

## QUERY UniRef90_F6RWB3 UniRef90-B4JEK9

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 HTSYATHLLLNGSPVSVNLGQYPEDAKFGEHREFSLRVGT
 HLAADYAVYYNDR

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 TLKSESTVYGUGRKRSVKRHEFPMRVIDTGASDFALSTHY HLAN YFLYNSETFIKGDFSIKNMRGAPGDGTMENQ
 TLPSALRLLYLHRRLSVGQHE
 NTVMAEYTIYKKDGDLSVDESFRMNVLQEDTVHFTIENPH HTDYN $\quad$ Y L NGRDGLSSMKSSS ITFKVEKVQNSAGSDSIENPS
 LADYTVCLNGREDVTVSTDSAFILNVLKSSTDDLII ENSN


 TLP S S VRLYLHGRQLSVSRHEFPGRVQDSGTSDFALSNRY TLKSSVRLFLHGRDFAVHKHEFPVQVLSTATEDFCLENQH YLAEYVVY NGEATSEITFNI KSMTSDSEPIILENPH
 HLAMYTVYNTEAMSETVSRQDFFKIVVMDSGTGDFALESNRY ESAQYLFLKDGGAVSVSGMDHFKVSTPQNAVVPLI ENPH

 RRWKNGNRF LSVMDSPQNETIEVGPGD SSKSLLANYVLYNGKTETKGMFNIKNDKSAEEDVMLENSF T T DYDIYGS GRNSVQEKPDRIFKI KEMPNSVDNIILENSY QAVLKSSVRLY LDGGRDLPVRKQPVHVFPTAPDDFCLENQH
 T LTT TSSVFTPRAMETS RRHELASETKSSQDDTDE $\square G P$ $H \square A D Y V \square Y$ N N K VED RG $\square F T \square K N M \square N T E E G \square T \square E N S F$ DKPRSYTFGGAQNSSAVElGS GN RRKGVMSHLNSKTGGNIDIGP GN TRSSV TRSSV
 QUIESSTVEVGHGN NGMGYVSTMVSPSNDT $\square E \square G P G P$ S S T I S MVY T S E HKNTLGSTTFLNSVRKAK LINNAFLIDDSTSNIEVGQGN T LDPSSVRVYLHGRRLLSVSRHEAPFLRVDVFDGKEFSI QNSE SNRFAKITVMSLDAPFTI NLNGYPELPEFGEPRKDSLKVDS

SSTISTVLTSEG
TTSKRHTVY
DRSSTVSTVYTSEGNT
SAGYVTK
SRS GY $\square$ S $V$ MD S P QNES $\square E \boxtimes G P$
$\mathrm{K} \boldsymbol{\square} \mathrm{T}$ Y
$R V G L L A V K$ HSSKSSVYTLRSEKSAVEVGQGN $\square K \square$ SSQNETIDIGPGD

 NENSTI EVGQGS
 HLADYS Y Y LSER SSAKVPDRDFK DKEMQNAMDDUTLENSY PLNY LSVVTVVYSTSQQTDEKHIKYF L GSTKSSIVKF Y Y $\square D T L R R \| S T R D L P S N E T V E D G P G N D K L S$ TLR SDTLLRRSSRSVTRASDPLPVHSQLADPQSFYI SSQF
 $T S M Q T L$
$V S E K Q T V Y Y$ NGTGYATAVVSASNHNQPTDNEKF
NGTGYATAVVSASHDT $\quad$ EVVGPGP

##  $M D \square P \square N E T V E I G P G N$

KFDGSEQDDVVVGPGN ILVFAAATSDRD $\square$ AHRSGNESDAFEPDEGNGKTFEVGQGN TERLA

 QALTYQPRPQKSSSH\|KPLSRDKSSSR DPSSRDLTIQNEH

 RAASTSSQLYQGRKLAVSRHEFPRVMDSGPGNFALSNRY STTRSSVY

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UniRef90 Q7PMM6 UniRef90_Q7PMM6 UniRef90_K9IUJ0 UniRef90_M0TWG0 UniRef90_G7KX96 UniRef90_G1PC04 UniRef90_B9I3Z3 UniRef90_UPI0002C33786 UniRef90_G7PZH6 UniRef90-A0A059BEH4
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GPTLAFSEQGLLKSTQLTQDSPHVPVHFKFLKYGVRSHGD $M Q V W F S G Q T G L L K S I K R V D E A Q E H R L S T E F L I Y G T R T S K D$




 ALFRFSGLNGLLEGVKRKEESEEQKVRMEDLLYGTRAAKD
 $V Q V W F S G L T G L L K S V R R L D E E Q E Q R A E M R F L V Y G T R S S K D$ I KLRFNQL GL MEEMMNKEDGKNHKLKVEFVWYGTTDRND V L WF $W$ S $\quad$ Q S G L M E K MM T K E D GK H H E V $L$ K V WC S G S S GL M E R V K S K E E GT ERRNV K V E F M WY GT T S N R D $M N I M F S V S S G L M E K V K T K E D N K V H Q V K V E F M W Y G T T S N R D$ LRACFS GS S GALLK SVVSQPGS GEERSS SSQF LIYGTR GTKD
 GP TVAFS GDGLLKS I Q DDSHAPHTP I KLLKFYKYS $\quad$ G D


 LILLS F DKT G L METMMTREDKQQHEVMVVQF TWYGT TS KK D
 $1 \mathrm{~K} L \mathrm{DF}$ S R S G L M ERMTNNKEDGKNHEVVKVEFTWYGTRN GRD
 $V E A G F S G R T G M L R W V R L K A G G E P R L L R D L L L W Y G T R R S S D$ LRAKFSGTTGLSVSVTTVKDGKETAMSVEFLMYGTRTKKD
 $M K L W W$ S G M S G L L E K I NT K E D GK N H Q M K V E FA WY G T T S N R D LRACFS GHS GL L Q S L R RA GEEREQRVVSSEF LVYGTRT SK D
 LKMSFSSTSSGQLKRMYNSKTGVDVPIQQTYLWYGSSTDS Q $V L R R F D Q T G L M K Q M M T K E D G K H H E V S V Q F S W Y G T T D K R D$

 LKMSF S S K S GQQLKRMFNS DS AV DLP IQQS F L WY G D S E D S Q L R L L Y S A D E GKKL THYVNN RNKVTASSTEQSYSYY S GND G T D
 GAGASFNANGLLKSISIDAN TVPVHLDFLJYGMRFSS G

 L K L I Y S G N D G E L I Q Y TN S R SL V K E SVVK QS FS Y Y P G D D F S K
 LKMSF S S T T G QL ERMF D S K T GVVDLPI QQS YLWY GS S D G GQ
 SR




 L R GCFS GSSSGLLLQSLLRRA GEEREEQRVVSTEFFIVYGTRTSSKD
 LKAVF DADTGGLTTDLS TVGUVLKKVQDIFMSYGTVANMD L K M S F S S A S G QL K R IV N SVV GV DLDPI Q Q S F F WY G D DVD S Q L Q L L Y S A NE GKL T R YTNRRNNSVTSSLA E Q S Y S Y Y T G Y N G T D

