

## QUERY

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RTEQAERETVVRGLTPE
 $K Q Q R L N L S H W L Q i S P Q N I H E M V L H G R Y K E F V Y L K R G L N P Q$ K D S WAKLARALNMSHGELAGRLQRYADSQFMYLRRHLSPQ EDKLPALAKAI GMDTEALKQYLQQRSEREFVYLKRQMSPD
 PDRFPELAQALGEPDDSLTRRVSQKADREFMYLKRRINPD ERQRAALARLLGDGEEDLYQRI AQRAEREFVYLRRHINPD
 PVSRVVLSQAL GMSLLTEDSRVARYSDHEFMYLRRRLTPR





 RERWGELAAALDMDRETLAERIENRADREFVYLRRHMLPA G DKKDELARAL E LDKPSKFATRLEKYRNKEFMYLRRHLTPE NDKVQQLARLL G DNATDLQRRLDSNKQFVYLKRQVDDD NPGWSALAELLGGDDVGELKERLGQNFEREFIVYQRQMAPE
 PRQVAELAMVLRLDPRELQRRLAQDR LQFVYVKRQVDVD
 DARWRALAETLHLSLSDLQARQGQHPHGRFLYGARQVDPQ DHKR LSKALNISEKKLQDRDTLYKEKSFIYLARHLSDA
 PDQLKQLSGLLETS MAE!DDRIKRENSRFVYLKRQVVPD

 MKTSKQLAAVLNMSEEKVYKHVTKKASIEKKI TPERKI SNE A DTAEKLAKVLEADKESVYKQU I QKEMSVRLKEGRKI THE DET QQRLQKLFP DSEHRFERDRKRTRRFKSVPLLNQLTEK

 PPAKLRELARLLELGPAELDAKLSDRKREFVYLKRQI SPE KKPEVVKELS GL LGLDPQWVNHRLARDKSFVWLKRKVTQE HEKKQMDKESTIREICE LLRTDCKEPRNRHITVARQI EPQ TAQQAALGKLLGMPVSEI QQRDARKQNKSFAYLHRQVEVS PAA QVARLARLLDMPADLIGRRLADKRREFVYLKRQISPE
 ERLPE LAAALELSAGELEERLARYAGRQFMYLQRHLVPD
 PQHVEAVAKLLGRRPAEFRKFDEARAERKFVYI SDPLSPA DETIERLREI SPERVARFKKEKRRARRFKSVPLLTQLTEE
 EQTAKSLAP LLGMTEESVKTVTKRRQSQVRLQPGGRKITME

 QATLDALRDITDDDGANFKKERARSHRFTSI PVKTNLNED KRRWQALAEVLGGDAKELMGKISADPKRRFVYLQRQVTPA TALLQELTPITPEDDTAFRDDMHHNGRYKPVTLKSGLTET K VDRLATA A ANACGGEAQEYKDKDQQDTNFVYL FKGADED $K K T S E E L A K I L D E K Y D D V Y K S V N K K N M A L V K V K R W Q D D D$
 DKMADDLDALPDGTKEKFLAETKRQRRFKPVPLYEKLTEK D N RWKALSDALK DPLDQLAARVNANPKGRFIYLARQVNPD DDTDRQLIEIDDDHIKKFRRLLMRQRPHASVPLKFKLTEE
 REHI A ALAKALDLDPVRLRERDAANEARRFMYLKRRVNPR D ATLARLQQILDI PEEDMERFNRYRRPFSSVPLSYDLTEQ AKSLEQVSKI IT ITEEQQKKDFDDD DKHTRRFKSQVDETEV QATLEGLKPITQEDDDNFKKERQRSRRFTSDAVKTALTEV ERRWHALADMLQDSPQQLSDK GGADDSKRFVYLQRQASPA EATVDALDELDPELKERFFHDVRRNRRFNPVVLVSRLNED TPHLDQLARALDMPLKRLRGDLRRNAHRRFVYLKKRLPPG ESVI RILS GELGVPEDTVRKKVEKYSAREDI K TNVDKK A EKIS ELTKALNLNEKELIAKLNKHKNRHFLEDRRQVDGQ NS L AN RDA WAVLDT DVDSLQQRVSNPKRRFVYL QRQVSAA KRTLALLAPI FNDEEI IDILARIDKNKNDPVTI K IDIITDE


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 EAQEVLDLHVPGVHARREYKRYYPAGEVTAQLLGVTNIDD AA QKVLDMQMAGVHSRREYKRYYPAGEVAAQLVGVTNVDD IA DKI I S Y NLP GVY LVKKESQRYYPYGDLLS H TL GYVGID N
 AA QQI LQLK LIA GVHAQREYRRYYPDAEVASHLLGFTDIDD

 I ADKI SNLKLPGVYLVKESKRYYPYGNLLLSHTLGYVGIDD KANQULAALHADGVVFLEKGYKRYYPEADAAAHVVVGFTNI DD RAEAVAS LVVPGVSDTREFRRYYPHGEAVAHVLGYTDI DD QA GKVVDD
L KA A AM QL S L EGGLYSQRDFKRYYPAGEVAAHVVGMTDIDDE
 TARKVEALHIKGVYMSPSYRRFYTEGAAAAQLLGFTDIEN

 DAEAI LDDLEVE GL YRET QYKRYYPA GEVTA QLI GDT DYQ D
 TAEKI MKLKIPGI FLSSESKRYYPESEFAAHVLGFTDI ND


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## V

 KAKE RALDLEGVYI GEDSKRHYPNGSYLSHVLGFTGVDN Q $\square$ F S V H QQD FPGVEVNATLKRFYPYGK ILTHVLGYVSTHD KARKI QDLNLPGI YLAGDTKRFYPNGTMAAHII GFTGDDN TTDKI A ELDDDGI ETRKEYKRFYPEGEVMAHVVGFTNVED LADKVMALG $\square P G I$ AKQQEFRRFYPAGESMAQLI GFTGVDG EADAILDDLGNPNIAVLNEFKRFYPHSSEDAHVVGFCNIDDN
 VA N QV K A L K I P G V H V V S S E T R R R Q Y P P D G Q V S A H V V G Y T N L E E
 A A DKI A A L KI E GI HQTREYKRFYPEGEAMAHIVGFTNVED RARDVLALLI SGVRAEREYRRFYPAGEVAAQLVGMTNVDG TA D T L R D K GL L G Gl E IVVD DNRRYYP F GNFA S QLL GF T N I D N Q A A P V L A S G M P GL VA QR D Y K R F Y P A A D L T A QL I G L T G D S D

 Q K F S V Q Q H N FP GVVSITANLK RYYPY G SVLTHVI GYVSRDN $K A Q Q I R D L A L P G I V V A E D N K R Y Y P F G G L A A H I L G F T G G Y N$ V I A R I K A A E I R D M NL P GIVVVA E D NK R Y Y P Y G S L A A H V L G F T GI D N

 QVARFN QYRFPGVEVK GYK QRYYPY GSALTHVI GYDS KDN MAHYVKALK $\square P G I$ GLKRESKRYYPTGEVDAHLI GFTNDDD $E V A R F N Q Y R F D G V T I D T Y Q Q R E Y P Y G A E L A H V V G Y V S K H N$
 IADKI T K A RLS GI WVAEDNQRYYPYGNFASYVLGHTSADS

 $\square$ GDYI K K L K LIP G I H L REESRRYYPS GAVTA HVI GFTNVDS $E \| A D I N R Y R L P G V D V D A Q L A R H Y P H G E L F T H V L G Y V G R D N$
 EADAVERAGLTGI GTETEYRRFYPGAEVFGHVVGFTNVDD


 QRFS I NQ HKFP GAADEA Y LIKRHYPYQ DTLT HVLGGYMA K DN RAEHVLKVDDDGVHLERRDRRYYPTGEVFAHVLGFTSAED EGDKI RAQGLAGVKVDEDYKRYYPYDSLASRVLGFTGGDN
 V A D Y V T K L K I K G V Y L K P E S R R F Y P T G E VV S A H L V G F T N I D D



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 K GQE GLEELA Y N S WL T G Q S G L LK K V I K D R L G H I V A D I R SIIR P RGQEGLELAYDEWLNGTPGSKRVLKDLYGNIIREIDAGRE


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 QGLA GI EL MY DSYLK GTDGA DKYYSDAKGNRLDKKEVYES

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 K GQEGLELTREKMLAGKHGSRTVLKDRRGHIVEDLAVIVP A GQEGLELAFNDWLKGERGTKKVVQDVKSRVINNLSLVKP

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## T

QGLMGLEKYYDKELSGERGAVKFFADAKGKRMKGMADDYE QGLLGLEAYYDDDLKGEKGSVKFYTDAKGKKMPDADDYTP DGKLGUERYYEDTLHGKPGYQEVEVNSRGRVIRTLKAYEA QGLTGLEKTYEPFLKGKEGYDAYPSDAKGRIMPGSEEYVA


## A



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TGDMGIVESYEDVLHGDAGYQEVEVNSRGRII RTLKKYVP DRDLGIERFYEEKLHGDAGYQEVEVNSRGRIIRTMKKYVP
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SYESEL PGRDMVEKDATGRMMPGVEQYLD PGKRQVRKDGLGRVVESLGTVQV T GL

EKKGGLEQYYEKELHGEVGSQNVETNARGRVLRVLERS D QGLDG｜EKTMEKYLKGVPGKILSEVDAQGRQMPNYEKRTD HGQEGIERAFDKSLRAHPGRRRVDQDGLHNQVAELEQVSA
 RGQEGLERAWDRELRGEPGVKRVLRDGRGRVVDDVES SRT QGIVGLEVQYEKYLKGQDGKILTILSNAAGVEI ENAEDRIE

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 DGLKNMALADVLGLDMRKLTSSVADPKRRFVYYQRQUTPA EKVIQTLSKELDMDTETVRKRVEKVSSVERIK TNVEKS QRRRAVDALVDVLGMDEDVVEDLVDREGTFVYVKRQVDEE EKVIKVLSENLKLKESLLIRKKVYKNSVIREKIKKGSNVEKD KKLFDDITAEELAKDPHNRKLKRYERPRSRYLVLQKEIPPQ VERWHALADVLGLNRQELLARVEKNKKRRFVYLARQVSPA SWVGPRLSKILNIPQVDMEDKLEEAGAYSSVRIARHLNEA HNVIKTLDLSEEDLEDFEHVVHQVHRPYQPITLISDLSEE
 TKEDKKLAEVLGDSYADLDKKLKNPPSRNFVYLARKRDLA AYAPL AKLLDMPLAEVRRRLTGDRSFVLLKRQVDPE EKTAQFDAE E M L DLDEYDEVLEKVKQRVALVRLKTKVDTE P IAVRQIAKLAPGNDSKDEDWRVLRSHQRYWFWQRDLPPF RKDWNKVAQALNLSPDELTARVRSGGSG FAYILRQVQPQ KKVARKLSPVVRMKVSSLTKKLRQKKVF VWLKRKLSRA PTAEQLMQSALLGVSSEELLEKLSDKKRQFVYLKRQLPLD GGYTDTRRWQAMADVLNTTPEQVENPERRFVYLERMITPA DEAVDVLVEVLGVDEAWCREQVVTSDTTFVYIKRQVDQE $K Q E N Q D L A D M V G L D R A A F K K Q M N D R P R S R Y L V L K K E V P P P$
$P A A D A K L S K V P G S E S E Q E K G K Q R R F K S Q V K A R L T S E ~$ QTTGTVLPDLPESRGARFAERYQKASKHRPQFLSYTLSES LLTESILLS QULNLPQDRVLRRGRRHQGFVWUKRHLTET EKVIKNLSAILETDEDEIRKKVNKVSSREKIIK RNVEKA NATLTSLQKLLNLSDHDLAKFKKLMHRTRSTKPDTLI EQM KAMLAQVPLGDDDDDAKKQLAQSRRFDSMPLKMHLSED DATIAQLVEVSSVDLKRFKKLKAQSHVFESIPLRTHLNEG DENULELQKLTDQELKNFNEQNRYARSFKAUTIRQQLSEK
 GIEDVVTKELMRTLVTAKDKDGKFYKQREVRSEGYKISPE EKVIQVLSDTLGMSQDDURKKVEKDSVREKIVKMSN|SKE AEVAKKLAPYLKMDAEKKIYKILTKKSAFEWVSAKREVDE


