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 D G WR E FF K D P A L Q R L V E T A L A N N R DL R V A A L N I D A Y R
 $D$ LA WR S Y F T D P L L

 WRNFFADPRLQALDEDALKNNRDLRVSVLNI EAAR WREFFAADAR L Q A L I T L A L Q N N R D L R V A T T L Q V E K A R
 WRE F F T D P R L Q GL I EAA L E N N R D L R TAA AL R I E EA R
QWREYF A DERLRKVI A L A L A N NRDLRVSVLNI EKA K


QWQD FY VE P QL Q QL I D TAALDHNRDD R L T T L R V E EA R WWK GF GDPA L D A L V A S A L D H N R D L A K A VAN V D A A A SWRDLLFD D P L L K GHi D TA L A N NLDD R V A L QQi A A T E

 PK GK WWEVYEDATLNELEENASAGNQGLK GAVARVVQAR D WWT RFNDPVLTTAMVEEA LIKNNQDLAAESLAKIIDSAAA WREFYRDPLLQTLI TQALANNRDLRIAALNVEAAR S A A WA DYF A DERLRGVI A L LALDNNRDLIRIAALNI ERAR

 WRDFF $\quad$ D P R L Q QL V G $\square A L K N N R D L R V S V L N V D A A R$

EFFKDPALV R L L D A A L E N N R DLIRI A A KNV E S Y R
HWRQFFSDSRLVRLQALALANNRDLRLAALNVEKAQ
A QWWRQFRDPTLDRLIQRAVAGNLDLKLALARLREAR
 DLGGWWELGNDTTLVRLVSTALRNNRNIAVALSRVEAAR P A A D WRD FF Q D P LL QHLI A L S L K D NRDL RVAVLNV QALQ WPK S D WWN TLG D R Q L D S L I R E A L Q S S P D L Q V A DAR S R Q A N RTF F Q D A QL R QLI DLALENNRDL R QAALNVEAYR WP $\square E Q W W L R Y N D P Q L N A L I A E A L K G E P T L A S A Q A R L H N A E$ WPKE S WWKVY G D K Q L N E L I S E A L K D S P N MI S A M A R L N E A D

PVVRWWETFNDPTLNKLIAEAYAQNLTLQVAGARVLQAR
E WF K L F N D S S L V D L I K V A L D S N Y D V R I A T K R I E E S R
D T GWRDYFADPRL QQLI A A ALE N N R DL R TAA ALRI E EAR
AEWGMFYRDPTLQGLVRQALENNRDLRLAMLRVDEAR
 WQQFYTDPRLQQVI QLALENNRDLRVAVLDNEKA Q WEDFFTDPRLKALI QLALKNNRDLAVQAATIAEAR PDWQAYFPDPALHTLIEAALANNRDMRIALARVEEAR $P$ VIE WWDEFS DPRLSSSLVEQALEANPDVRIA YANLQQAR WF D $\square F D D D V L E G L I N K G D E N N Y D M K I A M A R L E R A R$
PALD WWRGFRSPEL T QL ME EAQTVNLDIAAATSSRILQAD
A Q WWH NLA DPQLD QLITEAVGGNLDVASAKARIREAR
 WEDFFTDPGLRRLI ELALANNRDLRMATLAI DQAR
 RGKWWEAFGDPVLNDLEARAEQASPTLAAALARYDQAR S WK E VF T D A S L Q S L D K K G L S N N LDDI R N A M Q N I R DA E
 NPQWWE Y F H DPVLSDLERRAVTSNLDIQMATQRLIASR
 WKAFFNQPAMKQLI GMSLANNRDLRVAALNVDTAA WREIF T DP QLQSLI ETALA QNNDLLRQAQL T L E Q A Q WKDVFTDPALQQQLI DLALKNNRDQRDAVLNVEAYR SWQQYFTDPVLQNLI NIALEEQNRDLRIAALRIIEEAR $N V$ S WDKM F T D P L L Q G Y I T K G L Q N N L D D
 A S WWS S S T D P
$P$ DPRWWHGFQQPMLLDRLI ERARAGNLDDLQQAVLRI A EAR D P R WWHSFNDP QL DSLI T R A VA GNLLSLQQAVLRRIA A R
 R GAWWE LY G DA QL NGLI EKLLNSSNQSVAQAEAQFRAAR DAVWWQQFDDPTLNQLVDKSLQGNRDLRVAFARLKAAR R SKWWESYNDPQLNTLEEHVVAVSNQNLKAALAQYTAQAA A Q WWT R F ND P L L D QL 1 A Q GL S A S P D L R S A Q A K L R S A R A E WWF LF HSPVVI NDLI QVGGLANSPNLAAAKATLRQAQ UniRef90_UPI00047BB5C6

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UniRef90 UPIOOO3 UniRef90－UPI000374CBAB UniRef90－G8QIP7 UniRef90－K2CIY9 UniRef90＿IOING0

GFARQAGADRSFDLGLAASATESKVSERYQSATPPDGWND A Q Y R $I$ Q R S DLR P A V S A N A T G S R Q RV P A D M S T S G E A G I T S S ATYRI ERADLLPTVNGGTDLTHQRTPRTATQTGKAQTTTN ATYGI R R A D TLD TI S A G G S YVRFRSPGGLLPGGSFD G E A A QYRI QRAD LIFPAVSATGAENRQKVPRRATTTGKSADTST

 A AFRI QRSDRFPGI AVGAQGARSRVPGDLNTTGDALVGGE


 A Q Y Q I Q R A D L F P S I A A S A A GTRAARTP G DL N GLGRATVVND A A Y Gi Q RAE QFPAI AA QA GSERAHVPADLSLTGKPAMSSQ

 A AYGI QRADQFPTLGLSAEGQRQRTPGDLNLTGRPDTAS Q
 A Y L K QGKA GNYPTLGDNATATRTENSENSQFGSVFSGAMT

 ATARVARGELLPSLNNFDPSFDRQRFSPNQ DPSFGADTAN A QVGIA T S QLLLP S V S G DAAATS Q S S S T K I A N Y S T A D R S N T A QYGIQRADLLPSIAVSGGQSAQRVPGDLNMSGEPADSRQ
 $\begin{array}{llllll}\text { A M E A } & \text { E S A S L L P R }\end{array}$

 A QYRIQRRAE LLPTVVEAEVSGSHS RS GTD S DS H D
AEVSHARSGEI PDVQT GIDDYSRTLEQYPGFSRQRLDDRN A QTRVVARASSLLPTITANNNDSRTRTSSERPMSSYTSTMMS ALLAGQTRSNLDPTVDANAGVTRARVSGNAPGNGGDPADGN $L T L K A T K A C S G P S V G Y G L D A Q Y G T E S Y V G L T T M K P E ~ Q$ AQYRI QRASLMPSAAVSGTETAQRDPASGTASGNKASTQD

 A SA QQA GATLLDPEI S AQ G SVVEKEKQSYNNGFPPVP H GWRP
 A QLGUAF GELYYPQSQA DGGSLLERRQDSDNL GPDADDTEFS
 AALGLQSAERWPTLAVGSSHTRARVPGDLNVSGRAVTTGE $A V H G\|Q R S E L F P T V G\| Q A G E D R S R T P A D L N M T G K T L F A S Q$ GRYWMGRSGLFPQLGVTAEA GRSRSSEEGAAPMSPQVENP A QYQ $D$ QRA GQFPEFGVAGSAS RQPSATTGRYANS GQYEVQQHASSFPP DGVTGQGMF LAPSDTAGFSFAPGTLRL
 A ELGGYSKADLYPSFQYGGTVYANKDAFLP
AQARDTGAALLPSLTGNSSGSQNKTSGSNVSNTTDAGRRF ATQRQA DGALLPSSI S GT GSATETRSSSSSTGGVADGPTTYS $A Q L M V A R S G L Y P Q L N A T A S A A R Q K S G T F N G T P L A A F G P R N$ A ALLSSAKLAFLDPAFAFA
A QY R $⿴ 囗 ⿰ 丿 ㇄$
 A A A RI ERADLFPQV NAGGDASRQRLSGRRFGGNGTAPTYD A YMKQGRAQYF P TFSVVGPKFT LTESSANSMGRFTGGQTQR
 A QLMDAGSARFPSLAAGASYQRSQYSKKSFSRDVDVPSFN A A YGI QRAE QFPTVALGASGSRARVPDDLSPTGRAMTSAAQ A QRGVVAS A AFPSI NGQASYQRE LYSKN GIGPNQNAPP DS A MA DI TR SAALYPSVVDFE GSLVRRQRFSSTVLGAGTPLAGSW

 AQYDI QRSAKLPTIDATGSY DRSRLIFAKGETFDVDM ATMKQGEAGYFPSLSAST DWTHNK SSKNSQSGTFRDDDVD A ERENAVAG WYPQI NLSATKQSRGYSGTMQWPGLPQUA YR $A Y L K Q G K A G F F P T L S A G P S Y N L S S N S L N T Q L G Q L S G G K R D$ A QLG GTRAALFPSLNGAASYQRLKPVSDRSGQKIEVPPDD AQQDFAEADYWPTV SASASYSRRKQSNNQPNSANIPPFENN
 E QLT QARGGFLD SVNGSVKASREQDSDVA GSLDSLLTQS G G
 A LVVK E R K F D R WP T I TAN A GYT RERMGENVF VQGENPTYS A VR S S R G S F F P SVVDLS A GAS Q GTGSSSSSALSSSSSSGIRD




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Y GTLLTLNFQYDFDFWGKNRAAVVAATSELAAAEAESVAAR




 Y R A E V G L
 YSANIGVVAYELDLFGRVRSLLKEQALQQFLSTAEARRSTH LHKASALASSEELDLWGKYRRAHEAARAGLLGTEAAYATVR YNV GLSSAS WELDLFGR IQ S LK D QALLA QYL STAQAR KAAE
 YSANLGFSSYELDFFGRVRSLRDQAVYQYLSTEEAKRSAQ Y HVVL GLAS WEI DFWGRVRSLRDAALENYLASDEARRAVT
 YSANLGVSAYELDFFGRVRSLSEGALQQYLATEEARRAAQ $Y Q V G L G V A S W E L D F W G R V R N L K D A A L Q S Y F A S E A A R Q A A T$ L H NAGGVLLSYEMMDLWGRYRRASEAARADLLSTMMAARATVVR YTATLGFSAYE LDD FGRVRSLLKEQALQSTLSTGEARRSTQQ Q Y D L S A QLS WEAD I WGK I R S NK RAFQAATY L Q S DEAA KAVK Y S A NL GAAAFE LDFFGRVVRSLSDSALLQQYL GTEEARARAAQ


$S Y$ QVGGA L
Y S A NLGGFAS
$R F F N G G G P S$
$N D Q A T L N V G$
Y GSV L NVGYL YGSVGLDFSYD VYNV Q Y Q V Y N A QL GVVS S Y EL DV F GRLLRNLKDEALDE YLALDETRR S T Q Y Q M GF DASWEVVDLFGGI RRNIEAAHAEATGSVADLQAAQ




## Y

## L

$\stackrel{L}{\mathrm{~L}}$
 Y GTA ELLNFSYEVVDFWGKNRASSLAAATS ELLEAARADVA QAR
 NFSANVGMSWE Y D A G L A
$F Q A G L G M A S W E L$ F Y Q GFFS GS WE Y MVGGLSMPS WE

## 


QYQA GFD S S
T Y S $\square \mathrm{P}$ I TA S WE L

$\begin{array}{llll}D & S & S & V A \\ Q & G & E & L \\ S & G A & D & S \\ F & A & G L G & I\end{array}$
SYRA GF DATWE



## V

| $Q$ | $N$ | $Q$ | $S$ | $R$ | $L$ | $Q$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Y$ | $S$ | $A$ | $N$ | $L$ | $G$ | $V$ | $T$ |


| S A T | $V$ | $G$ | $I$ | $S$ |
| :--- | :--- | :--- | :--- | :--- |
| Y R | $V$ | $G$ | $I$ | $G$ |






$F Y Q G S F D A S W E L D M W G K V R R Q V E M A G A Q Q Q V A G E Q R N D A L$ Y A S GE LSTSWELLDVFGSIMRSRVKSSKEQFRATGQEYNAML $T Y S$ G S L D A S WE A D L F G R V T N R I K GA Y A T K Q Q A VA D M H GV Y $T Y N T Q L G V S W E A D V W G K L A R D L E A N E A S A E A A S A A D L A A M A$ RYDLGLDMAWEVDLFGRI QRSLEASDAREDAARAALQQLQ





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170
180

200






 SFEVGGASSALDDLAAAETARNTAQTADLASKLDQAAQAAEAAL







 SFQLGVATELDRSQAEVGVRTAQRDLAQYRRQVRQDTNAL
 RFT A E LLGT Q I D





R

## R <br> R

## R

## R



 K Q N A GS A S A V DTA K A N A L A A S T E A T I P P Y E S S Y Q Q A V H R L
 SKRA G GMA QDDMHRAQT QLETARDVVVEQYTRQVVAQDENAAL


 $M V S A G R G D E G D L A S A R A E L E T V Q A S V P Q Q E T A R R L A R Y R L$







 QASVGLASALDVK QAAA QVAETEAQLPPYDGQIVQAENGL QQHNGLAP LTDVENSQAQLFS LQAQLPQYQAQVQQAMNSL






QUERY
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 ALLVGKDPSEFHWNPQPPTUPAGLPADLLQRRPDVATAER AVLLGRSPRDIINRAMPRGQPEGLPSELLERRPDVRAAEY TLLVGQPDGSAMSSRLPETDPAGLPADLLTRRPDIRAAEH ALLVGQPPALDDSVAAVPVLPADLSSEVLVRRPDVAQAER
 AALGGNGPDRRRVFSNADGIPSNLADGLGVGHRPDVVAQRW VLLI GEPDPEDDGQALLADIPSGLPSDLLTRRPDIMQAEE
 AVLLGQRPSPAKYRPGDVVLPLGQAGDVLARRPDIRAAQA ATLVGTPAPAFHDDPTPPQVPADPSDVIERRPDVAAAER AVLVGQSASTFTFTVEPPAVDIGGLPSSLIERRPDIASAER $S L L L G Q N P S D D L I G D M P E E I P A G L P S D L L E R R P D M Q E A Y Y$ ALLVGEPDPADI AA QLNRARPAGLPSDLLERRPDDRAAEH

 A ALMGEGPDPAVDLTQPVAMPAGLALGLLGRRPDVVDARL A ALMK

 $A Q L V G V P W D A D A L A P P Q P T V P A G L P S D L L L R R P D I A A A E H$ $T L L V G A T D D P P P E Q D Q P G E R N P G L P S D L L F Q R P D I V A A E H$ SRLLGRNPGP DARGKHDDEVPMGLPSDLLANRPDIRQAEQ
 $R L L T G M A V P L P E T P G A T N Q T A P G L P S D V L L R R P D V R A A E Q$

 GVLLGRDPTATVIPSPRLPLPKGDPADVLVMRPDVRKAER SLLLGREPGPVERGKQAPPVGADLPAALLARRPDVLQAEQ VLLLADTPHTIQNQQLPKHFSVGIPVYLLSNRPDVRAAEH TLLVGTQLPADLPAPQPFENPPGLPSALLEQRPDIMAAEH $S$ S TGGAPGPDERGEVVNNDPVSVPSDLLRNRPDVRQAEM QLLVGAPDPADADQPIMTQLPAGLPSDLIANRPDIRQAER A ALVDFSVPVRVQPLGAPPLPAGAPSELLQRRPDIAAAAER
 A $\operatorname{L}$ A GLRPTATPQAPLAARLPDGDVGALLARRPDVAAAER AQLVGGPVDRFDDASVLPQLHAGLSSALAQRRPDLRQAEA SFLKGELMQAKSRMPAPPRPPLGVPSELARRRPDIRAAEA AALLGKGPDRGQE IQRPTVLAHDTPQLPDNRRPDLVAARW TLLVGTT DPQSQQDWKFPQTPAGLPSDLLTRRPDIISAEH



 QALSGELIVPPRPVPPVPPRQAVGGPVQLLVRRRPDVRAAEA
 ALLDAELERHEAVPPVPPSVSIGLPATLARRRPDIRQAEA AVLIDGELSQQKALPELPKMVNI GIIPSTLARRRPDVRQAEA
 SVLVGEVPGGLEDEIIMSPQPLPSLPKELKRRRPDVRRAEA AVLI GVPPAEFNTIPVLPQVPLGVPSQLLERRPDI ASAER AT LLGERPDQAKLPAISSKALPIGDPGELLRRRPDVVRSAER
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260
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280 RAEAAAQQVGIAQAQFYPDVTLSAFTGYQAFGLDHLFDSG NLMAANANI GAARAAFFPSITLTANAGTASPDLSGLFKGG KLVAANANI GAARAAFWPKISLTGNLGTASASGGDLGSSG RLRAANANI GAARAAFFPRITLTGAVGSTSTDLQNLEASG QLQAANANI GAARAAFFPSVTLTANAGTSSKDLSGLFQGG QLKAANASI GAARAAFFPSISLTANAGTKSAELSGLFDGG

 NLRAANANI GAARAAFFP DLHYATASI GVAKADLLP TLLAANANI GAARAAFFPK TLKAANADI GAARAAFFPR SLTAAFGTASPTLGGLFKAG DLQGYNANI GAARAAFFPTISLTASAGVASNELGSLIFNGS QLKAAHAQI GAARAAFFPRIALTGSFGTASAELDGLFAAG
 NLRAANANGGAARAAFFPR QLAAANAR GAARAAFFPRTTLTGAFGTASSELDNLFQGS NLRAANANIGBAKAAYFP GLINAFELTNVARSSFYPS GLTAAFELTNVARSSFYPS GLGADAGFASARLAGLFKGG
 LLKGANANI GAARAAFFPRITTLTSNVGFGSDELGGLFKGG NLASANAQi GVAKAAFFPVVSLTASGGYLSGDIETLFNWS MI MAYNANI GVARAQFFPSI SLTGMLGTLSAAVGNLFTGP QLRAANANI GAARAAFFPTLSLTGFGGTASAGLDGLESAG AL MAANASI GAARAAFFPRITTLTASAGTASSTLDGLFDAG RLVAANARIGVARAQFFPQISLTS LGGAASNQLNSGFKGP RVEASGHEI DVAKARFYPNVNLTSFIGQQSDAFDTFNDHS HAQAAANRI DYAKAQFYPDI KLSAFIGYQSFGLNSLFNS G SLLAANANIGAARAAFFPK Q L M A A N A N $\quad$ G A A A R A A A F F F F P P R
 RWHAATARI GVAKADFYPHLRLGGFFGLLSGTDAGLLSNA GAAAANAQVGVARAAFFPSVMLNGGAGWESRDLALLDSAP AVAAANAEI GVARAAWFPVVSFGAGGGGYEATRSSDWFDAP QVMA A NAEI GVA QAMRFPSIALTANGGTLSDDVSRLDGSK QLLAA NANI GAARAAFFPSISLTGFAGTASNSLTGLEMPG
 QLRAANANI GAARAAFFPSISLTAGAGTASAELDGLEEGG R A E A A S K RI DVA K A G F Y P NVVNL S A MM G F Q S L G L N M L T R A G QV V S K E Y L I KEKK KA EFY P N I N L S A F I G L Q S L G L N L L H E K D

 RLKAANANI GAARAAFFPRI ALTGGSLGTASAELGDLEAAAG VLVAA NARI GVARAQYFPALSLTGLFGQASADLSNLETGS


 Y Y V S A NEKVGVA QAMRYPSFNVAADAGFASVVVSDVLFQDS QLAAATANVGSARAQFFPSDQLTGQGGYQSAVLASLFTPQ QLAQYTAKI GQATAALYPDVSLSGTVSTSALKLGDLGKNS NAVAANAQVGAATALDVPSVNDSGFFGALATSPGALWHSAA ALESAFYATNQARSAFYPSITVSGSAGWTNSAGAVITNPG RLKAANADIGAARAAFFPSISLTAADGVASTALAGLISSSG

 RMFAANARIGGVRAAFFPTLTMGLSGGYQTTHGELIFSKPS GLANAFHLVNAAEANFYPRLTDDASGGVQGDELDKLFDHE
 KLLHSATAEVGVAVADFYPKVTVDAQMGFRSLSFRDLGFWG
 QLHATTADI GVAVADFYPSVKLNGNLVLNALDAKNLWKGS RVVEAS GKDI A V A KA EF L P A I S L T A F A GVVA SLLDTSNLLDMG TLKAANANI GAARAAFFPSITTLTGTAGTESGSLSKLEDGG $N$ L T Y A F F $\quad$ GVVNGAA H S A F F Y P N ALKASNANIGAARAAFFP K L K A A N A NIGGAARAALFP

 TLH E A T A N D G V A E A S F L P R RVII N A N L M M S A L T F A D M G N WG
 E L H A Q T A N I G V SVAAAAASVGAAKSDYFPKFYGKGSGMFAARDMDKFFDHN
 KLAAATANVGVATADLFPRVSLSGFLGFTAARGSQUGSAA
 TLAA A T A RVVARVAERYPSFTV S GSF GWQA LT S GAALGGS G TLATASAQI GVATANLLDQDTLNGSYGWSNTGLRNLINPS


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 SGTWLFQPSINLPIFNAGNLRASLDYSKDQKEINVANYEK
 SGSWGFQPQI NLPFNAGSRASLDAKBQKNDYVAQYEK


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TQ G A WS F GP S 1
SRAWTFAPSI SLLPLFDAGRRSNNLSLAEARRDLAVANYEK
S STWSFIP QI NLPIFDGGVNRANLNI AKANRDI SVVAQYEKS G A WS FIP QL NLLPI F D G GVVNRANLDI A NVQRDIVYVA Q Y E K
AT TWTK GA S V M GP L LD F G R GAA RVVDTA EALDRDQAET QYRM

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A A A WlF S P S I S L P I F
ARVWSWGGSVAAPIFTGGA』RGQVKAAEAVRQQALIGYQR


SQA WLFQP LLTLDLFDAGRNRANLEVAEARKVQAVADYEK


T IG WS I G P S L S V P il F N G G K L Q A A V EVVA EA QR D Q Y HVVA WQ S

K F L A S A VG S L T QP L F A R G QL L G QL K DTKAQQEEAR L S F E Q
MAWAFA PQITMPI FHGGANQARLDASKDQKD $\square$ NVAA YEK

SFWGLGPASAVLALFDGGRRRAGVKMSRAEYEEVSAGYRE

SRAFSVVTPGVNWPAFNLPTALARKRAAQARSQGEAARYEQ

S G A WN L A P R L V L P P F D A G R L R A N M D L A E V R R D V






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ANAWSLGGPSIT WAAFN LGGSVKARIRRANAFAEGALAA Y Q





## QUERY UniRef90_WOHEG1 UniRef90-Q2RSP3 UniRef90 O 13 O 18 UniRef90 - V7E876

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350
360
TVQALHEDADVVTSSQADQARDNKTEQAVQQAEQALHDA AI QTAFQEVSDGLASRKTYNEQLQAQRDFVTANQDYYRLA
 SI QTAF QEV S D GLLAAR QTYNEQLAA QRDFVRAN QTY Y D L A A I Q T A F Q E V A D GLLAA R T TFFE E QLLTA Q A R N L V R T S E D Y Y R L A
 $T V Q T A F R E V A D A L S D Q R W L A D E L D V A R T S L D D Q Q E R A R L A$


 AV R DAFRETQDALVANRKTRQQVDAQATVQAALERSLLTLA AI QTAFREVSDGL AARGTYDQQI A A LARNEEAQQRRYDL S


 AI QTAFREVSDALAQRGTLDERLAAQQALVEASSKSYAIIH TI QTAFREVADALAARHWLAE QVRVLHASVVQAQSERARLA



 $T V L T A F Q E V R D A L T L Y Q T S A E R V E S V R R Q V E A D Q D T V R M A$ QVLVAF G DVENS LA G $V Y$ HLA K QSEAQNRAVASAQRAADLA
 AI QQGFRETADALAGRDTLDEQIRAQTQLVAANQRAYSLS AI QSAFREVADALAERATLAEQLAARRALVQATQRSFELS

 TLIDQALQEVANAVTSNQKLSARIAKMQEAVDAASVAY QTS SI QSAFREVADGLAARGTYDQQIAALERNTRANQRTLTLS SI QTAFREVAD GLAARRGTYGKQLSAQSELVDNYKA YFS LA TI QS AFKEVA DALAE RSTGAERLLAAQQALTDANRKS FELAA
 $T V L G A L Q E V E D G L A G L Q S L D R A A N Q A R H A V E S A R K V Y D I A$
 A I Q T GFREVA D A L A GR GT LDD DE I R A QR KL V D A S QLAA LK L S $T M T Q A F R E V R D A L V L Y E A T D E R V G A V R R Q V Q A D Q E T R D L A$ TLVNALGDI GDSI SRLLRSLNQQI QEQQRARD』AQASFDIA SI QNAFREVSDGLAARGTFGAQVQAQSDLVAATSEYYELA
 $T$ T T A L K E V A D A GTS QK SLLA K QI F R S LIE A L N S SKEA Y E I K $T V L T A Y S E V E S A M V A Y A Q A R K Q V T F Y Q R S V E A S R K A A D I A$ NYIQ A L V VEVENE LTNTRTMKEEMAHRKLQVEAARKVLEL S A I Q T A F R EVVAD ALAARDY LGEQVVAQRAVQEAQADRLLKLL $T V Q T A F R E V S D A L A T R A T A A R Q I T L Q Q A Q R D A L H E R A R L A$ $T V Q A A F R D V A D A L S A R H W L A R Q V S I A Q A A L E T Q T E R A R L S$ AI QTAFREVEDALVDQRRTREQLEAQQRQVDSLRDYTRFA S I Q S A F R E V S D T L V N R Q A L K D QL D A Q S R Q L E A E QVR Y K L S

 $T Y L D A D S E V E Q S L Q D V K T Y K Q E W Q A R N K Q V Q A A R K N L E L G$
 AVLSSALE DVENAIVVNLAQERDRIIRSLTESARRYSEAARLLS SVVLNALAADVNSAL S S G l ALLNA GTEVNDALVQYHTARDKAVVFEKQDESLERAYKS T $T$ I Q Q A F R E V A D G L A A R G T Y D R Q A A A Q E T L S R E
 $T V L G A F R Q V E D A I A A N R H L A D Q A V N Q R S A A A A A G R T S E L A$ AI L L A S K E V S DAMY QYD A AS KK I DLDK QQESTVVLK SAVVSNS TVLAVEEME GALTQYGQTQQRLGNLAEAAAHSRRAADLA $T V L Q A W Q E V D N A L N A Y K A E Q L K Q E R L Q D T V K S N Q R A V Y L A$
 TVVLSAWHE V N A L NAYSS EQRRRRDSLKA QV DHAS QA LDA I S
 A I QTAFKEVSDGLAGQATYKDELLARQQDADANQRNYDLS ALLN A GEEVSTALGSYQTAVTRTESVKKQVAALEKAAVET AI QTAFKEVSDGLVAQDGYREQLQAQQALVDANKTYYQLA AI QTAFREVADTLLARE Q DEK Q I NAQSNATDADRERLKLV SLLTTA GKEVVDALAQYNNETYKFS IRRQKQADALTKAAD F S SVLIALLREVEDALVNFSTA QERDKNLLDEAQAQSQKALAQS
 TVLQAFHDVSNAMAAYEDEQRRNEALRQSVDADRRAVGLA



 A V L Q G L E D I K T A M S D Y G Y E L K R R E l L R T S S K A S S E A A Q I A






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| UniRef90_E8XMS5 | S L Y K A L G G G WK |
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N N NRDLRTATLNLQRAQ $N V S W K N L F T D N Y L E Q Y I$ Q E GLQNNLDI RIA IQQLAAAE



 $R G D W W T$ L L GDP QLLDALI GRVNVSNQTIAAAEANYRQAR D A QWWK GL GDAQL NALI DTALAADSPNLQSAQAR DRKAW RGPWWSVYANPELDDTLEKQQDASNPS LAVALARYDAAR
 AS WWDAFGDP QMTA LVVR S L ENN RTVATARARVVTEAR DVA WRD FFG DPRRLRALI DTALVNNRDLVVATARIIEAAR WWEVF QDKTLQALI REALLNNYDLRTAAARVDEFR RGEWWRAFGDPVLDDLIARADRGNPGLAAAVARLDRAR


 S QWWKVLEDPMLDSLMQRAVTGNLDLKEARARVRAAR P H WR HFFK D E A L Q K L VT M A L L N NRD I S I AVA NV EA Y Q D Q K WS E DY T D S T L R A L I VR A L D H NK D MLI A A A R V K E M A A HWWERLGDRELNALVEEAVAGNLDVAAAKARIRTAR WWESFGDEKLNSLI S QALKNNSDLLIALLNNIEQAK GDWWK K LK DPVLD QL I A D GI A G S P DV ATAKAKVRQAR WP QRAWWT RLGDHSLDALVAHAVAGSPDMRDAQARSELAL TLDWQS F V T D D AL R KLVELLALANNRDLRQSLLNDEAAR A WQDFYQNPQLKTEI SKALSNNHDLRTAALRVVQVR
 PDWQTYF T DPRLQALISASLEHNRDLRDATARDSEAR K GD WWA VY Q D P QL S S L M S QVQiS NQNVA QYAA QYREA Q
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 WPS S D WWK S LGEP QL D GLI QEALRDSPDMQVASARTHQAS WE QLYK DT TLQ AL I RK SLLYNKDMLIAAAARVKELA
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WP D
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P N
T D N W
D W WQNFF T DAT LS ENL QEGQRNN YE I A A A Y S R V K Q A E K Q NWRTFFNDPQLVQLI DTALTGNLDLRIATQRIIEQAR
 QWRDFYLDPQLQPLINHALA QNLDLEAMRSRLIAAR P RAD WWKTFGDP
DVSWKNVFTDP DVS WK D FF A D QR L TQQYi
WP A A DWWR YQDPRLDD AA D WWRQYQDPQLDDLERAMKGSPDLAQAQSRLESAQ \(Q R W Q N F\)
\(T\)
\(V\)
 S QWWRR LRDP QL N S LVEEAVAGNLDVATARARIREAR WE QVFTDP QLQA L I R L G L E Q N T D L Q S A DQ NV K A A E WPE ER WWD LIF H D T QL S ALV R RVVTS S LDD KI A S A R L Q Q S R \(\begin{array}{rl}W P A & R \\ R & G \\ \text { R WW WR G F }\end{array}\) \(N L E W K E F F N D P I L Q Q L I E K G I K N N Y D L Q Q A L K Q V A A S Q\)
 QWWRVFEDPTLDALIAEADAYNPGLEDAGLRVMEAR PKGQWWT L F NDPVLNQL E E QLDDKNNPDLQAAAETFLLQSR
 A HWWE QFHDPVLTQLVEHADATSPTIA QAVGRVREAR \(\begin{array}{rl}S & Q G Y Q Q Q \\ P & L \\ \text { R A WW }\end{array}\)
D D H WWKVFEDV NQDYF WWQS
D WRFMFGD L

 WWKAFNDPVLSQLI NRALEQNLDLAQATARIEEAH
 WWQQFEDPTLNQLVGKA R GNRDLRVAFARWKAAA
\(S L Q W K T A F F N\)
\(A\)
\(A\)

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50
Q Q Y Q \(\square\) S K N A Q \(\square \mathrm{P}\) SIIGANGSA
VR Q A N \({ }^{70}\) S V NPN N P Y S \({ }^{80}\) AYAKQGKAGYFPTLSDGPNYTHQELSKNQFGSFLSNTSTD
 QNV RQAQSAYYPTLNLSAGWTRSRSSGYAEEDAVPAATSS ARYRDSRADLMFELGATASRTRERTQRTDQERAGSQTANR ALYGVQASERLPTLEASGRYERERM RGETREAGQVEQR A QLGUAESLRNPQ GMARQAGAAPTDDATGSASDTKQSYNNGFPKEFVPKGWLD AQYADTRSSQFPSLGANGGASRSR ENYNAQAGQLVYPAVNGALGASRQKTQVATPGGTQAAVLD AlVREQRASLFPTVDLSGSATKSGGSGSTGSGAGASSSGR SLAQVSESALGPQLNGQASATRNHAPANGMDPPPDAGNNY ALLGEARSDLYPTLGVGASATRNRQSDNRPLRGSNQPNEY A A MRAGAGVFYPQLDATAGATRQAATPVRFGQAVPSSVFN ASLGVSRAALLPWL GSTDFWNNGRTPVEAGGSGNGGS GQFRIQRSARFPEVGVNGSVTRSRTPLNANPAFAVGTLTN ALVAVTRAETLPQTDLTASVERDRNSKDLHPTLDERLTS \(A E A S L S G A D L Y P T L D A S A A V S R Q R L S A G R P D G P G V P V T A D\)
\(L D E V A A H A V G K P T V D A S G N V T H V E F S K N S G G D A L P G S G D T\) \begin{tabular}{l}
\(L D E D A H A V G K P T V D A S G N V T H V E F S K N S G G D A L P G S G D T\) \\
\(A T L L S A K L A Y L D S F A L S P Q G T\) \\
\hline
\end{tabular} A QYQ K A AELAPKLDMTVEERRSRDSQNFDSTFLGPPMQN A Q LA I DT GRQYPQAQAGRSENSAAANPDDFNGGSUDRHFL ERKRISFSKLFPELGDNDHGERETFNLGKDNAKNDDT


 DNLNLANVELEPNI NLDGEATKNRSSGETYMGQDNKKYNA SQAKIAGAAIEPNFNAGGAFGRTRFPRLATPQPDGGHTTW AQYRI QRADQLPGDNAQGTGTRQRVPGDLSSTGASGVQSS AQYRI READRFPPLDGNAADSRQRSPAAMSFVNNSQVVDQ EAKDVSKSGLWPSVDATAGFSRERNSENVGLSPAAGGTRN K QYMI ERNNLLDPTLAANAN \(\quad\) R AQYGUVQADRLPNVSLGAQRAASLSPANTSFTGNPFRVQR \(\begin{array}{ll}S M V D Y Q R A G Y A P V V T A G A S A Q R Y R T S Q N V V H K G L A G H T V & \\ A Q L Q S Q R A D A L P K L S N A S A L S S A G S S G G S S G S S G R G P L Q\end{array}\) \(A Q L Q S Q R A D A L P K L S V N A S A L S S A G S S G G S S G S S G R G P L Q\)
\(G E Y E V Q H A S L F P P Q G T G Q G E F D A P S S R A G F A F A P G T L R F\)
 QRVF QARAEFLPDI NATLGSVNRQYRSKNFYSNPSSDYTM AAAYAADAERMPTLDASAGVTRSRDSRDQDPRGQGDAYGT A ITKRIDFANMFPQINARVYAEKEADNYGGHKYNPDNQFDLD \(E N V L A Q R G S Y Y P N V S G S F S A S R Q R Q A G T D A P T P S S N A F Q Y\)
\(A G L E L E Q A N S A P S V G A S A L A G H A R L P P A N L G G N G S A T S A N\) AMTREAQAQQSPTLGVNASPTFGHVSGVQELQPDVRPQRW A QARIA GAPLLPNVGLSAGATREMPDS QGVTVQRAALMPSINATASQTSAHEPANLYNTKTSGTYHE A AFDYTLGGLAPQVNATASAGVDRYGWNTLNGVGNFDTNLD AY I Q S S RATLFPKVEGSYSWTRELYSGNGFPPPYGGNWFS HELMAGAGVFYPQVDAQAGASRQRYVPDRTGANLPASDFN QRITVTDAALYPKVGDDAYG ERSLDSGLTNTEPSSED DVAA QVASHLYPQVSGTAGGEKYKSSKHRLYRGGTATGPD A YLKQGKAGYLPT GSAGASVAHQEPSKNSQFGGSGSLD QAYQISENNQLPTDGASGSV

A QYQIT DLDNDLPAINGNGGYTRQAQNRTDK SKFINGFTW GSQTNGGYNSQPRAW ASYRQSAGTLGPSADGSASATRNRTAANTRSHSSGVTSGS A GLMSARDAYAPSLADAPQGG V QTYGLNTANEDPTLNANASNTRQKTSDEAYSTKNKGAEYS
 A LVQEARAQLFPTVLGAPSISR EKLKQAKYMQYPDVGFGVSGQDSKPSKNSMNGQSGQNHVE ENYNAASGSLLFP NVNAQLGGGRQRAILSGTAPSEFN ENVAA RRGAFFPSVDASYTPSRQKDAQUIASPDSDNSDDF A L L G EVKSQLYPQLSLEAGGGKYKESHNRLFRSKTSSSPI DIARETQAQLSPQLNGSAGMSNNKTSLTRRLWNANSPTTES
\(L Q R Q M V A A Q G V D V N A S A V N R Q R L S E G S N A L M I Q R I A P ~\) ASVSTSRAALLPQLKGSGSATRQGLSAGALNPTLGLGTDT QYYQDRKNDQFPMIAGRADLLRQVSPTLDPH
AYARQARGALLPSASLQGSATRNRQSADKPLRGSGQPDVS A QLGIARSGRYPQLQQASADAFYLDRNQYGGDTEGDSSAW ANLRI MRAGYYPSLSLDAGWSRQQTSGNTGGTGQSQSRVG
 AQYSI QRAARLPAVSATGGLNRQRLAADPKADPATAARTQ A QYGVRRAELTPAVDASGAWTKQRRSKDVIDPEESRTVEQ
 A GLLGAANAALLPSATVSGQAARARQSLETPLGQVLNSDPS

 ANDMDAHGAMLPSVTGDVSGGGRKFGDYTMDGVGNYDTNF

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F QVVGLGVTAYELDFWGR|V|KSLKDVALNNYFATQSAQEAMQ QYDITA NLS WEAD IWGKI RSNKRATQAAYMQSVAGHQAVK
 AFNI GVNMSWEDDLFGKITSRVKESKWQKEATKAQYNSAM
 Y RVAA G DSAFEELDFFGRVVKNGGDAALA DYLASEEAARASAR T GDLLATSIIGFDLDLWGKHKAELAAAATSEVKAAQYDVRQAR
 RY QVGIGGAS WEP DLLWGRVRA GVVSGAKANAQAS QA DLLA GAR STAEARNGSWS LDL FGKHRAALDAAVGSARAAQADMDAAR SATF GVGLGYELDLWGRVRNEVAAGKANAAAAQADDAS VK AYSASLDNAS WELLDVFGSIRRQRVKARRENFAASKEEYT SVVM \(L \mathrm{~F}\) S L T A T V S Y T L D L F G L N R R R A V E A L S A Q V D L Q R Q M L G A T Y
 TYVGGFNTSWELDLWGKLRQAIRRSSKSKYLATENARRGVM

 F Y K I G F D A S WE FEAKGDLSSWEV \(L Y K A G F D A G W E\)
\(Y\)
\(S\) A S \(\square\) G L T A Y E
 SYHAKGLLS WE L
 N N H L A V V D L S Y D L Y S V GV Gl A S WE I





NFTPQVSVSYAP


 ENNALLLSASWELDLWGKNREK LKKSAVSQQKAAQAEFQQAR

 Q Y EAVA S L T WEA D \(\square\) WGKI R S NK R A F QA GY L K S \(\square A A H\) QAVK Y NVGLGVTAYELDFWGRVRSLKDNALDSYLATQSARDATQ Y NQGGVQAQYDFDWWGKRRAQDDSAVDQARAAEAQRSAAA


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SETNTESAMWEADLWGKПRNQIRMQKNLAQASAADYQSAK
 \(T L A A Q A D A S W E D D L F G G K R R S L E G A D A R L T A S E A D W H D A R\)
\(L Q V G L G L T A Y E L D F W G R V R N L K E A A L D R Y L A T Q S A R D A M Q\) SADQANGVVYELDLWGKLRNQLTSRKAMAQASDADRAAAQ QYGAGFDIGWELDFWGRYSRAI ESADASYFAARANYEDAL S

\section*{QFSHSLDAS} TQHTLDISSFE Y SADLGIAS WE YRSVL SAGWE
YNRYGSNAGWEL
\(\square \mathrm{H} T \mathrm{~L} Q \mathrm{~L} N \mathrm{~N} \mid \mathrm{S}\)
YQVGPGLTEYEVDL
\begin{tabular}{cc}
\(Y\) & \(D\) \\
\(S\) & \(G L D M A W\) \\
\(S\) & \(F\) \\
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NYTVGAS S Y Y V

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140
150
160

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CS L I G Q V A Q A W W L S Y S F A N N A N L
Q T L I A A NV V T A A A V Q E A S S L R G Q LI T L V S A V A D A YFA ER L A Q E QL DLAAT Q TL T D WR H S LDDLA H RLA V VA QTA DLYY I IVRGL QARLEIVARKQVETRQHLLATMEH



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RF D VVGIDSE\|IP|L GQAQDSVVETARNDVVAYKTQMSQA QNLL \(L K D A G N V T V Q A V D Q N \square A Q Y N S A K A L K V D L E A A D F R T E N T L\)

 R Y A A GMS T R I D L R S E EMLVVESSARATHAAALVRERRSQAVVS GL

 QFEFGAIA R A QV LS Q R N LVVA Q T A A TVVP P L E K A LA Q T R H L L RYAAA I APKSDVLQATTMLAGAQADLESLRQTRATYENAI \(R Y D A G L D T T V E V R Q S E S G V P Q A K V Q L Q Q V R E Q K Q L A C N A L\)


 R H E G G A A S G V

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\section*{sis sol}
月 RKEAGTSAYSAVLADDASRASLDASLPALEQKLGQADDLL RLAGSUAAGLDVSRAETQLHSTEAAETDLDARRDVMEHAL
 RVRQGVDLD DDAQKARI QQASARELLVALESSAKIRQSAL \(R F E A G L D P K L P S L Q A S A S L E N A K L A L V R A Q S S L L K S R N A L\)
\(Q L E A G A A S R L D V Q S E G V N S Q L A D I P G F E A N F S N A Y H\)