 GGS TS A A F T S K GK S LT DE N N QATVV V H H L E F Y R Y G M Q L S S G
 $L \mathrm{~L} Y \mathrm{NV}$ V D GTGLTHY L $\operatorname{L}$ SRSSLVKASMEQTYSYYASGS GNDPQ

 $V$ KLTTFSTDE GKMDN YVVNSRSLVEESVVQQS YSFYN GYNDP Q


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K S GA Y L F P D GEAKPVPPKDPPLVRVTEGPFFSEVAVYYGB K S GA Y L F R S GA Y L F M P Y G P A T P L V M G P P T V L V $\operatorname{L}$ S E G S L L
 K S GA Y L F L P N GE A M A Y F S E N P V T R V TAE G P L V S E V NT S N R N
 R S GA Y L F L P N G P A S P V V N H T P V V L V T K G P L E S S V SAGGLT K S G A Y L F L P D G E A S P T S P R S P P C C CV S L L K A L S S L R W L R K S G A Y L F L P D G E A K P V V P K D P P V V K S GA Y L F L P D GF A Q P Y V Y K K P F V R V VHGK I Y S E V T S Y F E H

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ASGAY I K S GAY F RPNGSPPTVVSRSVPLEVIRGDLVDEIHQEFDS
 ASGAYIFRPSKSSPNIVSRSVSFKVIRGPLVDEVRQKFSP

 AS GAYI FRPNRTTPTVVSVMAPDKVIMHPLVDEVHQQFSS K S GA Y L F L P D GEAKPVP KEPPVVRRVTEGPFFSEVVAYYE H K S GAYL FHPDGPATTMKLGEPVVLVVKGPLESSITS GLPF A
N K S G A Y L F L P D GE A K P Y V T D P P I I R V T H G K I Y S E V T C F F L H
 AS GAYI FRPS GSTPSVVSRSVPLKII RGPLVDEVHQQFSS K S GA Y L F LPD GK P K P Y N Q K P PVVVRVVEGPLVSEVVAHYQH K S GA Y L F L P D GEAKPYPKDPPIVRVMEGPLFSEVSSYYQH



 A S G A Y I F R P N G T Y P I N S E GEVVPLDTV L R GP L L D E V V H Q K I N S

 ASGAY I F R P NGATP TAV S R SVLLDNVGTRGPLVVEVVHQQFSP
 ASERRPTCPRSPPCCASPKAPSSRRWR R K S GAY IF RPNGTYSDNSEGQDVFTVLRGP LDDEVHQQ！S S NA GAYI FRPNGSSFVTPEEKVPLTVVQGPVIDEVHQQINS ASGAYIFRPNQQKPLPVSRWAQIRLVKTPLVQEVHQNFSA K S GA Y V FRPNMTHSLK S Q GQAPL TVI Q GPLVVDEVMQQQLE

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PSKMSSKAFQLSFTAELPPLSLTVYHVDKAPAGSA VS P ELLDFPASVPALGFSUYSVSP
RNYYSKFPSATPKYWLAFSASAPPIGFNTYFI SRGKRPVI RS YHVTAYMGKPKYWLVFSASVPALGFTTFFI SSAKGTGA

S HEAYQLSF LA HLPP L G LGVYQLLEVPNSEA
 RNFYVKAYLGVPKYWLLFQVSLPPLGWNTYFISKTAKEGK REFYVKSPQQAPKYWLLFQASVPPLGWSTYFISKTAKKGK

RNFY LKAYGFPPRYWLHFQVSVPPLGWSTYFDARATGDGK REKHVKAYLGMPKFWLAFPVSVPPLGFNTYFISSGKKS RKFYTEAYLGQPRYWLLFQVTVPPLGWNTYFIS RNYHTVAYLGKPKYWLAFAATVPPIGFSTYYVSYAKKEAT ELLAFPASVPALGFSDYSVSQVPGQRP R D

NKFE
RNKDS SVKYELLEVASVPPLGVAVFKVKDGSVSDA
 RDFYTKSSDTVPKYWLLFQVSVPPLGWNTYFVSKGAGKGQ RKYHVEAYLGQPKYWLVFSVTVPPLGFTTYTISTAKKTDG KNYHVKAYLGESAYWLAFSALVPPLGFSTYIVSNKKGRES RSKNFHP EL $\square$ FPASAPPLGFS $\square Y$ SIVT RNSYSKSTNVTPSYWLAFSASVPPLGFNTY I S SAKQAAS RNKFVKFPSEQLKYWLAFSVSLPPLGFSTYMVSSSEGTEP Y S Q S A Y E: SF LA NIPPL GLLKVFKI LESTSSKS
 RDKHVKSPASKPKFWVAFSASVPPLGFNTYFVSSGKRSAS RMFYTKAYLGDPKYWLVFKATVPPLGWNTFYISKASTQGS


LF
Y H P
T GRHR LYWK A S IPA L G LRTYF IA NGNVECE RK F Y L E A Y L G T P K Y WWL V F S A S FVVP A L G F S T Y S VVA QVS D Q N P
 VVVVP S A E P QE H Y P E LLV F S A SVVPAL GF S I Y
 SEFYVK P R GQ FP K Y WL L F QVVSVP QL G WN T Y F IS S G S G G G K $R N Y H V K A Y$ VGY $\quad$ K $P S P Q A S T E Q F Q L D F V A E L P P L S L V V Y H V T K A S F G S A$
PS P ELLFSASVPALGFSTY
ELLFPALVPALGFS\|YSVTQVS\|RRP

RAVRRRDRQEHPPELLFSASVPALGFSTYSVARLPGRNP RAVRRDRGDAVNELVFQASAPPLGYRTYSISRLPGRGP VE P Q QVVS S Q A F Q L L S Q T K Y Q L L QQELL L SASVVALGFSVYTV QAANAHTQ R N F Y T NA Y L G VP K F WL I F Q V S V P P L G WN TY F I SRRATK E N Q Q H P P E L L F S A S L P P A L G F S T Y S V A A R V P P G R S P
 1 F T GK H R L Y WK V V V P A M G L E TYY I S T S F GE CE

 $P D G \nabla S Q P$ S Y GK T S R WDLL L SASVPAL GFSMYS

 R S N Y S K A Y L G $\square$ P K Y WLLVF K A TVVP PLGWNTFFI SKEPGKGS $\square \mathrm{I}$ QHDKSKDFTGKHRLYWKS SVPAMGVQTYYVANGFVGCE



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 V E P S R A S T E A F Q L D F V VA E L P P L S L V V I Y H V T E A S V G S S EV R R QR GFA VNELVF QVQAP P L GY T TY TVVAL
$P \prod P$ E L L F P A SVP A L G F S VY S I A R V S R Q N P L Q H DK S N $\quad$ F S G R H R V Y F K A S I P A L G L Q T Y Y I A N GF A G C E
 RSYYVRANLGPPSYWLYFKAAVPPLGVSTYYVS IGSADTA K Y P GVVDCVK H P P ELLLFRA SAP PLGGFHS YSVVTKAPA K K P