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TALE\| IRKKAMPG\|VVIDEDTKRVYPYSCLIASQVLGFVGKDN EALKISRLDLDELFFLPESKRVYPMGEVTAHVVGYTNFNG EARKVLSSDTPGUYGKREYRRFYPAGEVVSQLVGTTNTDG VAQQURALRDKGLTLEPGYLRRYPENEAAAQVVGFTDDND QIARFDEYRFPGVSIDSYQDRQYPYGADGAHVVGYVSKHN VGDRIRNYGLAGVKVDEDYKRYYPYGTLASRVLGFTGGDN EGVKINYHRLPG|RVEAELTRYYPYGRSLVHAMGYVGTHY QVARFNQFRFTGASIETYQDREYPYGADLAHVIGYVSKUN EVFSASKHKFPGVQI EARDARHYPYKETLTHALGYVATHD DIAKFSKYQFPGVNIETQMTRYYPHGDLFAHVIGYVGRTN EVAKFSAHQHQFVEIKAYLKRHYPYGDALTHVLGYVARUN KAQQ SDDADPGVVVAEDNRRYYPFGSLASGVLGFTGGYN $Q \| A Q U N Q F R L P G V E V Q A S F V R H Y P L A E H F A H A V G Y V G R D N$
$V I A K V D A L K L E G L D T R K E Y K R F Y P Q G E V M T H L V G F T N V E D$ VIAKMVALKKIEGLDTRKEYKRFYPQGEVMTHLVGFTNVED TGEEIYRTGLDGIKVDEDYKRYYPYENLLSKVIGFTGGDN
 VKLEENRRDLPGVSVVVEPLRYYPQAALAGHVLGYIGSIIN QVAMFSVQQHKFHSIDASLIRFYPYGDSLTHLLGYVARIN ARFSEVKYLIFPGVNIETQMTRYYPHGELEAHVIGYVGRIN Q $A$ AR NQFRLPGVEVAAQLVRHYPQGAHFAHSVGYVGTHH MASYIKELKKDPGIHLRKESKRFYPTGEDSAHLIGFTNVDD Q QEFSVNQFHYDGI HIDAYLERYYPYGASLTHVLGYVGKDN
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EIDSVHQHNFPGFSTEARLARHYPFGDTLTALGYVAKRD EQFAVHNFRFPGTSLVSKLQRTYPHGEAAVHALGYVGRDN EADALRSQLSPGIHLVTESARDYPEGSLAAGVLGFTGDDN Q ITALKEYENEDVEDHAEAVRYYPHGKDIAHVIGYTRGDV ISDKI RNLEMDGVMVDEDYKRTYPFNSLASKVIGFTGADN SEVQLAKFSVNQFHYNGTNDRYYPYGESLTHVLGYVGKDN D DARFNRWRFPGVDVVPYLTRRYTFGARFAHVI GYVNRID ERFAVNRYRFPGVEIKSRLFRHYPQGKLLGAMI GYI GRI N EVFSVNQHRFKGFSIQANLKRFYPFADTFTHALGYIAKIN VAKQULALKLPGMRAEPEYRRYYPHGEVSAHVVGFTGMDD EKLQDDYKAKNAIVMTQESKRYYPEETLASHLLGYMSRDG MANYDRELKLAGVGLKAESRRYYPAGEASAHLL GVTGDDG TGDLI RSYDLDGVKVDEDYKRYYPYGTLASKVLGFTGSDN ESFAVNHYRFPGVEVSRLFRHYPLGKLGAHMVGYOGRDN QDAVVNEYRLPGLEVEAQFVRHYPMGAHFAHSIGYVGRIN ASQELKKMKLQGIGFAEESRRYYDHDTLAPQVLGFTGDDN VAEQUEDLELKGVDTRRDEGREVPGGGLAANLIGFTSDDM


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 YVKNPEKTALDLPEERDYELLTSDRFQVEFGPSGRNLSHD DPKLLKT LA K L L GQ P F SELVKKKLANEDKTFVWVQRQVVDEP E K T A Q K L A TVV L P $\quad$ IS E T Q


 D Y V K DP YYTATTMSR ILNAPMDYQSNVIELGSWGQKITE E
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 A H VA





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| UniP | PQPGNA |
| UniRe990 G7WHD6 | T |
| UniRef90 | VEP ENIHL |
| UniRef90-UP1000369 | N |
| UniRet90-A4BKS8 | PEPGAN |
| UniRef90-Q8R9G1 | N |
| UniRef90-W1SLIT | AQNGNDI |
| UniRef90-G8P? | NL |
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| UniReef90-UPIO0037FE9 | PQPGDN |
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| iRef90-X1DSR3 | HKDGHSI |
| 3DZ | AKNGDD |
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| UniRef90-H5S | GQAGRDL |
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| UniRef90-W71 |  |
| UniRef90-17LG1 | N |
| UniRet90-R7BMT2 | D |
| iRet90_D5CU46 | 兂 |
| niRef90-FOK9B0 | d |
|  |  |
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| UniRef90_UPI | A |
| UniRef90 | PIDGKNVVL |
| 俍ef90 |  |
| UniRet90 |  |
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| $f 90{ }^{-} \mathrm{M} 42$ |  |



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 $K M T A R K$ LAAKYD K DEVIVERLTVK DKFQVEFGKAGRDD SH Q
 K K VDR I CD LL QLDAAAFRKRLNENQDKLFLWVKRRLSDQE


 QREDQDD E L A A R F DLDE E D A VA E K V D A A D S S R Y L




 ATTTALELLSKIL NVDVNVLKEKNKKVS DQRDSPEGRQLDNQ



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 PKTK QLLS QLI S PAEDEKRLKS QDI Y A T E PLAA A R NL T L A A


 EDVIA RLGRLVDPA ELLAKAREEMRRSRDHPDVIAADRVVSD EALVMKFSEDLKMPTEKDSEKMNSNKKFEW LI ARRVVAE






 D QVA D GL S KI L G K P K A D I V K Q V V S F R N A K G E Y S Q Y R E L R P E


 RLT K NELLQAFPDETE YE EIV NKLIDDE ERQYVVLAK QVDK D
 K K T A K VLA AKVI DMPEKEIEKRLNTKK QVEFGRAGQNL T Y H FKEQRQRLAENPDSDETPYSYDVIERDKKF\|WIKRRI SAR







 DVA A D T L S R SL N M S R S K I Y K R LIK S R K K F V Wi K R QV T DR



 D NKKVE GT E HQR LTK I K A DELDYKT F C S DA YF V WL K R K L E N S

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UniRef90 Q2LQZ? UniRef90_Q2LQZ2
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90
100

120 EANLIRSYNLEGVYLAADTSREYVYGDFLSQVLGFVSSDN
 VMT QV K A L N I K GII I S P D TKRYYVN GN FMTSVILGLVNPEG KGKEIA DLNLKGVVVDEDDQRDYPFNNLASHVI GFVGKDN LAA R E QLAVPGVHLGRAARRYYPGGSDFAQLVGFVGANG

 K FMSDNGLNSDDI HLWPTSKRTYPNDSLAANI GFTNFDG EKEKDEKMKLPGITLYPETERFYPNGNFASHLIGMAQKNP

 K C D K V R N L E I S GLLEDS E GT KR Y Y P M G T A A A K L L L G S V T D D N DWKDLSDLGLQGVGAQKDYKRVYPEESGAADLVGFVGDDG QRK QI EAMKLP GI RFMETASRLYPNGAFASHVVGLAQLQN EFARVNLYANPGVMADMNEARYYPHGGVFSHTVGYVAKVS EVISI RELKLPQWGFREEYRRVYPQGQIAAHVLGLRNDDG DWEDLASLGLAGLGAHTSYKRVYPEETGAADLVGFVGAEG LMT E I E E M DLLD GI L F RE DPRRRYYPN QEFAS HVI GYTMRDMS



 VASKI QRLLHLS GVYLIVDTKRYYPGNNYLSHCLGFVGIDN TWKK AKDARGGVF GHEPDPDRTYPSGPVAANVVGFVGGEG AVAR DNRHRFP GLEVQPHLIRRHYPYGSLGAHAVGYVGR DN K D $\ K$ S K Y G IVQA I D TVVE DF KR S Y P L N E FA G S V L G F V G S D S YCDTRD GADVVGVRFEEEYKRKYPNGSLACHLLGYTVSGN QADEDTK LDQVQGLYVGVDFVRHYPYDDLLARLIGFTGYDS EMHRLYPRRSDYMI KILPSTKRFYPNKTTASHII GYTGRAD Q $\square$ T R L K E Y GKE GI DVVDDE SVRYYPGGQLAA HVLGYTGEMN TAQRVRELNLKGVYFQKEFKRFYPNNELAAHVLGYVGTDD

 QVTAI E EHHQEGVEVIIEPVVYYPQGNTASHVLGYTRQDY V R D K I M D L G IP GIVVAQAT SHRTYPS GAVA GS IVVGY LGSD N
 VA A L I K E H G L K GF D FVVE N R R Y Y P N D S LiA A HV L G F V G T D D V K E F Y V A L G K E H I G L V R E Q K R Y Y P K D E L A A H I L G Y T D R D G DWA D L R GVG L E L S R V A V N A P P G V R P E V G L S R R Y P Q A E DY S H MV GYV PR F Q



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 QA R Q Y A S T N L P G G V Y L V Q D TLLR Y Y P H K N Y L A Q T L G F V G I D N








 QVSRI N S V VELP GVVFVEA GQSRHYPY GPTLA HIVGYVPGFR EALGI E QADLKGVRLVSEYSRIYPNGHLAGQTIGFVNDDG KQWMEDNKWSSGI NI DKDNKRSYPYNNLASNEIGGCGSDN GLLQ EK L Y KFP GVVYIQSRTERQYNYPNMMAADPYYVRGDY EF AKVNQYANP GVMVDMNDARYYPFGGSFAHVIGYVAKVS IT A YFEKLNLSFI GTEATTRRYYPQNELAAAVIGFTNGDG AAEDKERQNVVKVWFE EDYQRVYPYN ELAACDTLGGTYSR D
 E Y L Q L E A I I K E H L H F Q Q E S K R Y Y P Q G T L A A H I L G F VV G S E D



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| UniRef90-W9GHV8 | VTN GRNVR |
| UniRef90-W2UGM0 | ARPGDNLTL |
| UniRef90-D8GUM9 | P VDGKNV |
| UniRef90-R6P8M1 | AKEGYN |
| UniRef90-UPI00016A8DD1 | GRPGADI RL |
| UniRef90-S6HGL6 | P \P GR D L Q |
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| UniRef90-X0SMH3 | PQAGGDI H |
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| UniRef90-S2XKJ4 | P K R G D DV H L |
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 EWSRTAEKLSAVLKDPTADILKKLQKTGYKSALPVRLGTA YKNRPEYVPLSKDQLLKYLNPTRKAFQVQFGSGGSGLTKA DSRWQDLAEVLRLQKPLIDGKLTSDNTRRFVYDKRQVTPP PALVAQLASLLNLEPEVIQKKLSTGKQPRKVKDRLTLREA NTLLGKLNNIVDLNVKEAKEKILKGYYYDPVTI FRGLNFK PEAVARVGEI LGWSADRLRRRLERGG ARFAWIKRGLSPS SNKTNLFPDLNASKLAEIYKRNDSYYNQDFDKVVDFIPYD APALATVLSQRLDVDYFKTLTRLREEGSRFEYVARRVPSD
$M S E V E P L A S Q L N L D R E L L R E K L S D Q N D M F E G L K K R K L T D E ~$ GDKKLYAQEKDFDKIAT TLHKNNELYQVEFGNYGKNTSQE GADFRAVLATMHVSPAELQQRLHRGGSRFAYMARQLPPD LPEVIDFEPDDARARRRFRKLQEDSKNFESLPI LTRLSDD LHNNNDLGKTKEEDNK乌LNYKLPSGADAGSANLVRRVPKE ARHARLLAPVLGOPAGELAKRLGAERAF VWLARRVSPE
 KNGQDLKTSLVSRDEVLKWEAVDDPRLKDVEIDSIRS Y P TPTQAVYK IADALGMKDSDVKNALDGDKTFNYVARGVTPE EKTKAALAERDGITQEADNRKLQASWVKDDLFVPDAYLSK KQ DSRWTNDPLEQURAEFERGRDMVRSFEKQVLVSNLSYE GGKNKGKRESDQQYEDRMAKFNTQUSQDKMVRIARDVDRK AEQTKAKLAGKLGMKVEETNQKLSASWVKPESFVPLAYDQ ANGDVLYVEESQYNKVAEIFHKYLDMEETYVKITYANMMS ASGKVLYVEESQYDKVADI FNQYLEMDKDYVKI TYSTMSS PEQAAALLAPIIGQDQAQLAKKLRTANTRYVLLARRQTPQ TETFRRLDKVDGKEKLVEVSRDQGLSESRYYIVAKDVKPD TVKVDGQPEVVGVMDVSELTTLFTRAKTRYVVVKKDVNPA AKGNKNYVEDIDUKDVLVKGKESNKYQVEFGTI GKGLSEL LEENQTLEIDKNKVLEVLNAKLENGEVNQYPNLLRAMSKE EGKLSRLLTLDPEDIERAMAEMRRSPPFGPQTLADQISWD HTDVADLLAPIVGEDEQELTEQLSRDDTRYVRLARKRTPQ STAKTVLSKLSELSSLSKSRLMNNYQNSEPIALARHRTKE ATGQKLYVQPSQYEKVNQKKLFQVSFGSSGSGLSYTKMAD DIIARGLSDILGEKYGVTYDDVADMIEKKKGSLDATVDLV HQIAVWTGKDYFELKTLYNKNRKRVKPFEPLIIVPDLTFA EVDGELVGAWKPLKTDPGVLYPKLVGDKRWNPVAKGLTAE DPDETPILGMPVKEDETYLIENKDRSQDEFGKKGNDLTADD QEMDFCRQFLQRMEEVRNFRKNPGYSKYTPQVFMTQLSAE QK V K K Ap EKR G
 DAETQLLVNLDEBDRARUERDLRHVRKYVPVTLHEFLSWD DEAVEKLTQLFPELDRKTLYQKLSDKGSQPTWVVEDLDYE

