRDVALALAAGASNVMIGSWFAGT RRGRYVHLIA D GAVGRSGDI AKAlA C GADAVMVGSPLARA ARAMGAHVWADGGVRHPRDVALALAAGASNVMIGSWFAGT AKELGAHVWADGGVRDPRDVALALAAGASNVMIGSWFAGT A QHFGVSI DA DG I Q TVGHVVKALA LGASTVMTGSULATT ARELGKHVWADGGVRHPRDVALALAAGASAAMVGSWFAGT AREHGAAVWADGGI R HPRDVALAVAAGASNAMVGSWFAGT A GDRNGAVWADGGVRYPRDVALALAAGAGNVMIGSWFAGT A HEQN $\square P V \square A D G G I R F S G D I T K A L A A G A N T V M I G S$
 ARRFSVPVIADGGI QNVGHITKALALGASTVMMGSLLAAT RE GEYVVPI A D G GIVVTGGDIACKCIA C GA D GVMMGSPI A R A A R A L G GRVVWA D G GVVRHPRDVALALAA GASNVMIGS WFA G T ATELGKHVWADGGVRHPRDVALALAAGASQVMIGSWFAGT A A DLGKHVWADGGVRHPRDVALALAAGASAVMIGSWFAGT A REELGA HVVWAD G GVVRHPRRDVALAALAA GA S NVVMIGSWFA GT
 T K R K G S EL I I H S
A K K H GK S WAD G GVRHPRDVALALAAGASQVMDGSWFA GT ATK PII A D G GI RTHGDIA K SIIRFGASMVMI GSLFAGH
 R D GRYVVPI A D G GLI T G G DI C K CIIA C G A D A V MI G S P FARA AREVGAHVWAD GGVVKYPRDVALALAAAGGSVMVGSWFAGT AREHGAHVWADGGVRHPRDVALALAAGASNVMIGSWFAGT AREMGAHVWAD G GVVKYPRDVALALAAGAASVMVGSWFAGT
 A H GADVPI I A D G G $\square$ RSSGD IVVALAAGASSVMLGYLLAGT SGGRYVVHVIAD GGTSTSGEMVKAlACGADSVMLGAALARA
 S G GRYVHVIA DGSVGRSGDIAKAIAC GADAVMVGSPLAKA
 RDAYYVPVIA DGGLVTGGDVCKCIACGADAVMMGSPFARA S G GRYVHVIA D G GI SRSGDVVKAVACGADAVMIGAALARA


 $R R G R Y V H V I A D G G V G T S G D I V K A L A M G A D A V M L G A A L A R A$ S G GRYVHVIAD GSVGRSGDVAKAIACGADAVMVGSPLARA E T G K Y V SVI A D G GL I T G G DI C K C I A C GA D A V M I G S P FA A A
 RD G R Y V P I A D G GIVVT G G DI C K C IA C G A D A VMI G S P I A K S
 $R R G R Y V H V I A D G G G M G T S G D I V V A M A M M G A D A V M G T A L A R P$

 RD GRYV PI I T D G GMRRGGDLCKAIA CGADAVMIGSAFARA
 SGGRYVHVI A D GAMRTGGDIAKAIACGADAVMI GLPLARA $R R G R Y V Q V I A D G G M G D S G S F V K A L A L G A D A V M L G A P L A R A$
 $R R G R Y V H V I A D G G F G T S G D \| V K A I A C G A D A V M L G A A L A R A$

 A A DLLGKH WA D G G V K H P P R DVVA L A L A A G A S QV M I G S WF A G T S G G R Y V HV IA D G GI GR S G DL S R A IA C GA D AVMLGAA DARA LA G T D I KII A D G GI R Y S G D I Q R


 RRGRYVHVIADGSLGTSGQIVKALAACGADAVMLGTALARA AREHGGHVWADGGVRHPRDVALAVVAAGSNVMIGSWFAGT

R R G R Y V V H V I A D G G L G A S G D V V K A L A M G A D A VMMLGT T L A R A $R R G R Y V H V I A D G S V G R S G D\|A K A\| A C G A D A V M V G S P L A R A$