 QEVRRSRSFAKNELVV QVRAPP L G Y S S Y SVV L
VP N NVVPN P S S E QLLELLMFPATVPALGG SVYSVVS

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UniRef90_A7S628
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GCTRSSVOT F ${ }^{130}$
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SRARY VVHRHGDPPTVHSEHFQVSRQSKEESTIEVGQGN SRARY VVHRHGDPPTVHSEHFQVSRQQGAEADLSLS LSN ATASKSHVVYSSEEKRSDVQPSSQKSWSG VLAGVGNED NSAQSKVYTIER GQKSSVDIHQGN ILAA YN IVMSGRDSVQEKPDRFFK IKKMQNSVDIKTLYVI SYRAQYTFLHHSKTAPVQAQHFQVSHLDSAYLSLSNKH RTAAFSE TTTSFVSTLGNPQNDTTEVGP $N R 1 G G F S Y Q S S Q N K D T I E V G P$ GLSASYVTSGSMNQ $\qquad$
KASREGSNNPPADFSPMTNMTEIGSGN
$P \square H V F P A A A D D F C L E N Q H$ MDSPQNDTDEIGSGN
RRNGLS V
ASVSLMSTLHPSQGSENSNMQDGQGQLKLQYNAAGA RAAGKVKRRKGFFLAADSPQDKTVEVGPGN

GCKPSKTS $\square$ YHHKVKNDLVKGFDVRNADCGKQYITMENQF HNRPSRVTAYTRDTLDKPTSEHFNIELQAPGSEVLTMNNH TPNAYTSTHAVLENET DEVGPGPFK QQ
A ATSERQ $\quad$ MFASERGMNDTVETGDGN
HRVG I I S A T

RSVLSS $\square Y$ TSEDF YSSKSYVSNULKGEQSUIVIVGHGH
RLPSKTPRFRDCCAVPVAQSS HS GMRTVY
SSTISTVYYTLEE
LLAEYVLYTLEENGKTEVKG NGKTEVKGLFNDKNVQSAEGTIEVGQGS
QAHNL VS $\square R R S K T H \square P Q P \square S Q K P G S A V L N$
ПS SPSTDYPQGSKSRNDQVGERQLGPQE DHARPLEGHNEH SNHTHSSVLLNPVSSTTEIGGP
QAYDRHPRSQKPWS ARRPAEALTGFVARGPRAGGNGRLVIQNEH
 QAH
NRTGYVSTMVSPRNDMVEVGPGP
TVLANTTLFGVTPGHGPQRGGLVDVRAAPPPSGLSTHNTH SVTK ISHQKPS $\square$ P LIPNS SRKFRSRFRVLA I ENEY

RRSE
PP L GFSTY $\ddagger$ S $\square$ SRKAGVNS TKSFFPMDSQNDT EVGPGH HRARYTFHRRGNPPAVQSNHFQSGLEDFPAAELSTFQVGN RAVARVSSRNPQARTPQPQPKKTGSGA GVIQNEH RAHLRQPRPQKSRSPVLS KSRT HRPKPRIRALDTQNEH ARSRALKRLHDQPGT EHLSWAI ENQH KAKPVKLKYSSDNSFSCPTPYACSKD EGDVADI RNRH PRSTYVIHRHGNRPS DASQHFQSRLEAAEAQTHLSLLSNKH ETVRSSIGQYNQFGEVQAPIVFTDIEVSPSTREFTLQNNR TPAPHVTAHKLWLS NTNGFFSVMDSPQNET 1 EVGP KTH
RTHNDQPKFRKPLPS ILA
IQNEY KAKQAKLKFATKSNHLPCPAPYACSKLEGDTAEDQQNRH QKSWS KARPAKLKMSKSSSVACPTPYSCVEVEADVTDLVIQNEY KARPAK LKMFSKSSSVACPTPYSCVEVEADVTEDENQHQK $\begin{array}{ll}A P G P S D Q T & P S D Q T P S V Q N K H \\ K V R P S Q P R H Q S P V & \text { Q } \\ \text { K }\end{array}$
 VAKVTVRTPQASSLSGKSRKSRSHVLS I ENEY HAVMSMVSSSQGMENS $D T T H S T V K F D N P R V G F S K R T R S K F V L D V E D S G E F T I M N D Q$
$D K N K H S P G T F S P M K G \square T E D G P S$ K AKPATLRLFSPSKQLSCPTHYSCSSLESDTVEDS NQD KAKPAKIRYFSKSGSFSCPTPYPCSKVEADVAEI QNRH
 Q K AKPVELKLGSKKLSSUQCPTPYACSKVDGDVGVEIENDY
 NRMGYVSSIASPSKDTVEVGP
FRAQYTSRRRRFQAQHFQVSH DDADAAPAH DS $\square$ SNGS KFHMPKS $\quad$ UQDGPPPAPAQQRAPTVIQNKF KAKPSKLKFFSKSGSLPCPTPYACSKAKDD TVQ:RNRH A HPRLLNRM RPQPVAAPLTP
TVSKFES
QTGSTRSS
RSRDAKRDREQAQP
PRARYTVVRRGNPPD DHTEHFQVSSRVDTS WSPREVQNEH
PA LGGFSTYSVAVVSQQKHQGHFPRCIPQKPRPGVIIRNKY
 ST LSSVTFFNTLPPSENNVFSDQKDSSSGNNUKLENSY



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## UniRef90_S5MHI9

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UniRef9O-UPI0003F0BDE8 UniRef90-W5JK63 UniRef90-G3HCV4 UniRef90_MOTLF4
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UniRef90_W4XT36
UniRef90-B0X971



## 


 FTHTVRLYHDDGHI SNMVDIRSETNKELVMRLVTDVASGN WCSQVRLYPGQRHLELEWTVGPEDWGKEVISRFDTPLETRG

 FTHRVRLYHLDDVHISNLVDIRSEVNHELAMRLVTVVASGN WIYQTRVYKGKEHAEVEFTVGPIPDDEVVVTKITTMLKNNK





 WCS QVRL VYHTNGI D SRQ
 WI Y Q T R L Y G K D K K E H A E E D E Y T 1

## W

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 $\begin{array}{lll}\text { WC A } Q & V & R \\ R & L \\ \text { W } & L \\ R & R\end{array}$ W
WV Q
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## 

| $V$ | $R$ | $H$ | $T$ | $V$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | $L$ |  |  |  |  |
| $W$ | $S$ | $Q$ | $V$ | $R$ | $L$ |
| $W$ | $Y$ | $V$ | $T$ |  |  |



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## ${ }^{w}$

$\stackrel{W}{\mathrm{~W}}$
## A <br>  <br> 

## 


WIY QI R L
$\begin{array}{llllll}W & C & S & Q & V & R \\ W & L & S & Q & V & R \\ F & T & H & T & V & R\end{array}$ FTHTVRHAGKSAYEISLEWTVGPIPGK WCSQVRLYRGQCHLELEWTVGPIWGKEVVMKIVSDVASGN VPHTTR $V$ VNEKEYRV WLGREFDDKEVSRFDTPLDTKG VATHTVRLYYHTDNMDVEVDGREFDDK WVSQVRL WCSQVRL
WLS
WI SVR WI S QVIR|FA