## D



UniRef90 UPIo000F57114 UniRef90_UPIO00477CF14 UniRef90-UPIO0035FF026 UniRef90 V4R7T0 UniRef90-R7KDP5 UniRef90-A3WOE7 UniRef90-H0C4Y3 UniRef90-UPIO0037335CB UniRef90-WORKG4 UniRef90-F7NEQ9 UniRef90-UPIO00367E3FA UniRet90_W4QAV3 UniRet90_S2ZNRO UniRef90-U2MB50 UniRef90_N4WGE5 UniRef90 UPIOOOO410C714 UniRef90-UPIIOOO35EF4DB UniRef90-DgVS19
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UniRef90-U1M820
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UniRef90 K2FU65 UniRef90-EOI3E9 UniRef90-SOJZS6
UniRef90-F9ZQW2 UniRef90-R7F590 UniRef90-UPI000466B7B6 UniRef90-UPIOOO47C19E2 UniRef90-E1QM98 UniRef90-FOSQFO UniRef90-B6BJG9 UniRef90-UPIOOO38218B8 UniRef90-K2DCB6 UniRef90-V6MHU5 UniRef90-D6SSD6
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UniRef90 $17 D T D 1$ UniRef90-C5EZT5 UniRef90-V6KSS2 UniRef90_E3DMG1
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UniRef9O_A4EEW

TVDK\|LK\GG\AGTD T RKEYKRYYPEGEVMAH\|V|GFTNVED 1 A R DI NDKYPNEVGLERQDVRVYPGGALAANLVGSTGWDG K A Q Y V K E L K $\quad$ K G I S L E S EPRRRFYPRDVEETA H L L G Y T D D D G S K V S L Y A N D i P GlLVA D M D Q VR A Y Y Y G G A F S HVV G Y VS K DN TKEK I EA LDNLP GL GF E ESFKRYYPKGDFLSYIVVGYAKDDS







## Q



 GTS QND Y DS LE GVVSHLVPVVRTYPLGEAAA HLTGYMGKVN

 $R F V S V R L P D L P G V V T Q R G Y S R F Y P T G P S V G H L I G Y V P G Y K$
 VA K K I E AMD F E GLD D FVE E Y R RV Y P N GEMA GALL G FT GVD S



 EI DPHYSNLNKTDKI DPVVKRKYPFGKLASHII GYVGKAN




 VA D K VA S LLKVN GI II SP DTKRYYVVNDNFAA QVI GHTNSD G VAEKTR QL GLD E I Y L LREPKRDYPYS DLACHVLGFS GLDA QVDA I R QL E L P T Y GFERREFRR HYP Q GA L A A HV L G L R D D D G

 Q Y N A L R E L NLP YI I GQPTF QRSYPN GSLGGGSVVGF LGSEG








 EWR QI K DLLK NA GV FAE EHAKRVVYPGDELAAAGTLGFVVNAA G

 LDFVVSQNKLENMVLVEASSKRYYPYGNVASHVIGFTGTDG



 K A T K D R P S IL LA GVVF QE PTSSK R V Y P N G D


 $V$ S A R I T E E E F P E V G A D P Q P I QGKNKRFYYSDAI GLDDPDVKRYY P YGSSLAACVI GF T G D D D

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 EARMGLERNLDEYLRAEDGKLQFQTDGSWIRLPNSERVTP
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 VGVGGVEQSFNSYLTSTASTKLAKKDRYNHIVENGGTVKK
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 EGKDGLEKKYEKDLRGTPGARRVEVTASGRIVRDLDQTRE VGKAGLEQLFEKRLRGENGGDITVVDKNGNKKDVLAEKQ QGLDEGLEYQYQNLMAGEHEEVVVERDGTRRVIP VGQMG ERMANKDLSGVWGRRLIEVNAMGEELRQMGVDP NSKMGLEAWFNKTLSGKDGYTISSVDASENQUSKNRVYKA EGDEGIEKLYNEALTGEAGKRTIRKDAQGREIEILDERAR VGQYGVEKWFDRQVRGRAGQKSVEVDALGHEKRAVVSDK


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| :---: | :---: |
| UniRef90 UPIIOO0477CF14 |  |
| UniRet90-UPIOOO35FF026 | YDAQDV' ${ }^{\text {- }}$ |
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| UniRef90-UPIO0037335CB | P |
| UniRef90 W |  |
| UniRef90-F7NE |  |
| UniRef90-UPIO00367E3 UniRef90-W4QAV3 | A ${ }^{\text {R P }}$, |
| UniRef90 S2ZNF | A |
| UniRef90 U2M | AEDGASLYL |
| N4 |  |
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| UniRef90-UPIoo035EF4DB | PTQGQTLVL |
| UniRef90-D9VS19 | A VPGDDi |
| UniRef90-R5EGC8 | GNLGGNL |
| UniRef90-UPIO0037D4D6C |  |
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| UniF |  |
| UniRef90-R8DPG6 | SKAGENITL |
| UniRef90-O1LSD6 | A |
| UniRef90-DOMFK2 | P ${ }^{\text {SGY G L HL }}$ |
| UniRet90-B0 | A ${ }^{\text {a }}$ |
| niR |  |
| Unil | A ADGKPLKL |
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| 171542 |  |
| UniRef90-U1M820 | (enc ${ }^{\text {a }}$ |
| UniRef90-D8PC18 | PVAGDDLYL |
| RiRef90-V5P |  |
| UniRef90-F8E4Y5 |  |
| UniRet90_UPIO0046C9E70 | AASGGSL |
| UniRef90-A8FL73 | PAMSND |
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| 970 | A |
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| IRRe90_UP10004 |  |
| iRef90 |  |
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| Ret90_U7US77 |  |
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| UniRef90_A0A022MIQ7 | GTDV |
| UniRef90-B8HGW4 | GKN |
| Ret90-w9 |  |
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| L1QAW |  |
| UniRef90 -7DTD1 | GEAGAD |
| UniRef90_C5EZ | Alt GS |
| UniRet90-V6KSS2 | D |
| iRef90-E3DMG1 | GND |
| UniRef90-B2NHI6 | D |
| niRe990-H9UJ73 |  |
| UniRet90_R7ER61 |  |
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| UniRef90 UPIOOO4703BBB | AVDGQGL |
| UniRef90_K0AC | OGSNL |
| UniRef90_A6P1Q0 | ATDGNNL |
| D77 | SVPGKNLKL |
| UniRet90_G6C271 |  |
| UniRef90-UPIOOO1FFFA8 | A |
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| UniRe990-UPIOOOO37E6 | ETPGHTLQL |
| UniRef90-J2LC66 |  |
| UniRet90_UPIO00464CCD5 | A |
| UniRef90-G7GPM5 | A ${ }^{\text {NGKTVRL }}$ |
| UniRef90 R6 | AVRGTSLVL |
| Q3 |  |
| UniRef90_C1DW |  |
|  |  |
| UniRef90-R5PHU5 |  |
| iRef9_-UP10002EB |  |
| -90_4C9W8 | KNGADVIL |
| M1LTN2 |  |
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| Ref90_A4EEW3 | D Dil |



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UniRef90-K2IDG4 UniRef90_K2IDG4
UniRef90_A0A059G2L8 UniRef90_R6P6B7
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VHKEVV 50
60
70
80
DP $D P T L Q V L A D C F G L D K S D V E D Q V E E N P N S R Y G I M K K G V S Y E D$
$P G L L Q K L A G L D V A V L R D R W E K G S R F P D Y R P V P L A E D V P R D$ D IA A R V DDI DVGEEQRDRDDCASQPSFMPVVVRQNLTWP WDKIR YL A GVPADKLVNGQPDEPDVHKEKEVTLARNI PA D IDEEAHQKNPELPDLDTRIDEIAAGISDETFVYLARAVSPE $A S D E K L Y V Q P S Q Y N K V A A D L K E H G G M K K K D V V K Q Y S T K S N$
$V$ LDKLAS LLKLDKAELDQERWEKSKGRARYYPVVI AVNI SRE
 S DESVSKLAALLNLKPEDIRAKLGAS WVKPELVFVPGIMKG

 GLEDEKVVRSLGQNMKKDLQARKUSSFQPSUFYKQMPAEQY NFARESLAPL LGQDAFELERLLRENPDSQYLVLARGVDLA SEWKDVVRKLAAFDKDYWPNQNHQWERYRPVTILDDVRPE AEMATLLSTALGLPHAQLMEKDSRTAYSQALKVPVNVTSD $\begin{array}{ll}E Q K H P E W K K D N G E L R D Q R E D R P D G W K V D K A V K D A L S E F R D \\ E & \text { R }\end{array}$


TS GEKLVYQPSQYDKVADDLNQHLGMEKDYVNI TYGTMTAD




E


## UniRef90_K0Z6P6 UniRef90-R6SJ48 UniRef90_UPI00037B0C60 UniRef90-UPI0002E77792 UniRef90_E8UAC3

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UniRef90-A1VBE2 UniRef90_A1VBE2
UniRef90 I6TWS2 UniRef90-G5K4D2 UniRef90-R7N5M6 UniRef90-W4HIK7
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UniRef90-K2IDG4 UniRef90_K2IDG4

UniRef90_A0A059G2L8 UniRef90-R6P6B7 | K |
| :--- |
| K |
| K |
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| R | 90


110
120 KA QEFNYPNVNGI WLEEDYVRTYPYNTDASDVI GFTVS GN VMEREHSTELPGVLVEVVPVRDYDEKGSEAHLIGGQPGDV R DPYEFTALQPNLELRERLERVYPHGKLAAHLLGYTREAN

## V

A

 $L$ L A K L SLLAKGTGNDVGLYFVEDTKYYPNGALASQLGYESKEG





 $Q \mathrm{~K} D \mathrm{~K}, \mathrm{~L}$ D $K$





 $T$ K K K IVEA A K L P GII D F V Q K Q A R L Y P N G VF S S N L I G VA V S E T

 Q K S Q I

 EMQAVYANQQENDSVKPIFKRYYPNRELASHDI GYVGAAD A I I A E H K D E L P GI N I E A L P VR D Y R K G T L A G H L L G YV Q G D Q K K E EF E TK KIIK GVVWFEDEYRRRFYP YNTGACNVVVGF SY DN G
 $V K R K D S K D N G G Q V Y A E L S N E R I Y S N G T L M G A L D G G G V N D D G$
 EKKAFEDYESP GVVWF E ED Y L R S YPFN ELLANDAI GFT LSSR D Q MLE D K E LDDD GI F FM T E PRRRYYPK QMFAS HVI GYTMNME $T Y R E I \quad R A L D D V G I E W E A T Y E R T F P N G N V A A P V I G T V N A E G$

 QVAR I EA ENWP G LEEDMVRTNRYYPEK DLFA HVLGYVMGDL
 $N$ NT N I A E R I DP G V S WH S K P V R R N Y V D D T G S F S H I I G Y V Q N S V QWQEI NAA GI R GVVSEEFMRREYPLGES TAP LLGWVGS GD

 T D L I K K A V E L P GVVVK T DVVS S RVVYPD K NA SA H L T G Y VVGKM T VM R E L D A L N G G Y IV G E L S S D R L Y S S GTMA G A L I G GV N D D G E Y A P L Q E K L R K F S G F F V Q K R L L R H Y D WE L K N N P Y Y L A G E I $K A D E I Q S L K I P G L Y T G V D Y V R D Y P H D E D L S R L L G F T G Y D H$

 $K N$ LIE ND L L A I A G V K L T T T N I R S Y P Y G K V T S HLLVGYTENS Y

 IVNVID ALGAP F LF GEVI SERLYPDGPVGGSVVGRYRIVD
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130
140
150
160
$V|G A A G \square E A S R E G V L| G G K D G E R T V|E| I A P T G Q U D P D G E T T K E$