 RLADGLATNLDVAEAAAQVAAVEARLPSLEQRQAQLINPP
RADHNLEPKDTVLSARDDQQQLDRRLATHDGADQLQDNLI \(R A D H N L E P K D T V L S A R D D Q Q Q L D R R L A T V D G A D Q L Q D N L I\)
\(Q Y A A G V A A R S D V I A Q T Q L Q T T Q A Q A D A V G L Q R A T L E H A!\) MWESGDTTSLGVQQANAQKQATELLITQLEQNDADQENAL QVALGAQARAAALSQGTLVAQTRAQLQPLEKALSQTRNLL DFRSGDSAELDFQQAKAQYLATLGTVPDLEGQVMRTRNAL REMGAMAAGLDVSRAENQLEMTMAQQTDVQAQRDVVEHA RADGGLVDDFDVERQRGQLAELRSSLPQLQASESAADNQL KFNAGTDSEDPLRQAQDSVETARHDAANSQTQLAQAQNLL LYRGKLAAQMDVSRAEAQLGTAQAALTEVHSRRALLVNAL RYNTGLVSKLDVAQAKSVYYSTLASVP SVESGIIQYTNAL RHRAGVVSALELVRQESLIESAKSSYAGAVRSREQARNQLD LLKANQSSALDVAQAEGQVATAEADLEGRARMLARAGNAL NYQAGLATRLDLRRAQTQADVAQRDVQRYDQQAAQDRNAL RYEGGLTSETAFRQAQVELARTATLVPDLERKDSLKENEL LYYKGLAAELQLNQTQGSLNQAQATVPVLQAGLDSAMNAM QF RLL
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 A T L V G E P A S G F K WS A G V P E D P A GlV P S T L L E R R P D A A L MGQPARAQE LVASPPRFPSQL SSNLLGRRADIVAARW ATLVGGQSASRESLDPADNAPMPLGGVPS QLLERRPDIAAAAEAR \(A \square L L G T Y P Q Y V R P P D Y M E P V G M G I P A D D L L R R P D I R R A G R\) ATLSGHYPAEGDPVAVPAD\|PRLLPAELVRRRPDVLLAEA







 SVLVVYQS \(\square D\) SPNTLP TMPEVVPSGIIS S DVLLLHRADI A S S L E


 A T L L ATLI NQPDPEDDKQFFVEKLPPAGLSSEVLLDRPDI RAAE H DSLVGKTPAQLPAQA DPADWDADVPSEVLLQRPDVDAAEQ A LL G RPPAQFSLAAEPDKFPAGLPS QLL QRRPDI AAAER
 QL L V G M P L P P D L P P P A P F D L H A G L P S D LI A N R P D V VAA A A




 A A L T G R A P Q C A Q A P R L A Q T I 1 A LL LGRPPQ NFKVEE QMPRIS AGLDPSELLTRRRPDIIRRAEA
 A A L L G K G P D R GLLQ \(\quad\) DA MP V L K P G G I P A D ATL AGRYPAERAPPALPPRLP QTVPSELLVRRRPDILQAEA \(R I L L G E F G Y P L Q L Q T F P A Q F N V G V P S E M L S Q R P D V E A A E Q\) A ALV N V A P A A F H I A P V Q VRR S A G L P S A L L E R R P D I A A A E R




 S LV L K E AP QKI K RGTLLEEQKN S GVVPDQLLANRPDDVKA A EM
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 \(A V L V N Q V P M G F H I A P D V E T N E A M G V P S T L L Q R R P D I A A S A E R\)
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 A V L L G L
 \(R L L V G A E L P D D L P P A V K T R L P P G L P S D L L V R R P D I M R Q A E R\)

 A FL S GE Y P H H DK R S V L P E DVV P V GLL P S A L L ERRRPDI RQAE Q DVI T A QLA Q S T H DP DV P Q FAS L GSP A DLL R R R P DLI VA E R

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 RVEAAAQGMKVAKADFYPNINLVASIGLASAAFGNFFTVVV QLQSRNASIGAARAAFFPSISLTGLFGSSSADLSGLFDGG RLKAANANI GAVRAEFFPRUSLTSSLGLLGTSPANMLNTS
 RLDASNASI GAARAAFDPRISLTGALGTASRQLGGLFGAG TMASANAAVGVATAAYYPDITLSASGGFSSSVLHNLFSLP RVA A A NAQU GEARAAFYPNLTLSATAGLESSFFAPWLTAS RLASSNAQI GEHVADFFPKVTLFGD GGFSASDPGHLIRKS RLDGANANI GAARAAFFPRLTI TASEGDSSLQFRQLFTPG
 ALRAANANVGVT QAYRYPTLTIEAEGGVNSMLSKNWFKDP RVEAASKDI AAGKTRFYPNLNLSAAAGTEAVLGDALFGSA SLIDANAEVGMAFTNDFPRITLTAHLGAESEELKDLDS NMHAASAQI GVAVANRLPNIVLSANAGNTALAMNQLFTSG TLAADTAKI GQAEAARYPSLKLFGVIGLGGTHPSDLTRDD


 QVEARDADVKETKAEFFPDVNLAAGFGFDAFGWGQFLKFA ALHAASANIGVATAALFPSVTLSASGGFDATRLPSLFNAA AL \(\square\) AMNAKVGVAKTAFFPKFTISGSFGRESDELSNLLDSE EMAQANRADGVSRAAFYPEDTFNAMTGFMDNGFDLASDS DFDQAFELTNVANANFYPSLTLSASGGFQSDEFNNWFDTN QLSAAGANDGAAKAQLYPTISLTGTAGYASTDLSDLFKSG NLKAAGANDEVARASYFPSISLASSVGVSSGSLDDLFKSG DLAAAVYDI GNAQAQLLP ALKAANAYVGSARAAFFP QYAQYTAKVGQAEAARYPSVV
SGAGAYYSTNQARSAFYPQ NLKSKNALIGVEKAAYFPT S I TGTLGWTNSTGMPI FDVP RLHAATAGI GVAKGDFYPRIRLSGNVGFQSMQLSDFGSWG
 VLLESNALVGIA QANMYPALKI TANGGVNSFKFDNWFQ!P LLHQASANVGVATANQYPQITLSGSYGTQHT VLPNTDLG QMHAASAQI GVATAARLPNITLTAALGSSSQAIGDLFTAG AVAAQSALI GVAEADLYPSVTLDGSIVWSATTLDGAPD QMA A A NRSI GVSKAAFYPDITINALSGFEDKGFGLA DMP NLAANSRAI GVARAAFYPDVTFSLNGGF MNNGFDLASDS QLHAATANI GVAVADLYPTI RLGAHFGYESVEDSKFGDWG AVAGASADVGVAVASRLPSITLAGS \(\square G \square N S Y L G G Q S \square T\)

 QVNAQAALLGASKSDWLPSFFLNGSLGYASHDMKDLTKRS NLK QANAN GAARAAFFPR \(\square S L T S S I G Q G S N Q L S N L F E S A\) ELAA T A QI GVAEAAAYPSFDLSGSI GVEADAAANLYTAA NL \(\square\) A ANAHI GAARAAFFPRLSLTSSLGYASPGLSNLFDGT RLKGAYAFI GAARAAFFPRISLTASMGTASDELSGLFGAG RLRAA GANIAAARAAFFPNITLTAGGGTASAQLDGLFKGG AV \(\square\) A A NAAVGVAFTNDFPRITLTADYGSESAALSDVLK RLAASNARIGEADSEYYPKFSVGALIGSATSSSGNLFSND QMHSASAQVGVADANRLPNVQLSATPGQADNAMSQFFTPG RLKARNADI GAARAAFFPRLSLTGSVGSSSTELSGLFDGG KLAAATADIGVATADLFPRVSLSGFLGFTAGRGSQI GSSA


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GF S WS V V G S \(\mid\) D L P I I F D WGTRK A N \(\square K|I| A E T E Q Q \square A|L| A D Y E K\) SLFANIVGGLTQPIFNQRKLKTQKEVALAQQEQSLLQFKK AVLG S V T G QL A G P L F QF GQNK R R V E A E RARAK Q Y A Y N Y E Q



 NA \(\square\) WS LTAGGTAPI FNGGA LRARKRASEAAY DVAAAQYRA A NTWSLGGLSAAQTLFDAGARKARVEQARASYDATVAADYRQ A R E WG V GP A LIS LP I F D S G R L R A N L S G K S A D Y E L A V Q A Y N Q
 SAVWSLGAGI A APLFHGGELYYRRQAAVAQWEAAQAGYRQ
 \(G Y T W S L G G N V D L D L P K G G K N D V G Y K A A Q A Q W Q Q A V A F Y\) K K GYWA L GPF SAVL S L F D GGRRREAREDVVSEADYRAALAA GYRE S DQA T G V G G V T F P L LDDWGRRKA TVVGL R K E DREAQA Y L R Y R T







 SRSF GWGPGVRWNL FNAGRVRSQQVAI E ESATARAAYYSYEN T GVWS FAPSITVDI F TWGTNKANLDV AK LDRQQVQVVAYES SQAWSFQPALTLPLFDAGRNSANLDVSRARNVIAVAEYEK


\section*{ \\ A}

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 A NTVWS F G P S L N L P I F F D G G T L R A N V K N A Q S V A R E K Y L A W W R TGA WT F E P S I S V P P I F S F G E L K A S L D V A K V E K E DE V A D Y E K














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A|I Q S A F R E V \(\left\lvert\, \begin{aligned} & 330 \\ & N\end{aligned}\right.\) \(T\) L LTTA G S E V S S N A L Y T Y N A E T E K Y E Y R L K K QV E A L R R A E Q N S


 S I Q \(V\) V A F R E V A D A L
 AV E G A F R D V A D A L V A R A A M N T Q Y D S N L A Q Q K A Y N E R L R L T

 TVLTAVQETDNAMNSYRNSIDQQVALREVCNQGEETVKLS VVLAA AGQVADALRALEHDGELVAATRQARDLAFEAL QEL

 TVVLGAFREVVED S L A N GAA LLA D E EVVERERAAAQAAAR G E E L A A
 TLLNAGSEVNEALVKYQTAKEKAAYYDKQIMS LNNAFEST TI LT A L E DVENSLVAYYKEETRRSRLEKEVEAKHRAYELK \(T V L K A A Q E V A D A L A G F D H A Q Q A M T F Q Q A A V K S A Q R S V V E A\)
 \(T V L A A L D E A Q T A M T D Y A K E Q N R R D A D Q A A T Q A A R E A L E L A\) A I QA AFKEVANGLAARKTYTNQLDAQTAYFDHATAY LGMA
 SVLTA ALEDVENAIVAFRRERIIKNGRLDAATQSYRKASELAA

 TI Q TAFK E V S D A L A A T E T L R REEAS RLDA L A Q S S QEAMR L S VLEQAFKEVHDELQAQQTLDDQLHALQDLT LAS KRGRELA SVVLLAAVEEVENSMSGQVNGRERLLQALDEQGTEAAREAV S LV AV QSAFQDVANALAAREQLDKAYDALSKQSRASKEALRLV TI QQAFREVADLLSARDSLTRQLSAQQANSYTQQQRLLKV \(T V L T A M G E V E D Y L V E L R V I D S Q M V A Q K N A A D S A K E S A R V V T\)
 AVLGALQDANSSLSRYGHQREHVVTLLDKVESATHSAALM \(T V Q T A F R E V S D A L T A R E T Y\) LD Q ERRQMRDLVASSSQQA Y D L A
 AI QTAFKEVNDVFANRAT LNQQLAAYN QSLAANQKYYQUV
 SLVK ALGDVS DT:QQS REIAR Q I A V Q Q HAA D A Q Q S Y D T V AVLNAFKDARNAIVAFNKTKE IYDTRLDRLEQASKSALDDLA TVMGAFQNVADSLVALDQDAAGLKAAAAAEEASRRSLDLA
 A V L \(N\) N A L R E T E S A L V T Y A R Q L D D R D A A L R A A R D Q S A L A A A A A
 A I QT A F K EVVNAL A GQDTVQDQLLTAL QQEVGANQRDYD YS

 TVVLARA Y F EVVNDAMNS FRRSEELA INA QQELLVAASSSEYNRLA \(T V L V A F Q E V V D G L T N D V R L D K T E G G Q Q A E A V S A A L R T A T M T\)
 TI QTAFREVNDALAVRENDGDRLAAQRRLVDATNTTYKLS \(T V L S A A R D V S L Q S L T A Q Q L A A R R Q E Q A A Q I A A N Q S L L A S A\) S I QTAFREVVSDVLATRA TLGGEQLEA QYRLQDNFEQTEGQA TVLN GVEDVESALAAYNRDARAVAANRAYVKSYKEALLELS AI QTAFKEVSNAL A GRATYDEQLAADEEYVDAAQKY YDTA


 SVLNAVGEVSDALVSNESLKVQEQKATEQTTTLKDGIKSA TVLKAF Q DVA DS L RAVDA DARALQAQADAEAKARESLEVVH \(T V L T A\) Y Q GV A D A L H A I E A DAR GLLRTA S DA E RAA Y R S F N I A \(R V R Q A A R E A D D A A T G L A K A L E S E R D R R E S T R A A D R S L D L A A\)

 KVVRQAVQEVEDALVRLDASERRVDAATMADA QYAKVLEAS
 \(T V L R A F R E V E D N R V L L S D L A K E R G F N D T T V A A A T Q T S N A A\) RVRQAAREAD DAAT GLLSKALERERILLREAAFSAQRS LTLA


 TI QTAFRETA DAL AVQQGTDDRQVAA QESDVVATTETVYSLS \(T V Q S A F R D V A D A L V Q R R Q L A A R I A D A R D M L A A D Q E R A R L A\)
 SVLRASEDVETAFSALINREQQLKQLAQGEDAFTKARDRS T V L \(T\) I QVA FREVAA DALTAT DTQRRREEAARRADA DS SVAAAMTLA


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\hline UniRef90-FORGW & NLYEALGGGWK \\
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\hline UniRef90-R5B6W4 & NIYRALG \\
\hline UniRef90-H0.J7 & EL \\
\hline UniF & YRALGGGW \\
\hline UniRe990-Q0 & TLYKALGGGWE \\
\hline UniRet90-U3A1 & ALVRSLGGG \\
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\hline UniRef90_A AAO11 & Q \\
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\hline UniRet90_C4WQ19 & A \\
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\hline UniRef90 HoFBT5 & R \\
\hline Uni & \\
\hline UniRet90 D5ENC1 & \\
\hline UniRef90_E6MUQ8 & DLYKALGG \\
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\hline UniRet90_B2JUN9 & QLLKALGGGWD \\
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A E
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A R R V Q \(\square\) A S A ALP E V S VGATGQTVVSSSKALSAQPGGRAR
 A LYGVVQRADLLPSIDANLGYERTRQYDPVVRESAVSGL E QIQLS R A ALL PS L DAVLGA Q RTRELSVLGITTHT

 A T LK A A R LA Y LP S FN LAAPTGG \(\quad\) G E QRRDE GAGLYPTRSAS FNPTRNKTSRDYSPDPNANVWYN A QYRI QRAALLDEVGTSATYTRSYRGKGAAPGNDTTQGSN A Q Y RI QRADRVPGLSASASGNRQRVPGGLSSTGTSTVTSS A QYRI QRSARWPEVADDASASRERGARAGT GSDPAGGAGA ARYR Q D S R RLD S V VSN GSAT R S R QP G DVE GA PAA DT S N R ALLTREARAS LFPTVSANGSVTHRTVVTNGVTSAAGSRAST \(A L F T E Q K L D L L \quad P H V V A D G T Y A K S N E Q Q P G S N G R R V E S Q\) H NALA Q R GLYFP Q
A QLG G A DASRYP Q A LLMTS RLLS Y LTP STS LSS LQQVSGSALLQTGQVRDGPDSHFM A QYRI QRADRLPGI EAQGSGSRQRVPGD DSPTGQAAVLTK GQTHIAAAAQGMPNI NWQPGYT WTQQSEKGFPKPGAN LQQYN


 A DARTA QA GYYPTLDFTGSASRSGGSRETANVFNKSTEN
 \(A \square A G V V D A D R G V Q V D A G V G P T R\)
\(A N S V P G L F S\)
\(S G N A Q G A S T\) G Q Y RVQRADRVPGVAVTGQMDRRGTD ASLRI A GASLLPSLDAGGSAARQRSGGAGRA T T R N A QYGUQQRAE QFPAVNAGVEGTRSRALTSDSSSNNNSTSQS ATLMSSKLAY LLPSLQQLSPEGT LLSSFDGAKPSK AVFVESRRDQAPHITAGGSYDRRKQPDPQLGGQR VFSE A MVA S A H A D WF PTI GASTAASNLHDSANVIGHQQTAGTFQ A A LQSARAGYFPTVNASAGLDRTRGSN A QVA A A D S L F DP TL L A N A S MS R S R L S R DEDYS GQGNRFGT A Y QA AVSSLKVPTVSVGAGYLDMRISENDPLMGSANRDPN A S L R Y A D A ALLLPA ANV SASAARAYQSVVETPAAPGFDRS GS \(A V L R E T R N G R L P Q T S U G A S G Q Y G R V P E D Q S V Q G F D R T N S\) DLSAEAASALYPQDGGNAGASNNQSSQHRLWRGQGPTYMS AVLGLSRAEQFPRLDGEAEV LRENPGRGDDPET \(A Q L G 1\) A QA GRYP QV Q QA S GEALYVHSRQS GATVQTSRVW \(L M R Q V T G G E Q L P G V S A N G A Y K R A R N S N L D E S S G L E G Q A P F E\)
 AVL AEARAGRLPSTTANGGVTYGDGDQGGGQAGFPGNGQW AELGFSKANRWPSLNAQADATREQGSTAVMPPELGGGQRN ANKRDSFANLFPEI GAEVAGQKEYLNYGGDSKKYSPELRA A QLGIA Q S GRYP QLQQQIAADSVY INRHQSGGNNPVDSHFW A L L M A R A SYF P TV S LTGQVVSNITTSDANKTLAYS S N AFSRQARAGLFPQVGVNANAQRDRQSDTRPLRGATSPANY \(Y Q V Q Q A E S A G G W S A G A K A E A Q R L Q E S G E A Y L L T E K V V V A N\)



 SMAGVAESAESPQVGADASLLRHKWPSDYFYGPGAKTTSW \(A \square R N T D A D R L P Q V G L S G G A\) ETTRAGRGARYPSVSVGMSASREQDPPGALAPVPSNNAFL
 E LAA D DAGAT RYP S A AVVDA D F S RARFARYASPSPPGGNTVW A I R D DVANDRYPT VTSRASSQ GGKGQVPGETEDRVNQE A MVTVA EA ALLY S LD F S L S G GREKR DDRIVGVPS GQGTA D \(A Q Y G \| E R S A L F P A V N A T G A G A R S R T A D D L T T A G R P N T T G Q\) A VLQQNARLSSYLPS I S LTTP QGS DS RYNGETKNV
QSAK LAAAAQLGLSSVNGSAQVTRERLS DHGLIPSSQFLGFSW AVVRRSRAALFPQIDAGADIERARVSAGRPLSVGNAVTYN

 LK F K Q S R LGNFP QL NA YS KVVTN DRSRTVFSSSQAFEA E L
 YRFTQSKWNNVPQI NLGGVNASTSNPSDNSFTGKNGQNHDN \(G L Y R V Q N A S L F P Q I G A T G Q S L Y Q A P S E N N A A Y A N G N V F K F\) A ARGVVAADRVPSVGATASGVRARNSEVGLNDPSGNCGRE AS LVQTTRS GLYPAV DGSASATRSRQK LSGFGRN AS LTS N \(A E R R G T Q A E L F P T V N L K A G A Q R Q Q N D P L D A L A P G L R Y N\) A LVQSSRSA YSPTASRGGSGSAGASSSNAAS GSSA GSVRN \(A Q L G M S R A E Q F P T V A L Q A E A S R E R T P G A M L P G N G D M S T N N\)
 ALVRESRADLFPTLTGTASSTRSETGTGSSSSSSSSSSAG
 GKLRETRSDLYPQLGYGAGASRQRRLGDYTS
E DLLNA E R L L P AVVDANVLSATRRQKVDP SA Y GVVPVAEQPAP FT
 AVVQQA H A QLFPTVLAAPS
A TYR DA K S S ELDP TII EA S A S G S K A R A VN S


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90
100
110
120
T WHILGFDASWE|L|DLLFGGTRRAVVEADAGDQALAEDHRALLQ SFDA QLSARYEI DFWGGLRATRDNADRSLDASRFDRQTVE
 A VQP S L QV S Y EVVDLWGRLRRLLREAADLQFQATEAERDAVR T N RLLQL G TSSWE A D D W W G K Li R S A K R GAA L A G M L Q S D A S K R A I A LY S A GFDASWE PDVFGGLARNE EAAQA DLEATAENLYAVQ
 YQVGVSLPEYELDLFGRVKSLTDSALEQYLATEEAGRSAR
 \(S Y N A G L S A S W T P D L F G Q L R N T V A T Q R F T E Q S R G A D D V V S A Q\) \(T Y Q A G F D A G W E \square D L F G R V R R G V E A A G A E A G A A Q A D L R A A Q\) S Y G L GA NLG WE DD FWGKF QR S I EAAD ASYFS T LAA Y Y DVQ AVSAD WED F GRVTNAKREAKAVLEQSEAYRQAVQ WR S GVVGLA A F E L D L F GRRVK S L S D A A M E E Y L A T E N NARA AR YYTN L S S S WDL DLEGMI R RTVEAQRATVVQTQAARRGVA A A QPGLQLSYEADLWGRLARLRQVATLQYQASEAEQQTLR EYDAGLELSYE LDDFFGKLRNMSEADRQNFFASEEARRAVG
 S YNAGFDAFWEMDVFGRVQRAREAATA DLEA DQESMMDVR NWFF GFNLS WE LDLLWGRI R R NVESTNATLDASVEDYDAAL
 S Y A A TLSASYEVDLWGGNAARLRSAGQSLEAARYSAAALG

 D Y A VVVA D A T W





\section*{}
\(\stackrel{S}{\mathrm{Q}}\) STGSAGAE S E NK GLL A A S WE P L L A NFDA
N N N A ALGGSYD TVTAAAANFSYEVVDLDGK LSSLDNSDAASLDDAQSREALLRSSTQ YFTPQVSVSYVPDVFGLNRRTQESLQAQQQAVRFQMLATR A Y S LIPVTASWQIDLFGQULNSKRNAQVTLKQTQAYQQAVQ

Y
 Y D L G G T A S WEMD DF GRMTN TKRAAAL A S F E QSRA Y VQ A V Q YNQAGVQLQYDFDWWGKKRATMEAALDQAHAAEAQRSAAA \(N A L I G P S L S Y E \square D L F G R V R N T L A A N R A S A Q A S A S D L A G V R\)

F R VGVG
GGGISE Y E I D
Y N Q G GVVQAQY DF DFWGKKKRNT DE GA V D QA HAA EA QS SAAA DFTAGAT LS WEAD DWGK I K NQKK GAYA E Y LQ S E EVVK KA LQQ
 D Y Q A G \(\square\) GMSWEL DLWGRRVRRQVEAADAR I E DAAEDA HA MQ
 MF ELGFDALWE IDDLFGRQQRRLEAALAELDGANAGYR QTL
 S Y AVE P TLLS WEVS LF GAL RHTKQAARAGIASAQWS LRGVR
 S Y DV GLL A A GWE L TYQVGLTA S WQ V GVGLTAS WQLDFGQLRAATEASKA QMLSAEEQRQAV L
 T L T L \(L\) Q GS A S W E
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AHRSG|LGTLADVVTQARAERETAEAQPPLL|EAD\ARFSHA|I \(R Q R S G S A T R L E L A Q Q R S L V A T Q Q R Q L P L L E Q K W Q D S R V T L\)



 \(R V D G G Q V P H S D L D Q A N Q V L H A A Q A D L A T Q T T A L A Q D V N A L\) RRAAGAATALDHQEALGLVEQARAELEANQRQKQQALNAL




LKKAGQTTDMAVAQTEASKLSVDASLLLI ERQITETENAL
 R A R D G A A T S L D L A Q A R A RV A T T E S D L P P L Q N S Q A A L I N P P RARMGYTSELEELTQARSEYEATA QLVPQLEQAVVEQEHAL


 RHERGGSSSALELTQTRT LVETARTDAARLRGQLAQDRNAL

R



RRESGATTCDLTVRQAQAELETSRAS LPGLQAADADQQRRAL




RY E G G L T S E
L K E A GM Q N E A A V E Q S R A L M L R T K L S I Y DL E S A I H Q L E N G I





R L A G G L G T Q F E V \(\operatorname{S}\) E A E V

Q R D K G Y A G GL E L A A Q Q A QLA QVRA S LPP L LT QLE Q Q N H L L









 SFESGEAN QLTL R QDE GQF RQAAANYA QFQRQVAQDEN EL \(R Q R Q G V A S S S L V A S A A A Q V A A L E A R D A P D R H R D A Q L D N A C L\) K A QA GT GTGGLDEVQAARAEMESSAAAS I A P L E Y S F REESVVNRL
 LIFNEGVVARHEVVRARALTETTMAQIPALQAKLTLIGAHP
 \(M F R Y G M S D G V A L E Q A R S L V H T A E A D L P Q Y L R A V E Q T R L T L\) \(K Y D E Q Q S S R A D L A T G K T Q L Q S A Q A S M L D L Q W Q R A Q Y E H A C\)
 QFNAGVIS QLQL NQAESQYYQAQSEVPRLQDSIAQQENAL



\section*{UniRef90 U9E6T7 UniRef90-T2H5V7
UniRef90 \(14 \mathrm{VY45}\) UniRef90-A0A024RQ24 UniRet90_W8RRJ5 UniRef90-F2IE83
UniRef90 A1WK45 UniRef90-W6M405 UniRef90_UPIO00468C24B UniRef90-Q5FSA4 UniRef90_UPIO0026315F2 UniRef90-U3HGC2} UniRef90-F0Q2E3 UniRef90-UPI000225E2AD UniRef90-UPI00028897A9 UniRef90-RODOJ9 UniRef90-K8NQ54 UniRef90-R1F5E0 UniRef90-R7DHS8 UniRef90-Q6D1K0 UniRef90-G6XLR4 UniRee90-UPIO002910634 UniRef90-UPIOOO237C583 UniRef90-UPIOO026CB087 UniRef90-B5Z177
UniRef90-C0QAF2 UniRet90-LODEN2 UniRef90-A6SYA9 UniRef90-10KSX7 UniRef90_D5RJ69 UniRef90-G7LU78 UniRef90-R6KJY4 UniRef90-M3G132 UniRef90-UPIO003485F4D UniRef90-A0A022FYR4 UniRef90-UPI000464FFC1 UniRef90_AOKWIO UniRef90-HOQ3N5
UniRef90-WOAMW3 UniRef90-D5QHJ3 UniRef90-UPIO0047554B4 UniRef90-Q470S8 UniRef90-F3HLG1 UniRef90-UPIOOO36DCA84 UniRef90_UPIOOO3B7B949
UniRet90-TOHG63 UniRef90_UPIO00465E9E8 UniRef90-F8WYYO UniRef90-J2WHI1 UniRef90-UPIIOOO3648346 UniRef90-UPIO0047D33AE UniRef90-V7DX31 UniRef90-F2LKV3 UniRef90_UPIO0035E9F93 UniRef90-D4GIQ4 UniRef90-F8JAN9 UniRef90-B8DN51 UniRef90-H1O3A3
UniRef90-AOAO24HCV8 UniRef90-Ј2КАЕЗ UniRef90-14W1 \(\times 5\) UniRef90-J9G380 UniRef90-B9BB67 UniRef90-A0A024HJ25 UniRef90 UPIO0035F23BA UniRef90-E8TQ83 UniRef90-B5CWD3 UniRef90-14WWIO UniRef90 UPIO0026CAC1F UniRef90-G8NP86
UniRef90
B3R1Q2 UniRef90-UPIO00382D521 UniRef90-UPIOOOO4786853 UniRef90O-UP10002DF8580
UniRefon-UPIOOO47D9C96 UniRef90-UPIOOO47D9C96 UniRef90-AOAO2ЗYOAB UniRef90-UP100034D2229 UniRef90-C0QA81 UniRef90-UPIOOO47B75D0 UniRef90-D8IPZ2 UniRef90-T2L886 UniRef90-R6VUN5 UniRef90-W6WE71 UniRef90-A4A5W4 UniRef90-R8ANJ4 4 UniRef90-R4XUT7
 UniRef90_W6EH04
UniRef90_R6WPJ4
210
220
230
240
GVLAGGFPGDWHADPMPADLLPLSLIPSEVIIRQRPDLIRADER ATLLGEPVQSLPASPHWPTLGSGLPSELLTRRPDIAAAEA SVLLGQDHRPHLLTPAQLAVPDNLPLDLLGHRADLVAARW RLLTGRLPGEVERGAEPPPVPAVLPSTLLRRRPDIQQAEL \(N Y L L G Q G P G K I E R G E L D T Q V D F A D L R Q L L K N R P D V Q A A E Y\) ALLLGQALPDDLRAPALVPLPAGLPSELLTRRPDIRQAEQ
 AVLVPLPEFRLEQFTLPKTLPVSLPSDLLNQRPDIRAAQA QLLVGAPVDPKEVAASIGDPPAGLDTSVLLRRPDVVQAEY VLLI GTPDAAKALPEAPQD \(\square\) APGAPSALLERRPDILAAEH RLLLGSDPPAGLPDPMPGEAPAGLPSGLLLARPDLLQAEQ AVLVGGTVPDGADQGDKPRLAAGLPSDLLLDRPDIAAAEE AVLTGQRPRATDTRPLITALPIGEASDLLRRRPDVQAAER TALAGRYAADEAQKFDLTHPVILPGKLVARPDVRAAEA STLPEMGADTGIDPHAKLTRAADLPADLIRRRPDVRSAER RLLRYLPQKSVAEEA ILQNIALGTPSQLLAYRPDIEAAEN RMLEKELLPGGPQPQPPAAVPVGFPSQLAERRPDLMMADA QLVLGTYRALPAENDTPVKLPPNLSSDLLQRPDTMEAEY AALVGRGADFYPQFDTPPLVPETLPADLLGRRPDLLAGQA AlLTGQPPATFAVAARPPPAPGLPALLQRRPDiAAER ALLLGQYPGTLYKPVAPMEIAVGVPAEVLRRDPTVRQAER CILLGTPPHDSPVPNTPTWVATGIPADLLRRRPDIRSAER AILLGKAPAEFTLPAAVVTVPSGLPSDLLERRPDIAQAQR ALLAGGQLDPALLPDSIEPQPAGLPSDVLLQRPDIMAAEH ALLVGLPPEQVREGLRVPPASPGQPAELLARRPDVRQAEA DLLAGQPVDDALLPADLDPVSAGLSSAVLDQRPDVLAAEH AVLLGRVPGPHKRQTFPQELSAGVSLDLVSRRPDVREAEA ATLIGQPASTFTLSPTPPAIPPGVPSQLLERRPDIAAAER AALVGTGPDPNVSVAADFHVPSDLPAVLESRRPDIGAAER \(A T L L G E S \square K E T S G P A M T E L I P T G V P S E L L T R R D D I A \Pi A E R\) DVLLGVQPGTWRTELAAVAPVPGTPAEMIRRRPDLIVAER ATLTGRAPADLPPSAGDQPDPDGDGRALLARRPDVRAAER AVLVGEDGAVIDGLDGLGDEPHSVPSDLITRRPDIRAAET ALLIGRPPAPMHELLDMPDKERDVPASLLLRRPD:|rAAELD CTLLGMTSRTDPRQYLPEKLNAGVPLRLLSRRPDVVQAEM GALKPRLAAVRPDPVGTPPAGDGLPADVLRQRPDVVAAER amLVGYTPAKLTETELPDSVPAVLPSELLQRRPDIRAAEE FVLIPRGKDDISHLQVPASLPIDLPSSLLKRRPDMIQAEQ AVLIGQPPGALPLVADNSEVLQDVPANLLLRRPDVRAAEL SVMLGRKPGAIERSAFEAQTVPGVPAQLLARRPDVIQAEL ASLVGESASNFNLPADIPTVPVSLPSTLLQRRPDVAAAER DQLPAGTAQCAELPHDAQLLPVGDGATLLKRRPDVRQAER ATLVGENAASFAlAPRVQR\|PAGLPSQLLERRPDIAAAER AALLGAGPDRGLADARPVRLPANLPADLVSRRDLVAAKW ALLVGKAPADFSLPAATPAIPGGLPAELLQRRPDIAMAER SVLTGQPPSAAPVPSARLNVPAGUPADVLLNRPDVRLAER CVLLGKPPQDAPIPTAPAGLALGLPADLLRRRPDVRKAEY AVLTGRAPSQRPLPTLPATVSVGNPAALLKARPDIRAAER AALAGKПKRPSLRLTAQPALPSALPDELVGRRPDVVASRW AVLVGEVASSFAVAPTEWAAPAGVPSTVLERRPDVSAAQS STFLGEVPHMDQRSTLDAQVLPGIPLQLLSNRPDVKAAEM AVLAGRGPGAGAPLARPALRPANLPAELVGHRPDVVAARW ATLLGQRPDQKQLPA
 SALLKEPAHTDERQHFSDDISVGLPLQLLSNRPDVRQAEA ASLLGVAPTERPLPADERGVPANGGLDLIARRPDIAASRW AVLIGESPPVDNRADPPAIPASLPSTLLERRPDILAAER TLLPVGHTDPNALTPPPQDLPTGLTTQLMARRPDVQAEA YLLLGEPSQRTPLPVKPADVTPGLPSTLLTRRADIRAAEH SVLSGSFPDKKERESQKENLSAGVPSQLEEKRPDVKSAEL ASLCGVSPAQLPTLQPRPLPPDNVGVDLIARRPDVAASLW ALLVGEPDPEDLPPPAPFGQPAGLPSDLLDRRPDIQAAEF AMLLAQPPDIRRDWPVLPAMATGLPSELAERRPDIRRAEA AVLTDRLREVAPVPALSWADEPDPPVEVLARPDVRAAER AILRGQVPAENHHMHVPEMMGMGLPVDLLTRRADVRRLER GTLALELSELGAVPQAAGDDLLTSPAATLRNRPDLQDAER ALLVGKTPAQFALPRAPPPVPQGVPSMLLERRPDVAAAER ALLVGKSPAELFAELDFGDMPSVLPSDLLQRRPDIRAAEA AALLGNPPRMLRIDRYPEEITPVGLLPSELLERRPDIMEARF ALLiGKPPADFGWQYHVPSVPLGLPSRLLERRPDLAAAER NLLLGRPPSYDSLPALAPVSLRGIPAQLVLRRPDVRTSAW SVLLGVNPQA \(\| P R G Q T L P A I P A D L P S T L L Q Q R P D I R V A E Q\) ATYLGQPPAAWQAPPLPAE:PTGVPSALTRQRPDLLAAEA ATLSGRPPSETQLAARPPAVPASVPSALLERRPDIAQAER
UniRef90_U9E6T7
UniRef90_T2H5V7
UniRef90_I4VY45
UniRef90_A0A024RQ24
UniRef90_W8RRJ5
UniRef90_F2IE83
UniRef90_A1WK45
UniRef90_W6M405
UniRef90_UPI000468C24B
UniRef90_-Q5FSA4
UniRef90_UPI00026315F2
UniRef90_U3HGC2
UniRef90_F0Q2E3




 AL VA A Y YATAEARAA LLYPLLT LISGSAGWTNNAGA IVANP G

 A L V A A H A D V G A A R A A F F F P P R





 QL A A S D R F L D S E R D R F L P R V Q L S A S L G R L Y V V N ALLD Y D P QL K A A DANIGAARAAFFPSIS LTSGLSTTSSTALSSLLFTPA


 QLAASSARI GAAKAAFFPKLLLTTGSAGYESNELRRDLFK WS QL LAA A NANI GAARAAFFPSI SLTGS DGSGSSELSNLEDS G NLAAAQANIDVARAALLPSLTLSAQGGVSGAVLGTLLRPE
 RLA A A T A RVGVA T A D L F P P R L S L S G F VGF L G G DA S GLLVN G N \(R \bigvee\) A A A N DEI GI A E S A FFPNLVLSAAGGLESSALSNWLMAP R MA A A N A Q I G V A Q A A Y Y P T L T L S A T G GL S A S T L A R WL A L P \(R\) VEAASKQI DVAAKTRFYPNFNLSAMAGFKSVLGDAVVADV EMAAKNQELGAADAAKYPSFFLTGAPGLSADHIDDLESS D


 QMA A Q S A L I GV A K A E L L Y P S L T L L G S I G W S A S S L P A T P N
 ALANAYYTTNQARSAFYPNLTLAGSAGWTNSLGQAVTNPG
 QLAADTARI GVATADLLYPKDSLGGGSGNFFRNDSVRGDN AL VAA A N A R V G V A K A Q R F P S L N L Q A L G G S V A L D S D NLLF T A P KLIEANAKVGMAYTAMFPSLRLTGGRLGGENTELTDFLKS P
 DL R S AFELLTNAA QASFYPSVVTLNPMDGFAASGFTNFFSSE \(R V A A A N A R I G D A R A A Y F P S L G L S A Q G G F Q S D R Y G G L F T A A\) QLA A A TARI GVAT GALYPDI SI GATVG TVGDLDDLGTPA \(R V\) A A A NAR R GVVARAAFFPDLVLSASAGLESAAFAPWLSAP RVDALVHDVKEAKAEFYPDI NLSAA \(\square\) GGLDAFGFGRFLNAA KMAAANAAI GVATAGYYPDLTLSAS GGVSASALHNDEALP QLA QYTAKI GQAEAARYPSVVSLTGDISTSATHFGDLLFKGS A AA GQCARLGVAKADFYPSIS L G GFVGFTASNVGAFSTGD TLAS QNA QI GARKADWFPKLSLGGSLGYSAMDPGHLVRKD \(K V A A Q A K G V D V A R A E F Y P N V D L V A S L G Y S G G G M L E F L T G Q\)








 QLKAANANI GAARAAFYPRLQLTTNVGLVNSDFAKLDBTG GV T M A N A KV G DT K A S L Y Y P A L N I T A V T G V N S F E LD K WF NDP Q V E A A L L R Q T D V A R A Q F Y P D I S I S A M A G L S S \(\quad\) D D L
 A L H A A T A S I G G A K A S F L L P R I T L

 \(R\) V A S A NA KI G VA KA A Y FP S L T L S A S GGYQ S S T FA D WF T L P TMIAA NARIGSAEASRLPSLVLSAFLGSSTADTTDLLTTSS TLRQAAA QAGVARAARFPSISLTARGGVASAS ISGLTGAD D MA A A N A A V GVVA T A A Y Y P D L T L S A S G G Y Q G S T I S N L F S V P Y VESSS D QI DAAKAAFYPSFDI KAFFGFNADHLADLLFTHA
 \(N L V A A Q A N L A A A R L A Y F P T I S L T G A L G S L S L A L T D L L T G P\) LL H QA S A QI GVAT ANQYPRFTVTASSGSQRTRAGDVVGDGV
 LVQA Q S A QI GVAVA A F Y P SVVRLSAS GGLLS GDP TA ALLA A E

S L A WS A A MQ GS Q SLLY DAGRARAGIVT A A QANADAVRRVYER S SYYTLTS G LLVAP I FNNGRLRAARE LAEAEQEELLLETYRS
 \(R V W D L G A S V L A P I F D A G R L E A G V N I A T A Q R N Q A A F A Y R A\) SLFYNDIGGLVQPIFNRGQNKARLRAAKAEQQVAFYNFQD SWGF S I AP S L L LAALF DA GRN RA QLE EVSEAVVRSIAVAQYE K ALAR G V V S I A AP I F D A GR \(\square R Q Q I\) E I Q T A V Q E Q A F I A Y Q S \(K L L L S A A G S L L Q P I F N A G Q N R A R V K I A K A Q Q E E A R L A F Q Q\)
 ARTASVGAGVAYTVFDGGAARANVRYTEAQRDAADAGYEK SRSWSFMPTLSLDI FDAGRNSANLDLAEVRKDAAVAAYEG WGT WR F AP Q I T QP L F DRGR L R GEEL R L A QV R R S E A V A Q Y E R \(G L G W S F G P S I S L P I F D W G A R E A D L D L A Q A L E V E Q V A N Y D K\) S SLLWSVGASLAQTIFDAGARRARVAADRAAYDAAVANYRR S K A WSVAPTVVWPALDLGSAHARLRAARARDDAALANYDQ
 QQAWSFSPQI TLDPLFSGGSNMANLDVANDRKEDAVADYEK AKYF T L G P T L N NV P I F E G G R L R G T L R L R KA Q Q K EAA A L D Y R R

 A QAWSFGPEALLNVFDGGR RAALNAHARAVYDEEVARYRQ


 QQIWSVAASLAQSVFDGGARRGQVALSEAQAEELLGAYRY
 NKAWS LTPSLSWAAFDFGTVRARLLRASKAEAEGVAA QYEQ \(S R V W S L G P A L A G T L F D G G R R R A E T D R A K A Q Y D A S V A D Y R Q\)
 S R S WNVTPAI SLLPIFTAD LLKANLLSKTADYDTAVAQYNQ SLT WALGAGVSWNVFDGGRTQAMVEIQEAGFKTAALSYQQ


 S RMWS Y GP S L Y L P P V F Q G G R L T G T L E L R K R Q E Q E A A I D Y Q R
 SF T F S L G PLIS WS FP NVAVARA R I R Q A KA Q GEA S L A A F D G AEMWSVGANLA GP LFDFGRTRSRIESAAEAQLAQAEA QY QL TWF WS GVLTGG P I FNMGKNKAKHNAAKA TYE QEVVYS YE K
 \(N L L A N V I G G L T Q P I F N R G Q L K G N L K I A K A Q Q E A A L I T F K N\) \(N Q F W A I G P T A L L T L F D G G R R K A G V E A A K A A T E E A G A R Y R G\) TNRWGFGPLISWTLPTNGARARIHEAEAATQGALAHFDG
 \(N R V W S L G P E L S G S L L D F G A T S A S V D Q A R A A Y D A S V A N Y R Q\)

 N A T WL A A LP R L Q WN ALDD F GRVVA A SVV D GA QA GR D NA EA A Y E S

 \(K L L A S A V G S L T Q P L F Y R G Q N \| A R L K A A K A Q E Q Q A K L S F Q Q\)
 A SAWGVAPSITWAAFD LGGVVRARLRASKADADAALAATYEQ E S VY A L G S GL S A P I F N A G R I R S HI A A A D A R LDD Q VAA N Y E K

 GFWALGPLSLA QTLFDGGARRANVRLSRAQFDEAAANYRQ

 SLFGTVTGGI TAPI FNSKKVRT QYEVAKVQREQAILQFKAQ
 GTTFGLNPQQQDPLTWGQNEGNLQASKALRQQRMAAYER A HRFS I GPA S L P I F Q G GRLLKANLAVSRLQQQQAALLQFQR SATVWS F GP T L S V P V F D A H K R A A K V R E K E A V R D E K V A A WQ A S IVVY S L G P R L S F P L F D A G K L Q T K V