## UniRef90 S5MHI9

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UniRef90－Q29451
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UniRef90＿V9KD73
UniRef90－UPIOOO3FOBDE8 UniRef90－W5JK63 UniRef90－G3HCV4 UniRef90＿MOTLF4 UniRef90－M4F7X2 UniRef90－A0A022RY86 UniRef90－UP10002C32FBB
UniRef90 W9ROT3 UniRef90－W9ROT3 UniRef90－UPIO0042B6BEA UniRef90－B9RUH3 UniRef90＿W4WD85 UniRef90－R7W4L1 UniRef90－H3DQS
UniRef90－l3IV74 UniRef90－UPI00032B1FAD UniRef90－W9QPL1 UniRef90－T1DKJ8 UniRef90－UPI000333EFB8 UniRef90－M7BNC3 UniRef90－I3K3V4 UniRet90－S8D6A5 UniRet90－T1JJDF3 UniRef90－M3ZDS7 UniRef90－UPIO004438332
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F F Y T D S SN G R D F L K R R V R D Y R Q P V A G N Y Y P V N L L A G M Y V T D G K Y
 HFY T D SN GRRE L L T R R R D Y R P T V A G N Y Y P V N T R I F I K D G E K





 LF Y T D S N G R E L L E R R R D Y R P P V A G N Y Y P V N S R I Y I K D S E M


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UniRef90_M0U935
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UniRef90_Q9FFX7
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 DNGD NVCSGLTDGKFYFRIDGEGAKWRRTF G


 T DN KLTE S L Y HL L L E D R K G GA Q E V G GA S V E H L S L L A H L T S

 KDNKRTCNRFRLLLLERRRSTANKVVQRERPIVGEGGRWRRETGG





 D E S V $V$ C $\operatorname{G}$ G A C Q G L

 E E EKK SVVSYPS LLSHLTS
LETD TVRGRHLVLLSSVSDAAARHRL
LA E

LA E
$\bar{M} D G L V V R G R H L V L L D T V E \quad$ SSPTXHRLQAQ


 K DNKRTRNHFRL L WERRTDGSEVSDGHSTSYPSLLSHLTS MDNRPMTVVFHLLAESNDSQS DPASNPNPRNPSLLSSHLDG MEEGRVRGRHLVLLDDTVQAAAAGHRL GEVVCLDDGSCKGLTARGTYYVKVDK LGHGAHWRRTYG $K D N K P T L S R F R L L P E R R S R H D S V P G A V P G G S L S L L G H V T S$
 DENVCMEDFCE GL TVVRGHYYMS D D D P L GS GAR WRRTTG DELVCAND QCQGLTVRGNYYVNINQ LIGSGARWRRKTG
 TD N KLTA S LY HLL L EDRRGGAE EVGGGASVEHMSLLAH LT S

 QEGLWVRGHHLVLLDT ARAAPTGHRLLAE LEGLVVRGRHLI LLDTVESSAEQHRL
 TDN K L T G S L Y H L L L E D R R A VQEVGGG A T IDDH L S S L A A H L E S LDNHPTKKHVFRVVLLEQKGASCRTTEGHPAGFPTLSSSYVSS QDSQLVRGRHMLLLDTVKAAAAGHRL PGEGARWR LA E

 MDNRPMNVVFHILVVESGISSTSNPVSNPLPLDPSLLSHSVGG NKEGWVRGRHLVLLDKKETAAARHRLL QAE MDNRVMNVVFHLTMEANVSATSNLVPTPFPYPSLLSHRVG NEGLVVRGKHLLELDT PSASGQLSRLAAE
 QESSTVRGRHFVLLSSVS DAAARHRL LA E NEVVCVEDECE GLADQ GK LIY DR V D D P L GEGAH WRR S T G K D NL P TP ES F V I MLEERWTA A AA A KESK S SLLA YP SMAVVY Q S S
 MDNRPMNVVFHIIVESNSSSANPGSDSHPLSPSLLSHLIGG M D N R A M N V V F H L L V E N DS S A S NP V S N P L P L N P SLLLS H RVG
 M D N R V M N V V F HL L L E S NIIS T S N S V S N S L P L S P S L L S H RV S

 T DNKLTA S L Y R L L V E D R R G GAQS G G GASVEHLSLLAH LSS S $N D G L V V R G R L L L T L D P P Q T A A D T H R P$

L $\begin{array}{ll}\text { A } & E \\ \text { A } & \text { E }\end{array}$




 TDNRPINVVVFHLTMERNVSSSSSVDSSVSARPSLFSHLVGG DDNKRTMQGRFWL L L E E R





| UniRef90 | S5MHI9 | F |
| :---: | :---: | :---: |
| UniRef90 | UPIO0044394CA |  |
| UniRef90 | L8YDF3 |  |
| UniRef90 | UPI00042B4159 | F |
| UniRef90 | A0A059AP45 |  |
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| UniRef90 | I1J8K1 | F |
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| UniRef90 | Q9FFX7 |  |
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| UniRef90 | G3WTP2 | V T |
| UniRef90 | V4SQY7 |  |
| UniRef90 | B9RGY0 | F N |
| UniRef90 | UPI0003F0A15C |  |
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| UniRef90 | W5AWP3 | F |
| UniRef90 | R0GNA6 | S |
| UniRef90 | F1SEY1 |  |
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| UniRef90 | L5LJF6 |  |
| UniRef90 | Q6V5C5 |  |
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| UniRef90 | K4AIG1 | F |
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| UniRef90 | UPI000333FB07 |  |
| UniRef90 | G7KJH1 |  |
| UniRef90 | UPI000333F263 |  |
| UniRef90 | H9G8J8 |  |
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| UniRef90 | W9R0T3 | F |
| UniRef90 | H0XD60 |  |
| UniRef90 | UPI00042B6BEA |  |
| UniRef90 | B9RUH3 |  |
| UniRef90- | W4WD85 |  |
| UniRef90 | R7W4L1 |  |
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| UniRef90 | I3IV74 | V N |
| UniRef90 | UPI00032B1FAD |  |
| UniRef90 | W9QPL1 |  |
| UniRef90 | T1DKJ8 | $\square$ |
| UniRef90 | D8QZD8 | F |
| UniRef90 | UPI000333EFB8 | 1 |
| UniRef90 | M7BNC3 |  |
| UniRef90 | I3K3V4 | M |
| UniRef90 | G1T6Q6 |  |
| UniRef90 | S8D6A5 |  |
| UniRef90 | T1JDF3 |  |
| UniRef90 | M3ZDS 7 | VT |
| UniRef90 | UPI0004438332 |  |
| UniRef90 | W4XT36 | V ${ }^{\text {S }}$ |
| UniRef90 | B0X971 |  |

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UniRef90 D3TLE1 UniRef90-D3TLE1
UniRef90 ${ }^{\text {B3RWW05 }}$ UniRef90-UPI00034F8B21 UniRef90-H2TRS8 UniRef90_B0X973 UniRef90 B4J3B9 UniRet90_-25TS83 UniRef90-B4MUA9 UniRef90 097043 UniRef90-R4WDK2 UniRet90_B4K676 UniRef90-R7U489 UniRef90-B7PF17 UniRef90-F1KUM4 UniRef90_B4JFC9 UniRef90-F2UDZ5 UniRef90_A0A059AHE5 UniRef90 Q70H78 UniRef90-A0A016VJD1 UniRef90-Q29JU3 UniRet90_D6WL14 UniRet90-U5EV98 UniRef90-U6PPC9 UniRef90-UPIO00441D033 UniRef90_U4UKH6 UniRef90-B4KHRO UniRef90_K7J216