 DEESGLEAS LEKVLPGRNGTRRVEVTANGRPQGDVKVVDP

 $\square G K N G \| E K A W E S E L H G S D G G R Q L E V D S R G R V L R V L S E S S P$ GGK S G L
 I G R S G I E S L Y E D K L K G Q N G CMMIVI E D E F G N R K D I I I D D K P







 NKDT GMEASLDDKIL SGKD GQVTY QKDKNGNTVLGAAT TK K E G K S G L E A S L N T I L A G Q D G I I T Y E K D K N G K LL G T G K T VK K
 F G K $\square G V V E T Y$ K D ML R GRA G S K RVVEVNAAGRVMREDD R RE IGRSGLEMAFDKDLRGTTGGKDSITDTBGVEKKVLDDHE



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$\stackrel{\mathrm{V}}{\mathrm{N}}$



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## 

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$\square$
$\qquad$ K $\checkmark \mathrm{E}$ A A KIKYEY PRGR
ERGY
KRGS TVKVQAKRGY
 LD A NGTILLAASEKVYNCKVMMDDKKENE


NTT

HRAIYAKRGT

| 1 |  |
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| Y | P |
| L | T |
| A | R |

 LLPDRGA
VLYPARGV
$V K L A A E R G A$
$R T O H S Y R G M$
R H

| K |
| :---: |
| I |
| K |

## $\square \mathrm{K}$

$Q \vee L A A A R A E$
EVV V QP
$V K V N A K R G Y$

$R S Q V E$ E S E R G A
VNMTLVPPRRGWi

$$
R \square H \vee 1 \text { K A Q R G D }
$$

## $\mathrm{V} R \square \mathrm{~T}$ T S K

 T D R N GS A L A R S ES AVLVVGVVP QMI S R N Y D R N GQLL VYNQPA YDVMLDMREI QAF


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## ,


 LLEKDNII QHYFPHFNYQKENSLYNHNLIVKVIGFDPYQTM $\begin{array}{ll}L & \text { E K N }\end{array}$

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

 TLK K DVV S EAVLRRLADVIP LTEPDIERVMTEAKRHSPVADRMAWDDGD F DALKNULLATKSFLEDKEF
 DDAVEKLAT $\quad$ FF PDLDRRGYAKLSVKSSRFAWLRRQ $S F L Q Q Q \square S Q L L F M Q P E E D K A K Y T Q S W V K P D D F V P D R L D P A$ KNRAGAFPDLNVTKDKRAYVKADSYYNQDYI EVVPFI EYD D DAAT IHEKLGDKGPSEKKLLELLNSDEPFVYLARNVDPR
 EPTLKALSECFGLDQSELRKFVKENPGSQYRVLKKRUTYD QAKRPRLLAPVLGVDAGTLAARLATPKSRYVVLARRRSPQ
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## 

EAKIKGEMA
 E P TK C T K Q T Q DY CH A L N GK D L S T S S G VG Q Y A V L K K D V T P E

 K V R D A A A E L L A P P E L A N L A A A E L L A P I L DLDDA HELGGA QLT G DA GVIRIAR DVTPE


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 E R V EVVNA P D L P G I S I E V G L S R F Y P Y A A Q A S H V L G Y V P D F R








 EMSP FLDDRKNEHVWFEE Y Y I RRYPNNTLACDVI GFTGGDN VWNRVKELKNAPVLAQSTSKRVYPAGDLAAGVIGFVNGEN

 TYMRFA QYNFPGFRGQARS IRDYPANYGERHPGEYRPGDY DKATNWSGE TTFTPTEERKYPFKDFAANTGGYVQGGS $\square K A E M K D G G W Y G V F S S N D P V R S Y P S G T L A A S L I G F V N T E G$ YGA LQE KYK F P GFY $\square Q N R T \| R E Y T Y P N A A L L L G Y Y N Q G D Y$ VWK K I K D L R A R L I F A D K H S R R L Y P N K D L A S GV L G F VG S N G I A D A V V A L D F P GVVY E K Q E F R R YYY P Q P Q P N A Q L L G F M G H N Y

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 E Q L E E GI E GI K DEPRNKRVYPNNNLVSHLGGTNDDG VRAAVVELGIGGVWDELTTVRDYPATTTGGNLVGWVNEEG K M I P R I A E L R E N L E EVKKPA S KR H Y P Y N NDLA S H I I G Y V G R A N T R N K I K A A H L T G I N F I QR Q S R LLYP N GVVFA S H L I G NVVTK S M T K K K I E A E HLLP GI K F $\quad$ QQQA RLLYPNGTFASNLI GVATS QN DANKVHALGEPALEFPLEATRYYPQGSMAAHVLGYVDSYG EAFHRISSQRFP EI GYEKRAKRVVPGE EVAA NVVGYAN WRT T K K K $\square$ D A K H L A G I NFVVQQQARLYPNGVFSSNLIGVATS Q N MQFEENSWRFPGFVLQQQRP】RTYPYNVGAHFLGYYKMGDY ■A DAVMALNFPGVHEKQEFRRYYPQPQPSAQLLGFMNSGY E Y A A F QE K ERK F E GFY T QK R A L R D Y QV I L N K NK Y Y N S G D L EA DEA L Y E DVP GF T Y Q M S E G R V Y P F G EAA A A H L I G Y DR P I T

 TYAHE YLY RFRGFYVQNRTVRNYPDS DAAQFNGFYRPGDY
 D Y A A L Q E K M R K Y E GF Y I Q K R S L R D Y Q T TII GA NV Y Y NM G D L VIS N $\square A E N D L P G V G W R S K P \| R N Y D E T G S M S H I V G Y V G D I T$ 1 KKDMKQGGWYGVFSSNDPDRTYPS GQVASNVVGFVNAEG
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| UniRef90-V6SME1 | PRDGYDI |
| UniRef90-R3W6L7 | KKDGEKI QL |
| UniRef90-T0MR03 | AVS GEGL |
| UniRef90-L7U610 | PVAGHNI 1 |
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| UniRef90-T1BNZ0 | PRPGENLY L |
| UniRef90-U2LW15 | $P$ V S GKNLIL |
| UniRef90-Q6A9Q8 | AV D G T S Y TL |
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 E Q T A R DVAPL DGLTEKD LLDD DAQGGGF VVWVRQMEPE
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 D AVAA D D A P P L G M TP E E IQ K D I A V G G GF V WVVKRRLDE HDE Y K RTARILAAKYI K MPES E I LIK TL S K K G Q S Y QV E F G S N L S VA K E N A I A Q I A A L Y G LTTSEGI NQTLA Q G WV T D D A F V P L K








 NDLI E QL QEASTE G DLLRK YL HDRLLS LSSSKWVSLKHYLSAE

 E I A A R L L A DI LDP E DS QD K LL K KLLS S DRAF I WI K R NLTP R ARTAA QLA A IVFPEMDADRLLTDDFT GERRFLWLRRRQMSPE


 D G GAEALDRRISRAKLDARAVRRKLGKSGRF LIWIARRRISPE D E R T K N M K A I S D E F S $\quad$ S T E T DE K K L $\quad$ Q Q K WV K D D L F V

 K SLI A EMMRSKGU WLSSKKTTTQK ILNQEGFVWI KRGVDDIDTA D S K Y V K K Y F G DK I D TAK L Q TYAK D N P T S R Y Y I L A K K L S Y D





 D T T R F C L F E I E K E S L DE NFTAAAKKY S WVK P Y P L I K QI S K E


 P MKPKDVMDKVRLCDAKTPQPCWNGSPYQPIPITDEASAK D T L A A R I A GVTTP E K LIK S E LDDKAAR Y S R R R P SVVIVK QM S L E

 KDHSKETYKRKLKNARATGRQYMDIDN
 $G I D T R V E M T P G Q K K R A A T R K H Y V V V K S Q V P A W T K R N V D V E$
 ERTEMRLNESTGVNEKAVVGYGAAAVAAQLAPIAQEVAPD




 D MKPDEVINKIRRLCDSKTPKPCWNGSPYQPIPVTDEATTQQ

 SDEKLVMKRI REVLRRDDVFSLRERAPGE LVLLEDDPLE D

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Q M Q A V V H D|IGEPG|LL|FGPREMR\|YPNGH|LASH\|L|GGATFGN ETMKEKPEYVACLGFDQESKRYYPNDMLAANVIGFVGTDD

 QP N L K L V E R I E RAYPNPD



 E Q F EVVRSYKFPNAFIDVVYSRHNNYPKVFSHAIGYVNGYQ








 QFSADAVVAPP GVVMPESALDSRAYVRGGDFAHVVGYVPDFQQ $R Y M R V K K F N K G G L D I E Q R T \square R E H P D G K D A E R T V G Y E R N G Y$ VLPN GETPVMT GIVQYASKDMRSYPLNQAAA HJI GYVVVGDT FAVF QEKFRFPGFY DQRRTTRQYTYNVAAHVLDYYRSGDF






 $T M Q Y$ TK L I Q T Q G TV V R P LD K R Y Y P N N A L A S H V L G Y V Y S Q D


 IVN RKE VKVLQQGAQYKATEDRYYPLGQAAA QLI GYTDGDT
 LGFKEHK LR WP GLLEL LVRSRRNYSYGDLLFCHVLGYVA GDN
 E $\square$ R GF Q E LITP GII WFE D DY I R KYPNNTI A S DVI GF TK K E N

 ERQAV F E L G QP GL FFRVVERRVYPSGRTAAHVLGWTDVDM



 DFAKVQDFLID YKGLFVMTRSVRSYPRSSAANVYYVQGDY


 DKRVEEARRDQAVAVKETPEREYPDGAAAAHLVGYVGTVT QQIREREEDFPGISAEPTAVRRYPAGSNAAQVLGYLSPVT AKLLFDEGEFSGFYTVYYTMRSYPRKMAGARDDYYQTGDY QMQAVH D I GDP GLLFAPRDMRLYPNGKDAA HVMGGASYGK
 Q Y PAMS P DRIDGFFP ERGY DREYPS GS LI A S LVVGFVNRDG
 WPVVFR H G RLGG G GVVI F H K V V D K R F S P F S N EA EK L K R LS D S I A Y F VN S KRF Y P Y L N T F S QI L G F T G V D N $L A A A N D G \square G L H G L A K E D D P D R T Y P A G D V A A N V I G F M N S A G$ 1 A D A I T K K F P E I G A E R Q DLLR Q Y P G G A L A A N IV G G I D WD G

 Q QA D I L N L GIMPGIGFRPEKRRFYPGGPAASANIVGHVNVDN QRE EVVHRLGGLPGVGFLAENKRVYPNGP DAAHVLGFANLDG QQ Q R ER SED FP GI TAEPAEAVRRYPH GANTS QVLGY LISSD E

 GE QV D T LDK K IS G V S A Q D A S V


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UniRef90_G2P7I7
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E GMAG|V|EKAFDNWLL
K GLD GI E Q Q F D G M I K G E E Q T S S I F T D A L A R P I M D S V F L K N
 $V G L M G I E Q A F D R R L K E N Q E P L R L D I D D R L Q H I$

 I G K N G V ERRS GLEASLLQHELRGENGDRRLLEVTAAGRP QTERIIDP VGRSGVERHHDRLL R GRAGTVQMEVNAVGRVIRELN RRE
 IGIT GLEKEYEMEL R GRRGVKFTMMNVHGENKGNGEFDTL K GLD GVE QALDGLL K GEVKEAYIT T DRRSRPILDS






 NS KM GLESYFN K ILSGENGVKSVRQDVYGYKLSSSEA GRK H G I A G V V F R Y F D K R L D S D K N P P L K L S L
H G I A G V E R Y F D K R L S S D R T P L R L L S I D A R
Q GYF GI E GYF D R L L K G R E G K I R T E K D G E GN P I LI GN Y Q F H
 HGMSGMERVLDERLL
$\square G R S G G E A A F D K E L$ R GENGGKDADTDEDGAE KAVLLEKE KGLA GVEQSFD TALRENDAPLELSDDLRVQH\|LTEE
E GVVS GVVRQFDPFLR

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## Q

E GMY GLE E Y Y N DVLN GTVGREYGYLDDDD LKKLERTTGP $D G R V G L E G A F S Q Y L R G N S G L R Q K Q R D A N G Q W K P D S D S E K E$ $V G T F G L E Y A Y Q R V L A G A P G W A L D R V T A Q G A P V P G G L V E H P$ Q G $\square$ A G $\ E K Y$ Y $\square \mathrm{D}$ Q
NGAAGAERAFETELMEKPGS
K K I M G G L E K K Y V F D N K L L L S G R D G $\square$ N N T A T D S Y G V Q L P G S S K K K R