 AETWGLGASI AGPLFDFGRARAQVETAEAQAEQANTQYRA P WA WS A A GS L VEPLFAF GK L R R A ER LADVAEYDEAARNYEQ NRFWS I GPS L TGTI F DF GATKAAVE QARFAYDAKVATYR Q
 A A L WS LGAELAGPI FTAGSI EGQI QQASAQQQQLLAEYQK \(N\) V WNL GLGGLVQPLFRGGELRARTRSAQAA YEAAAAA YR Q A Q A WGVAPS SWA AFD LG SVVRARLR GAEADAD GALARYE Q NQFWSVTGAATEVLFDGGARSAALQAARAAYEAAVATYRQ
UniRef90_U9E6T7 UniRef90_T2H5V7
UniRef90_I4VY45 UniRef90_A0A024RQ24 UniRef90_W8RRJ5 UniRef90_F2IE83 UniRef90-A1WK45 UniRef90_W6M405 UniRef90_UPI000468C24B UniRef90_Q5FSA4 UniRef90_UPI00026315F2 UniRef90_U3HGC2 UniRef90_F0Q2E3
UniRef90-UPI000 UniRef90_UPIO00225E2AD UniRef90_RODOJ9 UniRef90_K8NQ54 UniRef90_R1F5E0 UniRef90_R7DHS8 UniRef90_Q6D1K0 UniRef90_G6XLR4 UniRef90_UPI0002910634 UniRef90_UPI000237C583 UniRef90_UPI00026CB087 UniRef90_B5ZI77 UniRef90_C0QAF2 UniRef90_LODEN2 UniRef90_A6SYA9 UniRef90_IOKSX7 UniRef90 - D5RJ69 UniRef90_G7LU78 UniRef90_R6KJY4 UniRef90_M3G132 UniRef90_UPI0003485F4D UniRef90_A0A022FYR4 UniRef90_UPI000464FFC1 UniRef90_AOKWIO UniRef90_H0Q3N5
UniRef90_W0AMW3 UniRef90_D5QHJ3 UniRef90_UPI00047554B4 UniRef90_Q470S8 UniRef90_F3HLG1 UniRef90_UPI00036DCA84 UniRef90_UPI0003B7B949
UniRef90_TOHG63 UniRef90_UPI000465E9E8 UniRef90_F8WYY0 UniRef90-J2WHI1 UniRef90_UPI0003648346 UniRef90_UPI00047D33AE UniRef90_V7DX31
UniRef90_F2LKV3
UniRef90_UPI00035E9F93 UniRef90_D4GIQ4 UniRef90-F8JAN9
UniRef90-B8DN51 UniRef90-B8DN51
UniRef90 H1S3A3 UniRef90_A0A024HCV8 UniRef90-J2KAE3 UniRef90-14W1X5 UniRef90_J9G380 UniRef90_B9BB67
UniRef90 A0A024HJ UniRef90_A0A024HJ25
UniRef90_UPI00035F23B UniRef90_E8TQ83 UniRef90_B5CWD3 UniRef90_-I4WWIO UniRef90_UPI00026CAC1F UniRef90_G8NP86
UniRef90_B3R1Q2 UniRef90_UPI000382D521 UniRef90_UPI0004786B53 UniRef90_UPI0002DF858D
UniRef90_UPI00047D9C96 UniRef90_A0A023D436 UniRef90-A0A023Y0A3 UniRef90_UPI00034D2229 UniRef90_C0QA81 UniRef90_UPI00047B75D0 UniRef90-D8IPZ2 UniRef90-T2L8X6 UniRef90_R6VUN5 UniRef90_I4N5A3
UniRef90_W6WE71 UniRef90_A4A5W4 UniRef90_R8ANJ4 UniRef90-R4XUT7 UniRef90_K5YDC1 UniRef90_W6EH04 UniRef90_R6WPJ4

330
340
350
360
D|VLRSALLRDV|EDA|LTAWTSERQRQAALQKAVVDDSQQALEQT SILAGGFAVEKKALNA \(\square H G V D Q Q R Q W Q D E E V Q Q A R L A F D L A\)
 VVQTAFREVAADAFAARDSI ERQLAA QQDA HAADGAR L K LA A TALQAFNEVENSLAADGNLVRQQLSRVAARRAVLERSLDYA
 A \(I\) QTAFREVSDAL A GQAT LGGEQVQARQNQAQAEAA SLRRA TVVLNAFS DV E N A L T A LLA N T R Q R QR H L V V A V Q A A R L A A T L A A L L N A GA EVNN AL T QVVQTARAKTGSRRE QLRS LERAAVEST
 \(T V Q T A F S E V A D A L A R R G T D D A Q L Q A Q R A L L A D A A N T Y D A S\) SI QTAFREVADALAATDTLRREEAARRALANTSNET LKLA
 \(T V Q T A F R E V S D A L A G R R Y L A E Q V A T L E R A V E S S E R D A Y\) I A \(V T L T A F Q A V Q D N L A A T A D L A R Q E A L L T T T A S V A A D R S A A A V\) TVVL R A L E D L E N A L V A Y R Q Q Q A Q L A K SL T D Q A A A S R R A A E A A
 TLLSAAREI DDAAIGFAKNEE QIVLLLEQTEQAARRS LDIVA SLLDAGTEVNDALLQWQTARKRHHLNKQQDTSLESAVRSS
 \(T\) L L N A WR DV D D A MT A Y A QVVQK RHD QV A EAVVR QN RLLAL QA A AVLGAFSEVVNALS GLDRLAS QSARVKARRNDLARS L E DA
 A V L G A V R D SA D A L T HVVRASD Q DTA E QRRVVVAGLLRETVVRLN \(T V L D A C R D V E D S L V S L L R R L A E E S A T Q Q Q A V D A A Q D A T H R A\)
 \(R V L\) SA GREVVQVS L R GF LRRSQEQTESSLRRSVVAAAAAASQVG
 AI LDA L LRDVEDALVALLRETTAQEEAYAEAASRAARAA QIAA
 ALLDAGSEVNNALTQWWTARNKI ELLATKQDQHLETTEHDT AVLLALEDTENALTRYSKQQARLAIVVEQAQAARRAESLA \(T V L A A F Q Q V E D N L A A L R \| L Q Q E T T Q Q D A A V Q S A D K T L Q L E\)

 AVLRAATEDVGNAFSALVKREA QVGILTRGESSSAARARENS
 AI QEALVEVGNAWSVLNAAHERVEARQREMRARIEVLDLA
 ALLDAGQEVNDALYATESVQRSLDSHQQQCRELERTVQTS

 AI TNGFRDARDALVLVYQTSDRRVEAVRRQAEADEETELDA

 \(V V L N A F Q Q V E D N L A Q L D H Y G A A R N D Q Q D A A D A A K R S L D D A\) \(V V L N A D R E T Q T G L A Q Y T A Q L Q R R D A L A D A G A S A K E A A E Q T\)
 \(T\) L \(V\) V S V L T A L L E D V V

 QL LV A F K D V E D QL S A L RLLLA E Q S E A Q S R S V A S A T R A T V L A \(T V L T A F Q N V A D V L S A L Q H D A E G L Q A A A G A E Q A A K L T\) LDDLS TLLN A GSEVS NALS LYYQKTCEKVELRRRMQVESAQKASEDT \(A V L G A F R D V A N Q Q E S L Q S L A R Q Q A D V E A S A D T A R R A D D Y A\) QVLLALLE ESSNAFSDYGKRQQRMLVLVVRQSEASRKAAALA \(T F L L A L E D V E N A F V A H R S A S D S F G R L T E A E A S A E K A Y R L V\) A I QTAFREVA DT LAERATLDERLDAQRSLVQASQRALELS S LL L A G N E V N N A L T G WQ T A D R R I R F D K E Q I A D L E A A TEEK T AVLAAAREVATQALSAE QVAARRHEQQAQLDADQRLLANA \(T V L S A F R E V E D D L A A G R H L A D Q A R N Q Q V A A T A A E R T R D L A\)





 \(T V R S A D E E T E N A L V A L D R E K A H N D A L K K T V A A Y K S A F D V S\) \(T L L T A V G E V E N S V V G G V H N Q E R V G F L G A A L E N A D I R S V R I A\)




 TVYRA A QEIDDAADAVLKTAEAQAVLRESRAAAARALE LAA AI QNAFADANNALSAVVK I K EQQDTLQQQVDSLRSYARLA \(T V L D G F R Q Q A D A L R A L Q Q S A R A Y D A Y D T A W R R A D D A A R M A\) QVLLA LEESENAFSDYARAQERQQLSLLRQSTASSRAAAQQA



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\hline UniRef & \\
\hline Ref9 & \\
\hline UniRef90-I 14 Y 45 & Q \({ }^{\text {A }}\) \\
\hline UniRef90-A0A024RQ24 & A \\
\hline Ref90 \({ }^{\text {W }} 8\) & R \\
\hline UniRef90-F2 & NLYRALGGGWK \\
\hline & T \\
\hline UniRef90-W6M40 & QL Y \\
\hline UniRef90-UP1000468C24B & SLYHALG \\
\hline UniRef90_Q5FS & GLFQALG \\
\hline UniRef90-UP10002 & \\
\hline RRet90_U3 & \\
\hline UniR & A \\
\hline UniRef90-UF & T \\
\hline UniRef90 UPIOOO28897 & A \\
\hline Ref90 Rodo & \\
\hline Re990-K8NQ54 & \\
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\hline Ref90_C0QA & \\
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\hline UniReego-0K & \\
\hline UniRef90 G7 7 Ulu8 & GARAL \\
\hline UniRef90-R6KJY4 & NLYHALG \\
\hline M3 & \\
\hline UPI0003 & \\
\hline & VLIKAL \\
\hline UniRef90_UP10004 & QLIQSLG \\
\hline UniRef90-AO & \\
\hline niRet90-H0a & \\
\hline UniRet90_W0AMW3 & \\
\hline UniRet90_D5QHJ3 & \\
\hline UniRef90 UPI00047. & \\
\hline UniRet90-Q4 & ALYKAL \\
\hline UniRe90-F3H & \\
\hline UniRef90-UP100036DCA84 & \\
\hline UniRet90-UP10003E &  \\
\hline IRef90-TOHG63 & DLFKALGGGWQ \\
\hline UP100046 & \\
\hline UniRet90_F8WY & \\
\hline & ALYKALG \\
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\hline UniRef90 UPIO0047 & \\
\hline 俍e90-70x31 & \\
\hline IRef90-F2LKV3 & DLATALGGGW \\
\hline RRef90_UPI00035E & \\
\hline UniRef90 D4GIC & \\
\hline & \\
\hline UniRef90-B8DN51 & AVFKALG \\
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\hline iRet90_J2KA & \\
\hline ef90_14W1 & \\
\hline UniRef90 J9G3 & \\
\hline UniRef90- \({ }^{\text {b9B }}\) & QLMAAL \\
\hline UniRet90 A0A024H, & A YKALG \\
\hline Ref90-UP100 & \\
\hline Ref90-E8TQ83 & \\
\hline Ret90_B5CWD3 & \\
\hline niRef90_14WWIO & \\
\hline UniRef90 UP100026CAC1F & D \\
\hline UniRef90 G8 & Q \\
\hline UniRef90-UP1000382D521 & \\
\hline UniRef90-UP10004786B53 & \\
\hline UniRee90-UPIO002DF85 & S \\
\hline iRef90-UP100047D9C96 & \\
\hline UniRef90 A0A & \\
\hline & DLYRAL \\
\hline UniRef90_UPIO0034D2229 & ALYKALG \\
\hline UniRet90_COQ & RLYRALGGGWD \\
\hline  & \\
\hline niRet90_D81PZ2 & G G G \\
\hline niRef90_T2L8X6 & \[
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\] \\
\hline UniRef90 R6VUN5 & VLCKALGGGWE \\
\hline & \\
\hline UniRef90-W6 & \\
\hline UniRef90 A4A5W4 & A Y \\
\hline UniRet90-R8ANJ4 &  \\
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\hline iRef90_K5YDC1 & \\
\hline 19W & A \\
\hline UniRef90_W6EH04 & \\
\hline Ref90 R6WPJ & \(\overline{A L G G G}\) \\
\hline
\end{tabular}


WP \(\square E Q W W Q C F Q D E Q L N Q L M Q L A V S Q S P S V Q E A Q A R \square R \square A T\) RDRWWASGGDAQLTALDDLALQRNNNLAAAAYRVRNAQ A A WWK GFNDPVLDALVDRGLAQNDDLAQAAARVTQAR

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UniRef90 W3TF \\
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UniRef90_D2QDV3

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A LYDERWLLDLIPQVTSQAGYNRSLAQQADYDGEPRRRLSE SQLMAAKLAFVPSFTFSPQGTDASWD
 AQQRITSSQQTPNVNATASDTRNQQSENSPSTRAMTDPYN AGLKMQRLLAYYPSIAFQPQGTMSSWDFNKA ANVTDAGAGGLPSLTVGASHTLSGEKGRLRTTV GTTN AGVGASQASLLPTVGASAKADSERQSYNYGKDFVPKGWKD ARLAQAGASLFPSLGLNAGAS ATAVIAGAPLRPEVNLNLTSRQKLLRGQGGPDQSDDTVE AFVQANRASLFPELDVGFGPTRQRASAASAGLPVGAPVQP AKLGQSRSQL \(\square P S T A V S P D A A H V E D P F D S N G S S D G G T S F T\) EVTKQQRAALSPQDDAGATAAYERQNT PRPGGYVK ANAMAQRGALFPSVDANLDGNRQRSAGQLVDADTGRPAYN AYAEETGAALYPNI SLLGADASNSRTESATSGAYQKSKIHR AAVASSRAAQLPTLSTTGSGSRTYSNTNGENVARSGSUNN ALQRDARADFFPKVDAGVGPNRQRPSPASQDLSDNASPSA ASLREQKANLLPKADATALYAHARFPGLNDDNSGSGSDSG ELVAASQGQLWPQAGLNATVGRQQYGPATFGPVNLRIEPF ALFVQAHSALVPTLTASVAVQ DAQALNSLGRASDSA ALYGEERASLFPTLNAELSHTRSRTVD ASLMQAKLSFLPSLYGNIQEGQSKTSQAALNFGNTDGTTN EALGVAQAQGGFSGNASAVIERAQESAEKYLLTEKLPVVN SLVVAARSELLPHASLDAGASDNKQSADRLFRNGATLTQT
\(N E V F A R A G A Y R P S V S G G G A G V E K V S R D I K P G I D T P E V L P ~\) DVAREAESK【YPQLTGSAHMSYNKGSDGRLYNNPRTSSSL EQDRDEAAASSPVI GLGGDAENRRQSQTDQWPPRANGDYR VQRTTTAAQQGPQVNASAGVTRQRQSNRDQLIHTDSEPYN AAAGEVASARAPQVGFNTGPVRQRQSDDKPLRSATQPDYD NYTAQAGGTLLPSVDAQLSATREKDNGDAFGEPGLVEEFN GAAEAATARLLPTLDFNPQASANRLSQEVRTDPSFHRDYR ANARLVGAGDLPQVDASGAAG AAYRI QKSDELPVIAGSTGLLNRQGTAEDSSSLGKPYTTDT ALLGGTGSQYPQVQQANGSWARVDNWPTEGRSSGDHSDDN AGVIAAQAARYPTLDANAGTTRSRVAKVDDPLLQGKSYST ARLGLARTQSYPIGEVSADLHRRQISGTQLGTSEDGPESD AMNQAARAGLFPSLDAGFGPTRQRVSAASLFEPDGTPQRT
 LQLRSAGAARWPTVTAGLRSS ATRSDGGDAPSSRSE ALVQEVAAGRTLSTTASGGVDLTRASGTGDSLPGLLG AYASQLHAGLFPQINASAQPLRQRQSDSRPLRGGTQPVYN QNLQQSKANFLPSLGASPFKYNREYYSEYYNNYGSNTERM AQARMSQSSLGPNLDFSADTERQKMPFATDTDGNTGPWYT ELLYAEQASLFPALSASASKTREKVSSGAAAGGSAAQDFT AAASHAGAEL \(\square P Q A S L S G S V A R Q R Q S L E G P N A P G F D R N K T\) ALAQQAGAALLPRVGAEAGAGGVQQSRNMPPQFVPDGVRD TQ1 SEAGAAALPTVDLGAGA DFTKTTGQPLTR AGLGQTVGSLLPSVSSSTSGTVERFSPNSGSEQSDASLS ADVRVRRGALLPQVEGVASAGVERFSPNVEGKRRIDNPTP AALGTASAEQLPRLDLGADASRQRVSENGLQGGLRPNPYD ASAII GGALPELAFDVRGERNKFVRNSDRKANPSDDNNTN AVFDEAGAARLPDTTAGFGVDYGKHAPDQVVAAAKDTTRW SYQSVVSSFKVPTVNDGAGYFNYQLSKNDDSTTLLNNQHD ATAVKSKADLYPKLDGKGTYTNSRSGNDGTEGSKGSTSTD AQRSTVEAQRGPQVNANGGADRQRQSEYGASTRMDDAPFT AGDAANKAGLLPQVGVDASAIRQRLSEKYDPPPYGGSNRW SQAELLEAGSRLQMAASASGFLSPYAMDAPRLGMDGPYYT AALDVANAQGGFSGGFAGGAQRAQESAEQYLLTEKLPVVN VYLAQSKHSFYPVLSVGADYTRSTNSDNATGGVGNRSYNN AGLGAANAALLPSGVISGSAARARQSVETPLGQVLNATPG ALRDDDANDLYPTDVTSRASSQLGKAQQPGFTEERVNSD LQAGLAENQQGFRTSSSVSTGHNYDLRSGTTAFPGNGTDR NFA GQRKFGNYTDDGVGNYDTQFSTNUNEKQRTPDPITP ALLRESR QEFLPRGGPAFDYQNRRRGEVETPSGEPRDI E QYIT DTEAFPWADYSGSLSKGSNYTSGNVVQTSAVGNTLT ESMKQAKWGDLPQ GLSAGTSDNSMNGMMAGQFMGKKYME ALVRRARADFFPQIDATASAQRERALFPATGNYYE YH ELASATAGSALPQVDANYQVQRTRVSNALSPAVVDSNQQL AQLGFADAELFPSVGYQLEANRERTPGASIPIDIEPVQDL ALLSEAEQLRRPEVDLSASPALGHASGAANGASHALPDRA AGLSAATAALLPSGNVSGQASRAYQSVETPSTPGFDRYGN NTVKDSFANELPQLSFDGNLGRDMKSSDQHFMMIKDYAQW HALRAGQGDFFPQVDAQASASRQRAWPDRTGQALPASDFN ALLRSADAERAPQVRANAGVSRQAGVTTTNGTQPAT ALAVVVDSALYPNLGAHAGGQRGKAELRQPHGLPRDTAMV
 IQARQTQSQQGVRISDAGLT T RRSFDLEDGSSSSG
S L A A Q TDATLSPTMDAEVQ DNRKRWPTDYFYGPGGGTTSW LQAGNA LGGNRFPTPGASVGTSASRVLDS GAGTSR

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UniRef90 B2JQR8 UniRef90-B2JQR8
UniRef90 W3RQ48 UniRef90-R71376 UniRef90-D0J3Q7 UniRef90-Q2KZR7 UniRef90-UPI0003B3B212 UniRef90-171410 UniRef90-BOT9Y4 UniRef90-UPI000478B1D2 UniRef90-I4APA9 UniRef90_UPIooo37734C5 UniRef90-UPIOOO4632676 UniRef90-UPIOOO4774127 UniRef90-M9MKW0 UniRef90-B5ZFJO UniRef90-J2ST20 UniRef90-G0K481 UniRef90-D5WDY9 UniRef90-B5ZFY2 UniRef90_UPIO00372240E UniRef90_15AZ78 UniRef90-B7RX17 UniRef90-UPIO0036143E7 UniRef90_UPI000379E239 UniRef90-Q141A8 UniR Refo-E5AT21 UniRef90_F4QR67 UniRef90 UPIOOO3645C9E UniRef90_UPIo0024885E2 UniRef90-I1WIP8 UniRef90-M4K0C8 UniRef90-LOGO97
UniRef90 \(16 \mathrm{VNJJ2}\) UniRef90-UPIO004696F53 UniRet90-F8GQK6 UniRef90-Q1GNF4 4 \begin{tabular}{l} 
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UniRef90 W3TF \\
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S Y R A GFD A Q WE\| IDLLFGR\|LGLS DAALARAEAASADLELAR TYSLPVSASWSVDLFGNLLSQKRSSQMALMATRDYQLVVK
FQAQVGVIAFEVDLGGRVRSLTGAALSRYFAQEAAARATR
QWQAGALVNY QWQAGALVNYEVDLWGKKGFDTKSAFSQALASEFNRQAVA
WYQGGLDFSWEIDFWGHVRRADEAAEADSAQQAQLEFAR TYAFPIAASWQFGSMGSIRNTKKQYEMNLEMTKAAKQATR TSGGEASASWLLDFFGQYRRSRESADASLGAAYATADNAK AGMGTLSLDWEI DFWGKNRASLIAAKGKAAAAEAEAAATR SYEARLNASYEVDLWGALRNSRDAAKASLLASRFDRETVR QVAVNVGTSFELDRGRVRSLSDAALARYLASEQGRDAAQ QTYWRAQSTYEVDLFGRVRNNTDAAGADAERVEALYRAAR FYNLGATVSWEPDIFGGKHRQVDAARNMDEQRYADLADAQ QAGAGLTASWQPDVFGGERLAVLAAQAQATGRQWALNELR VQGEA STQWRAQAS WEL AGASYADFGRVANSVDAATADAQQSEALYRSIL SYNLGFDASWEVDLFGGQRRAI EAARATAESAQANLADTQ
 SEAQGAVSSFEIDLFGRNRSLSRAARETWLASEATAQNTR SYLGQLSSS WEADI WGKLRSNKRSVLASFLKTEAAARADQ EGDIGLSVAYEDDLFGKLRRGVEAAQADTEAVQAAADLAR NVYFGAFANWEVDDWHKLRNARKSADASYLGSVEGRNFMV VYESNQAYSWEPDFWDSIRNSTRMEKNपAQATAAEYASAK YWSLGFDGSWEDDLFGMTRRRTEAARASAAEMQAERDGFR SNTATFSLSFDLDLWGRLRNAAAAGRARADASGDDLAAAR UYNASVNVSYK DVEGGARREAEAGHAQADYQRFQLQAAY SSSATLGVSWLVDLFGQNRAARAGASAQLDAAYLSAEVSR SMSVGLGTAYELDDLFGRVKSLSQSALETYLATREAASSTR
SYNVGFNVGWEMDFWGRYR SIIESADAAFASLTNQUNAQ URTANLSASYTFDLWGGQKDAAEAADGAARASELDTQASK YAALGLNAQWELDVFGRIASLREAAYQDLQSQDWLTRQTR FWRAQASASYEVDLFGRVASTVDAARADTQRSEALFRSVM ASNLYGSLSYELDLWGKLAAQRDVARWKAAATQADHDAAR SYEAGFTVAYEVDLFGRFSAVTRAAEADANAAQATLEAAR SSSASLSVSYEVDLWGRLAAGRRSAQASWQASRFDLDGAR YDVGLSASYPVDIAGKIRRADEAAAGDAEAVRAARDDVR

\section*{V} \(V N S A\) SLIVSYAD VYSAGAGASWEDVFGATRRQIIEASGAQADYQRYQLEATY TGHVAATFGFDLDLWGGLRRGAEAASAEAQAAEAEHMGVR TYNVALQVNWD DI WGKVEKGVQAQKAEFHATEADWRAGY QYRSGFDASWELDFFGGHKRAVEAAHYGLEAAVEDMRATM DFFGGLRSSWEDDWGKLRQRRQAAYLRLLATERGRHLVQ SF OFAASAS WEL GFAPSFSLSWEVDLWGRVRHLVDAAQADADAVQAASDAMR GVFAGANIGWEMDLFGRIDRQSNAAKDRVEQAEDYRSGLN DVNI QAVARWEVDI WHKLRNAKKAAATRYLSSIEGKNFMM SHKLGLAASYELDLWGKIEAEAASGEDDYLSSREDVNSAA MQUGFDASWELDLWGRVRRSDEAADAEVSGQAALLDLAR EATVGVVAGFDPDLWGAHRSAVEAADGAKNAALAETAAVE NATLSFDAGWEMDVWGKYARGIESAQAGYYASIASYNDIL EGAFNDNVSYEFDLFGKLKRGVEAARADTDAVKAAGDLAR LWDITANASWEADI WGKLSAEKRATYASYLATAEAQKAVQ YDRWGNAYSWEVDVFGGLRRGRQAALADYQASQAGVVATR RYD GLDMAWELLFGRVRHTLEASDARAEAAASDLAALQ KSDLLLRASYALDLWGKDEKALDSADDTVRAGEAQTQAVR GLSTSVGVSYELDLFGKLANQTEASRWEALASAQDLQATA LYNASVGVSYMLDFLGANRRALEALRAR DYEAYELEAAR DYYLGLQSSWE:DLWGKLKSQKSSAAARLLASEAGRNLVV PGSTDAGTSWELDI WGKTRRMTEAARADYGASEEGQRALM DYTTAVNISWEADUWGKDKGRKEMALTSYLQTQEASKAUQ SYRAELSAAWELDLWGRVRRTVESGRASAEASAADLESTR YTDHTAQVSYNPDLFGGIKTRIRSARADAEVQRHRLDAAR ITSTSNQFSYEFDLWGRLARQREAALATFSESLIAARDAE SYDAGLHVSYQLDLFGQI RRAVEAANADSESAQAAVDLAR AYEANLNAAWELDVFGGLRRGREAALADYQASEAGVAATR GYQLPLTATYEVDIWGQNRLKTKSMEKQLQUVRQQERASY LATAGLGVSYELDLFGRLARASDAARLDAQARAALLQSTR TYLAGVAAVWEVDIFGGRRSDAAAASEAAAAMQQRLYGVR LYGAGVSSAWEDDLSGGRRRSSHAARAEYQAAQADEAAAR FGVNFPGLSYELDLIGGKANQTEAARWEALASEEDLQATA MGLNASYELDFWGKNRATANAALATADASRYDLETVR NNTGLLSLHYDPD WNKNSLQSEALLSEDKKQAKSQIAK LUYEADATAGWEDDVGGGLRRDREAAAADYQAARVGVAAAR
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\hline UniRef90-M1SUA3 & LSLVGDVMTVYFQVVSLNER \\
\hline UniRef90-E6WLY6 & LSIVGDVVNSYWNLRGI QQQi \\
\hline UniRef90-R6A1 & A I A V ANDYYTLQMLDEQLKTTQETIGUWAENVRAMEA \\
\hline UniRef90_O2K1A7 & KDLVESYUDARYYQER \\
\hline UniRef90_UPI00047CADC7 & LALASGI ADVYGRLAALYADRDSAKSAIDVRQQTLDLMSD \\
\hline UniRef90-E1VBH6 & LTVLASVVDTYLQVRYLEDSLALTEDNLRLAERLLDQVRA \\
\hline UniRef90-V9QZG9 & LTLLGNVADRYAQTLAARQREQIAELNLANARNV \\
\hline UniRef90-UPIOO04113F64 & 1 TLVGAVAEAYFAQRLADEQLQLTERTL \\
\hline UniRef90-B2UIII & LTLQADVAQTYFSLRTLDA \\
\hline UniRef90-19L & VSLTAQVAQSYVNLRDSEERLRLSTRSTQLQRRAVDLVRQ \\
\hline UniRet90-B2JOR8 & A \({ }^{\text {d TAAAYI DLR WAQTQRQI INENEDIRSRALKLTQQ }}\) \\
\hline UniRef90-W3RQ48 & LTLASNDALAALEEARLRGQ A A A R R V A L Q \\
\hline UniRef90-R71376 & SLAGNIAROA \\
\hline UniRef90-DOJ3Q7 & \\
\hline  & LALQADVASTYFLVRERDAESQLYRQTVALLREASLTL \\
\hline UniRef90-171410 & LTLTGNIATTSLTLATMKARIDVLKDITQDDKKNLQLIQK \\
\hline UniRef90_B0T9Y, & AGATARGY GLASLDAQLQIARETLASRDEAL \\
\hline UniRef90-UPIO00478B1D2 &  \\
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\hline UniRef90-UPIO0037734C5 & EQCSAAEELEI AQQSL \\
\hline  & LSTQAELAARDYVQLRGYDAQDA, YEQS G GYYERAV \\
\hline UniRef90-M9Mk & LSLEAELASDYTALRGLDAQNAVYEDS \\
\hline UniRef90-B5ZFJO & LRLLAEVGADYVTWCATEARV \\
\hline UniRef90_J2ST20 & SVQAELARNYFELRGTQRELRIARADAAAAESLELVQA \\
\hline UniRef90-D5WDY9 & LTSANIVTAAVKEASVRAQIDATERIATEEEQQL \\
\hline UniRef90-B5ZFY2 & 1 TVAADAADAYF \\
\hline UniRef90-UPI000372240E & LTVASADAQAYVDARYYQQALALTRQS \\
\hline UniRet90-15A & A QTADAYVNLLAQRKLLQHLA \\
\hline UniRef90-B7RX17 & SKENAELQERSLEITNN \\
\hline UniRef90-UPIO0036143E7 & \\
\hline UniRet90_UPI000379E239 & \\
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\hline UniRet90_E5AT21 & \\
\hline Un & S A \\
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\hline UniRef90-UP100024885E2 & VTVAAATARAYVDVCAANYSLAVNRQVVA QRRTLIDATRR \\
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\hline UniRe990_LoG097 & \\
\hline UniRet90_16VNJ2 & \\
\hline UniRef90_UP10004696F53 & \\
\hline UniRef90-F8GQK66 & dagy \\
\hline UniRer90-D1GNF4 &  \\
\hline UniRef90 W3TFY & VTLLGDVATNYVQVRGWQQKLLIVRQITAASQRKTYELMRA \\
\hline UniRef90-UPI00036CE859 & TQLVAEVARQYFTLLSYDNELLVLGRNQQLQERALDIVGT \\
\hline UniRef90 W7WMV4 & LSLSTGVANAYFQVLALRMRIEIIARDNLITAERVFGIVES \\
\hline UniRe990 UPI000371ABA3 & \\
\hline UniRef90 & \\
\hline UniRet90_A0AX11 & VVVAAETTAAYAQVCAYGERTDVAEQSVGDADRLAALTAK \\
\hline UniRef90-A6D W7 & \\
\hline e90_C63C5 & \\
\hline 90-C6C1C6 & MTVASEVVKRWLEI QLLQRKKKAIYQKQLETNETYLELIEL \\
\hline UniRef90_A0A0302 & DVVRNYFELRTT QRQURLAREDAALIEERVGLLEA \\
\hline UniRef90 A5VE & O \\
\hline UniRef90-OM818 & VTITSEVARNYTNYRTFQERILLSQRNTEIQERVVNATRV \\
\hline UniRef90 F2LNO1 & \\
\hline UniRef90-L1NRU3 & E V \\
\hline UniRef90-U8PU46 & AVAAQTADDYDTi RGL \\
\hline UniRef90-H0JC19 & VSLIAELVDAYGDLRGAQLRERIARDNLGNQREARRLTVT \\
\hline UniRef90-UPIO003B40318 & LSLATAVVQA YVQLSMQHSLRDVLVANLDRQQQLLDI ARR \\
\hline UniRef90 DOSQ25 & QSLVAT AKLYWQLG \\
\hline UniRef90 UPIO004765407 & TAGN \\
\hline Ret90-12EVAO & \\
\hline UniRef90-A6V155 & 俍 \\
\hline UniRef90-R7DX85 &  \\
\hline UniRef90 TOMQD6 & TRVS \\
\hline UniRergo- \({ }^{\text {UniRet90 }}\) & SAQAQLAGAYFQHYVADRTLRLDDEQVAMYRQQLQ Th \\
\hline iRef90-UP & NLVQAVIQRASLADQIAALQTSVAVNRDILT QLLK \\
\hline UniRef90-UPIO & D \\
\hline ef90 UP10004 & Q \\
\hline UniRef90_K6B861 & \\
\hline UniRef90 R6Q8N2 & \\
\hline & \\
\hline UniRet90-B9MET5 & A DVAQTYLQLIRALQAERALVDESLEAYRGTLYLTQR \\
\hline UniRet90_X4Z4F1 & MLVAADIAEAYLQERGLQARLRVLQASIDASDKLLRYARG \\
\hline Ref90_4 4 N035 & \\
\hline 俍Ref90-W6TYE1 & \\
\hline UniRef90 N8WWQ4 & \\
\hline +90 & \\
\hline & \\
\hline 3799D18 & ALIGGVASTYWQLAVAESRLASQQQSLARANRTLELVNV \\
\hline ef90 & SVAAQTADTYLVIRGLQARLAIAQGQV \\
\hline & \\
\hline
\end{tabular}


\section*{UniRef90 A6UZP1} UniRef90-EONUL3 UniRef90_UPI0003B34B70 UniRet90_M1SUA3 UniRef90_E6WLY6 UniRef90-R6A110
UniRef90 O2K1A7 UniRef90-UPI00047CADC7 UniRef90-E1VBH6 UniRef90-V9QZG9 UniRef90-UPIO004113F64 UniRef90-B2UIB9 UniRef90-19L1T6
UniRef90-B2JQR88 UniRef90-W3RQ48 UniRef90-R71376 UniRef90-DOJ3Q7 UniRef90-UPI0003B3B212 UniRef90-171410 UniRef90-B0T9Y4 UniRef90-UPI000478B1D2 UniRef90_I4APA9 UniRef90-UPIOOO37734C5 UniRef90_UPIOOO4632676 UniRef90-UPIO004774127 UniRef90-M9Mkwo UniRef90-B5ZFJO
UniRef90_J2ST20 UniRef90-G0K481 UniRef90-D5WDY9 UniRef90-B5ZFY2 UniRef90_UPIO00372240E UniRef90-15AZ78 UniRef90-B7RX17 UniRef90-UPI00036143E7 UniRef90-UPI000379E239 UniRef90-Q141A8
UniRef90-EEAT21 UniRef90-F4QR67 UniRef90 UPIO003645C9E UniRef90_UPIo0024885E2 UniRef90-I1WIP8
UniRef90_M4KOC8
UniRef90-LOG097
UniRef90 - \(6 \mathrm{VNJJ2}\)
UniRef90-I6VNJ2 UniRef90-F8GQK6 UniRef90-Q1GNF4 4 \begin{tabular}{l} 
UniRef90-D5WJS4 \\
UniRef90 W3TF \\
\hline
\end{tabular} UniRef90_UPIOOO36CE859 UniRef90-W7WMV4 UniRet90_UPlooo371ABA3 UniRef90_S3Nil10 UniRef90_AOAX111
UniRef90 A6D1W7 UniRef90-C6W3C5 UniRef90-C6C1C6 UniRef90-A0A030ZBM7 UniRef90_A5VBB1 UniRef90_LOM818 UniRef90-A6D2L6
UniRef90 F2LN01 UniRef90-L1NRU3 UniRef90_U8PU46 UniRef90-HOJC19 UniRef90_UPI0003B40318 UniRet90_DoSQ25 UniRef90-UPIOOO4765407 UniRef90-12EVAO UniRef90-A6V1S5 UniRef90-R7DX85
UniRef90-TOMQD6 UniRef90-UPIo00237D784 UniRef90-UPIO0045EBC3E UniRef90-UP100026CCBOB UniRef90-UP10004758DFC UniRef90-K6B861 UniRef90-R6Q8N2 2 UniRef90-A9ASM7 UniRef90 B9MET5 UniRef90-1424F UniRef90_W6TYE1 UniRef90-N8WWQ4 UniRef90-G1Y2D6 UniRef90-F5SWF4 UniRef90-UPI0003799D18 UniRef90_J3AOW4
Uniref90_D2QDV3

210
220
230
240
DVLIRGEAPGSGAPVP LAKNLLPDGDVDYLLI LQRPDVTSAER SLLLAQPAQNGARGKLEEQSLPSELSTGVAVHMDVHYAEM QLLVGAPVDPEQAARTVGELPAG/DSGVLLRRPDVVQAEY LLLLNQFKPDSLQAGNLPPLPLGLPSVVASNRPDIKAAEA CTLLCEAPHNFNADNFPTQYSVGMPVQLANRPDVHAAEM ATLIGMPASSLMQPVFRGDLRAGMPADLARNRDIRMAER AVLVGEMPQGFRVDGGEPDIQPGLPDQVLARRPDIAQAQA AVTLGGPVQESFATLTWPS:GAGVPSQLLSRRPDLAKAEA QLLVGSEMPADERQSVIPAPLPAGLPADLLLSRPDLRQAEQ AVLTGRAPGEAPVPLPPAQVPAGDPAALIAHRPDVRSAER AVYSGRTPDAQPIPVPSQSVPLTRPSEALLRRPDVRTAYA ATLTGRFPNELDKPVFPRQLPLSLPGEVRQRPDVRTAEA ALLTAQPPDSPYGLPEVPAIRPGIPSTLLQNRPDVREAEA AALLGKAPANFSLPVTGHLPTPPAVPEMLARRPDIAAAER AVLLGKTPAEFSMPPQPVTVPAGLPSALLERRPDIAAAER ATLDTT LTPDQP DPDPPAQVSПGDPAAMLQRRPDIRAAER \(N V L L G T L P P R S Q K D L V F Q K P L E L P S T L A H K R P D I L A A E A\) RLLLGGLPGPVPRGAISPTVAPGLPSELLQRRPDISQAEA \(N L L V G E T V P E N L Q P A P L D Q V P A G V S S E V L L R R P D V L E A E Y\) S ILLGRMPVADERQTAYSDLSMGLPASFLLNRPDVQEAEL AALLARAPSCEKLPQDRQPIPVGDGAALLKRRPDVREAER AVLTNTSPSSFHIPASPEFHPTNVPSTLLQRRPDIAASER NFLIGRFPQHVDRNPQDFNMSAGVPMQLLENRPDIRQAER AVLLNTAPAGFHTAPVRDVKMHG|PSSLLERRPDI AAAER A L MQLTPRAD SIDPMPARPPSLPSEVLTRRPDIQSATF ALLADTATGDALDAPALPALALGGPAELLARRRPDIAAAEA AVLAGKLPSDTGVPEFTLDMPVSLPSSLVRQRPDILAADA DVLMGAQPGTYE IPA \(\quad\) PA \(\square G G T N K P D V L R R R P D L L A A E R\) AT TA QLl R RGGGQPRAAYKASVGPAEVIRVRPDVRVAER VYLAPPPSETIDDIGVLTQLPAGLPSQLLDRPDIQAAEH SVLLGRSPGDMPEPTLNPVFIDAFPAALLMRRPDVRTAAW atLTGLSAHDTPFIATPRNLADGTTGLMHRRADI QAAE AVLDGKAPAEFSMRPVNLRVPPGLPSSLLERRPDIAAAER A LLDRPPQARAAEPAALPHPAGLPADLLRRRPDLRAAEC A ALQGLPPDCRTLPR乌ISVLPAGDGAGLLARRPDVREAEQ ALLDGRAPQGFAVPAADFEALQGDPSDLLTRRPDLAAAEA A TLPRDVADCARLPAMRRPAPMGDGAALIRRRPDVAAAER GELVGVTASDFSLPPSPHLIPAQLPSHLLQRRPDIAAAER NELLGRAPQHLEDIAFDSTYQTGVPLELLQNRPDIAASEY QAYLGRFPSQEPGEHFQEELPLSLPSAVVEQRPDVRSAEA DVLMGAHPGTYAAELLTPTERTAVPQNLLQRRPDVIAAER CTLFHVPQGHLQERVKLPGVPDGLPAQLLSRRPDVVAAEF SVLTGHVPTQAK DPQPHWPIPAGIPADLLTRPDLRRAER NRLLGRYPRPlARPVSLLEQPAGLPAATLLRRPDVRQAEL A LLGRPPQALQVETRSEERFAGLPSELVRRPRPGQRG FILTGASPREVYNEPGLFTLPAGLPSDLLRRPDDQAEQ AALLGQPVQNLHLADQWPDFGPGLPSELLTRRPDLAKAEA
\(A V L T G R A P H C T A P M L A R P F P V G D G A S L L R R R P D L R E S E R ~\) ATLLGEPLTQVDDPSLEGVDPVGDPSDLKRRPD:RDAER
 ALLLGERPGALRNRTALPDALGLPSEVALRRPDVRAEAA RAL 1 GATDMPDПKPVALPQVDTGLPYELLARRPDLQAMRW
 SVLLGEAPHADERTLAEQQFPTDFKEGYQNRPDVARAED DVMLAVPPGTHPDPATPHDADMGSPADLLQRRPDLVVER AALTGQGPGAGDADDHPAELPAALPAHLLGRRPDIVAQRW AVLLHMPVQQLSIQEPKQLPRNALPNDAGLPADILSRRP ALLVGVPPSDVDGANTPETLPVTLPSTLARERPDIRAALA NFLVGRYPQNISRAKIVWANVIGUPSKLLENRPDIKGAEY SVLRDRRSGSTRDAYNVKVPAGMPAYULSRRPDVRQSEY QALTGRMPGHDERKQAKDHLATGVPAMMLALRPDIRTAELL AVLLGRPPAGFSLAERQQPPPAGLPSQLLERRPDIAAAER ATLIGRAPPSGAGLALPQDPVLLPSDLVARPDVGAARA A LVGGTPTHLVEIAEPQRLPRLLPSELIQRRPDIRSAEA AVLTGEAPARFPQAVARCTIPVGDGAALLRRRPDIRQAER DVMLGVPPGTHRDPTAPPLIATGTPADLLRRRPDLMVAER ALLAGRYPVDWRTPDLSLDGPDTAPSSLVRRRPDTLQAEA AVLVGDVATGFSLPPAAVEDPPGVPSTVLARRPDVSAAQA AVLTGQPAQADRTLPEQPPTVGIVPSEVLARRPDVRAHAH DVLLGRTPGTADTDLDNSAPIPSAPSALLRRRPDLIVAER AVLMNMPVQQLSDQEPKRLPNDGLPASLLSRRPDLRATEL ALLLGRMPEAVELSEDDPQVTPGLPSELLARRPDVAQAEA AALLGEGPPPHLTDTEEVSLPSHIPAELLGHRPDVVASRW ALLFDSAPDQLPPEAQRPRIPAGLPSELLGRRPDLLAAEM


UniRef90_A6UZP1 UniRef90-EONUL3 UniRef90-UP10003B34B70 UniRef90-M1SUA3 UniRef90-E6WLY6 UniRef90-R6A110
UniRef90 O2K1A UniRef90-UPIO0047CADC7 UniRef90-E1VBH6 UniRef90-V9QZG9 UniRef90-UPIOOO4113F64 UniRef90_B2U1B9 UniRef90-19L1T6
UniRef90 B2JQR8