पNFDEVFQGQN QPPQPTIVTK LESEQRPVK VVVLYNSLC ENNKQFTMTVYNPG
FEPEQMRSKYDAQPVHKS TDLQEGTYQSKVIFFNPG Y $\quad$ l PS
 SGRSFVVVAYNPGG SMNDTYC Y FLIGELERDNFSKLPRKTPLI VTEARSTDFVVYNALA FEPAQSRSKYDAQPVVKADESAREGTVQTVVLFNPSE FESVELRKSYDMLPVSKVVEI HFEPVQERSKYDVQPVHKVLLPH

KNFKVQRVVFYNPLE EGKAQSVVFFNPLE PETSKKFSVNVYNPLAA
 EYYLNVSVCPVTEGGDFNMVVYNSLA FQVIVYNPLA LQMDDVRDTHDGMPHKQ LLSFTREGRTRYVVFYNSGA HKLNVSVCPLSQKPSFHVLVYNPLG $\square N \square S Y C P A S E \square N$ ESKKNLIDC ${ }^{\mathrm{A}} \mathrm{N}$ A VE TSANFTL पEGDEFRQSYSSMPQKKVV SEAGSVQSVIFFNPLE SEANDRFALTHNP SESNDRFSLTLYNPLG ESSHKFSMNVYNPLG ETANNFKVYLYNPLG FQVYVYY P PLLG
 NTSSCALSETNTRFLTLYNPLA H LNVS
HFEPEQSRSRYDAQPVHKV
E S
S SNSPFALTLYNPLA EASAQTPVLVYNPQA ESKDSFTVTLYNPLA
LDMDLKQNSQSSLPQ KTVTTLSAESDPRYVVCNPSE FLETDDRRATQDSLPQ RTLIEL DPAGPRYLVVFNPIE SETTPQFSVILYNPLA QK पN TSVCP LSSSSAFQVLVYNPLG FVMSERRLIQDQLPQKNGSICNQTSEAFQLILFNSLA FEPEQVRSKYDAQPVHKVI AATEGTYHSVVFFNPLE MDLSFC DSDRQTYD QPTYR $\square A \square N \square D K S R P R N V I V N P L A$ SKDNFMVTL SKDNFMVTLYNPLA SEDQDNFLVTVYNPLS LDMDLKQNSQSSLPQ KT■ITLSAE PRYLVVCNPSE
 F LQVDDTRSSHDALPERTVIQLDAS SSSRRFVVLFNPLEE ESKDNFMVTLYNPLA SVCAFTENSANNVVVTLFNPLA


FLLSEFERDNFNKLPRKMP FII LP
 HYNFDDVWHSHNTLPE KMQUTUGVPDLPSKKTVIYNSLA पH LDDVRDAYNGDPHKQPDS FSKEDRMRYLVYYNSLS SSDETSTTDTADGEEDSTVLLSKNAEASF $\square V L F N A D T$ RRTHDALPEDQ LLEVSAEPRKVVVYNSKG

F LIGEDERDNFGKDPRKTPDI
VTEGRSTDFTVYNALA LVLDEYRKEQDTMPVRRSYA LQLNSECAFT DLERESFEKDP KKTPTGपG KDAGDFVLFNTLS KDSADNVVVTLFNPLA NISQCD
LLLDEYRVNQDTLP TRRTYKT USETS $K M V I K L D$
$K$
$S$
S NI QUG

## UniRef90 H2YSQ4 UniRee90-UPIOOO38BC1EF UniRef90-K1Qlllo

 UniRef90 - UPIOOO2B45EA5 UniRef90-H9KRV0 UniRef90-A9SGT5 UniRef90-A9swm UniRef90-M8ARH8 UniRef90-T2MJRO UniRef90-Q17CX9 UniRef90-K4BBN6
## UniRef90-D8SAZ4

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UniRef90-K7V8Y8
UniRef90_K4J7W7
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UniRef90
MOTE13 UniRef90-UP100042C8C90 UniRef90-R7T6U8 UniRef90 W5UCS5 UniRef90-B4LVB7 UniRef90-A0A023GD61 UniRef90-UPIO003C1AAD9 UniRef90-T1DKM1 UniRef90-UPI0003442566 UniRef90-Q4S7D3 UniRef90-UPI00039564BA UniRef90-UPI0003F07833 UniRef90-U1M0C0 UniRef90-A0A059AGP2 UniRef90_-11G917 UniRef90-A0A023EX89 UniRef90 J9JLY2 UniRef90-Q178W0 UniRef90-Q178W1 UniRef90-D6WI18 UniRef90 M3YMC4 UniRef90-B4KYV0 UniRef90-A0A034VDB7 UniRef90_K7J217 UniRef90-B4MUB1 UniRef90-D3TLE1 UniRef90-B3RW05 UniRef90 UPIOOO34F8B21 UniReffo-H2TRS8 UniRef90-B0X973 UniRef90_-Q4J3893 UniRef90-B4MUA9 UniRef90-W5JSY8 UniRef90_O97043
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UniRef90-B7PF17 UniRee90-F1KUM4 UniRef90-B4JFC9
UniRef90- F2UDZ5 UniRef90-A0A059AHE5 UniRef90-Q7QH78 UniRef9-AOAO16VJD1 UniRef90-Q29JU3 UniRef90-D6WL14 UniRef90-U5EV98
UniRet90-U6PPC9 UniRef90-UPIO00441D033 UniRef90-U4UKH6 UniRet90_B4KHRO
UniRef90_K7J216
 RKVDHMVRLPVGKGIFFVKDPDGKTVRNNVVMLPS RAVSHWVRLPVIGKSYVITDPNGKSVPSQVLPVSNTKND QARQEAIRVVVTHTNIRIFDSEDKSVPFQLNPVWNTT QTREEVAMVIVNRTEVTVDDSNWTCVQSQISPEFQHDKAK


 QERIEVVLIRTLTPRVKVLDPKGNPMNDQVNPVWNGTETS QTRNEVVMVTVERPDVTI LDSNWTCIRSQI SPELS WSRKEMVRIPVSSTRLQVRDSTGNAIPSQLDPLDSVTKKD ETLQQVAMVMVDNPAVCVFDSLGKPVQSQLSPDWGAG QTRDEVVMVVVSSPDVSVINSNGSCLPSQLSPEWQFVSD RPVSWPVRLPVNGTTYSVSDAKGKAVDSQVVPRVPGHSGG


 RQVDWMLRLPVSKGNFLVLDPSGQTVPSEVVPVLNSTEHP RPVVWPVRLPVNGTAYAVSDAKGRSVNCEVLPVSAK | $R P V V W P V R L P V N G T A Y A V S D A K G R S V N C E$ |
| :--- |
| $R Q V N W I L R L P V G G H F V V L D P N G Q T V R S D$ | WPRNDVIR PVMTDKVTVLDSAGKEI ESQLLPLADAFVYL FARAHLPRFPVPFGSYAVYDEKGLVIPSQVVSMPFETQRL FTRKELISTHFSTPYVCVTNSQGKIVSNQVNPVWND QTRDEVVMVVVDNPSMCVLYSNWSSVTSQVVPEWQHGKDG