I G T A GVEKAFDAYLR
A GMTGLLERTYEKVLMGQRGVKQF LDRDNKGRワFENGMYDTT
K E E
D E QVGGLERQY DSELRRGKA GVT RYEVVDNDGRVIGQ RE SQR
$R G M S G \| E R T Y E G V L R G E K G M K V S \square V D V H G \square E K G D G A A D L Q$
$\square G V A G A E K Y E D K Y L R$
Q G I A G ME K Y $\square$ D D
$K$ GAT G LIE S S MNSMDS G $\square$ D GKYSFA NGYGAE $\square P G S Q E \square \square P$
$\square G V A G V E R Q E D A Y L R$
NRGAGLE Y S F N E QLA A K D GEA LYQK $\square$ A G GNWKPVF D S EVVK $\square G R S G L E E S Y D S V L R G V D G T T E V N L D A T G E A V S D A G S V V P$
 H G L L G G L E D S M D G K L A G T D G S DT Y D R G S D G VV V P P A S Y R N K D

 Q GLA GMERY LD Q Q
$V G I S G L E X K Y$ K $K K D S G I V K K F E D L I D G S P G K S V I D E T N A Y G R Q L K Q D S Y D C Q$
 I GHR GLLES DLLE E RL R G
IGVVAGVE K QF D GYLR


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| $P T P G Q D V V L$ |  |
| :--- | :--- | :--- | :--- |
| $A V D G G D V V$ |  |

SVAGKNL
GERGAELTL GDSGADIQL GQK GRDVVL
GVRGQDVQ
PINGKNI AKNGLNiV
AVIGKNLY

ATPGSNLEL
PQDGYDIV
AKDGQNI YL
AAPGSDLEL

| $A$ | $E N G K D$ |
| :--- | :--- |
| GE OGA | H |

PQDGYDVV


A V E G K S I
PEHGKDIH
RADGKD $\square$ QL
$P \square N G E N T$
PSANNHLQL
$M D G D D L L$
AEDGNTVV
PKPGQ
ET D GEM $\square$ T $\square$
S VA GK
P N A GEDVT L

AEDGNDVV
PTEGYDLH
PRPGTSIE

SVNGDDTY
P EVGGSDVWL
$A \mathrm{PI} G N N L Y$
SMPGENDQ

| S M P GE N L |  |
| :--- | :--- | :--- | :--- |
| P E R GK D | Q |

PVNGKNLT
ALAGKSLHL
AVNGSTVQL
PRDGETI
ARPGGNVV
A $\square P G T A 】 T$

A Q T G T TVRL
TENGFDT
AQPGSTLV

$A \vee N G S T V Q L$
ARPGATVR
PRPGNNL
AVQGKDil $\qquad$

ARPGSN
GlK G K N
AVPGSNVV
$A V A G Q N L$
$S K N G E D I Q$

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UniRet90-Q8KEW6
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UniRef90-U2DE34
UniRef90-GOHECO
Uniref90-GOHECO
UniRef90-C2CNH8
UniRet90-K9RFE3
UniRef90-C5VPZ
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 QTREVTAERGNI FSRNNNLLATSVPYFSLHFDPFVAPPK QRIHAERGAIYDREGNPLADSGEARMLTASPNQQETD0



## UniRef90 K2QM66

 UniRef90-B1VHD0 UniRef90-R6UPV2 UniRef90_JONBH2 UniRef90_C9LWQ6 UniRef90_UPIO0031910A6 UniRef90-M5EUA9 UniRef90-A0A011RMC5 UniRef90_U7M2U0 UniRef90_UPIO0039F0253 UniRef90_UPI0003485CFD UniRef90-R5BK17 UniRef90_UPI000466B823 UniRef90_UPI0003B4A3C1 UniRef90_UPI0002559DB8 UniRef90_I4YVG2 UniRef90_UPIO00465C48A UniRef90 R6IF76 UniRef90_UPIO0035E8973 UniRef90_UPI0002E518E9 UniRef90-E3PRK8 UniRef90_W9AV21 UniRef90-H8KRY7 UniRef90-F5LQDO UniRef90-D3DIQ7 UniRef90_UPIO0037970CD UniRef90_-Q82C96 UniRef90_UPI000287C69C UniRef90_U2T0G1 UniRef90-B4SF05 UniRef90_UPIO0036F83E5 UniRef90-E3EMW2 UniRef90-I4BW66 UniRef90_G6FSW2 UniRef90_UPI00047B3341 UniRef90-J3BYV44 UniRef90-E6SE66UniRef90 W7ZLT8 UniRef90_UPI00047BF16E UniRef90_UPIO0021933FE UniRef90-D8KNM9 UniRef90-A0A024FGV0 UniRef90_C7D8Q0 UniRef90_C0XS00 UniRef90-A8MHM0 UniRef90-V7EHL3 UniRef90-D8JQRO UniRef90-K2N914 UniRef90- X1XHQ7
UniRef90 B9CW28 UniRef90-Q7VP60 UniRef90_UPI0003738DC9 UniRef90_UPIO0025588EA UniRef90_UPI0003659533 UniRef90-A5CD84 UniRef90_UPI0004676F28 UniRef90-K1KTC6 UniRef90-1019B7 UniRef90-UPI00047EC4FA UniRef90_C3JAY5 UniRef90_UPI000373FDBB UniRef90_UPIO0040CE0D6 UniRef90-M2S9T0 UniRef90_UPIO00426EBEO UniRef90_Q8YYYX4 UniRef90-W5XRV4 UniRef90-B1MXV7 UniRef90_UPIO0047E373A UniRef90-M7N6Q1
UniRef90-M9T841 UniRef90_U2CHW3 UniRef90-K1MC10 UniRef90-A3XI73 UniRef90-Q8KEW6 UniRef90_K2AWN5 UniRef90_U2DE34
UniRef90_GOHEC0 UniRef90-C2CNH8 UniRef90-K9RFE3 UniRef90_C5VPZ6 UniRef90_UPI000413D9C6 UniRef90_C6VWA6 UniRef90_V1D7L8
UniRef90_Q216E4 UniRef90-K0DFL5 UniRef90_UP10002490D32 UniRef90-UPIO0035CFD5B UniRef90-A6G7Q0 UniRef90_B6YS31
UniRef90-F8F1N0
 MDERHKANPI EQDIE ELPDMUPASEGRVKKEDLRKKLTDE

 ERTEDRIDPATGEEAKAVVGHGQMVGEQPYAVDAEAVPPD A QLA A DLAP IVGLNEADILEDIDQGGGFVWVMEPYMSDAV KVVLA QKLAELMMERSASDYLAVLNTGSSFAFLKRRADPE




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

EKVIGTLSEDLNMPEDQDRKRDANQNSYEPTRLKSNVSPE MQRLAKLLKL NYND DYTNTRGCWTGSRYQPDPITKEADPD



ARVARELAK TFPETDPVALERRLTDG RSFLWMRRVMSPE DELVEKLATVLPDIDQKELLRALSDRSRRFVWVRRGVSPK
 DYKA 1 A EKLDLSESY $\square K Q Q T E Q D W V K D D T F V P L K T V Q D M$ LAKANGEKYNNDMDRDYKAARQRFIYIARHRSEN


 A E R R P A V Q T L E WL Q Q Y T D R Y F L R L A P A V E L E V G H R I L A E Q
 A HVNNNFTPGVWRDSLT NMRDSFSKPAKHYYKLAESVSYR






DTLYTNNDDAKPKHFYRKTFDEQKKKKNQYFRLAQGLDFD EENDQGLSKGLAEQLGKSQSYY DDLLRKARVNKNRYLLLA $\square P Y$ LA Y L LDE I PVDELNEKVAEAKDYSPFAVSTIYYRDLNEF ARVAKALATIFPDLDEATLLRRFTDG RSFLWVRKVLSPE KANT SSQLAA AESKLKGKYETEHPDQAVNDMYVSRNEMDK MA DRYK KSRSYVARKLAT TVKDADELEAKFNKNESGDFLSSNLQEE
GHAADRLAAD FPD $\square E R E A L I E K F T G K R K F \square W \square K R K \prod S P E$ DTRFCQVLGIQRRDFDSLMTAASAYSRVKPSLFLRQLSKE
DEAVE LLTA T LDPD DDTAEVRER DSSKKGFVWLKREDTPL VSTSETLGA ILQID SRILKEKLSSNKGFGYI KI KREESDLL KKTAKVLSKYLSUSEAKAMKDMTPSKQVEFGSAGNDDSVD $L F K T E M H M F T K S P S Y F Y D K F S T E R K K K N R Y M M L V K D L D Y E D$
$D R E D E V L A F L M Y G P D K A D Y D I G E L E R D K A Y R R L R L P V D D D$



UniRef90 K2QM66 UniRef90_B1VHD0
UniRef90_R6UPV2 UniRef90_SOKIV9 UniRef90_JONBH2 UniRef90-C9LWQ6 UniRef90_UPIO0031910A6 UniRef90_M5EUA9 UniRef90-A0A011RMC5 UniRef90_U7M2U0 UniRef90_UPIO0039F0253 UniRef90_UPI0003485CFD UniRef90_R5BK17 UniRef90_UPIO00466B823 UniRef90_UPI0003B4A3C1 UniRef90_UPI0002559DB8 UniRef90_14YVG2 UniRef90_UPI000465C48A UniRef90-R6IF76 UniRef90-UPI00035E8973 UniRef90_UPI0002E518E9 UniRef90-E3PRK8 UniRef90-W9AV21 UniRef90-H8KRY7 UniRef90-F5LQD0
UniRef90-D3DIQ7 UniRef90_UPIOO037970CD UniRef90-Q82C96 UniRef90_UPI000287C69C UniRef90_U2T0G1 UniRef90_B4SF05
UniRef90 UPIO003 UniRefol UniRef90_14BW66 UniRef90-G6FSW2 UniRef90_UPI00047B3341 UniRef90_J3BYV4 UniRef90-E6SE66
UniRef90 W7ZLT8 UniRef90_UPI00047BF16E UniRef90_UPIO0021933FE UniRef90_D8KNM9 UniRef90_A0A024FGV0 UniRef90_C7D8Q0 UniRef90_C0XS00 UniRef90-A8MHMO UniRef90-V7EHL3 UniRef90_D8JQRO
UniRef90 K2N914 UniRef90-X1XHQ7 UniRef90-B9CW28 UniRef90_Q7VP60 UniRef90_UPI0003738DC9 UniRef90_UPI00025588EA UniRef90_UPI0003659533 UniRef90-A5CD84 UniRef90_UPI0004676F28 UniRef90-K1KTC6 UniRef90_1019B7
UniRef90-UPI00047EC4FA UniRef90_C3JAY5 UniRef90_UP1000373FDBB UniRef90_UPIO0040CE0D6
UniRef90 M2S9T0 UniRef90_UPIO00426EBE0 UniRef90-Q8YYX4 UniRef9-W5XRV4 UniRef90_UPI00047E373A UniRef90_M7N6Q1
UniRef90 UniRef90_U2CHW3 UniRef90-K1MC10 UniRef90-A3X173 UniRef90-Q8KEW6 UniRef90_K2AWN5 UniRef90-U2DE34
UniRef90 GOHEC0 UniRef90-C2CNH8 UniRef90-K9RFE3 UniRef90_C5VPZ6 UniRef90_UPIO00413D9C6 UniRef90-V1D7L8 UniRef90_Q216E4 UniRef90_K0DFL5 UniRef90_UPIO002490D32 UniRef90-UPIO0035CFD5B UniRef90-A6G7Q0 UniRef90-B6YS31
UniRef90-F8F1N0

YTKYMQDKGFPMFNLLGPYTQREYPLGG\|AHRSVVG EREN KVTYKVTEKFPEDTAERQD IRQYPNGAVAQNIIGKDSSDN
 $K \| V D E V K S L P T G A S I Q E \square T G R K Y P L G A A A A Q L V G Y T S D G E$ TWRQIKALDIPGVEPDQRTRRTYPAGTVAGNVLGYTYEGD KALI REKSYGDCLGFREEAKRYYPNDVLAANVLGFVGTDD LVNALNA LGEPALEFTPEKDRLYPQSEMAAHVLGYLDDEG QQADLMQLGDPGFGFRTEKRRFYPSGETSSYIVGLTNDDN