UniRef90-B2JOR8 UniRef90-R71376 UniRef90-DOJ3Q7 UniRef90-Q2KZR7 UniRef90-UPIO003B3B212 UniRef90-17410
UniRef90- BOT9Y4 UniRefofo-bot9Y4 UniRef90-UPIO00478B1D2 UniRef90_14APA9 UniRef90-UPIOOO37734C5 UniRef90_UPIOOO4632676 UniRef90-UPIOOO4774127 UniRef90-M9MKW0 UniRef90-B5ZFJO
UniRef90-J2ST20 UniRef90-G0K481 UniRef90_D5WDY9 UniRef90-B5ZFY2 UniRef90_UPIOO0372240E UniRef90-15AZ78 UniRef90-B7RX17 UniRef90-UPIOOO36143E7 UniRef90_UPI000379E239 UniRef90-Q141A8 UniRefefo-E5AT21 UniRef90_F4QR67 UniRef90 UPIO003645C9E UniRef90_UPIoo024885E2 UniRef90-I1 WIP8 UniRef90-M4K0C8 UniRef90_LOG097
UniRef90 I6VNJ2 UniRef90_UPloo04696F53 UniRef90-F8GQK6 UniRef90-Q1GNF4 4 UniRef90-D5WJS4
UniRef90 W3TFY8 UniRef90-UPIO0036CE859 UniRef90-W7WMV4 UniRef90-UPIO00371ABA3 UniRef90-S3Nin10 \begin{tabular}{l} 
UniReffol-AOAX11 \\
UniRef90 A6D1 \\
\hline
\end{tabular} UniRef90 A 4 D 1W7 7 UniRef90-C6C1C6 UniRef90-A0A030ZBM7 UniRef90-A5VBB1 UniRef90-LOM818 UniRef90-A6D2L6 UniRef90-F2LNO1 UniRef90-LINRU3 UniRef90-HPU46 UniRet90-UPIOOO3B40318 UniRef90-DOSQ25 UniRef90_UPIOOO4765407 UniReffolinevao UniRef90-A6V155 UniRef90_R7DX85
UniRef90_TOMQD6 UniRef90-UP1000237D784 UniRef90-UP100045EBC3E UniRef90 UP100026CCBOB UniRef90-UPIOOO4758DFC
UniRef90-UPIO00477CD4C UniRef90-K6B861 UniRef90-R6O8N2 UniRef90 A9ASM7 UniRef90-X4Z4F1 UniRef90-14N035 UniRef90-W6TYE1 UniRef90-N8WWQ4 UniRef90-G1Y2D6
UniRef90 F5SWF4 UniRef90-F5SWF4 UniRef90-UPIOOO3799D18 UniRef90 J3AOW4
UniRef90_D2QDV3

290
300
310
320 SRAFELLAPAVVSWPAFRLGNVRAR|L|RAAEAQSDAALLARYQR \(K W L L S A V G S L V Q P D F Q R G Q \| I A G L K V A K A Q Y E Q A Y N T W Q N\) \(A F N W S V A P S A S Y P I F R A G A G R A G V V Y S V A Q R D A A D L A T Y E Q\)
 SRSWSVGPSLVLPIFDRGRRKATVVLRETDQQQAAVDYQK


 \(R\) QVWRF A P Q L S Q P L F Q G G R L R A E L R LA K V R K S E A V A Q Y E R

 S I WS I GLLSL DLDPIF DFGRRSARFS QAKAAETAAL ESYRM
 DFTALI AP QLSWSFLDFGRNKAKVLQAQGVRDEAEAKYRS PNAWSLLSNLTTPVFSGGT\RAQRRAS■HAYQSVLAQYQH SVGGSALATI FDAGRLSS QVAGAEARRDASAYA YRH A N \(\square W S F A P S V T L P L F T G G S N L A Q L R R Y A E A E K K G L I A D C E K\)
 ARWGF GPDISSWTFPANGARGRVREAQASSQVVALARFDG NSLWTY GA SLLHMP LFD GGLRRRAELQRTWSA YRETRRDTYRM SLMAS LLGGDLT GPLDNKNADTAL YRSASARQDQAVYNYQR RAFWK AVQAVEPAFTGGLRRAAALQRSWSQYRETVDDYRG
 NRYWAL GPLAALPVFDGGRRKAAKAGAEAEFDAASAQYRA
 GF QAVGS GAI RWRI FDF GKIDDAEVQQARGANAEALARY QL SKTWSFGPQUT LTPLFN AANQANLSAAQARAEQSRLAWQA S L S WA F S P NLTTMPI FNREGGLKA SLDVVATVGGEKDAAAAQYE G

 T \(\square\) G Y S F G P H I S WA GF N \(\square\) A R V K A G V E \(\square\) A N A S A E EA L L


 \(G A D W S V G A S L T Q P L F H G G A L L A Q R R A A R A S Y D A A V V D Q Y K A\) NRYWALGPLVNLPI FNGGRLSANERQAKAEFEEASAQYRS G A GF A L L N A I F QP I F Q N R K L K T N H LI A L N K RE I A QLDD FKE A Q Q M GV T A GL T LD P F D S G R L N A NLDD A SA Q N A L S IAA Y N K





 \(A\) I A WGVGPLIT WRFPNMAVSRAARLAQARADRTDARA QFDA SVGWA GAVGVSWNVFDGGRGEALVELDEARFDAAVLGYEA S IVG S L I G DLAA P V DN RYA \(\square R A G Y A N A N A R Q D Q A D Y N\) Y ER

 SKQ Q N F \(\quad\) P GLLRLPLFDGGRLNANLASTRASSNMLI ERYNQ
 S LFAN LVAGLA QP I LDNRRQ DRTQYEVQK DAQETALLNFKK
 DGTA GF G P A I S L P P L F D G G R L NPALTLGASLSLDPFLQYNDMKKDIAIDSDLEYEKAIIDQYRQ \(N\) VWNLGLNVTQPIFHGGELRARKRASEAAYEAALGDYRQ


 A R F W S L GP ELLA MT L F NGGLLTRAR TAEADAA YDA S VA N YR Q NPFWSVLGGVTQPI FHA GSLLRHQQRAA EAA LD GAKA QYRA ARAWGL GASIVGR L LD F GRSSRANVEDARSQVEQADA QYRL S L R Y S L GP LI SWTLDSTGAARAHI A QAEASAAAADARF DG ASQSA GVLGLRWRLFDFGRVNAQI NQAKGAEAEALAA YR Q
 AR SWGI GMLL S LP L F D G GQRAA QEE GARARLDEALAA HRG GS A G L F GVVGVVTLPI FTA GRDAA NVVEAAADARLLQAAALAR Y D Q
 \(S L F G V V G G G L T Q P I F Q R R Q L K S Q Y E L A K I D R E K V V L E F R Q\)



\begin{tabular}{|c|c|}
\hline & \\
\hline UniR & GNALVUA \\
\hline UniRef90-UP10003B34B70 & T QSAFREVSDAL \\
\hline UniRef90 M1SUA3 & TVVGAMRDVEDGLSSVALTAQAYAALINSRNRAQRLLAVMS \\
\hline UniRef90 E6WLY6 UniRef90-R6A110 &  \\
\hline UniRef90- Q2K1A7 & AVLNGVEEVENALTAVRRDTQTLEPLRRQVQTAQESLALS \\
\hline UniRef90-UPI00047CADC7 & LTEALHQVADAVVSKRELTRRLAETQRSMAAAEKAWRVV \\
\hline UniRef90-E1VE & ALQEVDQALGNVQALADQQQYRDEAYRQAEEAYRIA \\
\hline UniRef90-V9QZG9 & AI INGFADVEKTLSSUTRLDQQRQWQREELQQAQTA \\
\hline UniRef90-UP10004113F64 & AlQTAFREVADA \\
\hline UniRef90_B2UIB9 & \\
\hline UniRef90-19L1T6 & TVLAALQDAEDS \\
\hline UniRef90-B2JOR8 & TMLNALKDTEDTRSDLVNGDAQ \\
\hline UniRet90-W3RQ48 & TVLTAFONVGDV \\
\hline UniRef90_R71 & AYSDVRD \\
\hline UniRef90-DOJ3Q7 & VLT ALQEVEDNLVAAVNLAQEEQVQTEAL \\
\hline UniRef90_Q2KZR7 & TVLSAFREVEDNLANLRILGNQTQAQSEAVDASARAAS \\
\hline UniRef90 UPI0003B3B212 & TV \\
\hline UniRet90 171410 & \\
\hline Ref90_Bot9Y4 & \\
\hline UniRef90-UP1000478 & QSAFKDVAD \\
\hline UniRef90-14AP & TWLNAGGEVSNALFLYQKAKEKQESR \\
\hline UniRee990-UP100037 & , \\
\hline UniReer90-UP100 & \\
\hline UniRet90-UP10004774127 & - A \\
\hline UniRet90_M9MkWo & AV SAFRDVE \\
\hline UniRef90_B5ZFJO & AVLNALRDVED \\
\hline UniRef90_J2ST20 & LKAWHEIDSA \\
\hline UniRet90-GOK & L A A DRQVED \\
\hline UniRet90_D5WDY9 & VLLAFQNVAD \\
\hline UniRef90_B5ZFY & \\
\hline  & Nave Eve \\
\hline UniRef90_L5AZ78 & Q A AREVAQLAARKHYKGQLDAQNA \\
\hline UniRet90_B7RX17 & \\
\hline UniRef90_UP1000361 & \\
\hline UniRef90_UP10003 & \\
\hline UniRef90_Q141A8 & QVLVAFREVEDNLSDMRILEDQTRTQNEAVKASQRAADLS \\
\hline UniRe90--5AR17 & \\
\hline UniRei90_-4QR67 & \\
\hline UniRet90_UPIo003645C9E & AVLTALQEVEQALTQTARLIQQERIQRTLVDEAQRALQLIA \\
\hline UniRef90_UPIO0024885E2 & V \\
\hline WIP & TVLAAFQDVADKLAALENDASALDDASNSAVAARGAFDDT \\
\hline UniRef90 M4K0C8 & V LK \({ }^{\text {a }}\) \\
\hline UniRef90-LOG097 & TII GAVGEVSNALVTIEKLQEAHNIVEDRLQVTNKG \\
\hline UniRergo-i6VNJ2 & \\
\hline UniRe90-UP10004696 & \\
\hline UniRet90-F8GQK6 & \\
\hline UniRet90-Q1GNF4 & \\
\hline 5W & \\
\hline & AVLGALEDVENALVR \\
\hline UniRef90_UPIO0036CE859 & AI QVGFEEVTTNLRGIENYQRVFDLQQEEVEALQRA \\
\hline UniRef90 W7 WMV4 & \\
\hline UniRef90_UP1000371ABA3 & \\
\hline 俍90_S3N110 & \\
\hline UniRef90_AOA) & QALARYGAAWRRRAALETARAEHARAYRLA \\
\hline UniRet90_A6D1V & SML \\
\hline UniRet90_C6W3C5 & Q \\
\hline UniRef90-C6C1C6 & DSLVQEKWQHEYISARKNQLEAAKLINLQEA \\
\hline UniRef90-A0AO302BM7 & \\
\hline  & \\
\hline 俍et90_Lom818 & \\
\hline iRet90_A6D2L6 & \\
\hline UniRef90_F2LN01 & \\
\hline & \\
\hline UniRet90_U8PU46 & A \\
\hline UniRef90-H0JC19 & \\
\hline ei90_UP10003B40 & \\
\hline iRef90_DOSO25 & \\
\hline UniRet90-UP10004 & \\
\hline UniRef90-12EVA0 & \\
\hline UniRef90 A6V1 & \\
\hline UniRet90-R7DX85 & VLNALAEVSST \\
\hline ef90_TOMQD6 & SVLQAVGEVSNILASMASLKEQEEISRGLVARNQEMIRNA \\
\hline UP1000237D & \\
\hline UniRef90_UP100045EBC: & - \\
\hline UniRef90_UPI00026CCB0B & VLQaFGDVSDA \\
\hline & VLTAFNEVRDA \\
\hline Uni & V N \\
\hline UniRef90 \({ }^{\text {K6E }}\) & V \\
\hline & \\
\hline UniRef90-A9ASM7 & VVLSAFSQVAD \\
\hline UniRef90-B9MET5 & QV \\
\hline UniRef90 X4Z4F1 & \\
\hline UniRef90 \({ }^{\text {I }}\) - \({ }^{\text {NO35 }}\) & \\
\hline & DELVKLEKLKLQYDISSKRVTTLQGAVKNA \\
\hline e990-N8W & N A \\
\hline UniRef90-G1Y2D6 & SVRAAFGNVED \\
\hline ef90-5SSWF4 & TLTEAMQQIADSAVSLKSSLIQSATLASATKASHQAYLHA \\
\hline ef90_UP1000379 & \\
\hline UniRef90 J3AOW4 & \\
\hline & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline & \\
\hline UniRef90_A6UZP1 1 & \\
\hline UniRef90-UPIO003B34B70 & NARYRGGIDDYYTSLDAQRQLYSAQRTLVQTQLVR \\
\hline UniRef90 M1SUA3 & KVVERGGMDYVQLYETQRTVTASEDAAVSARGDQLIA SV \\
\hline UniRef90-E6V & NGGLTSFINVLDAQRSDI QARQALAMGQRDLKTA WA \\
\hline UniRef90-R6A1 & FQHSTSTTYLETLTAQQSLIQAQLTLISDKFDKVQAA \\
\hline UniRef90-Q2K1A & G \\
\hline UniRef90-UP100047CADC7 & SDRYNGGLLATYLEVLTAED \\
\hline UniRef90-E1VBH6 & RDRYREGATELTDVLNAQSSFSSA \\
\hline UniRet90-V9QZG9 & YQAGAEDLLTVLETQRTLYTA \\
\hline UniRef90-UPIOO & RYRAGVEGRLELDAQRQLQ \\
\hline UniRef90- \({ }^{\text {B2L }}\) & RYNAGSVNYLDVI DAERNML \\
\hline UniRet90-9L16 & RYOGGASSF \\
\hline UniRef90-W3RQ48 & QFDQGQVSVPILIVAQEAYLQTSLAHIDAQA \\
\hline UniRef90-R7376 & STLYEAGKGSFLSLLTAQRSANAAALSEISTRLNGLNNAV \\
\hline UniRef90-D0J3Q7 & NNQYQAGUVAYLNVLSAQTTVLSAQNSLISSRNRRLTAVN \\
\hline UniRef90-Q2KZ & HAQYREGSTSYLDVIEADRTVLTQRRLSVQLTGEQARSTV \\
\hline UniRef90-UP10003B3B212 & EQRYRAGTSTLI \({ }^{\text {ald }}\) \\
\hline UniRef90 171410 & RLSFTAGVVGVLEVLDAERLYA \\
\hline B0 & 俍 \\
\hline UP1000478B1D2 & SYQ \\
\hline UniRet90_14APA9 & EALEYSSTNY DVLT SKNNLLSAQLSSISDKQ \\
\hline  & MTLYQGGVGTYLEATVAQENTLES \\
\hline UniRef90-UPI & TSARADYMEVLLTQRDVLEA \\
\hline & ALYTGGLS NYLDALVAQQDALQARL \\
\hline UniRef90-B5ZFJo & QRQFHAGETALSSVLVQDSMVDRII \\
\hline UniRef90-J2ST20 & AARYKGGLTDLGVELDARRALLQARRDQAQSASRLAVGLV \\
\hline & \\
\hline D5WDY9 & QYRVGGV S \\
\hline UniRet90_B5ZFY2 & QQSFQAGVIPLTDVLDADRQL \\
\hline UniRef90-UPIC & WDGESDFFPVLDAERSL \\
\hline  & R \\
\hline UniRef90-UPI000361 & REYTGGLRPYLDVLSTQNQLIESDEKMVELKAQQINGAV \\
\hline UniRef90-UPI000379E239 & RTRYEGGVDDFI DVLDAESRLLSAEAALASSKTEALKAFI \\
\hline UniRef90-Q141 & RSQYTEGAVNYLDVIDAERTVLQARRAAVQLQGVQAASTV \\
\hline 5AT21 & RARFVAGATSVQPWLDEQQRLRDAQSTSALNRLNQLIN \\
\hline & QSRYRLGEDSYLWVLDAQTARNTAERDLATSEVRIARSQI \\
\hline UniRef90-UP10003645 & ERRYREGVDDLATLLDAQRTLFAAQDTVAQTRLARLVAAV \\
\hline 10002 & 俍 \\
\hline 114188 & SYRLGALP \\
\hline UniRef90_M4K0C8 &  \\
\hline J2 & QARMNAG \\
\hline UniRef90-UP10004696F53 & QAQYRLGAVGYLILLLTAQQTYQNAIVSRVRAQAARYSDT \\
\hline IRef90-8GQK6 & EDAYKGAVSL \\
\hline Q1GNF4 & \\
\hline D5WJS4 & \\
\hline  & RSLFENGNTSFLENADRSYYAQMALKDS \\
\hline UniRef90 W7WMMV4 & EDRYREGADDLTSVLSAQRTLFSAEDQLAQLRLARLL \\
\hline Uni & QLRYDNGYSDYLEVLDAERSDFOVQLT DSAQRDA \\
\hline UniRef90-S3N110 & QEGAEDLLTVLETQRTLYLAQDVSVQLRLAR \\
\hline UniRet90_A0AX11 & ELINYEAGALDFLGVLDAQR \\
\hline A6D17 7 & \\
\hline C6W3C5 & \\
\hline 6C1C6 & \\
\hline & DGGMAD \\
\hline UniRef90 A5VBB1 & GLGARLDVLDAGDRLLAANQREVDLAADGAAAR \\
\hline UniRet90-LOM818 & ( \\
\hline A6D2L6 & LTQYA \\
\hline & \\
\hline 1NRU3 & \\
\hline U8PU46 & \\
\hline UniRef90-HOJC19 & \\
\hline UniRef90-UPI0003B40318 & HAGLTDYLNVLNTQSVLLQQQRNRTQLIARQLESHA \\
\hline UniRef90-DoSQ25 & EVRYRNGAIALKNLLDAQETTRNARLSLLETKQNQYNAYV \\
\hline UniRef90_UPIO004765407 & REQYAAGGVSRSALLDAERQALQTALDQTRAQADRLLADTA \\
\hline & SELIFRSGRATY \\
\hline A6V155 & VQGDGEY \\
\hline iRef90_R7DX85 & \\
\hline TOMQD6 & N \\
\hline &  \\
\hline & QYQAGLVSYLDVVTVQSTRLAAEQEGLAILGSQLAARV \\
\hline UniRef90 & ALGDVGTLALLNATATDAQARSLVIQARAAR \\
\hline UniRef90_UPIO004758DFC & A \\
\hline UP10004 & \\
\hline UniRef90 K6B861 & FAGYQNGAASLI DVLRADETMLQTSDARAQAQTETARAAV \\
\hline UniRef90 R6Q8N2 & THKNTIGAASNLEVLYNKEQELMAKSEEVANKTNCLISTI \\
\hline & V \\
\hline & V \\
\hline F1 & \\
\hline UniRef90-14N035 & V \\
\hline UniRef90 \({ }^{-}\)W6TYE1 & V \\
\hline UniRef90- N8WWQ4 & EvRYRNGAV \\
\hline UniRef90- G1Y2D6 & V \\
\hline & \\
\hline UniRef90-UP10003799D18 & \\
\hline UniRef90 \({ }^{-}\)J3A0W4 & V \\
\hline UniRef90-D2QDV3 & RELYVRGLATYLEVLDAQRTILTTEQQLVQLHSQEVQFAlV \\
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\hline UniRef90-EONUL3 & NLYYALGG \\
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\hline UniRef90-M1SU & NLYK \\
\hline UniRef90-E6Y & A V N \\
\hline UniRef90-R6A11 & NLYQA \\
\hline UniRef90-Q2K1A] & DLYVA \\
\hline UniRef90-UPI00047CADC7 & ALVRALGGGFR \\
\hline UniRef90-E1VBH6 & TLYRVLG \\
\hline UniRef90-V9QZG9 & ALYKALG \\
\hline UniRet90-UPIO004113F64 & ALYKSLGGG \\
\hline Unil & \\
\hline UniRef90 \({ }^{-19 L 1 T 6}\) & K A \\
\hline UniRef90_B2JQR8 & YRSLGGG \\
\hline UniRef90- W3RQ48 & ALFQALGGG \\
\hline UniRef90-R71376 & ALNLALGA \\
\hline UniRef90-D0J3Q7 & TLLKNVA \\
\hline UniRef90-Q2K & \\
\hline UniRef90-UPIO003B3B212 & S \\
\hline UniRef90 171410 & \\
\hline UniRe90-B019 & \\
\hline UniRet90-UPIOO00478B1D2 & TLWQ \\
\hline UniRef90_4APA9 & QLYRALGGGW \\
\hline UniRet90_UP100037734C & \\
\hline UniRet90_UP1000 & \\
\hline UniRef90 UPI0004774127 & \\
\hline UniRet90_M9MKW0 & RLVRALGGG \\
\hline UniRe990_B3ZFJO & \\
\hline UniRef90_J2ST20 & \\
\hline UniRet90_GOK481 & ALMAALGGGW \\
\hline UniRet90_D5WDY9 & ALFQALGGGW \\
\hline UniRef90 B5ZFY2 & SSFRALGGGW \\
\hline UPIOO & \\
\hline UniRef90_15AZ78 & \\
\hline UniRef90_B7RX17 & \\
\hline UniRet90-UP100036143E7 & \\
\hline UniRet90_UPIooo379E239 & AVHNALGTGWQ \\
\hline UniRet90_Q141A8 & NLIRALGGGW \\
\hline UniRef90-E5AT21 & \\
\hline UniRef90-F4QR67 & ALFKALGGGWQ \\
\hline UniRef90 UPI0003645C9E & DLYKALGG \\
\hline UniRee90 UPIO0024885E2 & \\
\hline UniRet90_141P8 & \\
\hline UniRet90_M4K0C8 & E \\
\hline UniRef90_LoG097 & ELYRSLGGGWK \\
\hline UniRef90 I6VNJ2 & QLTSALGG \\
\hline UniRef90-UP10004696F5 & ALIQAL \\
\hline UniRet90_F8GQ & ATFRALG \\
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\hline UniRet90_D5WJS4 & TLYKALGGGW \\
\hline UniRet90_W31FY8 & MK A \\
\hline UniRet90_UPI00036CE8: & DLYRSLGGGW \\
\hline UniRef90 W7WMV4 & \\
\hline UniRef90 UPI000371ABA3 & \\
\hline UniRef90- \({ }^{\text {S3N110 }}\) & LYKALGGGWQ \\
\hline UniRef90_A0AX11 & AVFKALG \\
\hline UniRef90_A6D1W7 & GVFKSLGGDWQ \\
\hline UniRet90_C6W3C5 & N YRALGGGW \\
\hline iRet90_C6C1C6 & G \\
\hline UniRef90 A0A030ZBM7 & \\
\hline UniRef90-A5 & \\
\hline UniRef90-LOM818 & LIJSLGGGYQ \\
\hline UniRef90-A6D2L6 & ALYKSLGGGWQ \\
\hline UniRef90 F2LN01 & RLFLALGGGWD \\
\hline UniRef90 LinRU3 & R \\
\hline UniRet90_U8PU46 & Q \\
\hline UniRef90 H0JC19 & ALGGGWD \\
\hline UniRef90 UPI0003B40318 & LMAALGGG \\
\hline UniRet90-Dosc & TLMQALG \\
\hline UniRef90_UPIO004765407 & ALFQALG \\
\hline UniRef90_12EVA0 & GLYKSLGGGWR \\
\hline UniRet90_A6V1S5 & VE \\
\hline UniRef90_R7DX85 & SLYTALGGGW \\
\hline UniRef90-TOMQD6 & \\
\hline UniRet90-UP1000237D784 & DLVRAMGGDW \\
\hline UniRef90-UPI00045EBC & ALIKALGGGWQ \\
\hline UniRef90_UPI00026CCB0B & ALYQAAG \\
\hline UniRef90-UP10004758DFC & K \\
\hline UniRef90-UPI000477CD4C & GGGWE \\
\hline UniRef90_K6B861 & GGWQ \\
\hline UniRef90 R6Q8N2 & \\
\hline UniRef90 A9A & \\
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\hline UniRef90-X4Z4F1 & KLYQALGGG \\
\hline UniRef90-4NOT5 &  \\
\hline UniRet90_W6TYE1 &  \\
\hline UniRet90_N8WWQ4 & \\
\hline UniRef90 G1Y2D6 & \\
\hline 5SWF & \\
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 AD QWWTLF GDQQLNTLVNQVLASNTDLAVAGLTLRQAR NWWELFGDEQLNRLQQQAATGNQSIAQAAARLRAAQ


 WWRLG N D P V L D R L V T E A L A A N T DV R V A V A RI E R A R

 Q Q WWQ QF NDP TLNQLVKMASQQNLDLEAAGLRIVQAR RDFFTNKY L LEELI DNAFEKNSDQLLDAVQNI ALLA E WR S VF T DP QL Q S L I E K GLDA N NPDLLNA ALDNVKMA E A WWS GFD DPILTSSLQASAEKTSPSLDQAIANIDKAR

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UniRef90_A0A021WA06


\section*{UniRef90 G8MDW6} UniRef90-I4N306 UniRefefo E6QQE3 UniRef90-D5EU29 UniRef90-F5RAY0 UniRef90-G7TG46 UniRef90-C1DJ74 UniRef90_UPIO0040EF7D3 UniRef90_UPIO0028A0974 UniRef90-DOT6W0 UniRef90-A9BZ04 UniRef90_D4ZFX1
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A

RVHEGIVT \({ }^{170}\)
180
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200 QASQGAVSNLEVAQQRNALQTFEAAMPPLRQQRDQALYQL LLYHAGVSTPADVALSVSQLKAVEATRVDLGVQRAQLVHALC MHENRAGYRSTAVQSEAAYYQVQSQRVDLERQMRETENS RYDEGDVSELELLARAKTELASAQSESLGVSRRRASAEHALL QQTLGAVGTAQVLAQRTALAQAQATVPPLEKQLEQQRTLL QKQASRATELGVQKFQAEVLTSKSLEFDI LQKIKENENK RYNAGSATALELAQQKSLVABQRQLPQVQQQARDAMDTL RYRAGVASSADVAQAEAQYKSTQAQLDEAQTSRAQLEHAL QYDSGNVTELDVQQAKSQLYSTQAALPSRKDGMMQARNAL RREAGLATSLDVARGATLRDQRAADIPRLEAGRQAALERLC RRTVGLATRLDVARDAALRNQRQAEVPALAAQRDAALIRLL
 QYNAGVAEPTALLQARTQLEQTRAQEVQAGIARAQYEHA QFDSGNVTELDVQQAKNQLFNTKATLPSLEIAMKQSRTAL QYQVGDAN LGIRQVDAQLNENKILISQLEQSVSLQENALC NADAGFSPASDAALIDASAASTRSSFTDQRGQCDLLVKS
RVKVGDATLSELEQQRAATFAVRASTPTLEQQRFDALAA RFRRGLTHALDLRLALTDLANAEAQLAEQRNRVQULTRSL GVRAGLYTPLDAMRSRALLAQLEAALPPLEADRKAALYSL RYAAALAAKSDVLQAQTQLANAQASLANLTQQRAQLEHACL RQAYGAVGKADVAAQEAALAAAEGALPPIDKARADNLAALL QYAVGTVAKSDVLRSQVELANAQQSLVTAQNDYDLSVSTF SERAGFTAPATLALAQASGAEGRVRAEQQRMACDIDLKGL RFDAGAVSRLEVRQALQNLQSQRSSQSALEQQRVEVRNAL RUHAGSGLPEERHNALANLARSEAMLPPLQAGLLQAQYRL
 LYSRGTTSSVEGARNDTNDSKTEQQLTQVSGNMKETEARL LYQHGITSSVEGVETDINANKTEEQLAEVNGKMKAVEARL R L

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\section*{\begin{tabular}{l} 
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QREAGAATADDEAQAQAADDESDASLPSLESGFYASSYAT QYQAGVYGVEIPQQTQAQADSAKQQITNLKAQTEQLRHQL RYTGGI ATDADVAQAQTQLKTTQAQALDLGVQRAQLEHA RYDTGLASQLDVSQAKSVYYSTKASMPALEASDEQQINADI KLFEGAISKLPLDKGEAELKSUESELPNLEKGFRVNVHNL LNEAGLSGKLDVYQAQTVVEQAASDVAANVTQVAQDRNAL KYAAGADDRLAVEQAQQATLNARNSLI SERTNLKTAEQTL QYKAGITGIDDIPQQTQAQADSAKQQILQLQSQLEQLKHQL QRSVGKATELAVQQFNAQNNNDHAEASELKLSMDGEKALD QYRVGTVAKSDVLSSQVNLANAQQALTTAQNNYDAAVATM
\(R F D S G E T G E L A L R Q A Q S E L E T T A A L P G Q K Q R V R I N G A L\)
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UniRef90
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UniRef90_F8X475 UniRef90-F8X475
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 AVLMGEAPADLTIPDTVPTIPVSVPADLLQRRPDIAAAER ALLLGTLPEEMERVPRPPQLDKKLDANLVMRRPDLQVSEM NVLCGKYAGADTRKLEGNKEFDSVPVEGYASRPDKAAELG ASLTGLEEPALRTLMQPSAGVLPAPRKLDVTSVPADLVRQ AFLVATVPGNLTLSDDDPGVAAGVPSSLLLRRPDVRAAEA EVLEGRFKNAETLPPRHGVPAGLPSELLDRRDLNAAFA AVLLGRAPECQIPTIDQPLPDGNGMALIRRRPDIRQAER AVLVGKTPPDPAWRAQVPEVPAGVASELLQRRPDIAAAER SILCGEYPSGMKEMDPENKLHEGLPAQLLSRRPDLKAAEY AVLIGVAPPALDSUALPADLPLTLPAELVRQRPDVAAAAG NNVIGLPDDTNVRYEKYDLSLDNCIVYAQQHRPDGIAAVK VALTGLPEPELRARAAAAPAPDTLPARVLAQRPDVYAAER
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 NFLDGRYPQEDARDKGNFMVNTGUSQLLANRPDVKQAEL SLLLTEPAQATARQRLPESFSTGVGLQLLRNRADVHANEM ALMI GREPGALDAALAADRPLPMLPAVVPRRRPDVRRAER AALLAKPVDCAELPHLNQLVPVGDGAALLKRRPDVRQAER VALTAQDEMALRRPRPAELSDDSLPASVVSQRPDVHAABL AVLGGKMPGELEDQPTVPAFPATMPSSVMANRPDIVMAER AVLIGRTPDQPPADHLPGQVPVVVPSDLRRSPDIRAADA GVLSGRGPERGLALQRPHVGEFGLPADLLGRRPDIVAARLD
 SALAGRGPDAMNPSPDALAPKGELTLDLLGKRPDVAABRD AlLIGQSDPVAPLTAVPIVAAAGVPSALLERRPDIAAAER AVLLGVYPEPAPIPDYLRIVSVG| PANLLRQRPDIRAAER STLYUQKQKKPFQPNLYMKINUGUPADLIRNRPDIRYREK DLLAGLPASLDALITGVARVPAGLSSDMLLQRSDVLQAEH RNLLNLKPNQALPTRYPQGTDLNVPVSATANRPDVVARLN AALAGQGPSTMQNDHPVMAPKGELTADLLGKRPDIAAQRQ ALLENRAPNYRQAEQQQVPDAASLPLEVIAQRPDVQAAEW LTLLGEYGGKDDRSNDFLAGHLEVLNQLIHKRPDVSEAYF NNV GGLPDDDELKHPAYNLNLEDCTAYALNNRADGAAAYY A LVVGMSPAELMAELDFGDTPAVLPSSLLQRRPDGRSAEA YSLLAWSSQH DDCQRFPQKLSVGПPDELLSRRPDVMQAEA STLVGMNPQHQFEHPVAQTMPTVMPSRLLQRRPDIVQAER ALLLGLPEPTATSAAERTPDSAGLPSQLLVRRPDLTQAEA RNLLNLKPNQPLPAKYPSDVDNVPVSVI ANRPDVTAALQ AVLI GEAPVNFQDTPALPQlPVSVPSQLLERRPDIASAER ATLLGKPASTVRVAPNALRDAPPLPSDLLQRRPDVAQAER AALLGLSAEALPPAAFIDTPDTGFPTALLLRRPDVQRAQR PALRTLLAKGHGMPEPAMFDVSTMPANLLIRRPDLADDER
 AKLIGKGPDSTQHIPRDLALPDKLPLELLRHRPDLTSALF AVLLGRTPDRAPDDTVPADVPVVLPSELLQTRPDIQAADA AILFRLQKNRNALIKLPNTPSGTQPSSLLDHRPDLRAAKQ AVLRERLAEGAARLPRPPADPDSVARALRQRPDVSAAER


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UniRef90_V9QS99 UniRef90_UPIO0016A414E UniRef90_UPI00035DABB5 UniRef90-R4WXA5 UniRef90-B3H1H7 UniRef90_UPIO0036433EE UniRef90_J2PKD2
UniRef90_A1TIZ2

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280 QLHAATAS\|GMAKADFYPR|ISLLNGSAGFQSLQLISSLADWA RLRSANFDVGVARAAFLPNLSLNLLGGDDTLGT QMA A A NAQUGVAEAAFFPALTLSGQSGYQGVNFPGLDAAP SLAQCFYDVETARSRFYPSISITGTAAFTNNSGSINPGKW AMAAANARVGIAQAAWFPRLNLTGALGYESSELGNLFQWS QAHAASALIGVATAARDPSITLSAASGGSAASFGRMFAAG QVAAEARSI EVAKADFYPNVNLVAFFGSGSTTGEMLNFDT ELVAAKLDVKVARAEFYPSLDI SAAFGVQAFKPSYLETFP RLAAAKADVVVARAAMDPTVTLGASLGSGASTASDILRSP
 LAHGQSAKI GLAEAALYPSFTLFGSDGVNSMRPSGHSFSL RLAADTARIGVATADLYPRVTLGGSVGSTGPDDADAFGAG RVA A A NATI GVARAAFFPRLTVNGSGGTQDTGLSLGLNK RLA A ATARIGVATADLYPRISLGASGGSTGTDLDGLFGAG
 RMEEYNAQUGAADAAFYPDVKLTASYSYSGDPVGALVQVA QARAQSAKIGMAETALYPSFSLFGS GGDDSTVPEGSSFSF
 RPDVASSERELAATSAEDGAAVADLYPSLTLSGS STSAG QLLAADADVAVARARWLPPMDLSAQUGYSSVALSQLFVPR RLSAFDNRLESARKALLPRFTLTANGGS DSSSLTDWADPR QLAAATARMGVATAELYPSVSFGASLGTTSRGVGNLFDSS RVAAANAEVGAAQAAFFPSFTDSASRGGGASQLGRLFDAP NV \(\square S L N A K T G L A K A A M Y P S D S L S P Q V G V N S Y K F N T W F D P G\) ALDVAAANVRAADAARDPQITLSASAGGNATDFAQMFANG


 \(L L A A S S E D V G A A T A D L Y P R L D L G G F L G F F A L R G S G V V D G G\)
 Y I QS S MSEV DAAKAAFYPDI NLMAF LQQDAL HLLSDLFRNS

 EMA A L N E E V G \(\square\) A
 RLVAANAEI GAA DAEYYPKFSLDGLLGGSATASSGHLLFSGG


 ALA QCFYAVEKARSNFYPNDTI SGTGGYSNGSGMV NPA QLASSSAQI GQALSAYFPQVTLLGNDGMAATS LSGLGSD

 TLLAANANI GAARAAFFPRISLTGAFGTGSPTLGGLFKAG A L Q A A A A EVVGVATAAQLFP QLSSLSASMMGGGFSWPAMLS GA \(R\) V E A A F A N AD ST R A Q FY P DVVNLIA L G GVVALDTPA S L F S R D QL A A S N A R I GSAA IA E YY P K V S L G G LI G S A TTAS G NLLF S S G D Y A A A VA NVGVVSEA QMY P SVVSLGGGTVSTS E GV LVES Y S QRVSAAKKEFYPSLSI SAFGGLTTTNYPNLFEAA HVADMNA QLGVATAAFFPNLILSVTGGLEATNYSQWLLAP TVASYAASAGASRSDF LPKFYLKGS IGFAARDMDDFENRK


 RLQ Q A F K S L T AT E K S WF P TVVTLG GS DSASASKVAN I S D LVES YNQRVSAARKE FYPSLTITSAFAGLTTTNTPNLIEAA R L R A A L A G S DVAAK LDN F Y P T L S L G A T LDDA G S SVVF S QWF S N P ELLASSNADAKSARAAFFPTVNLGGYAGFNSFSFNTFFDAG RLHAATARDGDATADDFPRFTLSGLIGSSAVDAGGLFERD AVKQAEAGI NTAKAGRYPTVTASATKADNGKNEFKTDH GL DA A NASI GVA EASSRLPTLNLGAF LGTAAGDSSDDLTTTA GLMARRHLVQSAKTEFYPNITIKGLAGLANLE GGHLPASK ELKQAFYGVNQARSNFYPSITLSGSAGWTNSAGAVVSNPG QL LA A D A S L Q S A R A S LLLPS L NLTAS GTVQS SVLHQLVDNP RLAAADANVRAARAAMLPRVTLTASVGLQGQAAGGLVD NI NA A L N RLKSAKADLLPRFGLQFFGGDGRDRFSGLS GFS RLQSQFNTLTATEKSWFPTVTLGASLSSSASKVRDVGD
 QMARANATIGMALAAFFPSVNLFAVGGLISDAASLLEQGG EVLQ GHY LSAQAWAERLPTLSFDMFFS GGGTSDSDIAND W \(N\) L A E A S A NIGGVSKA QLYY S LT LT GS DGYRRTNFN GTVTR EVVVAA GELGMSRAD YY P HLLSLGAQWS LNDASNRKHTPN G
 RAEAAA QRI KEAKARFLPTIDDTAFAGVNALRANVLFS GS \(A L K A A A A Q V G V A T A Q L F P S L D L S A S M G K G G F S W P T A L D S G A\)
 ELAEASARI GVAEAARYPALSVTGNITPTRVAI NGGSAVS A I A A D T A R I GVAATA D L Y P S VV I G G S V G L S G K L E D F G T S D
UniRef90_G8MDW6
UniRef90_I4N306
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UniRef90_C1DJ74
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 \(N L F W S L G P S L A L A L F D G G A R T A A V E S A R A S L D L A A A T Y R Q\) SDTWTAGPSFSWNGFQYGRDKNNVRLEDARLQEALDGYNK PLRWLLGPLISWAFPNQEANRARIAGARADSEASLAAFDG NSVWSVGPAITMPDFDGDARVAELDASKASHAHAVAEYRE PLRWLLGGLINWTVNPAPARARIAAAEADSRAALATFDG S L Y SLVGGVVSPL DNRNA DKAEYSNANASRQLQAVAFEYEK
 SDTMVAGPAFSWNI FQYGRVKNNI RFEDARFQETDTNYNK SLFGSLAGGDTQPIVENKGRLKAQYEQAQDEREKEVDRFRQ LQQWSFGPSLSLPI FDGGQRLASVRSARASYAYQLAAYRQ
 AFRFSLGPLISWTFPNRGVARARIVEADAASRGALAAFDG SSDWSLGVALAQTLFDAGARRAT RDAARAGYDQTVAQYRQ SLTKMIA GNI AMPILQKKQLKTTYEDA IIEQEKAAVNFKQ NPFWAAIGAISTPI FHGGTLLKQQRAARDADEGAKAAYKG TDKWGlGVSASWNLFDSNVTNSQIKTAEAAKNKAEDAANQ NTWS GGPVGVSLPI FDAGRRAAQVDAAKARYQEAAQLYRA \(N \square W N I G L N L T Q P I F H G G E D R A K R R A A Q A A Y D A A F A S Y R Q\) \(N P V A T L G A G L S \ P F L N L Q R A Q L D T D \square A G T A Y Q \square A A T N F R K\) ARAFEVAPSVSYPAFRLGSVKARLRGTQAEAQGADARYEQ ARFWSLGPALALTLFDGGARQAELDRARAAYDGQAALYRQ AHWGLGP LITWNLPTNGVRPR I HAMEAGADAALARFDG

 SDAWLASAGVQWTLFDGGRGQALVVEMQEARFQQAALSYQQ NWVATLAAAV TGPLFDGERREAEVDRARAEADQVLTAYAR ASQSAGVLGLRWRLFDFGRDDAQLDRAKGRNAEALAAYRLL
 SRQFTLGPAI SLPI LI GGRLLRANQKDADARYQEALNVHKV SLLYSLAGDIVAPLINRNAIKAEFSSANARQQQALYNYER SVVSVLLA SVSLPVFDGGALRAQVRAQQAVLDAARSAYEA KLLLSAVGSLT QPI FMNGQLTAALLRVAKDQYQQAYNTWQN AI NSVVAPFLRWSLFDFGATKAKVAQARAGNDARLAAYEG NRWGFGPQ SWT IPTNGTRAR DRMAEASTQ AALAANFDG \(T V W G V G P D T D T M P L F D G G V R K A D A Q A A L I R Y E A A A T D F T A\) A MSWQF LMMAS LDPLMHGGKMTAEVRAAQASAEAARLEYRQ TAAWSFAPQITMPIFEGGQNDANLNDANVQKRDEIANYEK GADWSVGASLSQPIVHGGALLAQRRAAKASYEAAVDQYKQ

 \(G S W S F G P K V S D P V L N Q G V L A A K R D Q A D A Q A A E A B E L G W R S\) S K A WN IIA PAI SLLPI FHA GAL R S K L G E E S A L Y D Q S V E S Y N Q S R L W S L G P T L A GT L LD F G G R A S V K E E Q A RA H Y D E S V A Q Y R Q S

 A F G W S V S P S A S L P I F G G P A R G N L D Y S K A Q R D L A V A Q Y E K
 S QA WN V M P A I S L P IVF H A GA L R S K L G E E S A L Y D E A V E S Y N Q
 S E T R R V A L G S N S WY F G A A A N W N I F F D N G V T T A A S I M

 F R L W S V G G S L LA P L L N R E A LTAA QV DVVSMATAR QA L Y N Y E K N P I Y S L A A G L A A P I F D G G R L A G E R D L A V A R R E E L L G A Y R A