 RSVTWTVRLPVNGHAYKVIGPNDETVPSEVVDVSDFTKAL RQVNWMLRLPVRKGNFLVLDPSGQTIPSEVIH HPSSQFVRVPVKDENYLVTDEKGQEVPSELVPV HPQEHVVQLRVNTSNVKVTDSEGNDIVYQINPVWDMTQTT HETDEYIRIPVADYKYAVLDPTGKSLPTQVVPVPNA HQVTTYVRLPVMNGVYTVLDPDGSELVVQLVPLVN QTRDEVVMVIVSKPDVSVWHSNGSCVKSQVSPNWKHDTT
$R K V D W M V R L P V S K H V F L V R D P S G T V V P S D V V M I P S S D S Q$ RSGNYNFRVPVNGSAFIVSDAAGNTIPSQVVNVTAATEAD RPVSWSVHLPVNGTVYNVTDSDGAPVDNQVIPVVKAT HTTKEYVRVPVADYKYVVLDPTGKSLTTQVVPV RRVTWNVRLPMNGTSYTVTDPKGKTVPNKVMQVSAFT
 QDRTSVVSVYVSSPTAKVSSASGKPVEQQMSAVWNTA W RQVNWMLRLPVNQRSFTVQDPNGQTVPSEVVHNPGLDSRM
QERHEVVCVMVGKSESRASTPHIDPVPQQIVAPVRRADSAS QSREEVVMVIVDRPDVAVLDSNWTCVQSQVSPELQHHKSK RPYTGMVRIPVDKEDVSVTDPNNNTVADQIVPVSPETK K HSGYQYVRLPVSGKKYIVKDYRGVETPSQMVPVAESVED HSTNQYVRLPVPGKMYIIKDILGGREPGQIVPVAQS
 HPSTQFVRVPVKQQQYLVTDERGRAVPSELVPV
 SSTAEYURVPVVDNNYQVLDDKGVILEVQYVPIPGGLMDG QERLSVVSLLVNSPRVRVLSEDGQPLAVQLSAHWSSATNM RAVVWPVRLPVNGSAYEVLDAK
HPSAQYVRVPVNNEQYLVTNEKGQQVASEVVPV D PW
HAGHEYVRLPVTGGRYIVRDYRNVEVSSQIVPIPQS
 QKRLEVVTLRVQHPNVKIVNDKGVELNHQUNPVWNUTTSV QARYDVIRRRVRSPDVRVFDSEGNPLPTQVNPVFNFTEPK FARHEVVTFNINTQFI NGVESIFEYGSTM AERTEVLHLRVPHMDIVVKDLRGHSTPCQLNP VPRSELVSVHVTTPSVVVVDANGSVVTSQLSPDWD QKRDEVVTVRVQQPNLRVYNDRGVELKHQUNPVWNDTQSN QERLEVVTTRTLTPRVKI LDAAGKAI DDQI NPVWNITETS

QPREQLI QVRTNTSSVKIVDNEGNEVVSQVNPVWDTSES
HSGYQYVRLPVLGEKYUVKDYKGVEVVSQLVPLAESILNL
RSRNEPVCLHVDSKRAALENAEGKEVQYQLSPLF



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| :---: | :---: |
| UniRef90-UPIOOO38BC1EF | QVLA ENEY |
| UniRef90-K10 | A D |
|  | M |
| UniRef90_UPI0002B45EA5 | KPKPAKLKIFSTSTSLPCPTPYACSKVNGDVAE |
| UniRef90_H9KF | EVHPANVIVYNTD\\|SLPK】PGFNQUQUIPNAQE |
| UniRef90-A9SG | NHAKLSSYETRRAPLTV RSVYLKSSQ |
| UniRef90-M8AF |  |
| UniRef90-T2MJR0 | SK D Y $\square$ S |
| UniRef90-Q17CX9 | , |
| UniRet90-W5 | SSGNULCDGRA |
| UniRet90_D8 |  |
| UniRef90-A9RIII | SLSSVSVFNEPRDFMCPDPYLCTYHPGGHERVSUSSSQ |
|  | AQEFPCP |
| UniRef90-AJSF | MYGKS |
| UniRef90-K7J111 |  |
| UniRef90-UPI0002 | SKFVTKSDPLHVKKS |
| UniRef90-UPIO002C43D58 | QT GFSWLNPQKSRSSVLVIEN |
| UniRef90-L7M019 | MVFRASVTLYNTVSG PDTLYFPDARSESRDDFR! Q |
| UniRef90 H3DN93 | PADTKSGTQKPQS SDV |
| UniRef90-B9RGY1 | G |
| UniRef90-E9C | E |
| UniRef90-T11Z19 | N |
| UniRef90-U5D7B5 | K |
| UniRef90- ${ }^{\text {B3MJII }}$ | T $\square \mathrm{KPQAT}$ |
| UniRef90-F10TTO | VQQQPPVSRSKNAVPSSQNKF |
|  | GKLSLPDRFVIKGKRGKKQPDKIQNQY |
| UniRef90 UPI00045 | QTGSTLS |
| UniRef90-V5GSP3 | LNGQNDVKPDVLKSTFSDKD |
| UniRet90_B4JQ04 | R GNA |
| UniRef90-M0TE13 |  |
| UniRef90- UPI00042C8C90 |  |
|  |  |
|  | (1) |
| UniRef90-A0A023GD61 | RPRHHKKDLSMANAQTCDDPGAKQMVLRGKVTSATUN |
| iRet90-UP10003C |  |
| iRe990-T1DK | FVHEMSNQPARGGPAAVEPTEPMGVPAQWQSQEVTIGNKY |
|  | - |
| UniRet90-Q4S7D3 | TLRSDTLLRLSSRGVARAVDPLPVRSQPSDAHTFYVSSQS |
| iRef90-UPIO003F07833 | SSCSGSQRSQSSV |
| U1M0C |  |
|  | SESNTLSCPAPYTCTELQSDNTVERN |
| UniRef90-A0АО23EX89 |  |
|  | PMRDGDVQLEND |
| UniRef90-Q178W0 | ESPQNSQTN |
| UniRef90-D6Wl18 |  |
| UniRef90-M3YMC4 |  |
|  | R1 EPAKGKARPKDETELVVQNSQ |
| K7J217 | QVG D |
| UniRef90-B4MUB1 | SRSSYSKKW RPSYRALSDENDLE |
| UniRef90 D3TLE1 | KPVPDSPNTSSMTS |
| UniRet90-UP100034F8B21 |  |
| UniRef90-H2TR | PAPLQHRT |
| UniRef90-B0才 | S SVRVQADQPHFGSGWHSE |
| UniRef90 ${ }^{\text {B4J }}$ | MQAMSNQQETADAESDE |
| UniRef90 B4M | DFLIEAPAPASMPQAQPKKRSSLTVIGNE |
| UniRef90-W5JS |  |
| UniRef90_O97043 | AGD |
| UniRef90-B4K676 |  |
| N6T | A |
| UniRef90-R7U489 | VACVRANDTVHGDQHKHDDDSLFNDKSEGVGSDTFVDNSA |
|  | R |
| UniRef90 ${ }^{\text {B4JFC }}$ | KRNTATIYCDDCTEKANPVAGSATPVAPNEVGD |
| UniRef90-F2UD | EVAALS GKlVL |
| A0AO | SKTSFLSTLGDPQNDT\EVGP |
|  | GKMATLYCTECQDEKTK AFEVRTKQPGDIQLLENYK |
| ${ }^{\text {A0AOO16VJD1 }}$ | IVSTPTITAKDDIKKISEFKFNRVSGSDFSLANSLIS SAHFDT |
| Uniref90-Q29 |  |
| UniRef90-U5EV98 | DFFGAEAREPSVIQLDEPVYYENDEFTIG |
| Re90 |  |
|  |  |
| UniRef90_U4 | D |
| K7J2 |  |