 TYERVKADDIPWVVADEHPSRRYPNGAVAGNGVGWVDPDGG




VADADTTKFRE
VADA TTKFRE VGTERQDIRQYPGGSLAANIVGGDDWDG QPDFNMGRYKGGLIVLQKNKRDLPFKLLASRTI GY YVQD


 QELAAKVTQLNGVLSQKVDSRVYPFKEAVAHLIGYLGNDV TFDK LNALPYP WLLTSKKVQTRSYPNGAVAGNLLGYMSDSG
 VKRAIDDGNGGVVYGELSSQRUYANGTQLGALCGGVDDSG
 KLSYTA YVKI KGI IVVEQETVRKHPGGKDAERTIGYDRIDP $E A L S E R P E A F P G V G V T V D P S R D H P D T V S A A H D V G Y V A R P T$
$A K E S I D Q D L K D P G U Q L E E A T R R Y Y P N Q T F A S H V I Q K S D N E D$


 P G I S V $N$ D $\operatorname{D}$ E $S$ Q M Q R V H E IG G P G L L F G P R E M R L Y P N G Q L A A H V L G G A S F G A








 $E L Q Q Q K R F P D F N D I \mid T K R D E R K R P F G W L A R R T I G K Q$ SKA D E I T A E YP E I A TAE Y R A T R T Y P G G H L A S N I L G F A N WR L
 $Q$ QLL $\quad$ L $L A \operatorname{E} R \mathrm{R}, \mathrm{V}$ R $K$

 D F A K I Q D H D YP GF F I S P R TVV R S Y P Y S V M S N T T G Y Y K Q G D Q D WK Q E Q K H K LA A I F I D V G Y L R F Y P F S S T T S H L I G Y L S D F N
 $R N$ L G Y S K Y Y K G G I I T E Q R T V R E H P L D K I A E R T I G Y T E Y G R












UniRef90_UPI00036078A2

|  |  |
| :---: | :---: |
| UniRe90-B1VH26 | QGQFGLEGASQDSRLQGVNGSKTLIDIAGGGQTI |
| UniRef90-R6UPV2 | GKSGLESIYESKLRAVSGCKIITVDENG |
| UniRef90- ${ }^{\text {sokIV }}$ | GRAGLEATYDEKLRGTAG |
| UniRef90-JONBH2 | GRVAGLELSQNEPLT |
| UniRef90-C9LWC | K GLD |
| UniRef90-UP100031910A6 | HGVTG |
| UniRet90_M5EUA9 | QGIS GMEKY |
| UniRef90-A0A011 RMC5 | GKTGLEAVFNDQLSGTTGG |
| UniRet90-U7M2U0 | GQFGFEAARDTELTGLDGQSTEDVSADGQVIPTLRDVV |
| UniRef90-UP1000 | EGSSGLELLGEE |
|  | ERDGLEATYDAELRGTAGVRTLAVNNRGE |
| UniRef90_R5BK17 | GKYDYlLHGTEGILEYLRNTDYGRIQNSDSTVRM |
| UniRef90 UPIO004668823 | EKDLKVNGRT |
| UniRef90- UPIO002559DB8 | KVGIEGAY 1 |
| UniRef90-14YVG2 |  |
| UniRet90-UPIO00465C | EGLLKGKDGYKMVQVDALGRT |
| UniRef90-R61F7 | DKVIRGMDGSFDEEVDVAGNV |
| UniRet90-UP100035E8973 |  |
| UP10002 |  |
| UniRe | GKLGLEKKY |
| UniRef90-H8KRY7 | PVGLEGAYNEYISGKTGKRLMQRIAGGV |
| UniRet90-F5LQD | Y |
| UniRef90 D3DIQ7 | GLEGLEYMLNSFLDEKGKKVPFLLSAG |
| UniRef90-UPIO0037970CD | HGQIGLESSLDAVLAGTDGSHTYDQGSD |
| -82000 | EV NL |
| P1000287 | A |
| J2TOG | NG GLEESENGCLAGQNGTETYQQGADGVADPGSTVVKQ |
| UniRet90_B4SF05 | REFSGLEKFYEERLKGQKGARFEMVTPLGKKYDDGKSDIV |
| UniRef90-UP100036F83E5 |  |
|  | GVAGVESMENS |
| UniRee90 ${ }^{-14 \mathrm{IBW}} 6$ | KGLAGVEKQWDVFIYTPPEIIKTLVRDAAGN |
| UniRef90_G6 | RGQAGVEYSQEKLLERSVQAVRLSRTGNGSLMPDYAPDGF |
| UniRef90-UP100047B3341 | PEETGLEKDYEKQLKATDGAEIYIVNKEGKKLKT ${ }^{\text {a }}$ AKT D |
| UniRe990_J3BYV4 | ATGVGI EWAFKSY |
| 6SE | AARAGLEAEYDEVLRGTNGRTTVSTDPRGAVIGTVSSV P |
| UniRef90-W7ZLT8 |  |
| P100021933FE | MMGL |
| UniRef90-D8KNM9 | DSLLSGID GQKTLDVSANGQ |
| UniRef90-A0A024FGV0 | NNYAG\\|DGAFQKYLQGKKGKRLKQK\GNGQWKP\ADFDQE |
| UniRet90_C7D8Q0 | IGVAGVEKNFDDFLR |
| niRet90_C0X | QGQFGLEASSDSVLTGINGRSTEDVSADGQSIPTLRDVVP |
| UniRef90_A8MHM0 | HEGLEHKFEEVLKGTDGYQKVLVDSKG |
| UniRef90-V7EHL3 |  |
| Unierso Kovar |  |
| K2N914 |  |
| UniRef90 - 1 XHQ7 | G |
| UniRef90 - B9CW28 | HGAEGLERSFDSLGGKSGKQVIRKDARGNV ENVRDEKQ |
| UniRe90-UP10003 | EGISGIIEKFYDEDLN |
| UniRef90-UP100025588EA | RGTAGLEHEFDQLL |
| UniRet90-UP10003659533 |  |
| UniRet90_A5CD84 | $\stackrel{R G}{\mathrm{~V}}$ |
| UniRef90 - M10004676-28 | S GL ELAY KY |
|  | VGLSG EGFYEPDLRGVKGAKYKMVNVRGVDFKNGEYDTA |
| UniRef90-019B7 | VGMSGIEKSLEEKLKGVDGYKKVQVDASGRVTKELEVS |
| UniRef90_C3JA | VGKSGVERTYDAVLRGTKGYEVMLRDARGRIYNNGANDAK |
| UniRef90_UP1000373FDBB |  |
| UP100040CE0D6 | DQMAHLENSENTLLAGRDGER\\|SLDRARNIIPGTRVIEE |
| UniRet90-M2S970 |  |
| UniRef90-UPIO004 | A |
| UniRef90 Q8YY | QAGVERSQEKWLERSVKTVRLSRAGNGAL |
| UniRef90 W5XRV44 UniRef90 B1MXV7 | QGQFGFEASGDSLLTGIDGRSTEDVSTDGQLIPTVRDEVE |
| UniRef90- UPI00047E | VGKRGLEQVLDETLRGKSGAR\\|E\|TKPDD |
| UniRet90-M7 6 6Q1 | $R G R R G V R F K T V N V R G \ V Y R D G E L D V L$ |
| UniRet90_M91841 |  |
| UniRet90_U2CHW3 | GI EGAFEDRLKGSKGGSIVKLNRYGRVI |
| UniRet90 K1MC10 | GLEYAFTESLSGTDGMRLVQRVSANQWKPDYWKIKE |
| UniRef90-A3XIT | YSEAGLEGAFGPYLRGKEGRRLKQRIAKGQWKPGDDNVVE |
| UniRet90-K2AWN5 |  |
| UniRef90-U2DE34 | MGLESFFEKRL |
| UniRef90-GOHECO | GLELSQDARLQGTNGSVTSDVGNDA |
| UniRet90_C2CNH8 | GFEASGDSTLTGIDGSSTEDVSTNGQA |
| UniRet90_K9RFE3 | EKLLERSMKTVRLSRAGNGALMP |
| UniRef90_C5VF | SSQSGl ESAFESTLRGSKGTK\\|VQUNKYGR】MRELG RKE |
| UniRef90-C6VWA6 | A |
| UniRef90-V1D7L8 |  |
| UniRef90_Q216E4 |  |
| UniRef90_KODFL5 | Gl EFSLN |
| UniRef90-UP1000 | G |
|  | RGKVGLEGAYSDLLSGIDEGRRWEQFMGRGKWKPMKSWEQE |
| UniF | QGNLGVELGMNEDLAGRAASSPAYYAAFGKLLVDGHPDHG |
| UniRef90 | GGLGGLEYAFESDLAPNGOLY |
|  |  |


| M66 |  |
| :---: | :---: |
| UniRefefo-B1VHD0 | PVNGDNFEL |
|  |  |
| UniRe990_JoNBH2 | AVPGTAV |
| UniRef |  |
| UniRei90-UPI00031910A6 |  |
| UniR |  |
| UniRef90-A0A011RM |  |
| UniRef90-U7M2UO | L |
| UniR |  |
| UniRef90 UPI0003 |  |
| UniRef90-UP1000466B8. | RMDGKD |
|  |  |
| UniRef90 UP |  |
| UniRef90 ${ }^{\text {UPIO00465C48A }}$ | L |
| UniRef90-R61F76 | P ${ }^{\text {PPGKSLQL}}$ |
| UniRet90-UPI00035E8973 | PIAGDHL |
| UniRei90-UPIo002E518E9 | AVNGETISL |
| UniF |  |
| UniRef90-W9AV21 | AVNGSTV |
| UniRef90-H8KRY7 | PVDGSD |
| UniRef90_F5LQD0 UniRef90-D3DIQ7 | PEKGKNLRL |
| UniRef90-UP100037970 | AVNGNG |
| UniRef90-Q82 |  |
| P100 |  |
| UniRef90-U2TO | AKDGGTVKL |
| UniRet90_B4SFO5 | S |
| E3EN |  |
| UniRef90-E3EMW2 UniRet90 $14 B W 66$ | AVNGSDVAL |
| UniRef90-14BW66 UniRef90 G6FSW2 | PYS ${ }^{\text {P }}$ |
| UP100047B3341 | PQNGK |
| UniRet90 J3 | D |
| UniRef90-E6SE666 |  |
|  |  |
| UP100047BF16E |  |
| UniRef90 UPI 00219 |  |
| UniRef90-A0А024F | PQDGLDLy |
|  |  |
| UniRef90-C0XS | A VDGSQVKL |
| UniRef90-A8MHMO | AlPGETLYL |
| UniRef90-V7EHL3 |  |
| iR |  |
|  |  |
| 11 |  |
| UniRef90-B9C | QDVVL |
| UniRe | YDP QDVML |
| UniRef90-UPIO003738DC9 |  |
| UniRef90-UPI00025588EA |  |
| UP10003659533 |  |
| A |  |
| UP10 |  |
| UniRef90-K1K | SVA GNN |
| UniRef90-1019B7 | SVTGRDLVL |
| UniRef90 UPIIOO047EC4FA | PKSGDTVYL |
| UniRef90 | E |
| UniRef90_UPIOOO373FDBB UniRet90 UPIO0040CEOD6 |  |
| UniRef90 UPIO0040CEOD <br> UniRef90 M2S9T0 | ATPGSSLAL |
|  |  |
|  |  |
| UniRef90-W5XRV4 | ATD Gsnvol |
| UniRet90-B1MXV7 | VENGHDVYL |
| UniRef90-UPI00047E373A | AKDGQD |
| UniRef90-M7N6Q1 | SEAGKNLV |
|  |  |
|  | P G |
| UniRef90-K1MC10 | P 1 DGN |
| UniRet90 -A3x17 |  |
| UniRef90-Q8KEW6 | S⿴囗 GNDLY L |
| niRet90_K2A |  |
| UniRef90_U2DE34 |  |
| UniRef90 GOOH |  |
| UniRef90-C2C | D GKNVTL |
| UniRef90 K9 |  |
| UniRef90-C5VPZ3 | P Y P GKTVQL |
| UniRet90-UPIo00413D9C6 |  |
| UniRef90 C6VWA UniRef90 V1D7L8 | AVAGENL |
| UniRef90-Q216E4 |  |
|  |  |
| UniRef90-UP10002490 | AKNGDNV |
| UniRet90-UPIO0035CFD5B | PQAGSSVY |
| UniRef90-A6G70 | VSRGRTVVL |
| eef90 B6Y 331 |  |
| F8F1N0 |  |
| ef90_UPIO0036078A2 | S E A G R N L |