 A LGG S I G P A L S L P V F D R G R L K A K L G G DVA N A D V A L A L Y N Q


 TQTWSIGP TVLTLPLFDAGRRAADVEAARAE YTARASAF DA UniRef90_A1TIZ2

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UniRef90_A1TIZ2
 SVIEALQDVQTQLSASRELDKSYALNQAAVDSAREAARLA TVLTGFQEVEDDLASLRILAQENRVQTEAAAAAQTGLNFA
SVLRAAEDVENAFVALLVETGNRGKELDAEVASLTRARDLS AI YKAGNEVSNALVAYNSYSQKAELDGKRVEVLKKNVEDT TVLNAFREVEDQLAABRILAQQTQTQNEAVRAAARAAELS VVLNAFGEVSNALTALQSDAQSLRACADAQALAGRTLAAV TI L NAYLDEVSNQLSKIDNLQKSYDLKSQQVDALNKSDEVS AI INGFADVEKALNTLHGLDQQRRWQGQELSEAQTAFRIA TLYQAFADVENALSARTELDKQVRYQEQNLALDERTERLY TVLTALQEVEDNLVTASALAREQQVQLEAVAAAQKALDVV KVLLAVQEVSGALESYSLYREQKALRMSSVNASVRAFNI S AVLRALEETETALSNYARALERRQSLKAARDSAQAAAR1T TVLTALQETETALSAYGRALERRTALQAALEEAEAAVRIA AILNGYDEVANTLSNDNNLKENYEALKEKAVDEAMTEALD
 KVLQAVNEVTSALEAYNLYLEQKSLRLQSVNSSIRAFNIS AVLDGYAQVSNALKNKEEVEKQFDFAKSREKVLEEGDTST AVRDAVLDVEQALVQLNVARQQQGDAETAARGYQASFKAT TVYRAMKEAETALAAVRLSERRDAAQREASQAARRAWEDS AALNAFREVEQSLTAEGRLREQEQALREAVRQTDASRKLA SVLSALREVETALSTYARDLEQNAKLKIDARDENRKAFGLQ TALTAFQDVEDQLVATRVLVERTGFYTQASQSADEAERDA
 QFDTIQLDEVRTAYLSSMISAEKNDQTTKVAVAQAQEDYKITA NVRRAVSEVEQALVRLASTAARSADAERAAAGYRASFVAT \(T V L Q A L Q Q V A D A L D A L K D D A Q A L D A R D A A A D E A Q A S V E D A\) TLYTALSEVDNALSAREQLVRQVAASQASYDEAVEVERAQ TMLLAQEDVENAVTQLAENQTRLASLLQSARHGNAALGMA VVLKALQETQGALSAYTVELERNRSLRVARDDANEVARQQ AVVDAVNQVAKTASQVETLMEKNQQQQLVLKDAGRVVSQA AVVEAVNQVARTASEVETLTAKNRHQQQVEKDAARVVALA \(K V L D A F Q E V E D N L A A Q A M L G D A S D M Q T A A L N A A K R A E T V T\)
\(T A L D A F L D V D A I A G L R T D A E A L D A A A R D A A A S R T L A M T\) QVNQAFNEVETALMAYGNQQTHREQVEQAASHARTAASKA TVAQAVQEVEDSLSEKRQGEYLLLLTEQLEASRLTVKTA QVLVAFREVEDNLADLRLLDDQKGNQSEAVAASDRTERLS A ALHATEDVENAFSSLARRQEQAGTLVQGEASLSRAVESS AVRTAVKEVGDAGGQAGYSQQQEDLQRELVAQAQASLRLA TILTA YLEVSNQLSNDKNDQKSFELKEKQVQADKESIDLS QLLTALREVDDALTEVESCRTQAGLLDAALESARRVSLLA TVLNAYVEVSTQLSNINNDEKSYDLKSKQVDALTRSIDVS SILTAGSEVSNALVLYNASAEKSADEAKQDAVLKKNVDDT TVLAALQDANSALARFGAARQQALLAAAKAEASADRSAALL VVLNAIRETQTRLAQYSALLDRREALAEAEKSAKEAADQT RVREAVREVENALVSLQSTAARSADTGDSVEGFERSYQAT TV LTGFKEVEDAMAAWHDDDEYAEQLHKAAEDSATASERA AI QSAFREVADGLAARGTYDQQTAALERNEHAQQRRFDDS AVLGAFQNVADSLAALEHDAQALDASGRAADAARGAYDDA TVDDALGQVAQLVTSLQTSQTLVAQQQDAVAAAQK\|VQDA AVQAAFRDADTALFTVASDRPRLAELTRAEERSRFAFEAA AVLHAAEDVENSLSTLSKRQEQLVALQDGENALHHAQKTA SVLGAVEEVQASQSDYDRNQRAVAAYQRSVNSYERVVSLS TILNAIQQTADATTVSKSSVEQLQQASSAAKSLEEVYRVS TVLSAFGQVEDNLAALRVLEQEATAQDDAVAAAQRALAVV TVLTAVQEVDNAMTGYTHSLKQVVALREVVVQGETTLRLS TVLNAVKEVEDALISDNQDKKVVTALQNTVELYKQAMSLS TLVNALKGI SDQLIRRESMDKQQAFAAESVASAQKTYDIA AIQTAFREVADALARDGTDDAQQAAQRRLVNASARAYDLS TVTSALNEDDQHYYAYQQSDSSYATDQQAYEHDKRISNYY TI LNAVQETADA \(\operatorname{TVQQQTAQQQLQAASASQSMQQVYRVA}\) KVYSALKDVDDAMIGRLSYYQQKQNQWQNLQLLSQRRLSLT AV LLALLEDAGNALLRYARSREEDALLERAARDSARAATLA QDETIQLDVRTALLNLQAAEKNDGTMETAVKQAEEDLKIA TVNQAFNEVRNALVTFETSGERIEATLAQVEALARTLELA NVYTALREAADALTQYEAAALSVREQSEMTALARKNAAAA TLDDAGGEVNNALNQWQNARQKVVLDEQQVEYLSVAVHDT VVRAAFSEVNNDLDATTRYQQQQDELLITQQQVAQEALRTA AII GAFADAQTALDAVAGSDAQASAQVEELLQARRAAELS KLLSALTEVENAYQARSSQDKRDMQLSQALATTEQNDTVE TVTTALNEIDRYYYTYQQSRNSLATLQKVHEHNKKLTQYY TVLDGFREVENYMVQLKVLEDEAVVSNEALDAARESLRLT QVLTAFQETENNLAA KILFDRQEAQNRTVVFSKQQYDVS TVMQALSEVEQALINEHAIRTRLSYLETRTQLADQDTLRQ DVRKAVKEVEQALVNLDSATRRAQSEQASAQQYQQYFQAA AVLQGVAEAE DALSDLEQTRLREHASRQAQRATQTHLEAL TLLHALQEVADSLSGWKESLSLLEAHGRLMSSQRKNQELA TVLAAFQNVANTLASLLETDSEALAFADTASSKARDVSADA
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EQRYKA 370
380
390 QVRYRLGSTDFQTLLIVERTQYQAEDTLLQVRLQHLQAAV LNQYQAGMVSYTNVLIVQDTTLSANKARLDVLGRELVASA KRLMESSNTTYLEVITAQSNLLNAEDAEVSDQLSKMQAVV \(Q D R Y R E G S V S Q L D V I D A D R S V L D Q R R V A T Q D E G E R A R A A V\)
\(Q G Q Q A A G A V G M A D L L Q A Q Q A Y Q S T Q A A T V Q A Q A A R Y T D T V\) QGQQAAGAVGMADLLQAQQAYQSTQAATVQAQAARYTDTV
EEAYRRGLTDYRSVLGAQSELFEQQFLEQRVHAEHLTAQA


\section*{ \\ }

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TKRVYAVGGIDYLSSLLETQRSYHRYEDDYQKGRMEEGRQY










 \(S \| A Y\) Q R GA A S QIVEVLVAEA S L L L T TA DA RA QA Q TA SAA A A V ELRYREGSGDLMSLLDAQRSLFSAQDNLSVQRLARLQAVL GQLFKSAKAEYTEVLLTQREVLDARLEILETKRDQLLANVV NDLFKSARADYLEVLLTQRDALDAKLEVVETKKSQLNAVV RALMDNAGSSYLEVITAQSNLLNVQLSQVRDDFSKMQAVV QQRYAAGASSLIDALDVQRQQASAQDSAVQARTQVLLRYV ESAYRSGVSSVFELEDARRSLVAARSAAGGDRERVNAWLV DLRYKNGVDSYLSVLTAQTDLYSAQQTLINARLARWTNLV
 RQGYRDGLTDLTTLLQSERSWRAARTALTDARGQALTNRV
 DARYNAGVIGRDELLTSQSALLQQQQAQLTASSQLMQAKD SNRYKNGAITYMDVVVAQTTALTNERNAVSDARRRMAASV

 EQRYRSGGDTFLNMLVNQRSLYAARRTAGATDLALVRNRLL KNRYEQGVSEFREWISALNTELNSQLSTLNQKYMILSNEN NARYQAGIIGGDELLTSQTQLLQQQQAELTASSNLLQAKI NSQYQAGAVSFQTLLDAQDALLTSETSLLELLQYNYLNATM NDLYUSGYANYLEI NAQKNKLQAEDDFVDIQLRNANSQV RLRFDAGAVGLLDVLEAERTRLQAEDAAAAARARSVAAAA NVRYSAGVGTNLDVMDATEKMTAARTNYNTALYNYNVNKA EVRYREGFVGFIELLDAQRALLSAELALSEAMRDRLTATA KSRWQSGLDDNKLDYLAAQDETLQNESQLSQAQTKLFSAWL RKRYQNGYASYLDELDAQRTLFTTQLSVVRAKNNLLLAQ ELRYRAGAETLLVLLDAQRVLYSAQDLDVQLRQGRLQARV QGLYQGGKHTLQNVLETKLDKVDKDDSLI QTIQQQQMATI KNRYDAGLSSERLWI AAMNTELNSQLSSLLNQKYT ALTNEN ENQYKAGLTAYMDVVTVQATALSNERTVLTLLQTRLVASV RRAYGKGSVDFLNVLSSTNNQQLLQRELLQARGERLENGV EDNWKSGGLDLLSLEDARRQKINAELNVITQQKNRVLQWI QHRARLGGMSPLELETANVQALQTMQQADSASTERDUAYV EDRVRAGLDDRRELLDRRHAVLEQEYVLKTLETDHLAARV AARVRLGADPPRAARGSEQQYLNARLSTIRASSARMSDTA EKLFKYGDKTLDVALRAKDAAYSTQEKLI QSQLSQAQNLI \(E S Q R A A G L A S L N D E E I S A R A E L S A R S Q L I E L E R E R V A A L I\)
\(G K L F R F G S D F L V L S A Q G S L A A E A S H A A E A G L V E D Q I\)
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\hline UniRef90-T0K2N2 & K L D A M G \\
\hline UniRef90-D9P8V9 & TVY Y ( S M A GK Y R \\
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UniRet90 \\
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AALIAGAEAQGRPQVNAVATANRGVTDA ALEDSQRASLYPTATALGATLQMGGNNPADDSTTTPLGT GALQESQAVLFPTVGLNSSVT NNGNGLTSSSSPSTT ELVKVTMSKEFPTLQFSPTFARDKTAQNTDFDDETAARSN ASADDATASLFPTLDLSGSGSASRVMGEASTTRWGAQGEA DAYSQARADLGPNLNASAGQNFVFGRSIGLDNVYENTNSS ATAAVARASLWPTVGAQAGATRAQTNTNGV QRLGD ALRRQASAALFPTLNAGASA
QQLKAAKLSFLPNVAFAPTGTTSHFGSHTEA
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 YAVDEARASKMPQLDYTWSSSRSVPASSSGGASTNPVN GKLREQQASLIFPNLNLSTGDNKVESPDFSSGTSTDG SALREQQASLFPNLNLSTGUNKVESPDFSSGTSUDG YAl NEARAGKMPNVNYSFAATR SSSQTGVAGVSTMGN ALVKVAGGELYPAASFLA EQLRAQVGSSMLPTDDAGGQATRNRALADPEDGSNTFLYN VNHHQARSNRLPNVGANASANVNNGSGNQDTNDRVNQTTF IDLNTAKNSRLPDLNGSASQNWSFGRGLTSENTYSDTNTS AQLVLAGAERFPALSASGSYARAQYSSDQNASNATDPLLD EAVVSSRGDLRPQiNLTAGYNDNRSDTDSRESDKLTAGUS ENVPAALSGYRPQVVASLGTGLQAVRNLLPDNTDQTATLK A ALRQVQAAQLPTLNTQAEDTARETLDDLKYGNEKSSPAN AAI NAI RAQLYPTLSTSVSFNRNSQGGTATSQYSSGSTRN AVVQAVEAEAGPHASDEAAGKRAQEAGETFLLKEKDPVMN ARVTKSRSTWFPQITASAGYTY胃DPSEMSFGGSAPMPNN ASYNAARQSRGDSISANHTTQRGGYDDUHQDITWTKGMGN YNYDVGLAGLLPNFSGAGSYSKTTGDRSSTVVNDTQQLDY YQANLLGANLVPAFSGRVE SSAFGAWSNFLPRADASLGRSEFDNPRQFFTYEPPYLSGS SQMK NTANMFPTDNAGLNSSYGDRRTLSQSTVIRPGANS ASAGlAGAGRDPQLSLS
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NGTFGLTAGWHLLDDWGKNRAE\|ITAR|L|GTVKARAAERERTR

 QYSASLGGVRYTLDLAGGNRRALEALGARTDYRRYQREGAR \(T D A D G P A A S Y E M D L W G E D R S R T M A G D L S A R A S R S D D E T A A\) D Y D A A A T \(\square\) S WD DD L F GR L R A GA LAA A RA D A Q A QA A A L D G V R TWTTSPSASWE PD DWGKVRRRQIQENVTSAQAAAATVVANAR A GQVGIS DT QT \(\square F D G F Q T L N N V R A A Q A D V F S S R E T L K A N E\)
 P WQ I GLTVVT QTLTNGFKTANSVRVAELQVQSGREALRNVG GH QL QA SA S WE LLD DWG K L R R T L E E D RA SAADASAA E L A N I T GFNGQAQQTYNNGTS GRRQAAMIKEAE EQTRANNELDDVERQS SLTGGGFSSSWEPDDGFGQKRSDADAAAYAA LGRQEEVVYGTG
 NGTFGLTAGWNVDLWGKDAAQVSARDGKVKADIAEMA TR FFAGQLLAHYTFDLFGQTRYMNSASAARVNVQAFELEASR THTGNLDNDSTLDDLWRKLADSADAAEWEHKATVEDLAAAR TYSSKF GASYELDLGGKI RNSNDFALQSYLATKYATTATY
 LA DVGLSVVGYQLDLF GQLHRAAEAAGA DA DASAALLDKAR L S A GVTT SQQALLYDRSSWWI T LDDTAEKSARQSDASYAAAQ V F ETGLFS LS WELDDVWGRISDFQQAADREANATATAFAQGAR T GTYGG E L N Q ML F DGF QTKNNVAAAETTVVAQRENLRNDE
 NSTVSASLAALT QTVFDMS K WHA LTTLQE KTA GVQDVASY QA S Q \(T L Q Y G L D L S M S L Y D H A N W \quad V G L D R A E K S A E Q S D A Q L A A A M\)


 \(T L S A G F Q A S W T V G L W G E S A A R V D S A Q A R Q D A A G A G W H E A R\)
 LY VLP LIFATYEAD DF LLKNHDKTK SKRKEYEAKQYEEKAAD A WS MSL
 NYTVGLNASWEAD IVWGRIRRGAEAGDANAQASADSLLAAAR A S WY G L D L A WE DD L F G R L G A QR DAA TA ETQAT DH DYE A L R A Y T L P l A A S WNVVD L F G QL R A K K K V A Q A M L L Q M K D Y K V A A Q

 QWQLGLNASYELDFWGRI AS LDDEQALQQLNASRAAKN IQT STS F RLSTS \(\square P V\) FSGFRI NNQVK GARLDDLKAS DEDDLNKAR

 RYGGSLSASYE LDFWGRNRSARAAAESAWRASAHDRDTDR S S GA SVVSVSYEAD LWNR LGSLS DVSR WESLA TE QDRQA TAR







LY
 LK GWLVVSASWEVVDLWGRVVYGARAAEDQYASAAQADADYAR



 QA LTYRKSSWVNLD DTE K Q A A Q S E V T Y K Q VQ \(P W T \square G V T V T Q T L\) F NGFRTANSVRVAELQVKS GREAMRNVG \(T S Q A A L Q A S W E I D L F G G K R A A R D A A Q A R L D S A H A G W H D A R\) \(V L S G T I E V G Y D I F T A G R R P A R I R S A Q E Q V R L D R L E V E R L S\)
 N Y D A K V T A R A T I D L F G QL A R A E E A A HA S Q Q A T A A A L D V V R NHANSLSASLP I FTGGKLSGT\|KQAKANYQYN EVGVVQR HYTYTTVVALLRQPLFNYESFVVRYQQGGVQVAYSDAVVFDRKA QHSGS I NVSYT LDDLWRRLADAASAGEWAYKASAQDLEAAR A Y NF GLSVNQTI F DGGFSWFNLGYRRSLQRSSEYSYKQTK
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160 LALQADVAEAYFQVRELDAGLQLYRQTVQLRSETLDLDQR

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 LSLVGT TATQYWQTAFINQRDASSLESIAYARRTQDLVRA QLLASSVIARLYWQWQTESAIRRQLEQIQKEQNLIVSVDKK


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 QALAGTTATLYWRLSYYHQRLDSAAKSIEHAERTLALVQA QSSLQAKLATSYFALRGYDRQVDLLEKTVDAFSKADAMTRA QG LIN ATA A YMNVANQALVESQRTNVNVLREDQATTAR VVLVASEVAQLYFGQRLCRQQLAVADNDRDSRRVTADSNDV




 LS SQAMLA QHYFHLKLLDAQKALLDDTVAAYAKTLDITQN
 ITTVVDVSKAFYDILTSREQLNITDENIARDQKQLKDAFA NTIVSQLA I A WYGVLQEQQQLVLLKRQQARNKNALEVVRG E DV ALDNVTSYY LQVLFKKEMLDVAQNQLADSKSQLEKTEK




 QA L L Q N GATAYMNVLRDTAVLGLRKNNI AVLERQLRQTRD LLSLI GTTAKLYWQTAFLNQRMASSRESUAYARRTLEQVQT

 Q Q \(\square S L A\) GAVVA
 QSIAALVVKAWFGATEAQMQYAGANDMVRHADALDRLAGH RALAA NIVSAADTSAALRAQDDTTERLVTDADDQARDAAR NDLSMNVAKAY EVLNAAEAMTVAQRQVSIDSMQVVRMQG NNIVLSVLEAYLQALFKYENDTVAKNTALSSQEELAQARK
 QGLILRVAQAYFEVLRAKDNLAFVRAEKAAVARQLEQTKQ QALIVRATQAYFNVLNAEDTLSFVQANKEAVSRQLEQTKQ QGVLLDAVTAYTNVLANQALVAAQKSNVDFLGQTLDDTNK

 \(V\) SVAA ATVRAYVQGCSATAELHRAEAALAVQRRRLELARR RELSWQSI QLFYGNLLLHESIRVEQKEIAALNKALDFSTK NEMRSTVTDGYFNMLQADNQQKLSAESVTRLEDHLKNVQA
 QETVVAVKIASFGLLKTEKLLEVQQDVVKRSQQQLDIAKA
 LS L A A RTA Q TYFELA EAKDQVQVAEQSVKDRRAIVGDLVRS


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LYQNGITS SVEGGVETD DNASKTRQQLINDV|AGKMKDIEAR|L RY D A GDI S E L D L A R A R SE LEESARAEALGFERRRATAA HA L
 \(R L R L G G Q A A H S E V V A L D Q A Q V E Q T R A S V P D L R Q Q H M Q Q G S H L L\) \(R\) F E N A L S T S LLDI L Q Q Q E A V A H V T A Q I P P L E Q E I K R L S N R L

 \(R A A A Q L D T V D S A L S L Q Q S L A V H R E E L A D L A G Q Q Q L Q V I A L\) RYDAGAAGQDDLQQAQQSLI NRENNYRTLQQQREENRNAL \(R L N A G D V T P T D T A Q A E A R L N R G L A D L N A A E V N F A V S Q A T Y\)

 R F K A G HV T A Y E V D
 LY QA G ITTDSVE GVEND DNVGKTGQQLADIDGNLKEDABAR


 LK K VGGKSNEAGVLQQAKANVVMR LEAASLELSDRKSISSETAENAL



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\hline & CLLQGKPPTNTDFPILTPLPAMGI \\
\hline UniRef90＿UPI00026 & A TLQGLPPTTPQMAKVDCTLLLPRASSEVP \\
\hline UniRef90－A0A0231 & A M \\
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\hline UniRef90－B2VFT0 & A \\
\hline UniRef90－K9QBE3 & QNisima \({ }^{\text {a Wor }}\) \\
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\hline P10004 & SAPRAL \\
\hline & LIGTPAPDFSIAPAPPNVPVGLPSTLLQRRPDVAAAER \\
\hline UniRef90－UPI000463C303 & TQVIGAPPSQAPVDRLSP\TMNASTGTAYHEHPAVLGARY \\
\hline UniRe90－C6M516 & \\
\hline UniRet90＿A0A0241／ & AA TAQPEAEVRRQLIGTAPDLNAWPAEVLRQRPDVYRAQR \\
\hline UniRet90＿V4QN79 & \\
\hline UniRef90＿K9X0J2 & \\
\hline R6PHV1 & AVYIDECPSQFDKLEFKGEIIPDCISSDVVVSRPDLMKAEA \\
\hline & ARLTVTNVMa \\
\hline UniRef90＿UPIO0035F2B8 & Ql ME \\
\hline UP10002ED3D & \\
\hline UniRef90＿UPI000468EEAC & \\
\hline Ret90－D1XX25 & \\
\hline H8GH04 & \\
\hline 9BLT & Q A A \\
\hline UniRef90－UPIO00373218： & A \\
\hline UniRet90－R9GM19 & T \\
\hline UniRet90－R4YQ86 & \\
\hline ei90－R5JJV & \\
\hline 俍et90＿W0RD34 & \\
\hline UniRef90＿M1WTR6 & D \\
\hline UniRef90 R71 & CVLIGESPENANDVNYQLAVPSQIPSEIITQRPDYMRAELL \\
\hline UniRef90－A0A014MF & GMLLGQAQDVPMMALRPSALDAGLPAALLVRRPDVARAEA \\
\hline UniRef90＿UPI00037CBCDC & ALL \\
\hline 90－P5LGO & \\
\hline R & \\
\hline 6L & S \\
\hline UniRef90－UP1000 & \\
\hline & DRVAADPQRLPQGMGLPAGLLGRRPDLRAAEA \\
\hline UniRef90－UP1000365 & ALL \\
\hline UniRef90＿UP1000475ADA5 & ALLDPLWLQPGPPPQLGQWQLS SIVPADLLRTRPEITGAEA \\
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\hline A1HRF7 & \\
\hline iRef90＿K9VoY9 & QTLTVTASDEVKPAGLWDLSLEESVVLALQNRPELQQTLV \\
\hline UniRef90－D5WZT7 & \[
A \dot{\mathrm{~V}}
\] \\
\hline UniRef90－E2ZCl & \\
\hline UniRef90－A0A038H076 & \\
\hline & VLLGRTPDAAPGDHLPEQVPVVVPSELLRARPDIEAADA \\
\hline UniRef90 R6VT01 & S QL \\
\hline ef90－＿0ıl31 & KQLLELPVGTDFR Q ARQKEEVEPIENKEVIFQQKIYEK \\
\hline ef90＿R5CPA2 & TQLLELPSPEGFAIIRPPPSPDEYQEAITFKPEIKAELY \\
\hline UP100022 & \\
\hline UniRef90－T1XWD4 & REITGQEHSNRFSASKTTQPIDALLEEAQQKNLSLLTARI \\
\hline & T \\
\hline UniRef90－Q139U7 & AQVPSRLSPASPVDRLLPRSREDAVSLAMQGNPAVLAAGF \\
\hline 俍ef90＿UP100037871F2 & VALTAIGEPPSAAAGAPSIAIAEILPANTLSQRPDVFTAER \\
\hline 9 \({ }^{\text {U }}\) H7 & \\
\hline niRet90＿UPIO0047EA47 & \\
\hline UniRef90 UPIo0037EEB54 & \\
\hline UniRef90 Q0 & \\
\hline & \\
\hline  & EGMTGMPMGELWILRPDYLPNGVQPSQLDEWNPEIRAQRK \\
\hline & Y \\
\hline ＋9－T0 \({ }^{2} 27\) & \\
\hline & \\
\hline UniRef90－UPIOOO363CE49 & ETLLGRYPEGNRLATVQLPVPPGLPSQLLLRRPDLVAAFR \\
\hline & \\
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 AFQPQAVLGLHWRLFDFGRVDAEVAQAKGANAEALALYRQ AAVWSLUQITQPLFN PALLPAERRAALAALDAAAANYQG SWILSLGANMAATVFDGGKKAAAREQAKAVVAEGALAYYER
\(A F S A S A S P L I S W S F P N Q A P A R A K T A Q A Q A A E R A A L A S F D N ~\) TRFWSLGASSSETLFAGGARTAAVRQARADYDNAVANYRA DTTASVTAR VED YQGGAEYGQLRQAKEDGQQRILVDS SGVPAFGFAVDLPLFDAGLRQARHGAARASLDVA AAYDD SR SLGSSVALLFLNWNTVQLTDEDADLDVKQAADAFRS NRVWSLGPSLSGTLDDFGATSAKVEQARAAYDADVASYRQ TDGYSVGDRASWNLFDGGAARARASQAKANDADAETNFAE RRYWSLGPAGALTLFDGGAKNAQYKQADDAYDATVAGYRQ GWGSLIKAG川TVPIFTNGR\|KANTAAADARLQTALLQYDQ
 AQQMGVTAGLTLPIFDSGRLNANLDIASAENNYSIARYNK GGLWAIGAGLSQPIFHGGALLAQRRASIDDAYAAAVLHYKS YGVGTLGMTILPFLSWQTVKWNVKDSEANYEVARLGFEQ SKTWSFIPSINGPIFKGGENMANLDYAKAQQKDALAQYEK QWLLNAIGSLTQPLFNRGTNDANLKDAKSRQEEAKLLFRQ TRRWEFGPSTSWHFPTQV DRARVRATEAGAAAALDARFDG TNDFKVGVNLNVPLYTGGATTSLTKQAEFNYVSASQDLEK

VSSLATSLTVPLFRGGALRAEVERSQAARAVAFNEYAQ SLVYDLAAG TAPARRNE RSMWNEAKASQRIADSQYHE SGQNT GASLSRPI YSGGAVTSQVKQAQYAYVGASEQLES NPLATLGVALNLPIFGGGRVSSQTEQAKHLYIAASQDVEQ NDFWSVGPSAVLNLFDGGRRAQVAVARAGWTQATADY LLGGSALGQ NLPIYDGGMAASQTRQAKELLSQQSKMLDEM NSWSIGPDTLSHPLLGRGALHASADSAQARYEAAASAYAG DADNAGPVLSLPLFEGGKLKANLRGAEADQSVALASYNQ NTFGLVGVVAMQKLYTGGLLTANLKDSKIKYEQLFEAYKQ
 SRVWSLGAALAETIFDGGARSARNDAAVAAYDAAVAQYKQ DPAWSLGLQLDQPLFDFGRDESRIEGADARLAQSRLAYES KLLLSVVGSLTQPIFAQGKLKAGLRVAEDQYKQAYNTWQN ATVWALGGSVLAPLFTGGRLQGQFDAAAAQRDQAAYAYRG SFAYQLAAGATQPI LD QSLPGNLDLAKGNYRENLFAYRK MANLIAGLTVPLDDGDNLRAEVRRNQAVVEEADANYQQ NGSETVGLSLSVPLFNRFTTRNQVKQARVQLADQQLALEN TDGYSVGLQATMTLFDGGKSKAQASQAETNMA DAETQFAQ NPLYTLAAGLVAPVFDAGRLAAGHERAQARQAELLATYRQ NPYALLGAGVSLPFLQVNMMKLNNADARTQYESAVVSYRQ AG TVGGTLTLPFIEWRKMRLASEKALLQAQQAELQFRD NFSQYIGGSLSIPREDRFSTRNRVRSARIQQHTYYWQLEE QLSASASGQLNVPLYQGGAEYASTRQAKEQLGQARFNADLL NPVAALGSGLSLPFLNWNQMRLNLRDAEADYEILVAQFRQ TRTLGAAVTAPFIQWNTVQLTIESAGVQVQQAAVSFRK SGDFSYGPGIS SPLFDWGQRVARADARDHQLQAALLAYRQ NRDWAlTGGVSYSLYDGGATNAKDKEAKQSLDTARENEQK
 SLIWGVAGQLAQPLFKPGLKKAEARAAEAGFDAAAANYRE NKGWQLQGTVSLPI WDGGATRAKTKEAKEAFTKARENEQK NPSWSVGAG\|LLPLFRGGALKAQAEYRTAEQDQALASYGQ GADWS GASLSQPLFHGGALAAQRRAAMNTYEATVSQYKQ NFGQTVGLSLNVPI FSRYKNRDNVTLAKI SESQAELERRQ NFSQYIGLSLNVPI FNRATRNSIRSAKLERETQQLQLDN ARAWNVGPTITIPIFQGGRLAGQLELKKASQKAAALQYRK DYNFNVGTNLNVPLYTGGKTTSQTKQAEFAYVAASQDLEK NNVRSI GVAFNLPLYSGGATRSRVSQASYNYVAASELLER VDQASVVGQRAAPYDGGFAAAQTRQSKEDASQSRLVLDQ DTWTIGPVSVSLPIFDAGRRRANVDAASARYDAAVSSYRA KDGYAAGARLRWNFFDAGAARFGAAQEDANRAIAETRFAQ NRTWALGASASETLFEGGSRTAAVHEANANYDLYTATYRQ TARWGLGPLISWQIPDNAARARVQASKADAQAALAHFDG RNNTAAGLHLEDPIFSGFRNRAERQEATALMHAATLRRDD NGKWGVGVNVSMNVFDTGVTLSKDHGAEADLKKAEETYRN VNTNSVGIVELNPLFAGGRVNALTGQAVANRERALAELDAA GRSWSVNFRVSMNIFSGFQLQSDLNSAKHSKRAADERDA GRSVGINANSI TAPLLNGTPLLKQNYLIQKELSNEAYYTLAN AAAWNLAAGLTQPLFTGGRLQGDIRLQKALVAEALNNYRS YRTWSLTPTLQWTLTDGGQRWNRIQEQRWQWEEVQHQYQT TDEASVFATVTVPLYQSGSVSSRVRQSKQQETRAQNALED
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 ALTT TALNEVNTNYLAYQNAQAALNNQEQRYALDKKNSRYY



 \(T V L A G L Q D V E D N L S T L R V L D Q E S A D V A Q A V K S A Q L A E R L A\) A L RLA L R Q SQ T S I H G Y G Q A M R R Q S RLD A A A A A A D N A A QL A S L LTA GSEVSNA LVAYNSANEKNK LMQQQDDVLKKNVEHS



\section*{}
 \(A V L R A T G E V E T A D T A Y R K A R E R L A Q L D A A A T A S A K A A E L A\)










 TVLAAAF QNVA DTLAA LDEHDA QA LHAANTAARSAQ GUFDET VRKS LYYK E I Q QVVYY NARA A E S KYASS REAVASNEEAF K LTT
 TVLSSA WK DV D DA LTAFTKDGQRTDD LAAAKKAADQRAYELT TYRSVVKDVRAFNNNDNASDGADRAYEQSVIDAKSALEAT












RREAAGGQRTTDDVLNAQQDLTNARSRLIQAQRDR\|IASY QVRYQHGKNELKDWLEALNTEYSSAQNVLNQRYETLKYEN EARYRVGFANLSQLEEARRLKLNADSSAVALQQERLDAWL


 \(M R Q Y Q A G T V T V L S V V T H Q A T V L T N Q R S A V T L L G R Q L V A S V\)
 QLLYK Q S S S S Y L EVIT A Q Q N L L N A Q I S QV QE Q FTM L Q S I V


,




\section*{C} Q
\(\qquad\) 21D2F4E3
 REEA QVGQRTTLDVLNA QYALLDNARVALITAQRDRIVASY



 \(E\) QQYA L GTAASALLQLLITA QQQRQQQTARDGLI AA AAARLDNDTA TVRYQAGVG INLDVLDA QLNLDKARTNNI QALYDYNVGDA





EA GF DVGTRTVVVDLDDSTRRLYDANKNLSNARYDYVLSVL





R
M
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\section*{Q}
Q





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\(N\) L K Q AL G

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QLYVALGGGFD
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EI YQTLG
NLYYALGGG
LL \(\square \mathrm{KALLGGGW}\)
\(\bar{A} L Y Q A L G G G W Q\)
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QLLTSL
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TL Y LAA G G
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DVYQALGG
QL WLA Q Q G G
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TLE QAMG
KL DKAMG
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D F Y R
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E L L
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\hline \multicolumn{2}{|l|}{UniRef90-M2YFQ7} \\
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\hline & M4J \\
\hline \multicolumn{2}{|l|}{UniRef90-UP100} \\
\hline \multicolumn{2}{|l|}{UniRef90-UPIOO} \\
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\hline & UniRef90- \({ }^{\text {A2V }}\) \\
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\hline \multicolumn{2}{|l|}{UniRe990 UP10003B588} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90_Q3B6T4}} \\
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\hline \multicolumn{2}{|l|}{\[
\begin{aligned}
& \text { UniRef90-Q3B6T4 } \\
& \text { UniRefon A6EFR }
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\]} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & UniRef90-R6QWL8
UniRef9-_A7GYF9 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-F5SV16}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90 TOF1E2} \\
\hline \multicolumn{2}{|l|}{UniRef90-F5RKı2} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-U50MW1}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRe990-UPIO003378FD8E} \\
\hline \multicolumn{2}{|l|}{UniRef90-F2LY58} \\
\hline \multicolumn{2}{|l|}{UniRef90-F2LY58
UniRef90 K6Y867} \\
\hline \multicolumn{2}{|l|}{niRef90-14N676} \\
\hline \multicolumn{2}{|l|}{UiRef90-D3KZJ3} \\
\hline \multicolumn{2}{|l|}{niRef90-FOR2L7} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef9-UPI000367DDB8}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-R6F9V2} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-L8JRT8}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-Q0CO60}} \\
\hline UniRef90-W6LYH4 & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-R7DI47
UniRef90 R7ZSY1} \\
\hline \multicolumn{2}{|l|}{niRet90-F2PDW} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIO0047DC571}} \\
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\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-V8С3M7}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-E6QUD4} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{3}{*}{UnRef90-UPIOOO2F1FD05}} \\
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\hline \multicolumn{2}{|l|}{UniRef90-UPIO0036693AE} \\
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T|L|K Q A|I|D \(\quad\) DAF GNNRE|V|QAARLIVVRS Q
ELKK DAVEKAVVNNPEVRLKWHQFRGAG
 A WWQAFDDAELSHWI TTGLEQNYSLQAARARLEQSM
 L D K A I E I A L S E N P T I K V A DI E I T R K D T L R E C I D

D WWTNFNEP LA E I Y DLAAK QN DPQLLLSVA A QRDQAF
P Q
TLLGECLLD
GAET
\(L L Q V Y\) A A A YR D N P T L T A T R A GQRA T D
\(T L D D A L E T A L K N H P Q L M E A R E Y Q L H G A E\)

T L K D A L Q Y A L E N K S D AK K A K L S V E N S N
R G A WWS VLN D P L L L N Q L E H K L E E S N P D L Q A A A E A F T Q E R

TLQEALNYSLENNVNVKNAQLETLISSK
P A D R WWT E L G DVEE L DFWAS LG DA D L L A V L A Q A L R Q N D D I K L S A L R A K L A Q \(L L Q V Y\) Q Q S K D S N P D L R K S F S E R N Q A F
LLQQVYKQARESNPELRKSMAERNEAF
\(T L E E V L A S T Y S S N P T L L A R R A K L R S A D\)


\(L \mathrm{~V}\) TVYK D AVD N N A DLA A S R A N Y E A L R
\(\square E R C \square R Y A \square D H N \square S \square K Q Q E A T Q Q Q N E\)
L \(L Q \square Y Q Q A \square T S D P \square A L Q A Q A K R D A \square Y\)
TLEE CVVKY A V D N N I S I M K N T E L LD L K T A D A L A K A Y Q N N ST L NAERAGV RVT D EDCRRMALENSD DIK KS S R KVGGKAV
P A A A WWT RYGDPQLDALVAQA DRANQTLLQAEARYRAAAQ LVEI YEAARQYDATYLAARAQAESAR T L A D A M DS A Y R N S H L L E Q N R A V L R A A D YVNMDFWHRFGD DYLYQVVYEQARKQSDPQQLLQAAAATKDAAAF WWS SFA DPALDTALQECFRNNLILRDDRGLI YENQ Q AKESSDP Q I S A A E A GYY L A T L
\(T\) L E E C F Q Y A L E N N T T I K D A A A LLN Y D Q A A



E WWK D Y N Q T Y L N E L I E L G L K N N I D L A K S A V A D N K A L


T LRECVEYADENNDS DQQSELDLENAE
TLEEAI QMTLENNYNI KLIAANNLEVAK TLNRAVNEAI TNSY II KEA DENQKAAK D Q D WLT NF D NAHLVAMIDDEAI RANQNI RSQAFTA D DAE

LV S VYQEA V N N NA DL A A A R A DYK AQ S
L DNLDSIA EEHNPVLKAAAQEQLN QVR
\(T V D E L F R L G V E N S L R L Q A D A L D E A M A Y\)


\footnotetext{
LQ R LY LD S LEN N P LLA S A A LEMDSAR
 L LQQVYD IA TV N DPTVVKA KA QA DA QK \(T\) L K D ALLT YAMENSETLRRKARLSMMEGGK
\(T L P Q A M Q Q A D E A H P E V Q A G \square N G R D A A D\)
}

\section*{UniRef90 K9UQ30 UniRef90 UPIO0045E61CD UniRef90-19WE54 UniRef90-M5DQR7 UniRef90-G6YD11 UniRef90-UPIO00478DB54 UniRef90-R7DDB2 UniRef90-G5GBE2 UniRef90-B9M2D1 1
UniRef90 ATMWN4 UniRef90 Q482B4 UniRef90-UPIO002D8DB42 UniRef90-G2IMN5 \\ UniRef90-K8ZEJ4 UniRef90-AORTZO
UniRef90 G4SUW5 UniRef90-W6KAG5 UniRef90-V6S572 UniRef90-UPIIOO2365B87A UniRef90-H1YIF7 \\ UniRef90- M1 N853 UniRef90-UPIOO047C03E2 UniRef90_M5SWF9
UniRef90 A4BX13}

ARTLQAKASYYPQVSUAADWNKGRTFLTPTESGKSTKVHS EFKDQGIDARLLPSLSATGASSREWLHNKKAGAGFDFRGPQ HQIAEVRSRALPQVNLNGGLTYNPILQQSALPGEPFGQKW SQYNQAKDKALPTGNLSYGYSHAEDPANRLSLGPTNSRAD ADVVETTAEGLPQVNGSYEFNYNPSTPVMFLPNEPPFGDP

 EVKPQARALLLPNLSVVGTADYQNVDASGTTSFGTSFKRN VLSRSAQAPYLPSLGVVSGSYESTLKPKTHDADSPDTSTS EARKSARGAFGPKLGTTYSASKQERKTSPADPSSSRPAEK EAVPQARSGLLPQUNGGATMNNTRTELDEPSSTLSRSGNA \(\square E \square N T A K W S R \square P N D G S T S Y S F N F G R S G Q A D T Y Q S U N Q\) EKDEENRAPLLPTDSARVGYNKNWINNESPEPNTDSSGVN IDNRGADASFIPSFNANASHSWNDGNQDTTTGLLRNQTTQ ESVAGAKSGMRPRVEATASAGYTNNDGLDUGMEMEMSMK SDRQAAKTAYFPKISGSATYAYDFENIDMGMVGMEMSMKG ALVGSARAAEMPALGVQAATTRARNVALKPGARDADTLE FRAAQAGALRDPTVGLGASST

RTEAYPADGPDVSG ENVATNVSSLRPTLGLAGSVT

SSHPATFSTLNKNL NAALAGNAGLMPTVALNAGMSYSLNDVNGDGQSDDNAATV AAVDTNRGTLLPQSNLNAGYNLTRYSTNGPGVSDTNVLS QKVKVSDGKELPSLMTAPAYLGAQVPKNDNFELDTNA EKRPQALAAALRPSVKGSGSSSYTLTNASWTNYTATGAGLA VDYSKAKSSRLPNLYGTASETFSNNSDDPINSDYVTDQIM VDVKTAKASLFPSLSASVSQR VNRPNSENGTVISGDTSY YKTEEMRAQPNTSGNAGLNYNPVIGQLVVGDQSFQDGRSW EDYLQSKAALLPSLSASTNQNVNYTPWDGYSKASIDKVYY AQAGVLDANLLPTFSASASA ALVTEARAAYFPTVGLTASGSRARTPRTSLSSGSSSNFNN


ПDKSDAVGNFDPSVNGSASHSWNVGNQDTTTGVLRTATTQ NNVNPGVAGALPYLGGTLNNSGSIQDSRQVQADGTGAHNT SNYKSSISSMLPSVDFSYNYTHDYPYS\|NSGTKMRAGDND QRLAVAKSNFWPSLDGAFGAARTQANGN
 ERGKTARTSRLPNLQGGVVGQPVVFQRGLSDAVRPDTPDW EMLTSAHAGNWPRASASLSNSDSYDDTGHTGNGSGDNFSA KQHDASNGAYLPSADRDAGNGYEGDRPADSTGQDDTDLT
 MSKTSNLLQMGPSLSDTGNTGRNDNSFNQQEGRVVNGLLD ETKPQARALLLPDDLEAGVTVEQGRTFG KGDDEAFGDYLPRLDLRADMGHLYADSPTRRTQGEDQYAA
 ELLINASKGDYLPSVDLEAGVGYNKYNNSNL ARYKQAKDKALPTGSASYTYNHAEIPTTTFKMSEEGEPYY

KGSA IDDGQYRPQVDVSVQYGA \(V_{R N D W T T M N E T D G Q G A E V}\) QNDNVAKLQKLPTITASTSQFYVADDKDFSNSTK PPMPHY LLSKQAEMQEEPSLNFNYQASRKKQS YAQDQALGVLLPQLGFQMSYTDVTSEGADNEQHDGTGYTL YDTQEIRAQALPQINATGTLTDNLIIQKSPTILVAFGQKW QQVRUAQGGYLPKVDVLAGYGRENTDSPSTRAAAGSSETN
\(E T P E Q R A G G R T A S A D A G G Y D K F D\)
\(Y G K\)

\section*{UniRef90 K9UQ30 UniRef90-UPIo0045E61CD UniRef90-19WE54 UniRef90-M5DQR7 UniRef90-G6YD11 UniRee90-UPI000478DB54 niRet90_R7DDB2 UniRef90-G5GBE2 UniRef90-B9M2D1 1
UniRef90 A7MWN4 UniRef90-Q482B4 UniRef90-UP10002D8DB42 UniRef90-G2IMN5}