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UniRef90_A9SWM3
UniRef90_M8ARH8
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UniRef90_W5KXN4
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UniRef90_UPI00021A40D5
UniRef90_UPI0002C43D58
UniRef90_L7M019
UniRef90_H3DN93
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UniRef90_T1IZI9
UniRef90_U5D7B5
UniRef90_Q8IPB7
UniRef90_B3MJI9
UniRef90_F1QQTT0
UniRef90_F6RYR7
UniRef90_UPI00045DAF7A
UniRef90_B4LDM7
UniRef90_V5GSP3
UniRef90_B4JQ04
UniRef90_E9FYS4
UniRef90_M0TE13


 L H LT F S K D T GL L T HM S NK K T GVSIPV E Q S Y CWY N GEDP H M

 LK A TF D P T T GLL S GLTN LIETQQQSIQLS QNFYWYNASN GND








 Q TLLTFDVKK GML Q K L KVVHKDGTETMI GEEDGUYS T W H QL GF D T N GFL S EVTAD GLT RLVSQEFLFYEGAVGNNNR





 QV L T F D A K H G L L Q K I S H L D G P E N IV G EV V I I Y S S S G Y NV TF D G S T GH K K K I N A V S G V S SNDNQQR RFYNAS Y S S Q

 Y F TLLNF DENGFLLSTLQDGEEIVHRLQQDFLYYEGAY GNNNR KTV V K L R F G G S G L M E EMD DKE DGKRHEVVKVVQF SWY GT T S K K D
 LVK L T F D G T G H L N Q V E M N GVVTENIVRQDFYYYN GAA GNNNR



Unep-pysd

## UniRef90 H2YSQ4 UniRef90-UPIoooz8BC1EF UniRef90-K10110

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## UniRef90-D8SAZ4

UniRef90-A9RI14 UniRef90-K7V8Y8 UniRef90-K4J7W7
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UniRef90-M0TE13 UniRef90-MOTE13
UniRef90 UPI00042C8C90 UniRef90-R7T6U8 UniRef90-W5UCS5 UniRef90-B4LVB7 UniRef90_A0A023GD61 UniRef90_UPIO003C1AAD9
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 WCS QVRLYPGQRHLELEWTVGPHWGKEIISRFDTPMRTNG


 WI YQTRVYKGKDYVETEFIVGDENGKELSTE DTSMATNK FVSQVRLYKGADYAEFEHTIGPDPGKEDITRFDTDDQSAG WV S QVVRIVFNSNF END DDFEKNRETE

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## UniRef90 H2YSQ4 UniRef90－UPIOO038BC1EF UniRef9－K1OIIO UniRef90 UPIooo2b45EA5 UniRef90－H9KRV0 UniRef90－A9SGT5 UniRef90－M8ARH8 UniRef90－T2MJR0

 UniRef90－Q17CX9 UniRet90＿W5KXN4 UniRef90－K4BBN6UniRef90 D8SAZ4 UniRef90－A9R114 UniRef90－K7V8Y8 UniRef90－K4J7W7 UniRef90－A7SFA1 UniRef90－K7J111 UniRef90－UPIO0021A40D5 UniRef90－UPIO0021A40D5 UniRef90－UPI0002C43D58 UniRef90＿L7M019 UniRef90－H3DN93 UniRef90－UPIOO0333E9A2 UniRef90＿BgRGY1 UniRef90－E9C5N1

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UniRef90－UPIO00441D033 UniRef90－U4UKH6 UniRet90＿B4KHRO UniRef90＿K7J216
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KFFSDLNGF 290 QPRTTYSKLTPLLQANFYPMP ${ }^{310}$ MAFI QDDKS EFYTDSNGREILKWRLSQTEPVAGNYYPVSTRDYI TDGHD


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 S F Y T D S N G R D F
 EFFS DLNGFQYQKRVKVPS DGI E GNYFPITS GAFI QDDKM YFY T DSNGREVVLQRRK DYRPPVAGNYYPMNSRAFDKDKGS
 I F Y T D L N G F Q T M R R E T Y S K K $\quad$ P L L Q G N Y Y P M P S
 $V$ F Y T DANGREMQLRTRDFRPPVAGNYYPVNSR $\quad$ RFVKDSNR




TFYTDANGREMQRRDLLNYRPPVAGNYYPVNSRIHTIDNNR EFYTDDNGFHVVIKRRTLSSKLPLQANVYPMTTMVFDEDTE K VFYTDLNGFQMSRRETYKKIPM QGNYYPMPSHAFLLHSDGR V F RTDSNGREMIK RKDNHRDTVAGNYYPDT TKIDVEDDTA




 F Y T D A N G R E LL Q R R R D Y R E P VVA G N Y Y P P V N S R R VF WT D S N G R D ML L K R V R N H R D T 1 I S G N N Y Y P V







 RF Y T D L N G Y Q GN G L Q I IS K G K L N F N R F P K L N L NL F Q S I K
 V F Y T D L N G H Q M I K R T K DE R $\square$ GI I E G N Y F P I T S M A Y I E D S S H
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## UniRef90 H2YSQ4

 UniRefgo UPYIOop3UniRef90-K1010
UniR1 UniRef90-K1QllO
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UTJJE6 UniRef90-UPIo002B45EA5 UniRef90-HgKRV0
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360 RLTMTAQPLGAASLKS GELLEVTLDRR|LMQDDNRG|V|GQG|V

 RFSVHSRQSLGVASLKDGWLEMMLDRRLYRDDGRGLGQGV RLTVVTAQPLGVSSMASGQLEAMQDRRLGDDNRGLGQG|L DVSVLVDRALGGSSMEDGQLEIMLHRRLLYDDHRGVAEAL

## E

QLTVV L T D R R S Q G G S

 QFTVLNDRAQGGSSPKDGWLEMMLDRRLVRDDGRGLGQGV RLAVLNDRAQGGSSLEDGAGEGMVHRRLLFDDGRGVGQAL RLTVLVNHAQGAAGWEPGRUELMLDRRTLYDDSRGMGEGV RMAVLNDRAQGGTSMEDGVIEMVHRRLLRDDAFGVGEALL ALXNNPGQFVCLSVCLLGQLEVMMDRRLMQDDNRGLEQGV RLALLNDRAQGGSSADGQLEMLHRRLLRDDAFGVEAL RIALLNDRAQGGSSLKDGALELMLHRLLRDDAFGVGEAL
 RMTLLNDRAQGGSSQEDGVLELMLHRRLLSDDNFGVAEALL QLTVLTDRSQGGASLKDGQMELMVHRRLYDDARGVGEPL
 RIALLNDRAQGGSSLQDGLELMLRRLLKDAFGVGEAL RLAVLNDRAQGGSSLEDGSLEMVHRLLHDDAFGVEEAL RMALLVDRAQGGSSLQDGALELMVHRRLLKDDAFGVGEALV RLTLLTTHAQGAASYEPGQLEVMLDRRTLYDDYRGMGEGV RLTLLVNHALGAAAWQPGWLEVMLDRRTLYDDSRGMGEGV RLTVLSSSPLGCSSLTGGELEVMLDRRLNQDDNLGLGQAV