TGGRYVHVIADGDワHTSGD■AKADACGADAAVLGTPLAAA TRRFGVPVIANGGI QTVGHMVKALALRASTVMIGPLLAAT TGGRYVHVLAD GGVNCSGDIAKAIACGADAVMLGAPLAAC


L E G
$C R P A G V P \nabla I D D G D C S$

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TDAPGR GFHWGPEAHHAKLPRGRRVAVDRVG
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A EAP
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$\begin{array}{ll}T E A P G K & G T H W G S E A R H Q T L P R G Y R T T V G T V G G \\ \text { SEAPGQ } & \text { GWHWGPEAHHPQLPRGERVHVGTAG }\end{array}$
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MRTGAVG|VLVG|VGPGRICTTRGVLGVG|VPQATA\|ADAAAA MRTGAAGVIVGYGSAEGATTTEVLGIGVPMATARRDYLDE MRTGAAGVIVGYGSTPGTTTTEVLGIGVPMATARRDYLDE MRTGAAGVIVGYGSATGATTTEVLGIGVPMATARRDYLDE IDDAGVDAVKVGVGPGSICT
MRTGAAGVIVGYGSAHGATTTNVLGDGVPMATARRDYDDE
 VNAGADAVKVGVGPGAACTTRIVTG MRTGAAGVIVGSGTTTNVIDVPMATADADAAAARDDYDDE YQDGVDAVI AG RSVNSPLPNNALYPFLTTTTMA\|AEV MRTGAAAVLVGQGGGASSSVRQVLGLDMPMATAVSDVAAA
 YQDGVDAVI AG

RAVNSELPNNVLYPFLTTTTMADAEV LGAGASIVKVGVGPGAMCTTRMMTGVGRPQFSAVVECAAA MRTGAAGVVGVVGGGVNTNAETVGIDDVPDATAIADVSAA IDAGVDALRVGMGSGSDCDTQEVLACGRPHSTA
IDDSGACIKVGDGPG
MRTGAAGI IVNTSAAALG $\square E T P M A T A \square A D A N A A R R E Y \square D E$ MEAGVDAIKVGMG
MRTGAAGI $I$ I GGGTSTTD $\square$ A $\square G \square D A P M A T A R R D Y L D E$ MRTGAAGVIVGGGVNTNDDNVPKATADADDAAARRDYLDE
 MRTGAAGVIVGYGSTRATTTREVLGMGVSMAAARRDYLDE MRTGAAGVIVGYGSTGVTTTDEVLGDSVPMATARRDYLDE MRTGAAGVLVGFGGGSSTTTRRAMGI KEANE!LQRSKKGTRGLT $\square P$

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UniRef90 Q1AXU5 UniRef90-M3VHG3 UniRef90-R7WJQ0 UniRef90_D0L7X6 UniRef90 K1XA15 UniRef90-M0QMM5 UniRef90_UPI0003714A1D UniRef90 S4XG34 UniRef90-K2ESR6 UniRef90-UPI000478D819 UniRef90-B1MY19
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UniRef90-COXUU9
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210
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$T G G R Y V H V I A D G D \square H S S G A D A T A D A C G A D A A V L G T P L A A A$ TGGRYVHLI ADGDVHTSGDIAKALACGADAVMLGMPLTMM TGGRYVHVIADSQLLSSGDUAKS $\triangle A C G A D A V A L G A P L S V A$
TEGRYVHVIADSHLATAGDVAKADACGADAVSLGQPLAMA ASEFDKTVI ASGGVHYSGDVVKAISAGADAILVTDLLKG RRGRYVHVI ADGSVGNSGDVVKAIACGADAVMLGAALARA TGGRYVHVI ADGEIQNSGDIAAAIACGADAVMLGDPLAQA A ADFDKVVIASGGAHYSGDVVKAISAGASAILVTDLLKG ARQLGGHVWADGGDRHPRDVALALAAG RRGRYVHI MADDDLTSSADMAKAIACGADAVVLGPLLAQA TGGRYVHLMADGELTNSGS $\square$ AK KALACGADSVMLGSVMAEA