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UniRef90 WGKAG5 UniRef90-V6S572 UniRef90-UPIOOO365B87A UniRef90-H1YIF7 UniRef90 M1N853 UniRef90-UPIO0047C03E2 UniRef90 M5SWF9
UniRef90 A4BX13 UniRef90-UPI000368777E UniRef90-K8WHN8 UniRef90-C7BKC2 UniRef90 M2YFQ7 UniRef90-M4JVQ7 UniRef90-UP100031CDFC9 UniRef90-UPIO003B46D59 UniRef90-S6BPJ5 UniRefofo-A2WIO8 UniRef90_R6Y921
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UniRef90-D3KZJJ3
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 AFSNGISVNIPLYTGGLVEGQIDVAKLGKTNAQEEILRVE AGVTLNQVIYD
TGQFGASVGVD MYMAGITLQQPVYAGGKIVNANKMAKTGVADSEENKRLTR SNALTVQVVQPLFRQDRRVALSQARDQVKQADADYTAAE TAHQLALQARQPLFNRTNAVSIDQADKALDISRADLIQAE YGTLGLQASMTLLDFGRTRAAI EGAKQSALATRAALVGVE SGNASIEARYILYQGGANKRNLQNLLLTARQTDAESRRLV SRNYTINGSQTVFNFTQFANLR AGVDGSQT NOQFANLR SQRELSRAADFTLDSAN
F \(\frac{T}{N}\)
 DANAGIQLLNQQIFNQQVFTGLK AARTSESYYNMTANLTE NGTYSVMGNYTLYDGGKRQAQVKLNKLAGEAAQLDSATQA SFTSNIDISWQADLWGKLKNNSQAASKDVIEQALLYQAAR SYSVGLDASWEPDLWGKVSRTVSAQRAGEAAAAADLANAR NYGNTGTDSMPVYNAALNARRKAARYGLNAADFALEQTK Q FTSGRVSVGVDIFKGLQNQNRLRRSKLNILANQYQMDDMR



SQ
RKEATVSLT
 Y S VELRRQ LI F DGFRTSNDVKQAGYDKLGRFYE LLAT S
 SHNYA I GLLTQP I Y NRNSQQVRQR LAADTVVVSQSDVNFRNTBQ
 \(N V N V S A S G N V P I Y A G R Q I N N R I Q Q T K T E V E \square G R L N V A A T E\)



 \(G S S Y A V Q A T Q L I F K G G L V N K S D E M A G L R E Q L S E L D L E K N K\) S Q T L S L D L S WE D DWG RLA DA S D A A F A S S K A R E L D YV Y A R




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140
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\section*{UniRef90 K9UQ30} UniRef90-UPIo0045E61CD UniRef90_19WE54 UniRef90_JOQT12 UniRef90_G6YD11 UniRef90-UPI000478DB54 UniRef90-R7DDB2 UniRef90-G5GBE2 UniRef90-B9M2D1 1
UniRef90 A7MWN4 UniRef90 Q482B4 UniRef90-UPIO002D8DB42

\section*{} UniRet90-G2IMN5 UniRef90-K8ZEJ4 UniRef90-A0R7ZO UniRef90-G4SUW5 UniRef90-W6KAG5 UniRef90-V6S572 UniRef90-UPIOOO365B87A UniRef90-H1YIF7 UniRef90-M1N853 UniRef90-UPIO0047C03E2 UniRef90-M5SWF9
UniRet90
A4BX13 UniRef90-UPI000368777E UniRef90-K8WHN8 UniRef90-C7BKC2 UniRef90 F9UFL5 UniRef90-M4JVQ7 UniRef90-UP100031CDFC9 UniRef90_S6BPJ5 UniRef90-A2WIQ8 UniRef90_R6Y921
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UniRef90 UPIIOOO47B67D0 UniRef90_UP10002F42D5F UniRef90 R1GVW5 UniRef90-R5K707 UniRef90-UPIOOO3B58811 UniRef90-S7VLI8 UniRef90-R6FHEO UniRef90_Q3B6T4 UniRet90-A6EFZ8 UniRef90-R6QWL8
UniRef90 A7GYF9 UniRef90-F5SVI6 UniRef90-TOF1E2 UniRef90-R5KOS6 UniRef90-F5RKI2 UniRef90 U5QMW1 UniRef90-W2UM24 UniRef90-UPIOO0378FD8E UniRe990-F2LY58 UniRef90-K6Y867
UniRef90-D3KZJ3 UniRef90_FOR2L7 UniRef90-UP1000367DDB8 UniReffo-U3BCH5 UniRef90-R6F9V2 UniRef90-A0A038IKW5 UniRef90-L8JRT8 UniRef90-Q0C060 UniRef90_W6LYH4 UniRef90 K9H3B7
UniRef90 R7D147 UniRef90-R7ZSY1 UniRef90-F2PDW5 UniRef90-UPIOOO3FEO4D7 UniRef90-UPIOOO47DC571 UniRef90-UP100040C1886 UniRef90 V8C3M7 UniRef90-E6QUD4 UniRef90_UPIOOO3715939 UniRet90-UPIOOO2F UniRef90 U1L5S7 UniRef90-UPIo0036693AE UniRefo-LLLVV5
UniRefol-HPIOOO



150 ESMALLQVTQAYADVLRYRQLVEFAQENYATHKGLYDQDQLK LS LI ATTAEAWWQLGYANEQUTMGADSIA YVRRLLDLVVNK QNLVNAATAYADVFQYRRDADLRRENLAALEEQVRSDRA NTVAGQVATAWLGLRKETQMLVLLNSQQQRIVESALKVVQG



 \(N D\)
 Q DL AFRVRSAYY LLLAA EKQVVAVKETVEAREAVFRAAQE


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UniRef90-W6KAG5 UniRef90-W6KAG5 UniRef90_UPI000365B87A UniRef90-H1YIF7 UniRef90_M1N853 UniRef90_UPI00047C03E2 UniRef90_M5SWF9 UniRef90-A4BX13 UniRef90_UPI000368777E UniRef90-K8WHN8 UniRef90_C7BKC2 UniRef90_M2YFQ7 UniRef90_F9UFL5 UniRef90_M4JVQ7 UniRef90_UPIO0031CDFC9 UniRef90_UPI0003B46D59 UniRef90_S6BPJ5 UniRef90_A2WIQ8 UniRef90_R6Y921 UniRef90_D4ZFI4 UniRef90_UPI0004689A3A UniRef90_K2NT57 UniRef90_A7V8T6 UniRef90_S6BT77 UniRef90_UPI0003B46035 UniRef90_UPI000478027C UniRef90_A0A059IQB7 UniRef90_UPI00047B67D0 UniRef90_UPI0002F42D5F UniRef90_R1GVW5 UniRef90_R5K707
UniRef90-_7U3Z4 UniRef90_L7U3Z4
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UniRef90_S7VLI8
UniRef90_R6FHE0
UniRef90_Q3B6T4
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UniRef90-R6QWL8
UniRef90-A7GYF9
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QEKA G \(\square\) GTKF D \(\| \frac{L}{}\) R A Q VQQLA TA D R D L T T N A Q G Q Q Q T A R K K


 RF EVGGEGTVTDDVAQA DA SRS SAVAQL SAARA QALASAAAY L E R A GVVGT QF DV L R A QV T LIA NA QQ DL S QA L S QQRRIRRRNVP







\section*{R}


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\(N F E V G T A T \square T D T R E A Q A R F D L D A S A Q E L A A E N T L R T R Q L A L L\)

 \(R L E V G L A P I T D V H E A R A Q Y D Q A R A N T D I A Q N T L A D A Y Q A L\)


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QFSVGTVARADVLASEVELANA QQNLTTARNNYEVAVATLD

















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UniRef90-UPIO0045 UniRef90-UPIO0045E61CD UniRef90-I9WE54 UniRef90_JOQT12
UniRef90_M5DQR7 UniRef90_G6YD11 UniRef90_UPI000478DB54 UniRef90_R7DDB2 UniRef90-G5GBE2 UniRef90-B9M2D1
UniRef90 A7MWN4 UniRef90-Q482B4 UniRef90_UPI0002D8DB42 UniRef90-G2IMN5 UniRef90-K8ZEJ4 UniRef90_A0R7Z0 UniRef9-G4SUW5 UniRef90-W6KAG5 UniRef90_UPI000365B87A UniRef90-H1YIF7 UniRef90- M1N853 UniRef90_UPIO0047C03E2 UniRef90-M5SWF9 UniRef90_A4BX13 UniRef90-UPI000368777E UniRef90-K8WHN8 UniRef90-C7BKC2 UniRef90-F9UFL5 UniRef90-M4JVQ7 UniRef90-UPI00031CDFC9 UniRef90_UPI0003B46D59 UniRef90_S6BPJ5 UniRef90-A2WIQ8 UniRef90_R6Y921
UniRef90- \(57 H T 3\) UniRef90_D4ZFI4 UniRef90_UPI0004689A3A UniRef90-K2NT57 UniRef90_A7V8T6 UniRef90-S6BT77 UniRef90_UPI0003B46035 UniRef90-UPI000478027C UniRef90-A0A059IQB7 UniRef90_UPIO0047B67D0 UniRef90_UPI0002F42D5F UniRef90-R1GVW5 UniRef90-R5K707 UniRef90-L7U3Z4 UniRet90_UPI0003B58811 UniRef90_S7VLI8
UniRef90_R6FHE0 UniRef90_Q3B6T4 UniRef90-A6EFZ8 UniRef90_R6QWL8 UniRef90-A7GYF9 UniRef90_F5SVI6 UniRef90_TOF1E2 UniRef90_R5KQS6 UniRef90-F5RKI2 UniRef90_U5QMW1
UniRef90_W2UM24 UniRef90_UPIO00378FD8E UniRef90-F2LY58 UniRef90-K6Y867 UniRef90-14N676 UniRef90_FOR2L7 UniRef90-UPI000367DDB8 UniRef90_U3BCH5 UniRef90-R6F9V2 UniRef90-A0A038IKW5 UniRef90_L8JRT8 UniRef90_Q0C060 UniRef90_W6LYH4 UniRef90_K9H3B7
UniRef90-R7DI47 UniRef90-R7ZSY1 UniRef90-F2PDW5 UniRef90-UPI0003FE04D7 UniRef90-UPIO0047DC571 UniRef90_V8C3M7 UniRef90-E6QUD4 UniRef90_UPIO003715939 UniRef90_W4T3T3 UniRef90-UPIO002F1FD05 UniRef90_U1L5S7 UniRef90_UPIO0036693AE UniRef90_L1LV51

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v

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 RQVIRDDPDKLERPPVANQI PKTPDVGYKSTHPAILYARY AALTDEQDNALAPGPTLSPLDGRVSSAALKKRPDVETAFY


 REITTGQEHKNLNVLDTARFSASRSSESAETLIEEAKTARID ALWSGTLANQLPKSPQGKDPVSGDELKALKYRPDDQKSYA
 HDLVGDPEDFRPQLPADSGNDDGLDASALDKNPSLRSYQY \(\begin{array}{llll}\text { SNS } & G D P S L N K C U L A E P S T A I G A V P D R A F A Q N E A N N R A E L \\ R E D I G E D G E L S P I G K E L P L I V P E P N E M K A W N F S I I S A F N\end{array}\)
 AVLLNTVPAGFHIQPDNDSRMHGDPSTLLERRPDVAMNER
 \(K\) LQMGLPMEYDVELVNPDDEDNALMVDEGIVRVEVSQLET AVLLGEMPQYADYNPGPPLPSTGLPAELLNRRPDVRRDYL A QLLQEPAEGFDVAPIEVEAPSANLLYDNAYMPEIANAKL A LLLMPQPELDDDPDTVLPVPAAGLPVDLLSRRADVHAAELC
 VNNVGRPPEPPATPPALPANLEDVTSMALAANPSVVSADY \(R R I V G P \square R V P L A R L G D K L P L A P P D P N D I D V W A E S A M R G N Y\)
 NTLAK \(\square K F T G K L A H V P F T R S L E Q C L E A A Y R Q R P D L Y M A A R\) VTLTTNREYNS DEGMLHTLPDVEPVPNDAKAWVDTAALQNL
 NN L L GLPADHQLPFDTYNIS LQEATEYAMKYRPEVLQAAD
 QQII GDKPGEDKMANPLVKFMESAISVGLSEHPVIIARQH CHLI GDEDDAQIIATDTTQNYNNQLSHDIVNRPEYRDQEM
 DQLVGRQGVTPKPLATPVVLPSVEPADPEAWVPAVRRAAL KAAVGHYPGKDSRPPKAPADPRSLKDAAADAQHDQKQAQY NNLMAQSLDYDYEVEKQVPALNTLLGKAKENNAELVADRQ



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\section*{K}
 KELLQDTDEEAFDVVMPNPALQSVYTAALDRRPEMKVYQN \(K\) QLVGLSNAQDVAAPESYPQVKDLPQQTLARRPDLQAA ATLIGEPASTFSLPPNPPDPVDVPSADLERRPDIAAAER ANLQNVILKDKLNSKAYDVNFDNLLETAEASRPSLLSAKK \(N N V I M L T I N D E L R Y T G Y E L S L D D C T D Y G L L Y R A D G A A A V Y\) ARLLNYDDPTELKANEPDEQVGDWIQRALTQRTEGAYQDT AQLLLLDDYESFDVADEDYMPEEVYQKSLTFRGDVKLSMA NLALRKNDNDIMQFKSKTYNLNKLDDTAINKRPLLKELAL ERLLGRYPNAQLDVSQTGSVPDGLPSELVTRKPALQANWL EKAVGDPLSHDMVPEVAPKEESLLQDDPYS\|ALQYRPELV DILLGLDESRMLLPDTSLLRRSVALQEYDAYVEEMQLLRK
 GMTPAVDLQPVPDVAGKLPQQPANFDDSLEMNPSFLAKQA AQTLQLDPLINFNIEEPAWNVNELYADAVENRSDLAGAKH RQLTNQEYAQI AlLSEQMPLSLPKPSDPDEWVRELRSANF RYLQVFGTPAVVDSMTAPRPPVDLLPETDDAADEIARAEN SQLGNLEKAEGFDMEEPDMNPKDAFKFSVENRPG|KSALY VRVVGQYPKDLVKPEVDVNYLPKSLDDALEKAKKYHMAAN KALMGYPEAEPLTVVYNPEAMELDE ALDTTQKADFQQLQT
 AVLTGKPPAEFPRQVVGCPIPVGDGATLLKRRPDVRMAER SLALGLPSDTENVPTENLENKESGIGMDYYMNMAHKSARK NILRRETPDSPTEMAQUAAPPTKLPGEVVGSRPDLLAAYQ
RTUGKYHTETESTVKPTQNTNDFUEIAKAKNLDLQVAKS

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 EVGA A S R F QKK S Y L A E Y Y P T L S L N A N Y GY Q GL G K E F P WG Y W


 D I ENANFN I K \(\square A\) KAS F L P \(R \vee R S S L A D A D A T R L S F Y P\)
 THAAAKD GI DLVVWGELLPTVVSLGA ST GIIAASEAVGAARSGFYPSLDLQA QV VA A G GMSRA DYPRR GYDIARSGAENTD
 S V E \(\square\) A GK S QQA VQ S GYYPQQVEAYYNVSQS GNQEKGDRGSR
 \(R A D A A S D E L G V A R T A W L P T L T V T A Q G G F A S R D D G S G L D R N\) RLEGAAKNVRIAAQSAYYPQLSFGGGDGTNYYKVSGMGNND AVQEAERNI DI ANAGNRPTVAITGGNDWADNTFPGDDAN GKDMA QE A I S L Y K A GHMP S L S L N A GYT TN D Q Q E N N N N DR D \(N\) L E VA E K DVA A A R GA Y QP T L Q G F Y S Y N S R A Y A D Q T F K L N Q I DAA SF K V K S S E GA A LDP QVVTGSA GLSHNYTNSSTP GLDGS

 AYE \(\square\) A R \(\square E T D K A R A G H \square P\) QVKAAEYAVKRAKA QVRP \(N L R\) VS E N S L H \(\square A Q A A N Y P\) KVAAESGVSAARGAHYP SRDAAKERI SLAES GHLP

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\section*{H} RI E E GLL NV K A S QK EF Y P A I E A N QL RTKVA YK QLLP RAA A A NEQ \(\square G V A \square A A F F P\)
LMDAA E L GV RAA KRAFTP
\begin{tabular}{l|l|lllllllll}
\hline\(L\) & \(R\) & \(R\) & \(Q\) & \(A\) & \(K\) & \(A\) & \(N\) & \(E\) & \(A\) & \(N\) \\
\(N\) & \(V\) & \(E\) & \(I\) & \(A\) & \(E\) & \(M\) & \(D\) & \(L\) & \(K\) & I \\
\hline
\end{tabular}
NKRIA E L D L KI VK A YRYP
E LK Q A NLGIKLNQSSYYP HVNVNSGYNFTNSTSALGFAT Q A LMA A
 SLEDSRKAAAEELAKAAAGQARPNDY LQGEVVSYYEDEFFPN QTE DAKNEVRLTKAEALPSDSLYASNTLARPVSRTMADMY A LA E N Q ALI H Q A K T A R WP D L T L S L S W GUD D DIIDSARYQYK QSK GPFYP TVLSI EA S S OTWRDDAGGDEGR GIESSDLSI KVAKAGRMPTVSLNAGVTTSTSSMWGTQMKN YLLQAANAGVASAKGAFSPKFEFVAATGRDREQPEPQYRDV NESSMEFNYRAMKGNYYP L L A A A T A G I G L N \(\square\) A E A F P DVDKARENI NLQKS GHYPT QI A IA D E R RDLA E S GYYPRFN LELS GTYEN DVDP HLLRD GM AL E S S RFGLKQARSGYYPTLSFGASYGTSYYHAYKGGDEN \(G V N S A E L G V R D A K G A F L P T L G V N A N V F S N Y V D Q T F R Q F E N\) DVDAA E YQYKQATGTFYPSFSIEA SQEWGDDLNGVEGK
 ERDRAQQLRRAALAATRPNVTVGATYNINDNPDYRAVRGW

 NI DIDA DK NIEEIDKT DNMPTVAGFGGYTDQRTTRNPVLDMY

 DIAAA DKQYDTAAKSRFYPR S F A ANYAYS GDSDKF D Y N


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UniRef90 WGKAG5 UniRef90-WGKAG5 UniRef90-UPIOOO365B87A UniRef90-H1YIF7 UniRef90-M1N853 UniRef90-UPIO0047C03E2 UniRef90 M5SWF9 UniRef90-A4BX13 UniRef90-UPI000368777E UniRef90-K8WHN8 UniRef90-C7BKC2 UniRef90-M2YFQ7
UniRef90
F9UFL5 UniRef90-M4JVQ7 UniRef90-UP100031CDFC9 UniRef90-UPI0003B46D59 UniRef90-S6BPJ5 UniRefofo-A2WIO8 UniRef90_R6Y921 UniRef90-D4ZFI4 UniRef90_UPI0004689A3A UniRef90-K2NT57 UniRef90_A7V8T76 UniR Ref90-S6BT77 UniRef90_UPI0003B46035 UniRef90-UPIO00478027C UniRef90-A0A059IQB7 UniRef90 UPIIOOO47B67D0 UniRef90-UPIO002F42D5F UniRef90 R1GVW5 UniRef90-R5K707 UniRef90 UPIO003B58811 UniRef90-S7VLI8 UniRef90-R6FHEO UniRef90-Q3B6T4 UniRet90-A6EFZ8 UniRef90-R6QWL8
UniRef90 A7GYF9 UniRef90-F5SVI6 UniRef90_TOF1E2 UniRef90-REKOS6 UniRef90-U5QMW1 UniRef90-W2UM24 UniRef90-UPIO00378FD8E UniRe990-F2LY58 UniRef9-K6Y867 UniRef90-D3KZJJ3 UniRef90_FOR2L7 UniRef90-UP1000367DDB8 UniRef90-U3BCH5 UniRef90-A0A0381KW5 UniRef90-L8JRT8 UniRef90-Q0C060 UniRef90_W6LYH4 UniRef90_K9H3B7
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 NWVASLAGSLVLPLTDGGQRRAEVQRQQALETEAVANYQQ TNSASIGATLT P YSGGRTSALVRQSKESLGQARIDEVDV

\section*{and}




 A F WK V A V V A A V E P V F T G GM R R A A L Q R A W S Q Y R E R V D D Y R S
 S D N WF L G V S M S I P F F G G L S K S A R I Q K N R I Q L Q Q L E N Q R F F


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N




 NF S Q Y I G LT L S VP I F NR F S T R NR V R SARRVQE I L Q N WQ LE D K R S WK V A A GVVTYS LY D G G A T K A K V N Q A K Q D L L V A R E T E Q K



 NRVW AVGGAALAGTLFDGGARHAQRAQAQAVFDAAAANYRQ







 Y D A S A DGGVTM RVM I F S GFA DR S K V R Q A DVDDLKA A E E D R R Q

 ARFWTVGPQ
 S D T WAV GVVSAS WNIF DNGVTA A QVVDAAKATLRKAEAALAA




 N N A WN F GLLSVSYPLSS LYKNNHRVKESKFAVQMNLNAEEQ



 \(A L N F A A G P Q L A W S V T G L I R A G D R V R A A R A S A D A A F A M Y E Q\) NREFS SALVTANWNTFNGGAVSSRSREAAYNYEAAR QSLE D
 \(N L S Q S M N M A L N I P V F S Q F R N R A G L Q R A R V Q R R L S E G Q E V E\) T DELLKAMLKKMRYNLFNGGSDVAKSRRAAYQDNKSKDVRDR


 TMRFGLGGLI SWDFPNRDLAAKVHIA LAKSGGQEAAFARFD G NATVFAGVAMSLPAYRGGATENRVEQANIQYQQALELQSH
 S S A WS LL GGGITAPLFNRESLKANAEVKALDAEDAYDN YQK

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UniRefon-HPIOOO
 RKQFD门GQRTLLDVLDSENELYDAKRAYVNAQMDHTTAQA



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D
 R E QF RVGMKNTVELI TA QNELTAARQEVLQAKYMALLN

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 QAGFEVGTRTIVDVLNRTRDLYDSKRKLSDARYGY NSUL KERYAVGMMNSFDFNQAQTLLTNAQSEVIRTKYDYI DEERNVGQRTTLDVLNAQADVTTAKDNVVSAERDVVASY

 Q E E A K L G S R T T L


 QKKY E L G G L S T T DLV DS QN TYTNAAQQNY LQ A K Y
QEQFNFGMKNTVVELTTEKNNLLSAQQEMLQAKYMADLNT


 RVRYNAGVGTNLEVMRASDNLTTARMNYSTALYTYNTGKA R R R F E S GVG T Q T DV DT A D R D L T Q A R V N QLTAV DGYNRA L V


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\section*{\(\stackrel{\top}{\mathrm{Q}}\)}


 EK Q F K I GQ RTLLDVLNTENELTEARKAYLTAEYDGULAKY


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UniRef90-B9M2D1
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\(N L D W V M G\)

\(S L L A A M G\) LL SQALG R K R A RLKQA
RVYNTLG
QI \(\quad\) K SKG
R L VRA
TLLKSTG
SVQSSIG
DLEKALG
\(S L Y \backslash A L A G G \square D\)
Q \Y A A LGGD Y
NI EFARG
NIKHALG
QVKSALG
RLHQAT
ALYKA \(\square G G\)
SLLAAMG
QLYVAMG
RLKQAAG
\(S L 1 \square R A \square G G G W\)
K LE QVMG
ALK QAA G
A ILSAMG
EYLRA I G
RLLSAAG
ALLVALGGGDWD
RLRQAAG
QLLASMG
EVVRLSG
QL GQAVG
QL R QAVG
TLYKAVG
AVYRSLGGTW
RLKQAAG
Q L L K
AFRK A S G
QLIK S N G
Q YYKAMAG
\(N L G L A D G L G\)
ELERVVG
SLDNAMG
A 1 QRAVG
\(N\) LSQUSG
KLQRTI G
\(\mathrm{R}_{\mathrm{R}} \mathrm{L} \underset{\mathrm{K} Q \mathrm{Q} A \mathrm{~A} G}{\mathrm{H}}\)
DL DY A MG
QLERACG
NVYEAMG RVMNATG
ML
R

AVVRVL
TLRQAAG
\(R L L A A M G\)

R VLNATG
TLLKSTG
DVQKALG
AL QRAV

QL HFLAG
NLLKSTG
\(T L G L A L G M G\)
RLKQAAG
QL \(\square\) K S NG
RIKA T 1
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\title{

}
 WA QAAAPTLLSAYRAALANDPQFAAARAQSVAQH TMKSSLARAYLGNPDLNQQRANVSARN \(T L \square D T L S A T Y Q Y S P T L D A A R A Q Q R A R D\) NWWRRLDSAQLDNLVTDALAMNHDLKTSQLQLDAA D QQSIDYALQNRHSLKMARNEQEDAK EEAMSLA GNDPQLLA A ASEYKAVG



\(\qquad\)




 NMDWRELFTDP
WAQAAAP
QWWRRLDSA
QWTGNDP
\(\square F A D\)

\footnotetext{
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AEWWK\FHDD

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\footnotetext{
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\(L L Q L L E S A R A Y D T A W Q S A R A Q F D A A L\)
E A LA LA Y A N N P T L N A A R A A L R A T D
\(\square M Q V Y Q E A L A N D A K F S A A R A E F E A G Q\)









 相 a

T L K K C VE Y A LE N N \(\square S\) S \(\quad\) K N A L N \(\square S L S E\)
T L K S C L E T G L E R N Y S
LQ A C LD Y A K T N N TT L N S Y R L N R L S S Q LEDCIN YAVQHNISVGKTELNQQTAE SADLLLQVYRDAQSNDAQFASARAQLVATR
\(T L P A A V D L A L C H N A Q V H G A W A G L R L Q A\)
LT Q 1 YT QA REA DP T LAAADAN RALAT K
T L E D A V K \(\quad\) IA L E N N Y D

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\section*{VNTKEAKA QLFPSFDFSTSHNYGNYPLADGSREGNNVYTG} \(H Q D D Q A R G G Y F P K D D V V A G \square G P E K Y D S N Q S S T D G K N L T T K\) \(A V L M S A K L A F L P A F A L A P Q G T\)
\(A\) QRDVTAAS QWF SVVADF DA QR


EKLT QGRS GLLP QI GAAWSSTR】IFDQTAPAEF
K Q GRS GLLP QI GAAWSSTR\|IFDQTAPAEF NKTGS EDVAKAA GGMRP KL NA SVNGGPQFNRQLRQPA GRNSSNERV Q YRA L G R A A L L P R L V Y S Y NRGRS WS DTTTTRGD FK E DR D Y D A R L GA AR A DYYP Q GS LS VIAAERSSSLD


 \(K N V D \square A Q A D W W P Q V G F E A G Y S R S Q R E T M N F D S T G S S Y M Y D\) E A L P Q A R S G L L P Q I S G S A S L T R N E V D Q R S P DR V E R N G T S K E N K N DG R A GLLLP T V S V N Y R N G P R N WQ T T G Q Til E T S V V Q Q Y S DVLLKNYGQFLPRVVVNATYTPRSVNKSYGTGTTPSSGVK

A EVGQA RAAY LP T LLSGT N FMRT

\section*{V G L G V A E S A WL P S L S L T D N A A R}



 E EKNLGGVAELLD KLLSL S Y QNAPKNWDRLGRTVVKSSRMRQY


 \(\square D K K D A F G N Y L P S A N G N A S H S W N \square G N Q D V T T G Q L R N Q T T Q Q\) E GVA A A K S G Y R P TIIS A E A VT T S DV L R RYGS F LDP R L S V S A GYAPYTLSRTYTTGYPQKTTMK

 NNATLANAGYLPTVDDSAGYTGTVDNTGSKLRESGGVFD Q
 E R WP QA LAA GLL P NI SVVQASRERVHLDQTT SFASVDTYFF A AFD \(\square\) AESLAVVPSLNASAGY ERSR \(\square\) KETTVRSSTTRS \(S V I D R G K D A D W L P Q V N F A F N Y Q H N Y D Q S S V I G G G N V R F G V E\)
 \(G L K R Q A G V R P A P S L S L N G A T G K \quad P D G T D G\)



NDNTR GNAGMLP IVT GSTQANFNNNSVNQTFFPLGTATNR \(E K L P Q G R A G L L P Q I A G A V G A S R T K D D Q S \quad A P V V G D R F L N\)




 GL GERTSEGLDRQTSRLNATKNPFPAQFFDPEAPE GTF
 QDVYQAKSNDYPDLSDGVNQRFNNFDQVSGTVITGNEWTR

 EKVVQGRS GLLPQI GL NAETRWNDAELRTSSSPRAMDYSY Q NFSLLGNAGULPRVTGNFTRTNSDQNSRQQVQELNNAKND


\(R D V A \square T\) Q G N F L P S \(\quad\) NAS S S G G \(\square\) N S G L S P D R S GVLK N T T N F SNATRAAAGALLPTLDLSAGYDSRTRPRAGETSSENGAYDQ

\section*{UniRef90_H1Z9F0 UniRef90-TONKT5 UniRef90-UPIOOO37FF436 UniRet90_FOBSE1} UniRet90_WOER40 UniRef9O-UPIOO04672FCA UniRef90-D6CYX0 UniRef90 W1YYQ4 UniRef90-D8N718 UniRef90-UPIO00478FECF UniRef90-Q03027 UniRef90-F8.J697 UniRef90 -Z5XR65 UniRef90_UPIO003675F8A UniRef90-=5T3A UniRef90-U2XQS8 UniRef90_UPIO0036CA971 UniRef90-N9RCU9 UniRef90-UPIo004224C46 UniRef90-19W8B5 UniRef90_UPIo0036E46BF UniRef90-R9PQF2 UniRef90-B4S8W5 UniRef90-B5IL51 UniRef90-UPIOOO3A2305A niRet90-B1XPW4 UniRef90_A1ARK3
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\section*{UniRet90 N6Y3S2}

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UniRef90-UP10003751C4C UniRef90_C7PNG5 UniRet90-L1PA81 UniRef90-Q1LJU2 UniRef90-A0A031GVN9 UniRef90-UPIO0035D0609 UniRef90_UPIOOO47E4FB7
UniRef9_ F7VHS3 UniRef90_-F7VHS3

\section*{}
 SYNGNIALSETIFNGFKLKYARASTLLLTEIARTNVALSE YSAGFDASWELDFFGRRRRAAEGADAQAQASEAELADAQ

T YNLNASWT I FDGKRRNTIKSNQLQERQQQYAFQESLD
 ST S S G VS WEVDVWWQK DA DNVAA QDMT \(\square A S N Q A T Y Q G A K\)


 TS H GYTLLS LTQSVVYKREN FVQQKTQAE DAMKQADASYSVAE

 SGWSLNNLTQPLLFRWDRWE TYKQGEDQVADADTTLAQAS





 S WSTGGSL S LPP I A P A L WK S L K L S A V Q L E Q S LESAR S S R

 ENAYGVVIIE QPDWQ GGHTLLASISRKAQNGVVARLAAMMRETE







 NTQYY S D DLT QPIF DYSAYQRLDQADAQDAQAAAQVHAA EQ \(H \square D \square G T V L H W E P D \square W G R L R A G Q A A A S L S I E E K K A M V D Q V A\) NASSGQLJT TQALLFNRDVLLDASTTAS KVRVQARQNIEKSK


 \(S G N Y G V T S N W V V Y N G G F D N N D D R Q K T V L L E S A Q L N V Q A A Q\)











 N S NGYGVQQLT Q P L F R WQ NWVQ F K Q GE L Q T A L T E A Q F GV A R NMNYGVTLLNWTVFDGFRMFARYDQLREIQKQGETEVKYE I
 A NA G \(\square\) GNF E LLDFFGKLQALSEAARERYLASDYGRQAAR SWQSDAS LS WE IDLWGKVARQHDQSVWQAQASDSDRLATA

N GRF N L S V N G T DV N G F R N L N S Y K Q A Q L G I E A S K L D L E K A Q
 A QRD \(\square A Q W E A Q A S A E D L Q N T A\)
SGSSSLNSSVT LYNGGY LKTDDQQKDLLVK DAGLDLATVE SNNFGVSASMPLYQGNKLNLQIDRSQLLLEQNELYVQEAK



UniRef90 H1Z9F0 UniRef90_TONKT5 UniRef90_UPI00037FF436 UniRef90_FOBSE1 UniRef90_W0ER40 UniRef90-UPIO004672FCA UniRef90_D6CYX0
UniRef90_W1YYQ4 UniRef90_D8N718 UniRef90_UPIO00478FECF UniRef90_Q03027 UniRef90-F8J697 UniRef90_Z5XR65 UniRef90_UPI0003675F8A UniRef90_F5T3A0 UniRef90_U2XQS8 UniRef90_UPI00036CA971 UniRef90_N9RCU9 UniRef90_UPI0004224C46 UniRef90_I9W8B5 UniRef90_UPI00036E46BF UniRef90_R9PQF2 UniRef90_B4S8W5 UniRef90-B5IL51 UniRef90_UPIO003A2305A UniRef90_B1XPW4 UniRef90-A1ARK3 UniRef90_B5EKE5 UniRef90_R5Y3Z4 UniRef90_B6EQ11 UniRef90_I2JF27
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UniRef90-W7R3P4 UniRef90_T0ZKX0 UniRef90_F5SUS5 UniRef90_W1IWL8 UniRef90_K9X137 UniRef90_UPI0002E71B44 UniRef90_UPI00047E8432 UniRef90_K6XZ39 UniRef90_D5QD98 UniRef90_UPI0003F88CB4 UniRef90_A9D5R6 UniRef90_B4SAI4 UniRef90_UPI0003B48548 UniRef90-J2L6T6 UniRef90-H1CXV1 UniRef90-R6YNJ6 UniRef90-K5ZBD2 UniRef90_A4BV04
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UniRef90_F7VHS3

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140 140

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 LT L A S D L A TA A WF DL Q A V E Q R L A L F S R R L S N L E Q NL E I I E S




 QELLV RVLEAYTGALLLAQDQI ELARAQKRSYREQFQLNQR


 QTVLLNAAQAF LDVLRRDALTS LRRKNVEVLERQFQAVKD

 D D L I T T R V VA E A Y F N V L


 E ETRLLA A A V N Y Y NL Q S A D A QVVVI E Q S SVVF DA T Q S L R D A T L
 L S MV D QV K KA Y Y S I L M A N D S Y E V L Q Q S Y D NA R I NA D T YR H










 V S L S A E V A M N Y I T L R T L Q E E L A V T E A H I H N Q K E N L A L L Q V
 \(D L M F B L\) AQRYF DVLA GRADDSFARSDLKA DERQL EQAGQ



 \(\bar{N} D\)


 E F L T L L




 ENAARETALDAYLDVQQYQALVVKLAQENLTTHEKVFSQDE E



 \(N D V S L F V V N G Y L N I L D A K E N L A V A R V Q A E D S K K Q V E A A S Q\)

 \(N N I T L S V L E A Y L Q A L Y S Y E G I\) EVVAKNAASSSAEELKQAQT
 QDLLVRTATAYFNVLTAEDQLTFSQANEKSLQKQLDQADE


\section*{UniRef90_H1Z9F0} UniRef90_TONKT5 UniRef90_UPI00037FF436 UniRef90-F0BSE1 UniRef90_W0ER40 UniRef90_UPIO004672FCA UniRef90_D6CYX0 UniRef90_W1YYQ4 UniRef90_D8N718 UniRef90_UPIO00478FECF UniRef90_Q03027 UniRef90_F8J697 UniRef90_Z5XR65 UniRef90_UPIO003675F8A UniRef90_F5T3A0 UniRef90_U2XQS8 UniRef90_UPI00036CA971 UniRef90_N9RCU9 UniRef90-UPI0004224C46 UniRef90_I9W8B5 UniRef90_UPI00036E46BF UniRef90_R9PQF2 UniRef90_B4S8W5 UniRef90-B5IL51 UniRef90_UPI0003A2305A UniRef90_B1XPW4 UniRef90_A1ARK3 UniRef90_B5EKE5 UniRef90_R5Y3Z4 UniRef90_B6EQ11 UniRef90_I2JF27
UniRef90-K6XD89
UniRef90-W7R3P4 UniRef90_T0ZKX0
UniRef90_F5SUS5 UniRef90_W1IWL8 UniRef90_K9X137 UniRef90_UPI0002E71B44 UniRef90_UPI00047E8432 UniRef90_K6XZ39 UniRef90_D5QD98 UniRef90_UPI0003F88CB4 UniRef90_A9D5R6 UniRef90 B4SAI4 UniRef90_UPI0003B48548 UniRef90_J2L6T6 UniRef90-H1CXV1 UniRef90_R6YNJ6 UniRef90-K5ZBD2 UniRef90_A4BV04
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170
180

200 FYRHGIVTKNDVLRFRLQKSAIEDTASDLEANRKII CYNM GYRLGLGGADDVYLARNDVQSEQARVEAQNQQRSEAVRQLC
 RTESGVGSTADYMQUKGRVARAQANLSSAENNMLDAQAEF LMNAGLANESAVSQMEAAYYQVQGSVLDLQQQUNQVENSLL RYQYGLG GLLEALDTARTNTASTRATI ADYQEQIAQAKRALL \(N F D V G N A N L T D A N D A Q A R R D V I D A T V D A A R S D F E V K Q S A L\)
\(R A E L G D T T A Q A L A A V A H A R T E F Y A S Q A A L D A S A A S F R Q U I\)



 \(R F D V G M D T R A D L A Q V L A Q V A Q G Q A D U T Q A Q S N L T V S E A Q F\)



\section*{} E Q A G L GT K F DVVL R A E V E LAA S A Q Q R L TAR A E A T Q R TA R R R

 \(K Y E Q G T A S E Y D V L Q A D D V A V R N L E P S L L Q A E N A L R L S K L N L\)





 QF Q \(\ G L K S M T D R Y Q Q Q A D A S E S A D Q V D K A E T A M Q Q \| E P\) QT



\section*{ \\ }

 \(K V N A G V G R R V D L E Q A N G R L A L A E A N L I D T E S S N L D N D V S A R Y\)
 \(M \square R Q G D A T R A D G L K V A V K V N Q A D M Q I V Q V E N G L S L S K M L L\)
 N F EVVGTA T I T D T H E A Q A R F D L A A V A L


 LYEEGFA EKIDVVTRDRVQNNNDRTELVKAKTSTSSVSKALL
 Q F QVGGNK T L A D L S Q S K N QV A T D E L N L V N A R N A Y E S S L L T L




 \(Q L Q V G L I S R D Q L D A Q R R Q A D Q A H V A A L Q G D A D H A A A L R A L\) R A A A GGVS QA DVHAQRTLLAAQTQAALR PLAA RLAQA DHRL



 RA QRGLGSHSDTLQATSALDAKAALGASRADGEFQKAHAVL



\section*{UniRef90 H1Z9FO} UniRef90-TONKT5 UniRef90-UPlooo37FF436 UniRef90-FOBSE1 UniRef90-W0ER40 UniRef90-UPIOOO4672FCA UniRef90-D6CYX0 UniRef90-W1YYQ4 UniRef90-D8N718 UniRef90-UPIO00478FECF UniRef90-Q03027 UniRef90-F8J697 UniRef90-Z5XR65 UniRet90-UPI0003675F8A UniRef90-F5TЗАО UniRef90-U2XQS8 UniRef90_UPIO0036CA971 UniRef90_N9RCU9 UniRef90-19W8B5 UniRef90_UPIo0036E46BF UniRef90-R9PQF2 UniRet90_B4S8W5 UniRef90-B5IL51 UniRef90_UPIo003A2305A UniRef90-B1XPW4 UniRef90-A1ARK3 UniRef90-B5EKE5 UniRef90-R5Y3Z4 UniRef90-B6EQ11 UniRef90-12JF27
UniRef90-K6XD89
UniRef90-W7R3P4 UniRef90-ToZKX0 UniRef90-F5SUS5 UniRet90_WIWLL8 UniRef90_K9X137 UniRef90-UPIO002E71B44 UniRef90_UPIOOO47E8432 UniRef90-K6XZ39 UniRef90-D5QD98 UniRef90-UPIO003F88CB4 UniRef90-A9D5R6 UniRef90-B4SAI4 UniRef90_UPIOOO3B48548 UniRef90-J2L6T6 UniRef90-H1CXV1 UniRef90-R6YNJ6 UniRef90-K5ZBD2 UniRef90-A4BV04
UniRef90 KoNK94 UniRef90_UPIOOO46E8719 UniRef90_UPIOOO4062458 UniRef90_UPI000415708B UniRef90-UPIOOO4797031 UniRef90-C1D4V2 UniRef90-H1YAL1 UniRef90-G8TJZ4 UniRef90-R5FFF7 UniRef90-F8EE20 UniRef90-UPI00037F6C1E UniRef90 UPIO000473E3CF UniRef90-UPI00037A4E40 UniRef90-D7NA20 UniRef90-UPIO0037DA9E2 UniRef90-A8T2K1 UniRef90-T1A9W66 UniRef90-GOIWB9 UniRef90-F9N660 UniRef90-UP10002D9FBF4 UniRef90-TOMZE1 UniRef90_UPIOOO2377675 UniRef90-UPIO0047589EE UniRef90-F4AKF9

\section*{UniRet90_N6Y3S2}

UniRef90-C2FT55 UniRef90-UPIO003FB3B21 UniRef90-UPIO00289AAA4 UniRef90-UP10003B751C5 UniRef90-H7EFX4 UniRef90-FOGIZO UniRef90OPPIOOO36831BE UniRef90-UP100031C3BB2
UniRef90-UPIO003751C4C UniRef90_C7PNG5 UniRef90-L1PA81 UniRef90-Q1LJU2 UniRef90-A0A031GVN9 UniRef90-UPIO0035D0609 UniRef90-UPIOO047E4FB7
UniRef90_F7VHS3