UniRef90 H1H3P7 UniRef90_C5WD48 UniRef90-D0J957 UniRef90-G2PL20 UniRef90 UPI00035C7E34 UniRef90-UPI0003B5E283 UniRef90_UPI0002D5763A UniRef90 A8SMQ1 UniRef90 F9Z308 UniRef90_R5XGS0 UniRef90_E2MZQ3 UniRef90 R0EB14 UniRef90_UPI0003B309C8 UniRef90_Q3AVA3 UniRef90 UPIO003624ED4 UniRef90 ${ }^{-}$K9RXG7 UniRef90-W5Y1U0 UniRef90-D1Y637 UniRef90 K9V9W2 UniRef90_C0CTV7 UniRef90-W6RZU4 UniRef90_B1ZPT0 UniRef90 UPI0003B62D98 UniRef90-T2S9R6 UniRef90-UPI0003FDAE23 UniRef90 K1ZW91 UniRef90-UPI0002F2E18A UniRef90-UPIO0045E6540 UniRef90-K1W9Q0 UniRef90-L1NVA6 UniRef90-B0T837 UniRef90-B5LP33 UniRef90_U5MM75 UniRef90-K2AKN4 UniRef90-UPIO00365617A UniRef90_T0HG64 UniRef90 E4TA47 UniRef90_UPI00030A48C6 UniRef90-F3ZZK2 UniRef90 B9E008 UniRef90 H7D901 UniRef90-UPI0004633B51 UniRef90_A8UTV1 UniRef90 U2NQM8 UniRef90-F3ZQ37 UniRef90-D1PCJ1 UniRef90-U6B4L1 UniRef90 R6EYD3 UniRef90-B3SFA9 UniRef90_U2GI12 UniRef90-BOSAB3 UniRef90_UPIO0037B000D UniRef90-UPI00040E4AB6 UniRef90 R5PQR3 UniRef90-B1ILZ8 UniRef90-R4K1S6 UniRef90 R5JSM6 UniRef90-R6FV32 UniRef90-UPI000289E080 UniRef90 IOIOR6 UniRef90 R7JN36 UniRef90-D3HXI6 UniRef90_B8E086 UniRef90-Q3EKZ2 UniRef90 ${ }^{-}$F8WWB1 UniRef90-C5CGS1 UniRef90-R5MQN1 UniRef90 R5BJ91 UniRef90_UPIO003696E6A UniRef90_UPI0004030DCC UniRef90 LOEZ95 UniRef90-R5FDG5 UniRef90-C6J0Q2 UniRef90-W9E3T4 UniRef90-IOIGC1 UniRef90-D6YF72 UniRef90-R7HDK5 UniRef90-A8F8R9 UniRef90 R5TAT8 UniRef90_C9R8A5 UniRef90_V5SFJ5 UniRef90 W0J4D8 UniRef90_Q4E9F7 UniRef90_UPI0003B56AC1 UniRef90 R6E269 UniRef90_Q1AVW8 UniRef90_R7LQ06 UniRef90 B4WFR8 UniRef90_UPIO0046F754A UniRef90_D9RXM0

 TRGMI FDRFNNPI SVS I PVVQDI GLDLRNNKRW $\square R T N L I K A K R G N I Y A A D N S L L A M S I I R Y D I H D D R F Q E N \square$ KMFTIEPNRGNLYSEDGSLLAASVPKYEI RFDAQTVSQE QPVFATRGNIVSDNESIMATSLPFYRVAWDPSNFFGD



VQP VK $\square E P N R G D \square W A A D G R \square L A T S V P F Y E \square R F D P \square A V N K K$
$\square R E A D \| I P S Q G N L Y S D D G S L L A T S V T R Y D \square R W D A N F N K Y V$ V D GARGDVVDRNGKLLAVDLAHYALYVDPKEDWDL

$R Q R T Q S P P R L P \| Q D R N G N W V A M D Q Q T F T L F A H P F L F K V P$

 $V R V S T D R A D R G S I L D R N G N L L A G E G T A S L V G L V P G K M N R D$
$R Q L V V P A S R G N \square Y D R E R R L L A T T R T P S T V A F D L G Q Q R H V$
PAERGTFLDRSGNVLAFNSEAK QLYANPSDLT RT


VK LE A D R G DVLA CD GR ILAATSVPMYEVRMDFSSFFGD V A S A R P D I I D R N G D IV A DDV K SP S L F A E P R R L I D P $R S L P F I P R R \quad P \quad S D R N G T I L A F D Q Q D Y T L Y A H P V L A K S P$ MREAE $\square$ MPNQGNLYSDDGSLLATSSVTRYNVRWDARTNKH $R G D L V D R N G Q L L A D D L T H Y A L Y \square D P K D V W D A$

ENKAKYSKMTGEELTNQI
S $\square$ S A S R GS L L G S G S WLA T SVE GWLLFA QLPDVI LD ERGEI YFKNGESSLA DNWNWPLVVASPPKVEEP LLPARADIVDRNGVPLARTMDAYSIAVSPSKLDGE


> D VDRKGRVLATNLETYSLYAQPPQMIDP R\|IP TKVPRGSIKDTNGRELALSVPTLSIYAHPDTSRLN VDI KPSRGNI LSCDGKLMASSLPEFKVFMDFQALHDA
VDSLKTQPMRGNULSCDGQLMASSLPQYNLFMDFKALREA
$R \square Y$ VDPARRGGVVDREGKQDAYTMQARSLTVSPTKMSRE EVMPERGDI LA QNGEVMATNMTYYRALI DFGVPKFK QRGTI YDRRG\|ELATSRESATVGIDPSNIYDP $R D V V T P A N R G F I V D D S G V P L A L N V D R T K I D K D P D K G V A V$ VSVTPKRGNILSCDGELMASSLPEFMVFMDFKQLCDA
 KEVLVQPVRGVIYDRNGN\|LVNNVPTYDLI IQPSK DKNL RTDPFKRGS TTDRNGT\|LANTTVKDEEKNDTHPYVDP $\checkmark$ V VKPNRGNILSCDGQLMASSLPEFRDYMDFKALREA $\square V \mathrm{~F} I \mathrm{PPERGLI} \mathrm{F}$ DRNGYELTFNIKRKSLAVNPS\LNNA

K DREIRPNRGNDYSDDGRLLATSEPLYGVYVDFMADGDK VKVNRLPADRGSIYDAKGRLLASDSLI YEAWLDLGYDKET NVIV LDP TRGNI IS S DGKLMASSSLPEYRDYMDFRAGGTE $\square Q R D$ V
 VRVD P A R G N
 VLLARRGPLVDRRGRTLAETRVAWRLFVDPRLVEDH

VR Q $\square$ EAPRGK $\square$ LTNDGSP $\square$ A WDEEV
PRGR\|VDRHGRVLAGGREEKR\VFFASLLPDR RPD IVDRGGRLLATDVEMPSLYADPSLVRGD

RKDNIVHKQPD DLDRNGVLLASDVKFYSVYANPMKIKDK
 NFTLNAIRGQILDCNGKELTESDYTNFIIAKPT
$R R G D I L S A D G R E L A V S M R A D R V V A T P Y Q V K E P$
$M Q V T P R S A R R \quad Q \| V D R Q G N V V A M D Q L L Y T L Y V H P K L F K E S$


## UniRef90 H1H3P7

 UniRef90-C5WD48 UniRef90-D0J957 UniRef90 UPI00035C7E34 UniRef90_UPI0003B5E283 UniRef90_UPI0002D5763A UniRef90-A8SMQ1 UniRef90-F9Z308 UniRef90-R5XGS0 UniRef90_E2MZQ3 UniRef90 R0EB14 UniRef90_UPI0003B309C8 UniRef90-Q3AVA3 UniRef90-UPIO003624ED4 UniRef90 ${ }^{-}$K9RXG7 UniRef90-W5Y1U0 UniRef90-D1Y637 UniRef90-K9V9W2 UniRef90-C0CTV7 UniRef90-W6RZU4 UniRef90-B1ZPT0 UniRef90_UPI0003B62D98 UniRef90-T2S9R6 UniRef90_UPI0003FDAE23 UniRef90 K1ZW91 UniRef90-UPIO002F2E18A UniRef90_UPI00045E6540 UniRef90-K1W9Q0 UniRef90-L1NVA6 UniRef90-B0T837 UniRef90-B5LP33 UniRef90_U5MM75 UniRef90-K2AKN4 UniRef90_UPIOO0365617A UniRef90_TOHG64 UniRef90_E4TA47 UniRef90_UPIO0030A48C6 UniRef90-F3ZZK2 UniRef90-B9E008 UniRef90 H7D901 UniRef90-UPI0004633B51 UniRef90-A8UTV1 UniRef90 U2NQM8 UniRef90-F3ZQ37 UniRef90-D1PCJ1 UniRef90_U6B4L1 UniRef90_R6EYD3 UniRef90-B3SFA9 UniRef90-U2GI12 UniRef90-BOSAB3 UniRef90_UPI00037B000D UniRef90_UPI00040E4AB6 UniRef90-R5PQR3 UniRef90-B1ILZ8 UniRef90-R4K1S6 UniRef90-R5JSM6 UniRef90-R6FV32 UniRef90-UPIO00289E080 UniRef90-I010R6 UniRef90_R7JN36 UniRef90-D3HXI6 UniRef90-B8E086 UniRet90-Q3EKZ2 UniRef90_C5CGS1 UniRef90-R5MQN1 UniRef90 R5BJ91 UniRef90_UPIO003696E6A UniRef90_UPI0004030DCC UniRef90_LOEZ95 UniRef90-R5FDG5 UniRef90-C6J0Q2 UniRef90-W9E3T4 UniRef90-IOIGC1 UniRef90-D6YF72 UniRef90-R7HDK5 UniRef90-A8F8R9 UniRef90_R5TAT8 UniRef90-C9R8A5 UniRef90_V5SFJ5 UniRef90 WOJ4D8 UniRef90-W2UYU4UniRef90-Q4E9F7 UniRef90_UPIO003B56AC1 UniRef90-R6E269 UniRef90_Q1AVW8 UniRef90-R7LQ06 UniRef90-B4WFR8 UniRef90_UPIO0046F754A UniRef90_D9RXM0

DTLALLCSLLDVTYDQFVISKLLEKAKVYSPRLIPSTFLLPQLSK
 NF Q DNVAYYRQLFRKARANGNRYKLVARNVGY LDYVRIKQ RTKQEYYRRLKNAHDPKRGVRYIRLNSRQINYQEKKELAS KNFQDK LRLIFPNDPDEEDRQKLNGK KYFRDKTRDTQN RHEVAEELAKILDQDASKLESRFA AQNSNILLNSALSEA

VF DAEVDS LALCLSRFFKDGSKAFYKDKLVGARNRKPRPD
KPDSDSLSKMFGRPSNYYLNLLKKERNLKNRYLLIASNDG RETRVALGRALPQVPPKRLDKAVFGDHRAFVLGGBTPD


LPEEVDGLA P I L VNVPPEALTKTLQSDDSGDPVAYELSET LKQQAELDLQQSDQNSQYQGDNKLKSDSSYEVLVRNVDPD GFEPGSLDKLTPYDGKAKVQADDKRDDRRFYWIKRYL ERS NSEMAQLLGTILDQDAGELEEKFNAK KSGUVLSKNLAEE PSVEGITKKLSAGWVRDDSLVPVKTLKHVDELNLLADKPD
DRLNAVTGRAVQLDAARDDWAYRRRPNVPFVLIEDVTVQE
KDEAHAKDPGKPTAEQYKREDARFDHAKVGDRDPEQEVYD YFRNN $\square Y K N K \square M R Y R Q S K S K R Y L R L K S R Q D S H L D R E K I K K$

K S K GA YK DEAGLGGLKVLPD DDVEEARKRLNSGKGFAWLKRE TVA PEEVAQQLATDDSSPTTQELLNLFNVAQSGLKVADGLSEQ


LQQGYS LK D $\square R K Y M L V K D A \square K M Q S F K G Y K S V T \prod A Q N D K K D$ PK T\ANKLAPVFVDDKDNAVLLGETGR\|EWVPI KARVDRS
 $\square Y S K N G L S K M F G K P K H Y F R E T F D A Q R K K G N Q Y Y S G K R D L D$

$\square G A A K A D A G \square F P D L A E E D L I E D F T G K R K F D W D K K K L S P E$ NRGRSKLTGLPERLIKKKVSSGTKKPVKILSRIIDRRLKEE ENDSLWEAKVDSlCMGLNRIFPQMTAKAFRSHLEEGKKKR

 KKDTLFCEKLDS ICTGLNADFPDRTAAEFKKHLMEGFEKN $\square$ PKM $\square E E A S E D K Q D L K S K D L L D K \square R A D T Q Y E V L K R N V D P D$ SREFNDSDKTLCYEKAMRTAFLRKKRYFVLVREITGRDYE
 KDTMLINHUDEDCEGLLHQDFPDKSASEFKTHYIQYKEVKQ KNDSLWESKLDS $\operatorname{K}$ CMGLNRIFPERSTKEFKSNLQEGFAKK