TGGRY VH $\square L A D G E \square E T S G D \square A K A \square A C G A D A V I L G A P L A A A$
TGGRYVHLIADGETETSGDVAKADACGADAVMLGAPLAQA TGGRYVHILADGMLANAGDIVKAIACGADAVVLGPLLAQA
 TEGRYVHIIADGGI HTSGDIARAVACGADAVMLGTALASA TGGRYVHVI ADGDI A GSGDLAKAIACGADAAVLGAPLAAA TGGRYVHVLADGDIHTSGELAKA IACGADAVVLGTPLAES
D S S Q GNSVYQ $\square$ S M $\square$ H Y $\square K Q G N V V T A A Q A K H \square T G \nabla D G \square R V G$



UniRef90 Q1AXU5 UniRef90_M3VHG3 UniRef90_R7WJQ0 UniRef90 D0L7X6 UniRef90 K1XA15 UniRef90_M0QMM5 UniRef90_UPIO003714A1D UniRef90 S4XG34 UniRef90_K2ESR6 UniRef90_UPIO00478D819 UniRef90_B1MY19
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290
TIEEILLGPAHENDGTLNLMGALRTSMATTGYQNDKEFQ ERSSLDVVLNGPSDDGLLNFVGGLRRSMAKAGYSDLKEFQ ERPTLEQVLTGPSNDGSLNLVGGLRRSMAKSGYSSLKEFQ DRPSLERVLNGPSDDPFGNLVGGLRRAMAKAGYCDLKEFQ

DRPTLERDLNGPSDDPYGNLVGALRRSMAKAGYSDLKEFQ HPVPLEKLLFGPSDDGSLNLEGGVKRAMAKCGYRDLKEFQ
 $E V T S \backslash E R \| L F G P T D N G E E N D V G G L R R A M A K C G Y T N L K D F Q$ TMDEIVNGGDMSIDDALFQADGGLRAGMGYTGSST 1


GEPTLEVVLYGPSNEPFGQLVGGLRRAMAKCGYTDLKSFQ EVPDMEALLYGPATSSVQNLFGALRRAMAKTGYTSVKEFQ

EPVS $\square$ AS $L L H G P S S D G Y E N L C G G \square R R A M A K C G Y T D L K S F Q$
QRPSLEAVLHGPSADGALNLVGGLRRAMAKCGYTDLKKFQ DPTTVEVVLHGPSSDGRQNLVGGLRRAMAKCGYTDLKAFQ ERSSLEVILHGPSANVFENFVGGLRRADAKCGYTDLKKFQ
 EPASLEALLHGPSHDGAMNGVGGLRRSMAKAGYSDLKEFQ


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| UniRef90_Q1AXU5 | K A EVMV |
| :---: | :---: |
| UniRef90-M3VHG3 | $K \ G L S V R$ |
| UniRef90_R7WJQ0 | $K \vee G L T V R$ |
| UniRef90_D0L7X6 | $\mathrm{K}, ~ \mathrm{G}$ |
| UniRef90-K1XA15 |  |
| UniRef90-M0QMM5 | $K$ V L L VA R |
| UniRef90_UPI0003714A1D | $R \vee G$ |
| UniRef90_S4XG34 | $K$ APLVVR |
| UniRef90_K2ESR6 |  |
| UniRef90_UPI000478D819 |  |
| UniRef90_B1MY19 | L G A Q F V Q |
| UniRef90_J1HMJ9 |  |
| UniRef90_C0XUU9 | K V G LT V |
| UniRef90_K0DE95 | LS A K F V Q |
| UniRef90_X7XY64 |  |
| UniRef90_W5XQH2 | $K \bigvee G L A \backslash R$ |
| UniRef90_UPI00046D6CA7 | $R A D L V$ |
| UniRef90_B7Z1G4 |  |
| UniRef90_W1JUF7 |  |
| UniRef90_UPI0003748522 | K |
| UniRef90_K2C9H4 |  |
| UniRef90_L1MKQ7 | $K$ VQLDA】R |
| UniRef90_U219W4 |  |
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| UniRef90_UPI000362A0E3 | K V G LT V |
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| UniRef90_UPI000255D077 |  |
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