210
220
230
240
 AVLLGLPEETDLKKEEVPAPLRQYLNMAFSERKELKQNDLL
 \(K\) QLLELDDDVTMELALPTDDESKVLVPLPDKSTVYATA LIG FRATNTEPQPVPDVSKLPATLAEAKAAAQKDHPTLLSADQ ALLLAETPRNYERQQFPADFSDGMPVRMLSSRPDVRSAER VLLVGENDPTTSVLPEVIEPLSALPEQDLARRPDLQSAYY RQITGEPVGKLAGVRTGVALPQPEPAAPERWVEQARGAQY
GVEPGRLDPAPPIEALLPKTVEEATAMALVEHPGIVAAMR ERLVGAPGERFQVRPLSPASYTAWRDLALAENPELASLRH EQVVGHPPYNLIEANPNTKJVPRSLQDALAMGTKENQALY AVLTGRDASDITLIDEFELLSRDFSVSFMALRPDDTSALY
 QELM
Y Qi T G \(\square T A D N L V A \Pi K Q \square P T \square P N S V E E V L A R T N H H P A \square M R G\) REI TGQYHQELAELDTKNFSPTSPAPANADAWVTNAEQRV QQ TGKPAEELMGLRPGAPLPGPVPTDVNSWAQQA\|IASL ETL \(G G P P V T G P E M L Q M L R P G K F S T Q P L R P A R F E D W Q A S R Y\)
\(T R L V G K T P D N L V K P Q F D Y Q L I P P A D Q Q G T D A H P E M Q S A M A\) QRALRTDPTQNIAVVPEKADPDSAVTVALNNRKDLKSAMA A ALLDLPQNVTPTAADWQPSLQESIVAAYAFREELDQVLL
A VYVLGIPTRTADALPDELNGDFAESEESKTLDDWLK KVLLGLDSELRIDDYESMYADMLQPDTSLSQNTSLRQDDLD TQIVGSPPQALIYPRADANTLPLSLQEGVERAYEHHPAQS SQLVGGEHNNLWSLKSDFPTLMPEPLDRAEWVDFALANNK REITGQYYQTVEPLNTENFTPPALNPAKVEDWLIIKAAQ TEIVGSPPGALTPPLPIRPLPHSLVEARASENFSVLVARY自RVVGEPPESLEEPEDPENLDPDSLDAALVKAVDNHPANF ATRLSLPQSVNUSAADWNQSLEQSVVLAYQNRPELQQQLA AASTGSAAPDFQSVAAQRQSSPPLPATAQEQTPELRLAEL AK DGQQPGALAELPAGVRLPPPQPARMADWSTQVARAQL
RETVGKYHDNFTASRPIPERVDGWLEDAEEKNLDLMVSKL QQVVGAEAPDDGQPPQPLVLPVQSEQDATTRAVENNPALF GSAPKNLKPVALPRKLLPASLDSAVVEGTTEHPTVLAALY RTLLTASPEELKVTLSSKLIEDSLAATALERRTDLKSKLL DAMVGEPPVDDESPPTLPGLPADPDAAVRADNPDIQAAQK NELMP RGVDSVIDVTDKLNFTELWNSTLATNANLLKADQ RQVIGKQPQSLADLVRKPKLKGPQPAEEGRWQWQLIAARK AVLDEGHQPGGEWPVLEKIPADSSPRELLGHRPDLRAVFY KMLMGYPVDRALLDQYDTVAMDTTQAVNYTNNVDYRILHM AQLLGDRDYQNFNNEDLDNVYDVDNTAKEERSEDKIAEA
 FRLVGEAPPVDMSPMPKDPAGNDLISMATQHNPSYLSALD SVTFDVTQPDT VTNQVVTSLPEAENAAVNSRPEVKVGEL CQLCGLPLEEDUAPTHIPEEDLTDNDTIAAGRPEIRLLEN QQUTGKPVDELLGLRPAAELPGPMPADVNTWASQAENARY QQV GSTPGELARLKTGTVLDAPQPARUDQWVESAEQQNY NVVLNSELEQSFKVDTQVNFTNQVKDESFSNNVRLLQAEK GHFPEELDTPEGFSAPLPAGLDEAVDLAVSDNPTIRDFEA
 KLQMGFPEEEEDDFTQYLETQRLLNEEGQQRVEVDQDNT GLLIGQTTADQSDFPTVLQPLAGLPEQDLGRRPDLQAAYA KQLMEMSPQAEVDYVLGQYSAVNVFEKAKSFNPEVKKAQLD DQLVGSSGARPQPLVWPVQLPGVQPDDVSAWQPAVRQAAS EQUVGDEARNLSASTPLPRSVEEADRLGEEYQPLLRQAQH AQI IGKQPEALAGLREGVQLQRPQPDNDADWVFGVQAQQL
 NFDITHPTTTDEMAMAEIPALNDVYNSALNNRPE:CNYLN HVLAGYDSDALASADRPSSAWRNLDSSLLLQRPDVQQAES AILFDSSPRKQRPNAGATPGPKATPVSALSERPDVRSAEM AlLLGTPPAEAELPDLNRTLPVTLPSTLARERPDIRAAEA AQLLQVSSVGFDVENMEVNTPSGLLLYETSNQPQLKSAELL TVLLDGQPPRQLERATSPAI AEGLPADLLGRRPDLRAAEL KQLLQLPTVTPFEIVEPDTLMGDAQQTALATRPEVKSSEL KQLLELPPNQEDDYVA\IPNKDEVFAEAKQTLPNLKIYQS QQIVGKSVDELMGLRSEAADPGPAPADVNAWAAQAEQANP VYTLGLPAEAGVVLDDEADAPVAGLGEDLHTWLALAQARH


\section*{UniRef90_H1Z9FO UniRef90-TONKT5 UniRef90-UPIOOO37FF436 UniRef90-FOBSE1 UniRef90-WOER40 UniRef90-UPIIO004672FCA UniRet90-D6CYX0 UniRef90-W1YYQ4 UniRef90-D8N718 UniRef90-UP1000478FECF UniRef90-Q03027 UniRef90-F8J697 UniRef90-Z5XR65 UniRef90-UPIO003675F8A UniRet90-F5TЗАА UniRef90-U2XQS8} UniRef90_UPIO0036CA971 UniRef90-N9RCU9 UniRef90_19W8B5 UniRef90_UPIOOO36E46BF UniRet90-R9PQF2 UniRef90-B4S8W5 UniRef90-B5IL51 UniRef90_UPIOOO3A2305A UniRef90_B1XPW4 UniRef90-A1ARK3 UniRef90-B5EKE5 UniRef90-R5Y3Z4 UniRef90-B6EQ11 UniRef90-12JF27
UniRef90-K6XD89 UniRef90-ToZKX0 UniRef90-F5SUS5 UniRef90-W11WL8 UniRef90_K9X137 UniRef90-UPIOOO2E71B44 UniRef90_UPIo0047E8432 UniRef90_K6XZ39 UniRef90-D5QD98 UniRef90_UPIO003F88CB4 UniRef90-A9D5R6 UniRef90-B4SA14 UniRef90_UPIOOO3B48548 UniRef90-J2L6T6 UniRef90-H1CXV1 UniRet90-RGYNJ6 UniRef90-K5ZBD2 2 UniRef90-A4BV04
UniRef90 KoNK94 UniRet90-UPIOO046E8719 UniRef90_UPIOOO4062458 UniRef90-UPI000415708B UniRef90-UPIOOO4797031 UniRef90-C1D4V2 UniRef90-HHYAL1 UniRef90-G8TJZ4 UniRef90-R5FFF7 UniRef90-F8EE20 UniRef90-UP100037F6C1E UniRef90 UPIO000473E3CF UniRef90 UPIOOO37A4E40
UniRef90-D7NA20 UniRef90-D7NA20


KYEKQAAEKQYADTKREDWPTVMDTSRAGKQHEASYDGSE AVEDSEQQTMDAQAGHYPNVSLDAGYSTQDSESEVEGTPR SGQIAQRETKKARAGHLPTVDLVASRSYSSNSTASQTSTN GTDAAKYDDENNRGRFMPQVALYATHSENDSSSDNTTNQQ DIEAAHQETRREKGNYYPEFNIEAVANRNEN VGGLRGP TAKAARWEDTRSRAPHYPSLDLSFNLGTDGYAYYKYNGDV DASAANSQANVALGAAQPFLSGFAFDGDQGSGDFDASSGG
 QWLASRATLREDQAQGLPTLSASVSGGKRFQN GGGLGP DIQAAKYQYAQSKGTNYPTLSFEAAQTWRDDAGGDEGS LLKVSTAGAASAYQSAQAKKMGHLPRYMPSSTFSTPPDAY DI QAARAYSGSVKANYYPKLSLEVAANDGFNRTGLDVGGH PVA TAKKD 1 DIASAGHLPEANFEAGYNWQD DDSPTQQGDA G| RSARAAUSEVQSASLPSDQLVGEYLRSYNPGFGFTRLN DLESARAQHATAKAPFYPD QLHEEVGTRADHNDDGQVGT KVDVAYRDDERNRAGYFPKVELYASHSENKSSSDNSDDQK QRNNNEQRRQALAALGPQVSLVA NYDLLDQFDDGFNV Q\|QQSEASVGLEKAQRIPDLDV
 ATEUAKDDVKNARAGHYPTVSLTASTGSNDTELNGNSSGP DEAARKDAVGVAFAALLPSUSAQASYAHDINQEEGRSNY GVDAAGFSVKSQEGSFLPGVRLSGTVSEGDGGV
ETDAAKWQTRVSRAPWYPRVDLGFNVSTAGSEYLHNEYRH QDQQAKDNTKLAASSYYPHVSVFGEYQQKGRDVLASKNNF
 NTTLAQLDYKKVLSRNYPYLRLNAGYGYTFNKYDVNATRQ NTKLAEND F
 QKELQQANVKYANWAYLPTLSINGAYNLNYQNNNLGYARQ
 EEEQQASGVDVARAEAKPDVTLSAGYTRQDNQFDGLIFGFN N RASRSEVHVRRGAFSPTLDLRAGSKQLGDNLGTYEGR QQIITRRDLQFELTHYYKYAYLPTVSGFFNYNLQFANNNF TAALLDQKVNLTRAAFLPKVFAVGGYAISNPNLENGFRKF NLDTAQREYNKARAGHLPTVDLVASYGFNNTTQTVNVASR AVEDAHRDTAKNRAGHYPSVDLVA SRNHTNQNTSNSVA NIA ASDYDYKASKGVFLPRIGLTGSYGWNEPSTNFATSST GVESSEDNTKMAKALRLPTVGVSAGVSTNTTSMWDRQMKN DVRTAEAEVGLSEVPFYPSVNLEASTEHRDEFDATPGSYE DVDSAKFQYKQSKGTYFPTLSVEAAQTWRDDAGGDEGR AVDASAQEVKKDQAGHAPQLDLVGSVSRNNQGSIYTFAQD
 AVKAAEENVGLADASDTPVVKANASRRMNGAGMHWAGND
 DKEVALKQDDIAKGGYYPSLSLGVSYGTNYSSKGRNLFNQ ALESARLETRKAQTGHLPTLDLQAGYTDTRNPNGTTVNSR
 NKRISEYNLKQDKGERYPVIALNAGYNFNESHSSLGGATE HDKQSDLNUKIAKANKLPTVSATAGDSTSTTSMNNNPWKD QKDLLHYKKKASLADYYPSLAAFGSFGYQGLGDKFTWGFW ELRAANADIGAARAAFFPSTTLSSSFGTASDGLSGLFTAG QLRAALAGSDVARLNFYPTLSVSGTVGAANAVFSQWFAHP GLQNADLNL ELSKGAFLPS SYNLNSGTSYFNQLNNLFPG EQTLAELDLGTLRSRNYPYLKLGAGYGYSLNRYGSGSTLQ RLRNSLKTVKVTATRYYPALSLTGSVGTGATSLSDVLKHP QQKIAEKDVADARAGALPSLSLQAGVNTGYSNLNDLGYDS QVSLAGYNLETAQAGHLPSVDDVASYGYTNAQQLSNVGSR SVDSAEYGLQTARSGHYPTLNATLQRQVTPGWGNSHGNSV

UniRef90_H1Z9F0 UniRef90-TONKT5 UniRef90-UPIO0037FF436 UniRef90-FOBSE1 UniRef90-WOER40 UniRef90-UPIIO004672FCA UniRef90-D6CYX0 UniRef90-W1YYQ4 UniRef90-D8N718 UniRef90-UPIO00478FECF UniRef90-Q03027 UniRef90-F8J697 UniRet90-Z5XR65 UniRee90-UPI0003675F8A UniRef90-F5ТЗАА UniRef90-U2XQS8 UniRef90_UPIooo36CA971 UniRef90_N9RCU9 UniRef90-UPIo004224C46 UniRef90_19W8B5 UniRef90_UPIo0036E46BF UniRet90_R9PQF2 UniRef90-B4S8W5 UniRef90-B5IL51 UniRef90-UPI0003A2305A UniRef90-B1XPW4 UniRef90-A1ARK3 UniRef90-B5EKE5 UniRef90-R5Y3Z4 UniRef90-B6EQ11 UniRef90-12JF27
UniRef90-K6XD89
UniRef90-W7R3P4 UniRef90_TOZKXO UniRef90-F5SUS5 UniRef90-W11WL8 UniRef90_K9X137 UniRef90-UPIOOO2E71B44 UniRef90-UPIOOO47E8432 UniRef90-K6XZ39 UniRef90-D5QD98 UniRef90-UPIO003F88CB4 UniRef90-A9D5R6 UniRef90-B4SA14 UniRef90_UPIOO03B48548 UniRef90-J2L6T6 UniRef90-H1CXV1 UniRef90-R6YNJ6 UniRef90-K5ZBD2 UniRef90-A4BV04
UniRef90 KoNk94 UniRef90_UPIOOO46E8719 UniRef90-UPIOO04062458 UniRef90_UPI000415708B UniRef90-UPIOOO4797031 UniRef90-C1D4V2 UniRef90-H1YAL1 UniRef90-G8TJZ4 UniRef90-R5FFF7

\section*{UniRef90-F8EE20} UniRet90-UPIO0037F6C1E UniRef90 UPIOOO473E3CF UniRef90 UPIOO037A4E40 UniRef90-D7NA20 UniRef90-UPIOOO37DA9E2 UniRef90-A8T2K1 UniRef90-A1BH09 UniRef90 GOIWB9 UniRef90-F9N660 UniRef90-UPIO002D9FBF4 UniRef90-TOMZE1 UniRef90-UPIOOO2377675 UniRef90-UPIOO0047589EE UniRef90-F4AKF9 UniRef90-N6Y3S2 UniRef90-C2FT55 UniRef90-UPI0003FB3B21 UniRef90-UPI000289AAA4 UniRef90 UPIOOO3B751C5 UniRef90-H7EFX4 UniRef90-FOGIZO UniRef90-UPIOOO36831BE
UniRefgo-UPIOOO31 UniRef90-UPIOOO31C3BB2
UniRef90-UP10003751C4C UniRef90-C7PNG5 UniRef90-L1PA81 UniRef90-Q1LJU2 UniRef90-A0A031GVN9 UniRef90-UP100035D0609 UniRef90 UPIOOO47E4FB7
UniRefgo-F7VHS3
UniRef90_F7VHS3

290
300
310
SNTWQVGIVSLLSYSLDNTYKTPKKIVKKEQLEKTKATDTKVL NFIISAGATLSWDFSLLWMNKNKRSEDRIRQQQTSQEKNI SLAWSLAGGLTQPLENAGRLKAGEAQAQARVDALEQQYLG GFNESIGLTLSDPI YSQRSNKSAMERARIQQKDSALDLKN DDTK IMLMARYNLFNGGADDAQKRATASQDAEAKDVKQN
\(S P V W N L L G S L S A P L F Q G G A L R A Q V D \square A K L N A E Q A F W E Y Q D\)
 YETDSVG \(\quad\) QLLSVPLFS GGETVAATRQATHRMEKSHYDDLD \(T S A S V V A S V T V P L Y A Q Q G E V F A Q V R Q A K H N H D A A L Q Q D E D\) VQQ W QV T P K V E WS L L S Y P A L L A Q R D A Q Q F L S E A A Y S N Y Q S L D F A Y V G L G L Q V P I F D G L R K H Y V I Q Q S K L T L

SNNYMVGVQLNVPLFDDGLNRANTRKAQADVDLAKQK \(\quad\) TR T MDS S SI GVVVRVVPLFSGFRTTAQTEQARANYVASSQQMEF S D S S QI GVVQVTIPLFS G GYT QSRVRETLDALESKAAS D Y D F
 QSSYSVA S S L WS I F DGF LTHYNDEAA A WNY DNARNDR R A Y D T S V G L S L R WR L F D G GAAAAANARQN RQLAQENTFRFA E



 R N D L T V M M L RMRYN L Y S G GK DVA LIERGAAYKTI EA QE IN Y R
 YRTDSVGLRVSMSLYNGGGTSAAMRQSAANYGKTKYEMDA SDGYSVGVRAT LNLGDGGAAKARASQARANDADAETEFSE VRERVNLVGVSMPI PDFNRNQGNVMAASRRADQARDVRNA A \(\square D S\)



 N K Q A A V G A T L S DP L Y Q G G R P A A Q V R Q S Q A L E S Q A M E R Q S H A F Gl MP QV S Y P L F N G G ALLKRNVVRVQSEKEKEMQSA YEN
 S DRQS I GVVRGELP I F QGFAVSSRVS EAQA RYTQSREQLEE A R E L L S F I S G LL LV P V F D A G RLL K A N V S V K K A Q A F E NLDA L L E Q FPFSYA GATLAFPI FQGGKR \(\operatorname{FAFKVREQRWTSRRDEWGLAN}\)
 SQDNMLNFGVSI PLRTS RSGAGNVQAA TARTSGARLRREY


 \(N G S L N Y G A R L V I P I \quad Y D G Y N Q R R R E A N A K D G T M I A A E Y Q E S D\) \(Y N S G Q \square G V Q L V V P I \quad Y S G G Q D Q S R V R E T D A L A D K A A S D D L E A\)








 +

SEAT T I GL G Q \(\mathrm{L} N \mathrm{~N}\) NKGFNYGVTASVNIGAGGF IVQNRNEKEAAMARMMADADLED N F S V V G G I S V S 1 T N N A M V Glv S L K
 \(\stackrel{S}{\mathrm{~S}} \mathrm{R}\)

 RRTPGIFNRFQTKNNVAKSYINRELSLLNLDN
 \(N F G Q T I G A S L N I P I F S Q N K N K S N V K L A K L T Q Q Q A V L E E Q Q\)



\section*{UniRef90 H1Z9FO} UniRef90-TONKT5 UniRef90-UPIO0037FF436 UniRef90 FOBSE1 UniRef90 WoER40 UniRef90-UPIO004672FCA UniRef90-D6CYX0 UniRef90 W1YYQ4 UniRef90-D8N718 UniRef90-UPI000478FECF UniRef90_Q03027 UniRef90- F8J697 UniRef90-Z5XR65 UniRef90_UPIO003675F8A UniRef90-=5T3A UniRef90-U2XOS8 UniRef90-UPIOOO36CA971 UniRef90-N9RCU9 UniRef90_UPI0004224C46 UniRef90-19W8B5 UniRef90_UPIo0036E46BF UniRef90 R9PQF2 UniRet90_B4S8W5 UniRef90-B5IL51 UniRef90_UPIo003A2305A UniRef90-B1XPW4 UniRef90_A1ARK3 UniRef90-B5EKE5 UniRef90-R5Y3Z4 UniRef90-B6EQ11 UniRef90-12JF27
UniRef90-K6XD89
UniRef90-W7R3P4 UniRef90_TOZKXO UniRef90-F5SUS5 UniRef90_W11WL8 UniRef90 K9X137 UniRef90_UPIOOO2E71B44 UniRef90_UPIo0047E8432 UniRef90_K6XZ39 UniRef90-D5QD98 UniRef90_UPIO003F88CB4 UniRef90-A9D5R6 UniRef90 B4SA14 UniRef90_UPIOO03B48548 UniRef90-J2L6T6 UniRef90-H1CXV1 UniRef90-R6YNJ6 UniRef90-K5ZBD2 UniRef90-A4BVO4
UniRef90 KONK94 UniRef90-UPIOOO46E8719 UniRef90-UPIO004062458 UniRef90_UPIO00415708B UniRef90-UPIOOO4797031 UniRef90-C1D4V2 UniRef90-H1YAL UniRef90-G8TJZ4 UniRef90_R5FFF7

\section*{UniRet90_-F8EE20} UniRef90-UPI00037F6C1E UniRef90-UPIO00473E3CF UniRef90 UPIOO037A4E40 UniRef90-D7NA20

360 AMQQTEMSVHAAYAKYEESTQQANLLEKSQQLAQENYRII WADKIRTEVNQAYQLYQRALNKVALLHSADDEATENDRMQ
 QEKELLNQLESAWLDASSAQSQYLAAREQLABTQTSAEELT
TLLSAVNEVENALGQEQSLTQQQLQTSKALASAKRSYSNY ARRTVEQGARQAYDGVIAGLAQVKALEAAEVSARTAYDSN QRDSVRAGVVTSFGQLRNAKASI GSGRVAVKAAEAALKGV KVRETLNQVRKMYNQSSSSAAKIRAYEMTVDSARTLVMAT QRASAQSQVVQAWSQQVGFKAQAESDKASIVANTTALNGV
\(K V L K A D S E S E L T L Q R V V K Q Q Q L D F A N Q R F N Y A N A F E Q A\) KVLKATSESELTLQRLVKQQQQLDFANQRFNYANKAFEQA


पe पd LnQRARTTYAQLQs TRQNKEALQNATDAASTAFVYT TRRGVEREVRNAYYDVVAARATMRALEQAVVSAESALNAT ARRTAAQSARQYYSGVTNGLAQVAALEAAEKSALSSLESN

 NKLDDLETNINQAYVDVVNSSKAYDAAVKTREARILAALDY QRNQLRLAVETAYYDFEASEQNDTAAAAVTLAEESLRLA TEQNTLMEVVKAHADAGSSLQNLQASKKLLDVAEASLAVS LIERNLRMQLTAAMDNI RASDKQVVSSKEGVRQAEKAYLIM AYRNVEEGFRLSWSALDLTLQQKEFLDDHVDAASDTVIAY TQRQVDTGTRAQHDAVYTNVQTVNARHQNVISTRSALDAT ARREVTESFRLAANAYEMLGLQKGYLQQHVVSSKDTQDAY VLRSALTEATQAWQNYATATAQIRALRAQVAAEQDAYRGV QTGETLNALRRHYNACINGEKRMRAYETAVAAAALQVKAT QRNQIRFQVEQAFSNQLSNLENVQTSNTALEQAREALRLA


 KSLDLQRNVYTAFTNAKGALLNYESSTVTLEARQQAYNYA LKKRDIVQDLQQSAGEYTSAFMQ1ETANLSFTAAQSAYEGI VERGVIAQARAAYAALQASLRTIQSSQKAVDAADLSLEGV LEQGLRADLSNLWQAYRNNLQLLNLERQNLVSAKENHEVA SVLNAFQEVEDVLVKENALFDEQCLLNEEVSIAMETVDRA LRSSINAEYARSLAAYKSNLIANYAQKENVDLLARDVYNVI AELDLEANVYQAYTDANGAFEAYEAALVASEAQKRAFEYA LEKNIPSEVEDAYQRWRTAAESLQMLQSGVDPSTNNLAVI ACVDMRQTAVDAYNDVRKLKEQLGALRQHRLSTEKARDAY TKT TEEKGLRLQLSQARFKCHEAEKRMQMADSNLTSANENLRSA ARRTAAQSARQSYSGVSNGLAQVKALEAAEHSAQSAVESN
 KQTALYSAIENYWLQANNNQSMFKSARTSTESAKESYNRL SVVDAQREMRQSWFALDASRQSVTDLASSVQYNTETRDAY KTNKVLVDLYKQYGLVLSSFARMRALEQAVNSAQQLIKAT TLQNIQLEKGARQNLINSLQELEVQEENRDLDADEVFNMA NLDTAVNEVENALGQEQSLQRQQQHLSDALSSAKRSESNY ARRSAAQAARAAFFGVQSGRAQ QQALEAAEASSQSALDAN
 ARRNAADAARQSWLGVTSGMAQVRALEAAKVSSTSALEAN QKQT NAQVTTLIQTYITNUGLVDLEKKNEELAKENMDTT QQTTLYSTIENYWLQANTNQSQFKAAKLINTESAQKSYELLL T 1 EAAFREVADALDAHATACVAEPRARAQAERERLRVQRL \(K V W K A L S E T E D A L T E S Q H A L A Q Y E M R G H Y L Q L S H A L L W Q Q E ~\) QKLQLQQTIEQAFADAKAAAKTFEAATISLKAQREAFKNA QLLSLEADFSNFWQAYRNNAKELLKAAEENLKAREEAYENAA TRTNLSQEVERAYINVQNAQGQYDAAVEQLRYTQEAYRMA AEKELYAKIETAWQNATTHQAQQAASRTARDNAKLDYDLA




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QSK Y Q Q G L VD L LD L T VQ Q QVY D LQ A QLS Q \(\square \mathrm{N}\) Y T L LT N R
 RDEARFGQRTTVDVLNAQQTLLNARVDLVTAQRDRVVASY RKS \(\square\) A A GVRVVNLDLLNAEQALYSAMNELSKAKYDYLTAWA REEERVGQRTVLDVLNAQQELLQSQVNLETTKRNILVASY HAMY E EGQDP Y L E L L D A R Q DVLDA QENAVDST DA SVVAA V
 QQERELGGTRT TLLDVLNAE QELLDARVAQVKA ER D QLI SA Y

RKEFDLGTKTTFDLLNTEQKLLDVQTQKTVNEQDEVVYVY QTGFEVGTRTIVDVLNSTRNLFNARRNLSTARYNYIRRSLD



 \(R L R F N A G V G T Q T D V I S A Q T G L N T A R G N Y L Q A V T D Y N R A F A\)

 QKKFEVGAATVI ELDDANLALASSRLSYYQAIHDYLSAQS EKQYRIGKRTLLDLDNTENELTEARKSYLDAHYAEQFAKF E A GYEVVGTRNVVDVLDA QRRLVYAAMRDYTNARYDYVVNVL



 TRGFEMGKFNF LDVLDAQRTLDAARTQYLAATAQATDA WV
 ERRADV GTGTTLAVVLQQQETGLQAQVALVMMSLGSVVQASY KEKY DVGGLMNSF DFTQA QTILTTNAQS DVI RTKY D YM VEERRVGGRTATDVLNA QQSVVNAKEAI SNSERNAVVAS F KRKYELGAA GFVELSSARATLENARSNLSQATFNLAL D \(\square R Y K N Q L A T S T D V L D A R T Y L T Q A E M N Y Y T A D Y G Y Y I\) A K K A RAENSVVGSRTVLDVLDNAEQESSLNAKVEVVTARRNAYVAGF K ER Y L L G DLS Glle MREA QK SLL DA E ERIL S A E Y D T KMCE I


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NLLKVSG
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RLKSAAG
\(A \vee L G A \square G\)
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SAYNVFNGRW
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RL \(\square S\) A \(\square G\)
QLLDQMG
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A L L
R!LNAMG
E LRRTTG
QLKREVGLG
R L LA CVG
NLANALG
DLEQlS G
RVLHATG
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Al RAAVG
A R R N N M G
GLL
D Q R

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\(K \square R R A L G\)
TL \(\square A A M G\)
SLFKALGGGWK
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QL MHACG
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\(D V L R V L G\)
E L Y
TLRELAG
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RVLAA \(\square \mathrm{G}\)
DLEKAMG
ALQKALG
E L L R
RLKAATG
RLKSAAG
ELLQLT G
ML
\(R \quad \mathrm{R} A \mathrm{D}\) S G
RVMNATG
HLNADAG
TLDFATG
DLEKALG
TL EKAMG
\(D L G L A \square G L G\)
K LRQAAG
QLLSAVG
NVLAEIG
RLKAAAG
R L
QVIKA Q G
ALFQSFYG
KL W
ALL QALDG
\(S L L Q \| S G G\)
\(T L F K A L G G\)
RIY
N F Y Q
RLKASTG
RL \(\square\) A S A G
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\(\bar{N} L K E L A G\)
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WS A A P TEQQVDS \(\square D\)
LA D CI Q Y ALA HRPLVRQSVIDQEIAE L R K A I LKAAVEQTLQSNPDVLADANRRLSTD K Q AI LRAFARNPQIAQASAQIRVGE LQEAI DYALTHNRTAINAARDIDAAE

LQSCLE YA LQ QNDNI KK SGYDKEKAN

LVKAARKAVVSNPEVQARWNGFKAAG LRSLVEAALANNPEVRASSAHQRMLD
T I E E AVV \(\square\) A L E N N Y E I K \(\square \mathrm{A}\) T N E L T T DD K


IQ QR K V I S DF DP NLS SFGD YRRYDK TRSTSSGFTDDPED ID TK N AKAKLFP SLLTA GDS Y QYNNTP FQETNNSSDLDDNY II E NVVTQARA GMRR R Q R L
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 ENVDQARALLLPQISAGLTLQQTNGGNHEVVQDPSNPNQT A GIDVVARAGYYPQIS GGITTG DLSSGERG E Y R A G R A G L L P T L N Y N Y NK G R N D S K VK Y D S R R Q E E D R N Y QKSTEALAGYLPQVSTNVQVSIIPAGAFSPTEDKLQFGTQQ A QVRRAAAA Q GLPDVRASASYQREQRRGAEHTVDQLTS PVN QKFPEARA QMLP QAAA QLE WGRYGTHANLFGIDVSGSSNA
 ALANSAMSAYQLDASVSGMAN A ATGSR■KDDFTRR ANEDTAGLRRPNPVFDTDAQFDPFFSPSNLNSDYMDN
AR LVEERAALYPTLD DDSRLNREFDERQTAEFATGQDTEA E TVPIA KA DGRPQVNGQGTFQES YYNSNPFS AR

 FSWETRAREAAALQASFFPNPTFGANAANFGNRSIQGFD QRAK GAE GFYLPNVNLS GTGGKQRTKFTQQSQENDNLLSG

YEEGDAKS GF LP T L \(N V Q G G S G Y E W S S N P T T R A G G P N S S D H\) \(E N R T L G R A G L L P Q I D A R V Y Y S D S S Q D T T D N M E D V T Q E T E R\)
 EDVAQAVATLRPVLTFQASSSY
 ENNT DGRA GLLSYNYNKGRNNSEAHLP DGRGGSYRDDRNYN
 LT MK QS QF NR L P S V NGSAS A GYQF GRTDPT TNTFNNTR DG A A WGET Q GSY L P T L S L S YRKERSSQQKTAVKSATPAARNRQ E Q DS I A R S A R L L P R V D L EN R I I G RA GLLDPRLGY TYNKGRNTSKVTQDNEGRPD FTED

 QDRQSAFTNYFPSVVATGGGFLADQGLLQMEMAPGQGISM T Q I S K A R S G L FP TLLK F E Y NV
 ARVVS SGSSWRTTI SASDQYSR SEGDDG
 NNANLAANAGMLPSVTGGASASAATQNTTQTTRSLDKGARNT





RSAYLPTLRASFGENWELGRAQDNTGTYLDRSSA \(R T V Q S A L A A W Y P Q I A A G Y N L L H Y L K L P D S L F P D L T T G E K R\)

 Q QK WET TA S G L P Q i S A S V D Y Q N Y L K Q QVQQVIPAEEFF G G T K
 A A TLQA GLLPNPTFNANASNFGNRVLQGFDGD \begin{tabular}{l}
\(Y A R K E V L G A\) \\
\(E\) \\
\(R\) \\
\hline
\end{tabular}




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 \(\square Y\) A A G \(\square M V T V Q P Y M G G G G K A M N D \square A A \square G E E F A Q N D I M E K R\)





 TSGVD E S I G G A L G G L


 A Y T WGARLLEQSFS LGGREFDA L N MSKKK DE KNEDDFKTVN TGNSGSDKNQTMLNGGK QLNQUKTQK DNEQMQSAS LEETF



 RTVFV TYNA GLNNNYTLEDGLGRFYTYKQL
 IN TSQRGHTRTRSVNFSEYANLKAAHSAAQAD QLELDERLQQ
 Y NTSA \(\square A\) QVVQQVI YDK SMLVGGIKAAEPNNQVAADLKKE QNQ LW WA GFDA S WE L D L F GRVVRRSVVEAA GA QTQAA I E GRN DA L
 \(T\) LQTKAS \(\square\) QYRLVYNGGHDRAALEAADARNRADTQEWTAVR \(P V Q L N L D A S W E I P L F G Q D K Q A Q K M A D L S D A M A T E D V A A A K\)
 Q A V A A L D L A V P I Y N G G A V K Y S V E A A D Q R V E A G R A T L R G T E

 GDVVTG E L L S QLI E L G GKRAARTEAAAALLTKELAADWDYE SKR




 S A S GA I NVGYTL F D GLQNVRQLQRAKLSELAA QYRLDKMK
 \(M K N G G V T A S L P D F T G G Q D A N G N K L A E V N V E V K R L Q R G L S D\)
 GHS GSVGLLTQRIFDS GQTRLLSVQASREGMMSTEADGDSTLL MP HF G N N Y A L E I WK G G MVK H T I E S K S L Q E D L A T L N Y Q F N E SMAYGANLDWTVFDGFQMFARYDQLKELQKLGDANLKQAD

 \(P N A T S N N E N Y A L D A G Y G L R P E A D Y T M K M M G K D A E V S E E L A A\)
 V N Q A S V EAA S V P L F T S G E I P P A Gl A Q A E H A L D A A R Y A L L A A R R
 N S S L L A

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 QERAYTVKQAYFSLLRAREDAAVAEETVALYEAQLKQAQA
 \(\square D V L T Q V S Q A F \square E V L A A Q Q R L S\) T T Q Q \(\square\) QE L A NQMLVMTS A
 SEMALKVAQTYILAVIMMERALTMSEQNLKIHQD Y Y Y N I FK
 EQLRQEVTNAYYNI QEAEALVRDGEAAVQNSQQSLIRDADAA QEVLLDAVTAYVTLQQRQDTVALREANLRLDTQELRASRD
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 QELLVRVLENYTNALFAQDQIDDADAKKKAFEQQFQQNEQ
 E E: RLSVVATEYYNLQQREEEVRIAESAVKNAEASLKDAQA A QVRLNVREAYFGVLGAEAVLRAAQAAQANRHDISRQLSA K EVVRLTAEQYFWQIVTDKEKLKTDTTVEKQDGQLNADVEA

 QNUKLLALGYY LDLYKLQNQASVYLKN QLAEQRLQNDSR LSTVFNVVSEYFNLVQQKQQLTALRTALDLSKYRLEMAEN









 EDVITTQTATGYYGI QSTEYAMGGMSKSVELVEKMLKMMEV



UniRef90_UP1000474C33C UniRef90-11YQW0
UniRef90-H5V7H5 UniRef90-UPI000313B797 UniRef90-UPI0003B452C5 UniRef90_UPI0000E0E46C UniRef90_K9TE58
UniRef90 I7A5N0 UniRef90_UPI000248A3EB UniRef90_UPI0004026BC6 UniRef90_Q7NR59 UniRef90-A0A059IPF6 UniRef90_K5Z1J1 UniRef90_A0A011PH45 UniRef90 A0ZME6 UniRef90_UPI000367BB50 UniRef90_K2DZI4 UniRef90_R5YK72 UniRef90 Q0FZQ7 UniRef90_UPI0003793FB9 UniRef90_UPI00035F1881 UniRef90_E3HVJ6 UniRef90_D0D7F6 UniRef90_UPI000360B5BE UniRef90_Q01SJ3 UniRef90_E6X3P6 UniRef90_A0A011R0B2 UniRef90_L8M223 UniRef90_14VS11 UniRef90_A0A009GUZ8 UniRef90_Q1ID43 UniRef90_UPI00047A32AA UniRef90_C4AUP3 UniRef90_B4EHV6 UniRef90_D2TK24 UniRef90_E8REE8 UniRef90_N6V1D3 UniRef90_C1F6K2
UniRef90-T2JAN0 UniRef90_UPI0003B7BB81 UniRef90_UPI0003B74410 UniRef90-I4XTZ6 UniRef90_K5YYG6
UniRef90_UPI0003629B71 UniRef90_A6QCI2
UniRef90_N9FE22 UniRef90_UPI0003615179 UniRef90_UPI00046456C2 UniRef90_Q8DII1 UniRef90_I3C8N7 UniRef90_UPI0003B57572 UniRef90_UPI000466E14A UniRef90_E2XS99 UniRef90_C8WZN4 UniRef90_G7UTE7
UniRef90_UPI00035 UniRef90_C8NDI4 UniRef90_B5EHA1 UniRef90_C9RNP7 UniRef90_A0A024E526 UniRef90_I3YTP6 UniRef90_X5JEJ8 UniRef90_I3ZI75 UniRef90_R5SRU5 UniRef90_T0SUJ7 UniRef90_A5FKH5 UniRef90_D2Z5X1 UniRef90_T0MHH1 UniRef90_F4CDX9
UniRef90 S2D900 UniRef90_F8GHU0 UniRef90-A0A017H9K9 UniRef90_S2DJV6 UniRef90_A0Y9J8 UniRef90_R5P2E7 UniRef90_UPI0003B3D09D UniRef90_UPI000289FAF5 UniRef90_UPI0003617E06 UniRef90_R5VL58 UniRef90_F1VW91 UniRef90_J7KTB6 UniRef90_UPI00047A5C91 UniRef90_B3QYJ9 UniRef90_UPI00047BCBC6 UniRef90_UPI0003755A32 UniRef90_IOIQ95 UniRef90_Q21RZ1 UniRef90_A1AT56 UniRef90_UPIO0037E13B2 UniRef90_W4SSH7

874


 \(R Q A A G R D D A G P V L E A Q R A R N Q L Q D E L A D W Q Q R R Q Q D D W Q L\)


 AFEVGTATITDTHEAQAGYD GAVAQEISDANNLELAENNL

 LER SARAGVARRADLEEQSGRVSLAESNLLTETTNLHDVVTARY
 R F E V
 QYE N D L A A R K V



 R Q KE QA GILAT S IIE NEP

\section*{}


R RYHIGSGSRMM
RVQAGKS


R

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\section*{4}
\(\stackrel{L}{L}\)

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\(L A B Q S E L R S T L D V N F A N V L E S E A D L A V V Q A Q S V V A Q D R S R L\)


\section*{O}

\(F\) Y K E G M V T R N D V I R G E L Q







 RA E A G L S T Q S D \(L\) L Q A E T R I A GMMRA T L E Q Y R A L E R S S L A Q L





UniRef90_UPI000474C33C UniRef90_I1YQW0 UniRef90_H5V7H5 UniRef90_UPI000313B797 UniRef90 UPI0003B452C UniRef90_UPI0000E0E46C UniRef90_K9TE58
UniRef90 I7A5N0
UniRef90_UPI000248A3EB UniRef90_UPI0004026BC6 UniRef90 Q7NR59 UniRef90-A0A059IPF6 UniRef90_K5Z1J1
UniRef90-A0A011PH45 UniRef90 A0ZME6 UniRef90-UPI000367BB50 UniRef90_K2DZI4 UniRef90_R5YK72
UniRef90_Q0FZQ7 UniRef90_UPI0003793FB9 UniRef90_UPI00035F1881 UniRef90_E3HVJ6 UniRef90_D0D7F6 UniRef90_UPI000360B5BE UniRef90_Q01SJ3 UniRef90-E6X3P6 UniRef90_A0A011R0B2 UniRef90_L8M223 UniRef90_14VS11 UniRef90-A0A009GUZ8 UniRef90_Q1ID43 UniRef90_UPI00047A32AA UniRef90_C4AUP3 UniRef90_B4EHV6 UniRef90_D2TK24 UniRef90_E8REE8 UniRef90_N6V1D3 UniRef90_C1F6K2
UniRef90-T2JAN0 UniRef90_UPI0003B7BB81 UniRef90_UPI0003B74410 UniRef90_-14XTZ6 UniRef90_K5YYG6
UniRef90_UPI0003629B71 UniRef90_A6QCI2
UniRef90-N9FE22
UniRef90_UPI0003615179 UniRef90_UPI00046456C2 UniRef90_Q8DII1 UniRef90_I3C8N7 UniRef90_UPI0003B57572 UniRef90_UPI000362FD34 UniRef90_UPI000466E14A UniRef90_E2XS99 UniRef90_C8WZN4 UniRef90_G7UTE7 UniRef90_UPI00035C1874 UniRef90_C8NDI4 UniRef90_B5EHA1 UniRef90_C9RNP7 UniRef90_A0A024E526 UniRef90_I3YTP6 UniRef90_X5JEJ8 UniRef90_I3ZI75 UniRef90_R5SRU5 UniRef90_T0SUJ7 UniRef90_A5FKH5 UniRef90_D2Z5X1 UniRef90_T0MHH1 UniRef90_F4CDX9 UniRef90_S2D900 UniRef90_F8GHU0 UniRef90-A0A017H9K9 UniRef90_S2DJV6 UniRef90-A0Y9J8 UniRef90_R5P2E7 UniRef90_UPI0003B3D09D UniRef90_UPI000289FAF5
UniRef90-UPI0000470D599 UniRef90_UPI0003617E06 UniRef90_R5VL58 UniRef90_F1VW91 UniRef90_J7KTB6 UniRef90_UPI00047A5C91 UniRef90_B3QYJ9 UniRef90_UPIO0047BCBC6 UniRef90_UPI0003755A32 UniRef90_IOIQ95 UniRef90_Q21RZ1 UniRef90_A1AT56 UniRef90_UPI00037E13B2 UniRef90_W4SSH7
 C QL C K LE DENTPDELSATFPTNYNDADTAFNARPEVVI LQN
 QQI DGKPA GELLATLRP GVQLNSPEPAQMEKWVESAEQQNY \(A L L D G E L D E A F R Q A D R R P S V P S G L D S S L L L Q R R P D L Q A A A S S\)

 \(R R I D G A D P G T L D E P P P D P P L P G S P D E A V R D N N P N L A S D G A\)
 A A L N I DLLRDTGRQPLPRGQAALGVPA DLVRRRPDIRQAER \(R Q L V G E Y P A D A L A P P Q P L V L P V S G K A D A V A N N P D V V A A E F\) ANVMGLDANQPRPDERFSDDVAALI GEARLRRRPELIKAAEA QSVNLSAADPVQLA GLWK Q DLESSIVLADQNRPELQQQLA


 \(\square D V V G D P P G E L D A G T L P P R N D S Q A I T V S Q N E H P A I L A T Q F\)


 QTLMGRRVVPSPTVEATGTMRRDSTPVVMETVATQALDDLRP \(N V V L N Q D L N K A Y Q V D T L V V F T P S D E L T D H Q N N V S L L Q A E K\)
 TE I TGGKPT GELLKKLREDLPMQPPTPNDPDTWNPDLLAQRS RTLVGVDVFNKS WI DP DDLVK QSGGYSEPEFNT』PKMAQA


 L H L L GL T GETVVTLDPSATPAQEDPGERDPHNRPELTAMAA ATLLGTSTPDPALFKYEPQMAEGKPADLLRARPDVLRAEY \(R Q L V G F D S V P Q N Y D V I G K L E A P Q P K L G L M D M E A D A L L K S R P\)


 AASWGSAAPRFEAVAGDLNADRPPPSQRLANNPDLARWAT Y VLLYA R K LDP LP H L S S K L P QVR S S L S Y Y A Y E H R Y V L E S S K H Q NL LETK QGLNLLTTP LTVNTA QNHS LDK LLANYDQK K LQM MRLVGAP THSLHEPVPD FDLLPETMEQTIVNYPLLKSALQ EVLTGQPHDAI AP LEEDFPVVSPTPADRHAWNYVLKAA QL
 \(K\) L KI GHYPK GLKRLPNMPRTAKSLGDAQAVA

QRTHP
 Q L L G G LMV D G L G GL N P T T Q S L D N WL A L A R Q H H P E L A A A Y Q AVLLDLPPDQCPDATGSPRLPVQLPATYHKARTYALNHHP A EI T GQPPDDDF KP QLP S E Y GA D GWVVD T A VA QNP S L K K S L QL
 A S L L H T D T S LTA T TP V E SP E G I R SMDE F KA L A I E K R QL R V GALI GVPAVD DT DLAPQNFQTFSLLPANYDTWHEMAVAN N A QL L L V K D Y S S F DI A D E E Y DVN E I I N S A K E T R S E V K I A L K
 A QY IGHPSDSIDDVQMD IS WSLPQRPDSLYRNPDASULLLTA A N F L G LDP K T EDVVFS D K T R KVVGS S N N E NF E NLAA QVRV L S D K F Y M GMP DE T Q I DMP K E E F E V VP A Q E P N DE N RTE Y L L L K K