TMLMNHLGEDCEGLHRTFPDRNY LIYPKR ISYTQYKEAKR YSLEDI RKYMVVKDA $\square \mathrm{ND}$ Q S YQGYKSVTIANDITKD

TVAALVEYFGLDETD DRDRLTGETTKESQYQVLARGVSMD GNDSLWDAKEDSDCHGLSQIFPEKTAKDFKQQLEEGRKKQ ERNRIATLLSKELNLDKKDVLSKLNLKVSF DWUKR LLSEK
$K D T \square M K Y V T P D S Q A L A K K F P D R S A A Q Y K R V I L D G W D L S R K$ A SEREDSEVLSSLSENFDDPPEKDSSERFFLVEKSPTLGKE KDTMLMNHLAE ISQGDHEIFPDKSAQEFRKHLLKGRRSKS FRGKSNPDSLERDWLYYRMIVTGRKDGNRYMRLTADLDQK YFKKKQDYRDRSPQEYADLVRDARAHKRRYVLLNRRRVTF
 GNDSLWNVKSDS UYEGLHR■FHWPIWPYRVDYNTYMEVKE
 G IF SETLTRRVGLDPVEVERAMHRRPDSRYVIVAPRLAPA $W W K$
$Q Y$
$L V A R S T G L M D P S S V E E V V G P E R K L K L L L G E E \| I V$
REAARQLSALL $\quad$ LGKPVEEDEREDRKEAGVLPYSLTPE DNLTERLQTVLPDLDRAELRRTLSDRNRRFAWIRRGLSPR

EKTAS LLGSVFPE VEYSTGYDK LDH K Q S HFVWDKKNDTPR ES S A A QLCS T DH DLEYKNLYRVLTSEKKFAWIKRHLTPK RERDETI DELDMPEED ITGALDQDWVTDESSVPVKTLSPE LGSDDTLRDLLDSRTYSSLKQRMEKGSPVMVNI GKAKVET GRAAERLAGVLKPHLEKLLSRRGPDGGLSGYSVLATVRPD
 KNDSLWTAK LDSICNGLHNLFPEKSAASFRRHLEEGRNKLD


|  |  |
| :---: | :---: |
| UniRef90-H1H3P7 |  |
| UniRef90-D0J957 | GKAGLEGAYSKFLKGKDGKRLEQRISSKDWKPNSGNE |
| UniRef90-G2PL20 | TRVGLDGAFESYLRGKEGKRLKQKIAKGQWKPGL |
| UniRef90-UPIO003 | KNGAGLEFTFNRHLAGKDGEALFERLPGGNKPDYDGTEVK |
| UniRef90-UPIO003B5E283 | RGQAGVEYSQEKLLERAAQAVRL |
| $\begin{aligned} & \text { UniRef90_UPIO002D5763A } \\ & \text { UniRefo_A8SMQ1 } \end{aligned}$ | RGQAGVEYSQEKLLERAAQAVRLL |
| UniRef90-F9Z308 | EGRVGLEATFENQLKGECG QGIKRMMSGTW |
| UniRef90-R5XGSO | SQQTGIESTQEDNLKGDDGYKKVKVNATGKDTDELEVKE |
| UniRef90_E2MZQ3 | RVGLEGAYAN |
| UniRef90 UPI0003B309C8 | KGISGLELLYLEKTI LGDKTVIPALKDARGNप Y |
| UniRef90-Q3AVA3 | VPQAGLEQSRDSDLVRHEQTRSLRRGADGTPLPD NLAP |
| UniRef90-UP100036 | STQEGVEKTQESKLHGTDGYKKVKVDAVGNTTENLEVT E |
| UniRef90-K9RXG7 | QGQAGEEASSDAL |
| UniRef90-D1Y637 | KMHTSYRGAPAAV DVTQESK |
| UniRef90-K9V | RGQAGVEYSQEKLLERVMQGMRM |
| UniRet |  |
| B17P1 | E |
| UniRef90-UPI0003B62D98 | DGQDGLEYEYNSYLQGRDGEQRVEVDAQGRPTG |
| UniRef90-T2S9R6 | DDGLGLENSLNTTLAGRDGVKVADTAMGSV |
| iRef90_UP10003F | GLEASFDKNLEGKAGIGWVEMVEGGMK |
| K1ZW91 | GVEKWMEDTLRGSAGTKR\EVNAV |
| UniRet90_UPIOOC | GI EGAFDSVLRGID GSVMMQRVS GSFRVPVPDENVD |
|  |  |
| 11 | QAGV Y So |
| L-1NA6 | Y ${ }^{\text {G }}$ |
| UniRe90-807837 | DVVGNVPGTEVSQQ |
|  | RVG |
| UniRef90 U5MM | DQLKGVKGGKTVKVNSKGGV |
| UniRef90_K2AKN4 | O G |
|  | TGQYGL |
| UniRef90-E4TA47 | NEKSGLEGAFSEYL |
| UniRef90-UPIO0030A48C6 | YLKGTK |
| UniRet90_F3ZZK2 | QLTGSSGERWV |
| UniRet90 B9E0 | AGI EAAFEDRLKGSKGGRIVKLNKDGRVIE |
| UniRef90-H7D901 | GUEATESNLRGKHGSN\\|IVVDNNGTKKEDUMQU |
| UniRef90 - ${ }^{\text {URIOUTV1 }}$ | A GME M R ${ }^{\text {a }}$ |
| UniRef90-U2NQM8 | GLELSYDSILRGTNG IIHRRKVLNKFLDDMD |
| UniRef90-F3ZQ37 | GAKNGLEKSFDDVLRGKDGHR1 |
| UniRef90-D1PCJ1 |  |
|  |  |
| UniRef90-R6EYD3 | CGLELSSYSLLRGVEG DRHRRKVLNRYLDD TD |
| UniRet90 B3SFA9 | 隹 |
| UniRef90 U2GI12 | ( ${ }^{\text {a }}$ |
| B0SAB3 | GKTVKKQIPS GMv |
| UniRef90-UPIO003 | KAGLETQYDSYLRGTPGTKTF\\|VDR |
| UniRef90-UPIOOd | GAKNGLELSFDS |
|  | GLELTYDSILRGSNG ITHRRKV |
| UniRef90-811L28 | GDNEGI EGVFEERLKGSKGGRIVKLNKTGRVIEELG RRE |
| UniRet90_R4K156 | VGASGI EAVLEDRLKGSNGGDVQIDKQGRITNKL ASRE |
|  | GAKNG ELIAFDTLLKGRDGHRQKVMNKYLNVV |
| R6F | Q |
| UniRef90_UP10002 | GL ENUYDSAL |
| UniRef90 IOIOR6 | -INGLEYTYQTELRGTPGVRYSERNILGIDDV |
| UniRefto-R7N36 | OFGU |
| UniRef90-B8E08 | GLEAFLDNYLNGKNDYLTIDKNLQE\VLRDYVKEYE |
| UniRef90-Q3EKZ22 | GLEQVLEEKLRGKKGGRVFVEDAQGKE |
| Ref90-F8WWB1 | GLELKYDSILKGMPGLKTRQR VQGRWI |
| Ref90_C5CGS | NGIEKKYD HVLKG |
| UniRef90-R5 | NGLELLTYDSLRGQNGHRQKVMNK |
|  | GLEGKYDYALHGKEGEIWLRTDNRERIUNYDSTYVK |
| UniRef90_UP10003 | 1 GL ASFQPALAGKNAVGLVEVLAGGIIRKPNDGPDM |
| UniRef90-UP10004030DCC | QAG E S |
| UniRet90-ROEZ95 |  |
| UniRef90-C6JOQ2 | AGFDGLELYYQQELRGKNGYKRVPTDPR NMANGVAE\\|VP |
| UniRet90-W9E3T4 | G |
| UniRef90-101C | AARAGRATLLRDAGRRPLWLVDAYDT |
| UniRef90-D6YF72 | NRLLEGENGERKLLRS |
| IRet90-R7HDK5 | D |
| UniRei90 R5TAT8 | EKYLKGTNGKKITATDSVG |
| UniRef90-C9R8A5 | ( DAVLQGSFPSLADYRDAQGKLLNE LFTVAD |
|  |  |
| UniRef90 W0J4D8 UniRef90-W2UYU | ELRFDDRLQGQTGGS DHLVDPAGYRVDPALDERRQ EYF LNNHMG |


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| :---: | :---: |
| C5WD | L |
| UniRet90_DOJ957 |  |
| UniRet90-UP100035C7 | $P Q P G Y D V$ |
|  |  |
|  |  |
| UniRef90-A8SMC | $A$ VPGKNVYL |
| UniRef90-F9z30 | PVDGHDV |
| UniRef90-R5XG | PVSGDTVYL |
| UniRef90-E2MZQ3 | PKDGYDVV |
| Re990_R0EB14 |  |
| UP10003 |  |
| UniRef90_O3AVA3 UniRef90 UP10003 | GVYGGDLVRL |
| P10003 |  |
| UniRef90-W5Y1U0 | - |
| UniRef90-D1Y637 | PRSGKQLYL |
| iRe990-K9V9W2 |  |
| 俍ef90-COCT |  |
| UniRet90-W6RZU4 UniRef90 - 1 IPTO | SYQGQNVHL |
| UniRei90-UP10003B62D98 | $A Q Q G S R L M L$ |
| UniRef90-T2S | PTPGSDVAL |
| UniRef90-UP10003FDAE23 | PEAGRD1 |
| UniRef90-K1ZW91 | - |
| UniRef90-UPIOO02F2E18A | PV |
|  |  |
| L1N | PKDGYDVV |
| -5 |  |
| iRef90_B5LP33 |  |
| UniRef90-U5MM75 |  |
| Uniref90-K2AKN4 |  |
|  |  |
| UniRef90-E4T, | P $\square$ D G Q D V |
| UniRef90-UPloo030A48C6 | SYPGKTVQL |
| UniRet90-F3ZLK | PKSGNNVVL |
| UniRe990_B9E008 | SYPGQTVQL |
| UniRef90_H7D901 |  |
| Uni |  |
| iRef90-A8UT |  |
|  |  |
| UniRef90-D1PCJ1 |  |
| UniRef90-D1PCJ1 | P【DGAD V |
| UniRef90-R6EYD3 | PENGADIV |
|  |  |
| UniRef90-U2G112 | A VDGkDTQL |
| UniRef90 R5ER31 UniRef90 BoSAB3 | G |
| UniRer90-BOSAB3 UniRei90-UPIO0037B000D | $P \square A G D$ |
| UniRei90-UPI00040E4AB6 | P V ${ }^{\text {d }}$ |
| UniRef90-R5PRR3 | , |
| UniRet90_B1 |  |
| UniRef90-R4K156 | ASPGENVQL |
| UniRef90-R5JSM6 |  |
| UniRe | SYAGNNIQ |
|  |  |
| iRet90-101086 | - |
| UniRef90-R7JN36 UniRef90-D3HX16 | A Q ${ }^{\text {P }}$ |
| UniRet90_D3HXI6 | P |
| B8E0 |  |
| Q3EKZ2 | AVDGENVTL |
| UniRef90-C5CGS1 | PVNG |
| UniRef90-R5MQN1 | AVDG |
| 25 |  |
| UP1000369 |  |
| UniRef90-UPI0004030 |  |
| (enirete |  |
| UniRef90 R5FDG5 | PVKGYDL |
| UniRef90-W9E3T4 |  |
| UniRef90-101GC | PADGRAVRL |
| UniRet90_D6YF72 |  |
| UniRef90 R7 | AAAGHDVYL |
| Ref90 A8F8R9 |  |
|  |  |
| UnRef90-C9R8A5 |  |
| UniRef90-W0J |  |
| UniRef90 W0J | PVQGGDL |
| f90 ${ }^{-} 4$ |  |
| UniRef90-UP10003B56AC |  |
| UniRef90-R6E2 | TVETGNVRL |
| iRet90_O1AV |  |
| UniRef90_R7LQ06 | A VS GSNVVL |
| F75 | P\DGADIV |
|  |  |

1


```
lupas }2
lupas_14
lupas_28
jnet
conf
\begin{tabular}{|c|c|c|}
\hline UniRef90_L1Q7H5 & \[
\text { P A A K A Q } \square \text { R R }{ }^{50} \mathrm{~A}\lfloor\mathrm{~L} P \mathrm{R} \square \mathrm{P}
\] &  \\
\hline
\end{tabular}
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lupas_21
lupas_14
lupas_28
jnet
conf
sols
sol0
jhmm

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lupas_2
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm

UniRef90_L1Q7H5
E G V A G A E \(\square\) A F \({ }^{130} \mathrm{D}\) K E \(\square R\)
140
150
160

lupas_21
lupas_14 lupas_28
jnet
conf col 25 sol5 sol0 jhmm
jpss
\(\begin{array}{lllllllll}4 & 6 & 7 & 7 & 7 & 4 & 1 & 7 & 8 \\ B & & & & & & B & & B\end{array}\)```