 Q A AV GRAPGDLAAAPDARIPDLSEAQAADARREAPSSIRAAQH
 \(R L Q L G L Q A E N P Y F L K Q E D F V K L G V K K F E D D N N P E Y Q L S Q T\)

 \(K Q L M G Y P P N G Q L Q V T Y D T L Q L M N E V M V N P R N R \| E Y Q L L Q T\) \(R L Q L G L Q A E N P V R L T D P Q E D Y V K L A V V K F E D N N N P E F Q L M\) LRVVVNLSKVDGPPASLIPASSEAAALTTADDNHPTLKSARA SVLTGGVLPTALPDLPHALLQQKDTLKAPYQKSNAVLSAQS






UniRef90_UPI000474C33C UniRef90_IIYQW0 UniRef90-H5V7H5 UniRef90-UPI000313B797 UniRef90_UPI0003B452C5 UniRef90_UPIO000E0E46C UniRef90-K9TE58
UniRef90-17A5N0 UniRef90_UPI000248A3EB UniRef90_UPI0004026BC6 UniRef90-Q7NR59 UniRef90_A0A059IPF6 UniRef90-K5Z1J1 UniRef90_A0A011PH45 UniRef90_AOZME6 UniRef90_UPIO00367BB50 UniRef90-K2DZI4
UniRef90-R5YK72
UniRef90-Q0FZQ7 UniRef90-UPIO003793FB9 UniRef90_UPI00035F1881 UniRef90_E3HVJ6 UniRef90_D0D7F6 UniRef90_UPIO00360B5BE UniRef90_Q01SJ3 UniRef90-E6X3P6 UniRef90-A0A011R0B2 UniRef90_L8M223 UniRef90_-I4VS11 UniRef90_A0A009GUZ8 UniRef90_Q1ID43 UniRef90_UPI00047A32AA UniRef90_C4AUP3 UniRef90-B4EHV6 UniRef90-D2TK24 UniRef90-E8REE8 UniRef90-N6V1D3 UniRef90_C1F6K2
UniRef90-T2JANO UniRef90-T2JAN0
UniRef90_UPI0003B7BB81 UniRef90_UPIO003B74410 UniRef90-14XTZ6 UniRef90-K5YYG6 UniRef90_UPIOOO3629B71 UniRef90_A6QCI2 UniRef90_N9FE22 UniRef90_UPI0003615179 UniRef90_UPI00046456C2 UniRef90-Q8DII1

\section*{UniRef90-I3C8N7}

UniRef90-UPI0003B57572 UniRef90-UPIO00362FD34 UniRef90_UPIO00466E14A UniRef90-E2XS99 UniRef90-C8WZN4 UniRef9-G7UTE7 UniRef90_UPIO0035C1874 UniRef90_C8NDI4 UniRef90-B5EHA1 UniRef90_C9RNP7 UniRef90-A0A024E526 UniRef90_I3YTP6 UniRef90-X5JEJ8 UniRef90-13ZI75 UniRef90-R5SRU5 UniRef90-TOSUJ7 UniRef90-A5FKH5 UniRef90-D2Z5X1 UniRef90-TOMHH1 UniRef90-F4CDX9
UniRef90 S2D900 UniRef90_F8GHUO UniRef90_A0A017H9K9 UniRef90_S2DJV6 UniRef90_A0Y9J8 UniRef90-R5P2E7 UniRef90-UPI0003B3D09D UniRef90_UP1000289FAF5 UniRef90_UPI000470D599 UniRef90_UPIO003617E06 UniRef90-R5VL58 UniRef90-F1VW91 UniRef90-J7KTB6 UniRef90-UPIO0047A5C91 UniRef90-B3QYJ9 UniRef90_UPI00047BCBC6 UniRef90_UPIO003755A32 UniRef90-IOIQ95 UniRef90-Q21RZ1 UniRef90-A1AT56 UniRef90_UPI00037E13B2 UniRef90_W4SSH7

250
260
270
280
ERDAAGFD\|GTARANRLPR\|NANVGGNYYNYGTATAVGQT
 GVENAQREI TRNRAGHDPTVDLVASRNYNNAGWSSQFPAG

 AVNAAGETLRRQRRAGHAPTVLDAVAS KKGDNDDYPRYNGD TQQAAGYDVRRARAGRLPSVTANTGVTYNNFPAGTNLDGT NVESSKKNLKVAQSGYWPTLSFNLGYSTAFQRVYNTDNNN K IK SAQQNLELARGNHLPTVTLNAGYADNDSNQSGSY PH
 NDASQKDAVDVAFSALMPQLSSLQASAYKQSGSSGQ NTY QRNDSEQQRRAALSALLGPQVSLDA SYNLLDQFDDSVSV NDSAQEAAVESQQAAFHPELNLNARYGTQDY VDGTIDER
 SVDAAAFQVKSAEGALLPTVELQASVQNDFSTSNTSQFSN AVDAASFQVKSTEGQRLPNLSVNGTVENTYSLSDTDPNSS VLPASDYDVKDAK AALWPSLSLSGGYSNGYYYTFGEKNKM LIA GREI QI AKSGHYPTLNLRASSGSASDAVMRNAAPG VVAANDISVVI AEA QMQPKVELQGSWGASDT NFDSERA
 \(N L K I N E Y D D K V G K S G Y L P A L G L T G S Y G W N L N Q V I P G S N R D\)
 NVETTEEHNISAARAGHLPTITANVSYGKNYQAERENSQES GIEVAKAQKEQTRLTRYPTLAVKGSDSQADNGKNPNNNED NNPQARYEVERNRAGHLPRVTAFATSRRQESDSGNTYNQR NMYLQEFDVKRKQAAFMPTVSMYARYGASSFGNSSSFNNW QLHAATAGVGVAVAQFYPDVSLTGQVG
DV QVARLAAKRVSAEHLPTVDLFASYSRGLNPNDRGLTDR TLDQSKADVIASTSNHLPVVTLQAAYGNNWSRGENENDFD LVKAREAQARQARAGYYPT ADAFGSYQVDKGTELDDGS

 RREAAAYDRRVA QAGVLP RVLSAKESLRATARGMNPSLYASGGWGFSDS QVVQREASLGLEKAQRDPDMDA NQTLSEEDDYKKVKSRDYPYVKLNAGYGYTAN SVGGQYDAS EITQRQALITVEKSKVIPDVVATGGASKYWYEVGATQQ YVQGAKAHVKSLEGDYYPTDSVGADYTKQHADDEVTALMP DTQLANENIKVQQAAKKPSVFAFGEYGDDSKE NTRASEQTAKAAKSQHLPTLGASATYSDTATEGSQYFDTE QRNAALQQRRVALANLGPQ LVAGGSFNTDDSVTDGVGP \(S \square R Q L Q H Q V A A A E A G D A D A K A N M G P T D T G N D N V T D A R K K A\) QELIAETELRDTQANRYPSVNLFAGFQYNKNTAEVGFSNS NVEVAKKDIEKKQAGHYPTLDLVGVRSYSQNDSNNTLGSR SNPTARYEVERNRAGHDPKVTAYASSRQQESDSGNTYNQR ALTRAREQTEQARAWAAYLPRLLAQGKYYHDDPHMAYSRE QVQSAEAGVAGARAGHLPTLSLNGSYGRSASWGGDTDTSDLD RLESSKAGEKVAQSGNLPTLSLEGNLNTNYSSLARDFNNP ALEATKAAVQAVKKAGAPQVFLYANTQDNHDRTGGGLSYR
 ERKRNQNAIVRAARADYFPTVIVALGGYKELLNESYTKDLTILD \(N V E L A E K D V Q D S Q G N F Y P T L S A F F G Y N T R Y A D N D P L D R Y G\)
\(Q R N G S K Q E R R Q A L S A L R P Q S S L V A\)
\(A\)
\(A\) AQASQQAAHEMALAEKRLSYPSLNVLGAAGQDPFHDHTLH EYHLLLLQNLKASRLQHKLTKHLPTVADGGGYVYENDMDKD SEAMSKSLES AAKSDHLPTLALLFGSYSPTTYYDDFFSNED SVAKAKSSLKLAARGLSPTISATGGFSWNGDAPFE GVELSETA TKUTKTERMPTLAAFAGNKLQRTTTSPADDMY NRRIA QLELKEVK GQRYPTIDDNSAYTRTRTTAELGFATK
 AVTVNELNI AQAEAAKRPQLSLNGRVSVD
 QEDLSKKMVGDQKWTYAPT IISGTYSYNYKLLKPDFDM SRFSALEQLAGAVAESQRGVRVEAFGSAALQTGTWDNDFN RLA A ATAR GVQTSQLYPQLS G GS IGSTALTVGDDFTGG GUAAAEERIRTARTGYWPQLSLNAGYSNAYFRLLGRNYKH QHQLLDANVRYNRWAYLPTVAAFGNYNYQNSSLGQLFSAV \(D F D A A N A Q D A G A K A P M S P R\) LI DLDQLGATVNSNDDGVPGR K QEAS R HRI RQAEAQHFPTV AVQAGRTRYETVRRNYWDD Q





UniRef90_UPIO00474C33C UniRef90_I1YQW0 UniRef90-H5V7H5 UniRef90_UPI000313B797 UniRef90_UPI0003B452C5 UniRef90-UPI0000EE0E46C UniRef90-K9TE58
UniRef90_I7A5N0 UniRef90_UPI000248A3EB UniRef90_UPI0004026BC6 UniRef90_Q7NR59 UniRef90_A0A059IPF6 UniRef90_K5Z1J1 UniRef90_A0A011PH45 UniRef90_A0ZME6 UniRef90_UPI000367BB50 UniRef90_K2DZI4 UniRef90_R5YK72 UniRef90_Q0FZQ7 UniRef90_UPI0003793FB9 UniRef90_UPI00035F1881 UniRef90_E3HVJ6 UniRef90_D0D7F6 UniRef90_UPI000360B5BE UniRef90_Q01SJ3 UniRef90_E6X3P6 UniRef90-A0A011R0B2 UniRef90_L8M223 UniRef90_I4VS11 UniRef90_A0A009GUZ8 UniRef90_Q1ID43 UniRef90_UPI00047A32AA UniRef90_C4AUP3 UniRef90_B4EHV6 UniRef90_D2TK24 UniRef90_N6V1D3 UniRef90_C1F6K2 UniRef90-T2JAN0 UniRef90_UPI0003B7BB81 UniRef90_UPI0003B74410 UniRef90_14XTZ6 UniRef90_K5YYG6 UniRef90_UPI0003629B71 UniRef90_A6QCI2 UniRef90_N9FE22 UniRef90_UPI0003615179 UniRef90_UPI00046456C2 UniRef90_Q8DII1

\section*{UniRef90_I3C8N7}

UniRef90_UPI0003B57572 UniRef90_UPI000466E14A UniRef90-E2XS99 UniRef90_C8WZN4 UniRef90-G7UTE7 UniRef90_UPI00035C1874 UniRef90_C8NDI4 UniRef90_B5EHA1 UniRef90_C9RNP7 UniRef90_A0A024E526 UniRef90_I3YTP6 UniRef90-X5JEJ8 UniRef90-I3ZI75 UniRef90_R5SRU5 UniRef90_TOSUJ7 UniRef90_A5FKH5 UniRef90_D2Z5X1 UniRef90_T0MHH1 UniRef90-F4CDX9 UniRef90-S2D900
UniRef90 F8GHU0 UniRef90_A0A017H9K9 UniRef90_S2DJV6 UniRef90-A0Y9J8 UniRef90_R5P2E7 UniRef90_UPI0003B3D09D UniRef90_UPIO00289FAF5 UniRef90_UPI000470D599
UniRef90_UPI0003617E06 UniRef90_R5VL58 UniRef90_F1VW91 UniRef90_J7KTB6 UniRef90_UPI00047A5C91 UniRef90_B3QYJ9 UniRef90_UPI00047BCBC6 UniRef90_UPIO003755A32 UniRef90_-IOIQ95 UniRef90_Q21RZ1 UniRef90_A1AT56 UniRef90_UPI00037E13B2 UniRef90_W4SSH7

GTAATVG|L|G|LTVP|LVQGGRAAQ|V|RQAQDARDQSDER|V|TE K DVWSI GLVLHVPI WNWGEGKYKVRAARSVTQMAQMELSD
 A SVVT S I GVVQVA I P I F S G L GVVTS R V R E A DA L E D K S R S D L E N ILPF GI GPSI SLPLLDGGARAARLDASQQAAEIAETEYRK


 TR GSNVGVTVVLPLFAGGGINSQVREATAQEAAARDALES K S GQSLGAGLVLPLFNQPGLAANVDAAQARADQAYQAWRLL

 \(R T E G R V G L D V R Y N L Y R G G R D Q A N V D K A Y E E V D R A K D Q R N K\)



 NRGGAVALGLSGPI YQGGGLTSGVRRAIADRDASRAQLYS YRGS LI GILKLS DPI FDGFQKRNRVA QAR RESEK IGY DHYM GNANALGVFFSSPLPVFNKNQGEIERARQEQQQILARDRA


 D GY S S I M L E ATS S F Y Q G G S V S S QV K M A S Y A E E A A K S K V N S


S D F H A VGVQVT \P TV S GGSVYYR QVEAEHVTEQYRNRDRE
 GNSWTTGVRLNYTLFNGGQTSAATERADAQLREAKEQQHK \(A G P S I Q L P V F D Y G R R K D V V A A R E A E F R Q S V L V Y K Q\) A GNNDLSAFAT GI P DFNRNQGNIAKASAQDTQAQEQERA


 RLGGNY GLLTVGLNLFDGFNRRRERRNARDQDENSQLLKKQE VGFS S P LPAFNRNQGG LEEAEHRLTKAEEDRRSAEVRIAT TD Q GKV AVQMNWNGFS GYQTADAQVEAAKVGVEKAATMQVQS NWWVGVMAKYNLFS GDDNN KNIDRAAEELKKYAA E LDMTEA D D D Y NL MFHARYNLFNGGADSGRMKASLSRWNEAKD DYHQ TEGSSIMLSSLVVLFSGGRTSAERRQANAQYLQARAEQNR \(R W G Y T V G G Q L N L T L F D G G V S R A S A A Q Q E S A A A D A E A Q Y A A\) S S A H N Y GFRVNVVNVF DGFNQNRSEK DAKLK DDNSK LLIE Q S D S F TA GVT L S QTI Y A G GRPS S LY R Q S LAA R D Q A R A GL N Q



 ERENT I GLL GLIRWP L F E GYKRHYQEKA L LAAQQEQEEAA LAA A AAT L GLLKV NLVEGAAKEARDRQAVESRARDEERMRD

 D RYAAA GFNLN I PI FNGNDFAARHAEAELEATARQRDVEQ Q S F W I G F A T V S V P P L T G WW S G T H E V I K R D K L R V V N A E S Q L E D


 N N G F S Y GVV A S M N I F N G F LQ K R N ER N A A L A I E N A S I N L E K NFSNS GN I Q L N DP LS N F RNRA NVQRARRLQKR LS E LQ E E E







 \(L Q L V V E A P L Y Q G G A D V A R V D A A S G T A R A A Q A E V E A\)
 \(V G F S V P L P V F D R N Q G R \square Q E A E H R L T K A E Q D M R N T E V R I T T\)





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UniRef90_R5YK72
UniRef90-Q0FZQ7 UniRef90_UPI0003793FB9 UniRef90_UPI00035F1881 UniRef90_E3HVJ6 UniRef90-D0D7F6 UniRef90_UPI000360B5BE UniRef90_Q01SJ3 UniRef90-E6X3P6 UniRef90-A0A011R0B2 UniRef90_L8M223 UniRef90_I4VS11 UniRef90_A0A009GUZ8 UniRef90_Q1ID43 UniRef90_UPI00047A32AA UniRef90_C4AUP3 UniRef90_B4EHV6 UniRef90_D2TK24 UniRef90-N6V1D3 UniRef90-C1F6K2 UniRef90_T2JAN0 UniRef90_UPI0003B7BB81 UniRef90_UPI0003B74410 UniRef90_I4XTZ6 UniRef90_K5YYG6
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VRHKI RLEVEQNRFRGDSLAKMALCQLCGLPLDGDLL RVA AKMDAE QRLKKSFSEDWRGAKARKANS DA QLLHAARTMTREVVY VR RTAA QGARQAFFGVNAGLAQVKALEAAEVSSQSSDESN \(A A L A A F V D V E L A L Q A H A D A D S R Q R Q S E Q T A A W Q Q Q L A Q R S\)

 \(V\) E R L V I I A D A R A T F A R Y D A A V E T I A S S A E Q A V A A N R L A L

 A QRKAYSQATQSSWE GMVS S RAAVLASNNAQIKADADALDGT
 A CVDMRQT L Q DA Y N DVQ K LDDQQL P LLNQHRLSSDRVRAAY

 \(T R D Q Q V R S A V A T A W A Q R Q A A E A N V T G Y R A Q V V A A A Q L A A L G G V\) K RDNDD R N V L L A R T DLLEKADE QYRVAR E S L A L


 AT N D A M V E V K R Q F L A V E T G V G R V A A Y R K G V D A S V V A V E G T

 SA DNM RLAAFKNSNA QLDQKS QS DLLGDNRENLVFAK EVVFES S

VE E QLS T D H R E A L S A LE S VGG R \(\quad\) R A LQQ S LQ A A R LA Y D S S A Q R K A L E E A E R A WY A I A N D A K I R A L Q K S I A S A K K R L E S T LE LAALNLLE VE QA ALAAL QQET ERLLAVTGGKMVESAEESARELS AVLVVAYEEASRALDEEVNAARARTAALLRARLQRQVSKLKAST


 LELGLRADMSNLWAYRNNLDLWSLE

 ALLDDTQEEARLA WEAHT QLNK QIP QL QKHVTY S LID TVVSAY \(T E R T V D Q S A R A L H L S V E T G V A Q V K A R Q Q A I V S A Q S A B E A T\)


 K T R E TV DE L R R Q F S A C L \(\operatorname{S}\) G V S K L R A Y Q K A L A S A E A L V V S T
 TT D QL KT DVQSAA TTQFRASRNA YLAAA QRSQNAAEAA YNDA L Q S R L S S L E M R Q A Y R QL T T T A V E K Q A I A E K S A A S A Q L N Y Q T R

 \(\left.\begin{array}{lll|llll|lllllllllllllllll|lllllllllll}A & E & L & D & L & E & S & N & V & Y & Q & A & Y & V & D & A & N & G & A & L & K & A & Y & E & A & A & T & V & A & L & E & S & Q & E & L\end{array}\right]\) \(V Q Q L V N\) N E QV R D A WY R A D E A Y R S L







 S VL T A L E E T E T ALLSTYAR E LDDRRTAQLQSAARDNAAATAAAR T A DL G L Y K E DF KA HA NA VA A ER T I V A S G N A E RAAAR S S A E AV







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400 NLGFTEGVMTVTDVMQAQTAWLSAKTAGIDAEDAVRTAQV RNEYTLNTRSLNDLLSSVEQDVFQAQQAQTMAEYDLLQAAL \(R \square G Y Q V G \square R I N D D V L N A Q Q Q L Y S T R E S W A K A R Y D T I M N G L\) \(A A Q Q Q A G R A N R I D A I T L E S A R L E A E Q L A D D R Y R Q Q L\)


 RAENTVGTRNVLDVLNA EQELLNSEVLLVTARRADAVVAGF E ERY Q I GKT SVVFESES QTKLI S SK SEQL QAKY D
 RELLDDHGDVTVLDLLDRERADADARASLAQTRRAFATDF D








 RAGFDVGTRTMTNVLIQQQNLTQAESEYSQARHQFVLNKL


MK A H QVGYSTTYETLNLRRD \(\quad\) TSG \(\square R Q K L F D S Y L D A L K L Q L\) TY G K Q I G G Q R T V L D M L N A E S D Y Y K S L K E L RLRRFKEGVVLSSSELI DTENRMLTDARLLSHTLATAAA HA AA A A





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T ID E LF R R VE Q S NVE V KA A Q K DVVNIS R LTDVVSLTLNTNPEVDDAKAQELDAE

T LDEAVK \(\square\) AVQRHPE \(\square\) SQN \(\square\) AS \(\square\) AS QN HAANLVEVANAAWSYDGTWRAARMTWNADQ L L QVYSLARDNDPQLAASQSNRLAVR TKEQAVS I A L D N NYGVG D LIDAGALQRPEITQSIATHGQG LVDAVQIAVKRNPSI GQAISTMAAQN

\(\square H A E T L L E V Y Q L A Q K H D P G L R A A A A T Y R S E Q\) \(L S S L V T Q A L E Q S L D I A Q A Q A R L S Q A R\) DAARKAVVSNPEVQARWHGFQAAG TLEECVTYAVENNLDVQQFQLAFERTM TLQEAVEYAKLHNLQVRQALIDKQGAD LGEAIHRAQQNEPAFAAAVADRKSAG \(T L G D A W G Q A L Q T N P S L M A G D R N V G \square A E\) TLKEC \(\square E F A L K N N \square T V K Q A E A A V D N S E\)
LT S Tlad ALAHAPALAEAQAGVDAAK TLAELI DLAEQHNPATRLAWQQAKARA L Q E A

HAA

TLPELL DQAQLSN NVVTRASWERARQAA
LERVLREHQLVRMVDADVETAR
LQQCRAMA D D Y S K Q L A A A D R QK E Q A V

L R DAFA L A L R NDPAFHAA DAERDAGL
LAKMVNQALSYSPEDQVAGADKTAAN HSTTLGQCLDFANNNSYAAHRANLDVSEAG LDVYKAAFFNDARLSAARHAYRAQR LDEAIRRAEANESGFASASAESRASQ LDQAVRAGLADHPEVRSAMAEADRAG \(T L D D A I Q R G I Q A N L A I T Q A R I Q Q Q Q A D\)
\(E Q A W Q Q A K Q N D P N Y E K A K I ~ G V Q L G E ~\) LQDLYTAARGYDASYQSAKSLYEANLL \(L Q K S L Q T A K N N N P V L K S Q H Y E V D \square A Q\)
 \(L 1\) N VFQQAL SNDNLYQQAVLNALSHK
 TVDRAI QEALSVSPELDQARSRVAAAG

LQQAARAALTYDSAGQSSQMTSEADQ \(T \square E E M V K K A M L H S P G L Q M S E L D A E I G D\)

D E Y L S MVWKKNLTYAA QKYNVSMAE
LRNHHNLRGMDENREVLD
T LIRDCMEYAVSNSTQVRQQQSKNDDAR VYR L A \(\backslash\) AHDPGHRAARKERDA IV
\(\square K E A \square D S A L K Y N T D V L Y Q K \square N T K \square A S\) SAIQQRAVSHPQISQSISNLAAQN
 KECVDIAGKNNLTYRESQULGESAH TLDQALVRAKERNGTVRSAQYDVNAAE

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AN \(\square D V A K A A Y Y P Q L S G G \square S T G \quad D M T S G E R G\) QLLVQGRAALFPNVSASYGRYDNEQEDEDLRDEQNYGSEV EGEVQARAALLPQINGTASYDRSQPLFDNATGQFATGDFE NNTNLLNTGFLPTLTGSAGANYNEFSDGRPDAFLNGAESS ANIDAAKAQYFPQI SGGIS TADLTTGERG SNIDVAKS QYYPQIS GGISTGGNLASSEQRGRQM REL REAKAALFPTFDTQLNLSEANTRQQEQENDDEDTSNS

ESVTSTKGSLYPS \(\square\) SFS GS \(\square G Y G H Q E A P K F G T D Y T S N S \square S\) A GLGAANAALLPSGTVQGQAARAYQSVETPDGRVLDSTPG NERDVARGGYFPQDDLRAGTGRESRETPDTDY GRYN EAMRTAKTGYFPKLDFSGSAQYRDNDYNMFGGTK DPMENE
 \(V D Q Y \square A K A A L L P T A L Y H N Q \| L Y T Q P N G Q T N Q G G Q A G T Q N A\)

ARLDGAHAQSMPTLGDEGQVGAGRLDNGGFFGFTARNVTP AQLGDARSEWYPTLAALAVANTSRVRVLLNSAFYRQTYGS \(M D Q T Q A K M A Y L P N V S L N V R A T R Q V G Q Q F Q D G F E D S N V Q A D\) QQKWEl IA QGLPQISAGVDYQNYLKQNTPEGF IPVQFGTQ ANDDVAKAQYYPQLKAGLNTGDFTSSDRGR
EASVQGRAN LLPLIGLSGSYQRVSRDDTANDRSHGYTDSQ
 EQVAVEKTAYFPKLTVNGSAGKQHDDRENGGNASYDP
WMKKEYRANYYPRLSASGMYFYNQKKQEYPDDP TGS RG QETNMSKASLYPTLDVSSEADHKKTDEHDNEQNVENKLTG
 YDDDQVKGARWPQDQLGSTAPMASFGG GGETTNNRDK YQUNEARSNVLPQI NASGGFDHSLVLPTTMLPGELIGESG
 LNRSDARAGLLPSASFHNQYEFTQGNGSGDR I A QRLESLNAVLPYLKAEASSGAHQDNLAVFGFNARTFTNL VGVQSSRSALLPGLSASASA DWNESTSL
DWN S AKAEQARALLLPSANFALGASR SNQE LLPNPDRSFG SDIVTAKMRPNLIFGFNYIGGAAEKNYAPNTGFFNSANTQ EDQEVARAGYRPQVDAVASUGREQQHHSGEGGDGTDTFTH
 YMKREMDAALFPQDDGTVSYSYTFKKPVVY LQMPGMPEPR A NFHQTDAVFLPQVTVGYTALSTNNPLNAFGFLLQQESVT ARIVQSRQSYLPKVTLSETFVVTNDPGAALVLKLQQNIVQ

 FDFRSARANFFPSFSATGTGLYSTADGGFPGLNLAYEVGW SASGQVT DEDRAQQGLLPDNEPSG ASTQTANMFPDPQLDMEGSNN HEVTRAQAGFGPRVDVTGQAGGSVLSDSSTRSONDDSN RRDA LLAAFTPSADGNSYGYYRWGRSDDPETNTYVTTTSL EERD \(\downarrow\) GRAGLLPRDSYQYQTSRSNAELSQPDDFGNAATTN WQDASNRSSGGKSTAF
EKKKEAFGNF \(\square P S \square D F N A N A N V G N K \square A \square P E G P T S F V F Q K G\) SNIDDVAKANYYPQi SGGDSTGDMSH GEGG VELTTRAKSSMYPQIFGTGQDVRVGRVTEQNPDDDVKNGYN SRVTQAFSAFMPTVTMQQYQYNNIGRDGNQPDFVTNGD
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 HRHSLNLRQALLFDVPSAR QI DAEARRVGQSEQEFDAMR

RQLLSLNATQMVYDFGKVKS SVD DQKARDALQQAQVLVK STFTLTQPLFRVDAWYGYK EAKSSTDI AQANFEQAR TTTTSRSVGVDVQQMVFDRSRFTILKSQQRASDFNLQAAD
 RQLYS SAASQLLYDFGQVKSNVTSQEARLQLQQANVLVS S F DGRLNFTYDLYTGGGRGADIKRAKNQVRLSELELEEIN SRTTTVQDNQPUELGGKRQARMTAAERAAELARADLSARR
पD पN YP
H YDRYGNSYSWELDVFGGLRRDREAARAEYQASEAGVSATR
 TTASANTASMTLEDGLRNDNQLQRAKMNALAS QYQLQDLV

 \(T N N M G L G L L Q L P G Y Q G N R L K N A V E R D K D N W E A T N Y D V V A R Q R\)
LALLRAGAELPDYAGGRVAAADDQAHGGQAIAALALADDAR




 S E A S V GI N QLI T D F GA T S S R V Q A A K V V V L I K E E A E R E L Q V
 A Y R \(P\) L S MEMT LVQPVVMGGRIVNGNK LANDGK QVSEY QLS LT K
 DSSFSVNVTTTMEDWGKNRENDGSATQQSHAAAAQYEAFK

\(\qquad\) A Q S S L D Q A G L E L S A K E
A D A N A K A A A E ME I A R
 ATNFPGVNPATMIKTVVEVNSTTADAALDWNAAFYNTGSSR S NS Y G ATLLS QTM WD S SLWS ELD QANAN Y LK A QLELDSQS H A T N
\(\qquad\)
L \(\square\) K VFRRPAN SYEMRLSAS QP \(G \square F N F A V F S R Y Q A S K V T A R A A L A R L N A D L Q\) AMDFDPSKLNNPGARQNYSASVVKGAKAQEEVVYKYKTARAK \(D V V S S A Q G E W A L F E G G S R R F D R S A A L N Q R R A Q Q D E V G A M R\)
 HS Y D L SVVRQP LIF DMSK Y A GWRKGVA IAN TAEAAS KKA E E K PYSGNVNFTVDQADFNRDFLASKGSKLARTQLSQTLETQK
 GYTY G G S L G WTL E L G GKRRARVVDLARNQSELSR I LLLLDF F GKVYSAQLVQPI WDGFATRSRVRTAKSTLESQKYRVVDTA NQGFSVSAGITLIFNGFSADNNLIDARTSMSMGLSQERQER
 N HFS Q WN F GLLK QVVLF DMP SF Y KY K

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UniRef90_B1Y5J2
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UniRef90_E4TMH2 UniRef90 UPI00047B17B9 UniRef90 UPI0002485743 UniRef90_A4G8J4 UniRef90_W5WVL8 UniRef90_A0A024KJI3 UniRef90-U3HCE1 UniRef90-UPIO00477E0CB UniRef90_A0A023VGF4 UniRef90 R5EPP4 UniRef90_L1M1S7 UniRef90_U2MPC1 UniRef90_W4V030 UniRef90_R5MXJ7 UniRef90-Q4ZRW1 UniRef90-G8NQL4 UniRef90_UPI00036EC677 UniRef90_S5JAG6 UniRef90_C9YH20 UniRef90 A5FBD6 UniRef90_UPIO0037853BB UniRef90_UPIO0047C654F UniRef90_G9EIW3 UniRef90_T1DSX3 UniRef90_F8X1H8 UniRef90_A0LNP9 UniRef90_Q0YST0 UniRef90_G2KMR8 UniRef90_U4W141 UniRef90_UPI000416E9A0 UniRef90_UPIO0047497C4 UniRef90_F4Y3T7 UniRef90_X5L2S5 UniRef90_UPI0003B42031 UniRef90-R6E1K9 UniRef90_UPI00046AF619 UniRef90_R5PJZ8 UniRef90_E6MNB3 UniRef90-M1RSX7
UniRef90-N8YG69 UniRef90_N8YG69 UniRef90 UPI00040ECC16 UniRef90-I2ET39 UniRef90-W5XCQ9 UniRef90_J9YVK2

\begin{tabular}{|c|c|}
\hline & \\
\hline UniRef90_R5CZT4 & VYLGLDEGTMI EPW WDGTDEMNLPDWRQEAEMSPKLKRDDL \\
\hline O-E2CK93 & R L \\
\hline UniRef90-B1Y5 &  \\
\hline UniRef90-R9BF38 & (LLGFDTSRTNWK\PENVVTESKTVEAPKTNPTDMSAQA \\
\hline UniRef90-U7G3Z1 & ETLTGQQWETLSELQDDLPMDGPQPAAMS \\
\hline UniRef90-UP10003 & A EIT \\
\hline & K FVL \\
\hline & LLGYDVSHLKMRIPNTIIRNAGLYNDP \\
\hline UniRef90-N9A & TVLLGFDSMGKSWAIPENLVEVSDL \\
\hline UniRef90_UPIO003473673 & A \\
\hline UniRef90-K01128 & ASAMGSPLGPLVLEGRLDDLPP \\
\hline UniRef90-A0L6A4 & VELIGKQVASLADLEQSFPLDKPEQ \\
\hline 2J & \\
\hline UniRef90 L1L & DVILGTPAGTHRIPRA \\
\hline UniRef90-Q12FL6 & VMGEKPPEALPKLPAKFQMGPMPAST \\
\hline UniRef90 A4CG73 & AQLLQTTDYENFDIADQEFEP \\
\hline UniRef90-UP10003F8S & TQLLDLDNPESFDTNTTVUSPDVYDVAVQTLPEIKAADL \\
\hline UniRef90-E8UWY7 & SDPRTSYETMAPNAPKAIPTRAEMIAAAGASSPEIKSALIA \\
\hline & \\
\hline E4R & \\
\hline & NNALGLPHDDDFKYEKTGLTLEQCLTYAETHRPEIVQYES \\
\hline UniRef90-F1Z6H2 & RRLTGHDAGQLDPLPALPAlIPPTLDEADDTAHRSNAQAER \\
\hline (F7X1 & 㑑 \\
\hline E4TM 2 & SL \\
\hline  & NTSLGGPVERNVVATDPL \\
\hline & \\
\hline & ANTLNQDETEFVLVTKMKPRSFESLESYTQSARSENSSLK \\
\hline UniRef90-A0A024k. & \Kl \({ }^{\text {RVQDASGRRLPRAVPQDLURLIEASLQRRPDVQAAFA }}\) \\
\hline UniRef90-U3HCE1 & \\
\hline UniRef90_UP1000477 & \\
\hline & \\
\hline & \\
\hline & \\
\hline iRef90-U2MP & QRLTGDAVTLPEKLDWMQPITSALVMSRVSKHPSLLKAEA \\
\hline UniRef90-W4V030 &  \\
\hline UniRef90 Q4ZRW1 & \\
\hline UniRef90' G8NQL4 & A \\
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\hline UniRef90-S5JA & \\
\hline C9YH20 & \\
\hline AbFBD &  \\
\hline UniRef90_UPIO0037853BB & AFNTSPA \\
\hline UniRef90-G9EIW3 & \\
\hline & \\
\hline UniF & \\
\hline UniRet90_A0LNP9 & ERLIARSITQGEIPRPEAEDADALVAQALINRPEMAAIRS \\
\hline UniRet90-Q0YST0 & \\
\hline ef90_G2KMR8 & \\
\hline ef90 U4W141 & \\
\hline 6E9AO & KQVSGYPLDRELTLHYEYGEMAGSPDFLLESRVDYQLAKT \\
\hline UniRef90-UPIO0047497C4
UniRef9- F4Y3T7 & A \\
\hline & N \({ }^{\text {a }}\) \\
\hline & \\
\hline UniRef90 R6E1K9 & EDV \\
\hline UniRef90-UPI00046AFG & QGITGQAWQTFQTQPLVPGAFGQWQAQAVRHNPEL \\
\hline niRef90-R5PJZ8 & \\
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\hline iRef90 & \\
\hline UniRef90 UPIO0040ECC16 & \\
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\hline UniRef90_W5XCQ9 & GLDAGQALPTLEKDTAELPEMPGNLDSIVT \\
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\hline UniRef90＿R5CZT4 & \\
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\hline iRef90 \({ }^{\text {B1 }}\) & YEDAKDETRRADAGHSPTLDLEGSMGSAHNSVSSGGKGV \\
\hline UniRef90＿R9BF3 & VNVAKAQKTQTDLSRYPTLNLVGTLSQALNGVNPNNNKD \\
\hline UniRef90－U7G3Z1 & GVRAALFNTKRQLGTMMPQVQL \\
\hline UniRet90－UP10003F & QLASANENVETARSGHWPTLYLN \\
\hline UniRef90－S7VQ & NILISELDINSGKSAYDPTIGLSG \\
\hline & QTKLSTYPTINIK \\
\hline UniRef90－N9 & EVEVAKADKKRTDLSRYPTLSLVGSVSQAV \\
\hline UniRef90－UPIO003473673 & O \\
\hline & \\
\hline AOL & \\
\hline 2J & \\
\hline & RLKAANARIGVAVSEYYPRFSLGALI GSATTSGGHLFGGG \\
\hline UniRef90＿Q12FL6 & TINAALENVR1ASRQAAYMPRVD \\
\hline & Q \\
\hline UniRef90－UPIO003F8s & RIQSAETGVGIARGAYYPRISLNGSLFTGYSSSRSLIFSND \\
\hline UniRef90－E8UWY7 & \\
\hline A4X & \\
\hline 促 & \\
\hline UniRef90＿T0 & \\
\hline UniRef90－F1Z6H2 & KVKSANAVIROQRSSYFPT NFSGNGGYGADD \\
\hline & \\
\hline UniRef90 UPIOOO47B & TAEAAEDQLKLQQAKALPTLSAFVNYGYQGFSDEFTFLNG \\
\hline UniRef90－UPIO002485743 & \\
\hline & ALEIAKRDITRNRAGHYPTVDLVASRSDSNQRNTTVQGLS \\
\hline UniRee900－W5 & FGEABLSAN \\
\hline UniRef90 U3 & \\
\hline UniRef90－UP100047 & \\
\hline & \\
\hline R5 & \\
\hline －1M1S & \\
\hline UniRef90＿U2M & EAQSAQHLTAATKASSLPQLNWVVSKSTAKDG \\
\hline UniReeg9－W4 & ＋ \\
\hline UniRef90－Q4ZRW1 & \\
\hline UniRef90－G8NQL4 & R \\
\hline 硡 & \\
\hline UniRee90－UP100036EC677 & \\
\hline UniRef90－S5 & A \\
\hline  & \\
\hline UniRef90－UPI00037853BB & NVRASQALI DSRRAAFHPR \\
\hline UniRet90－UP100047C654F & QQKAAEANVKDAQGNYYPALSLMGGYVA \\
\hline  & IVQAAREKIKQSYADHLPTVNAKLLYDDNSFHYTQSSLII \\
\hline & \\
\hline & AVDATNMLVKSSKMAFLPRINAFGSYSLINDS KAFKFG \\
\hline UniRef90－AOLNP9 & K \\
\hline Q & \\
\hline 矿 & \\
\hline f90＿U4W141 & \\
\hline e90＿UP1000416E & S \\
\hline 247497C4 & KAELAREQLRLAR A S ERLPQ \\
\hline \(90^{-\times}\) & NTQVAKSQTNLALANRKDQLGLTAGVSHNTTATNELAPSP \\
\hline UniRef90－UPIOo03B42 & \\
\hline R6 & \\
\hline ef90＿UPI00046 & \\
\hline niRef90 R5PJZ8 & \\
\hline & \\
\hline & \\
\hline & EIEEVAQLQKKQVDLSRYPTFNIKGSLSQAVNGVNPNNHED \\
\hline 90＿UP100040ECC16 & \\
\hline & \\
\hline Ref90－JYVKa & DYELSSKKATYSARLDRARAQREAGDSFALDDLSNDYQKS \\
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\hline UniRef90_R5CZT4 & \(Q \backslash L\) \\
\hline UniRef90-E2CK93 & \\
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\hline UniRef90-B1Y5J2 & R L R Q A A \\
\hline UniRef90-R9BF38 & QL \(\square\) S T T G \\
\hline UniRef90_U7G3Z1 & TLKSTTG \\
\hline UniRef90-UPI0003FCAF5D & LLA QSVG \\
\hline UniRef90-S7VQQ0 & EVLQ \({ }^{\text {L }}\) G \\
\hline UniRef90-N9JRC8 & QYI YVT G \\
\hline UniRef90-N9A581 & QYISTTG \\
\hline UniRef90-UPI0003473673 & ELDRAV \\
\hline UniRef90-K01128 & ELHR\LG \\
\hline UniRef90-A0L6A4 & ALHRAAG \\
\hline UniRef90-F2JXA3 & A L Y E L T G \\
\hline UniRef90_L1LU82 & \\
\hline UniRef90-Q12FL6 & R T L A G M G \\
\hline UniRef90_R5UT66 & DYNKA \(\square\) G \\
\hline UniRef90-A4CG73 & \\
\hline UniRef90_UPI0003F893F4 & \\
\hline UniRef90-E8UWY7 & \(N\) L Q L L G \\
\hline UniRef90_A4XRH4 & RLERUYG \\
\hline UniRef90-E4RX17 & \\
\hline UniRef90-T0JPQ0 & NLD Q A M G \\
\hline UniRef90-F1Z6H2 & QL N ALLAG \\
\hline UniRef90-C1F7X1 & NLAFQTG \\
\hline UniRef90-E4TMH2 & ILE Y QVG \\
\hline UniRef90_UPI00047B17B9 & ELENLL \\
\hline UniRef90-UPI0002485743 & A V Y \\
\hline UniRef90-A4G8J4 & R L K S A A G \\
\hline UniRef90-W5WVL8 & Q L L K \\
\hline UniRef90-A0A024KJI3 & TI AFATG \\
\hline UniRef90-U3HCE1 & RLLRA T G \\
\hline UniRef90_UPI000477E0CB & E YLKS \(\square\) G \\
\hline UniRef90_A0A023VGF4 & \\
\hline UniRef90-R5EPP4 & A Y L Q A T G \\
\hline UniRef90-L1M1S7 & QV H Y LA G \\
\hline UniRef90_U2MPC1 & K L \\
\hline UniRef90-W4V030 & D L L K A S G \\
\hline UniRef90-R5MXJ7 & A MDRATG \\
\hline UniRef90_Q4ZRW1 & KLKQSAG \\
\hline UniRef90-G8NQL4 & NLQ T L T G \\
\hline UniRef90-T2EBM4 & \\
\hline UniRef90-UPI00036EC677 & \(\mathrm{G} L \mathrm{~A} R \mathrm{~N} \mathrm{~L} \mathrm{G}\) \\
\hline UniRef90_S5JAG6 & GL \(\quad\) Q T A G \\
\hline UniRef90_C9YH20 & KLKQAA \\
\hline UniRef90_A5FBD6 & KLLY A S G \\
\hline UniRef90_UPI00037853BB & RALS GMG \\
\hline UniRef90_UPI00047C654F & EVLAAAG \\
\hline UniRef90-G9EIW3 & RLKKEAG \\
\hline UniRef90-T1DSX3 & T L E K L T G \\
\hline UniRef90-F8X1H8 & Y \\
\hline UniRef90-A0LNP9 & LL R K S LG \\
\hline UniRef90_Q0YST0 & EL \\
\hline UniRef90_G2KMR8 & R L \\
\hline UniRef90-U4W141 & NLAQSTG \\
\hline UniRef90_UPI000416E9A0 & DLQRAMG \\
\hline UniRef90-UPI00047497C4 & EYRRAAG \\
\hline UniRef90-F4Y3T7 & NLQRAV \\
\hline UniRef90-X5L2S5 & ELERKTG \\
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\hline UniRef90_R6E1K9 & \\
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\hline UniRef90-R5PJZ8 & NL \\
\hline UniRef90-E6MNB3 & NLQKSLG \\
\hline UniRef90-M1RSX7 & KLI EVVVA Y G \\
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\hline UniRef90_UPI00040ECC16 & RLA TLLG \\
\hline UniRef90_I2ET39 & \\
\hline UniRef90-W5XCQ9 & \(R L R L V T G\) \\
\hline UniRef90_J9YVK2 & NLLKS \(\mathrm{K}_{\text {G }}\) \\
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