 RLTLLTTHAQGAASYEPGQLEVMLDRRTLYDDYRGMGEGV
 RLTLLTTHAQGAASLEPGQLEVMLDRRTLYDDYRGMGEGV RLSLYTAQALGVA SLK S GQLEVMLDRRLNQDDGRGLFQGV R A LLNDRA QGGTSMKDGQLELMLHRRLIRDDGYGVGEALI RLSSLTDHAQGASGWQPGFLEVMLDRRTLYDDSRGMGEGL
 RLTLHTAQALGVSSLSSGQLEVLLDRRLMQDDNRGLGQGL


## UniRef90 H2YSQ4

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KDNVPTPENFVIMLERWTGVKENKAKAQTAYSSMVVHOSS ${ }^{390}$ TESSTVRGRHFVLLSSVSDAAARHRL LAE NETGUARGKHYLLLDTVQNSG KSESFSRPTLLHREMG TDNRAMNVVFHLLLESVSTKDNPVSSYSPLSPSLLSHCIG TDNLLTNHLFMF LEKRKPTSSTPTNHPSGVLSLYGHRTS
NETVCNGRCEGLTLLRRSCIRMFDSRPSEEASQWRR1 KG


 MDNRAMNVVLHLVESNVTEANQTTGPHPLNPSLLSHLVG NETDCDDSNCEGLTVRGKFLLD GLDHSTEESARWRRNQG MDNKPMNVIF HLLMESNVSALPQTHSLLTLQPSLLSHRVG NETSDDYPEGLVVRGRLVNVARLSLSPATAADTHRPLA TDNLLTFHKFVLLLEKRQESCQQPDEHPAGLLSLAGHLS NETGVDRGKHLLILDTDDESAYTQRM


 NETGVIRGTMYVTLEKTAAGSPRAVHPSAVASHAHPVA LDNRPDNVLFHILTETKSSTP PTSLSLLPLNPLLSHLVG NETEARGKHHLFFGKSTDREGVSLKG


 VDNRKTVTKYWLLIEDGSQAKTENKQESFSRPSLYANHLS
 MDNLVNNVLFHLLTESNTSADPSNHMLLTLQPSLLSHRVG SDGLAVRGRLLLALTPPSTAADTH SDGLAVRGRLLLALTPPSTAADTH


HDNKVTANLFRILLEKRSVVNMVDGKHS DEAALILH KDNKKTMNRFRLLLERRSLGNKMVDATSSSFPSLLSHMTS DEGLVVRGRHRLLLD LETNWVQGRHLVLLDKTQTAAAGHRL TDNKRTSSDFRLMVEPLESAVHFDSL TTAFHSMAAHYAS MDNRALNVVFHLLVESVSRTSNPESNPGPLSPSLLSHSVG DEGLVTRGKHLLILDTIDESAYTQRMM MAE DEGLIARGKHYVVEGSKK VDNKPTLTKYWI LLETVSDDGSGSKGDRVSNPSLVANQLS DEGVIARGKHFVVFGSKKTSSPTVQRARERFLQ NETAFARGSHFLTLGP HFKKTGNVSTAALERDIAQ HDNKVTANLFRGLLEKRSVVNMEEEKKSVSYPSLVSHITS

 NETAYGNG
NEGLIIRGVHYLTLARGTHYLMVGFSQKNDSPTTLERFAQ KDNKRTWNHFRULLERRTVGSEPGF
NETSVVRGRLLLELDR R PASAADTYRPLAQ DEGLVARGKHYVLFGSKKTSNPTLQAR NETQFGVGKHWLDARGKVYLILVSAEEKPTDGERLAQ NEKAFARGKHWVVFGAKKPTSPT NETEYARGKHHLFVG G VDSRLTRHRFWLTLETMDGAQRSGATGDGSLPSDFANSLS VDSRLTRHKFWLLVEDLPGGQHVTQPPSYKVLSQQAQQLA VDSRLTRHKFWLLVEDIPASQHVDNPPSYKVLSLQAQQLA LDNHPTKHTFRVLVEKRPPGCETSVSHPSGFPTVSASVAS MDNLRTPSQFRRLVERF SAEEHRESVPSHPSLLAHQAL DEGLRARGQHWMIVDTPNASARIHRESPSHPSLAFEQLFN VDSRLTRHKF WLLVEDMPPGQQVENPPSYKVLSLQAQQLA NETVCDSNTCKGLTVRGHYYDGDNK PGTGARWRRTDG IDSRLTRHRFWLTLETMDAQQPPNTSDPYQLPSTFANALA
 NEQKDARGKVYLILNSVEESTKVEKGEGFRASDFANVAE NEEAYARGHHYLVFGAQKTSNP SLKARERFDE MDNRRTDSRFRLLVEPDASDNTNTAQER $\square G Y H S M V G L A Q N$ KDNKQTCNFRLLLERLSPVNK VDNKRTTSRYWMLI EDVSKAPVEPKQEAFSRPS LYATHLS



UniRef90 UPIO003442566 UniRef90 Q4S7D3 UniRef90_UPI00039564BA UniRef90_UPI0003F07833 UniRef90 U1M0C0 UniRef90_A0A059AGP2 UniRef90_11G917 UniRef90_A0A023EX89 UniRef90 J9JLY2 UniRef90_Q178W0 UniRef90-Q178W1 UniRef90_D6WI18 UniRef90_M3YMC4 UniRef90-B4KYVo UniRef90_A0A034VDB7 UniRef90_K7J217 UniRef90_B4MUB1 UniRef90-D3TLE1 UniRef90_UPI00034F8B21 UniRef90_H2TRS8 UniRef90_B0X973 UniRef90_B4J3B9 UniRef90_Q5TS83
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ARWRRKLLLRLEHQFAVGEDTDSPVTLYLRNL RTPESSWTPSNTTAMFLHRLPHDCMRCTLQT DSMTTAADM
ALWGPRK
QELDDGK
 LLRLEHQFAVGEGNSLPVTLDLRDL
 ( EPWHENQ LLVVRFEHFMENGEDASYSQPVNVKNV




RTQADSQFPSTSALMVLHRQGYDCTVSASCTVLSFEASNY EPWHEKE
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F R N I E S I T E M N L A V T K T K E D S P R L N F V H LTT P M Q I R T F L VT
 F F S I E E I R R E M T L G A N Q L L K S E S S

F F T IT S LRE M A LG G L H S V S R L L W N T A V R L E P M E I R T F LA S












FFNVISLEELLNLAANRNKRTSDEGLSTELKPMEDRTFR T G NL Q S I E A T S L T G L P K H Q S L R S L A QI T L EPMELRT F NLT


 HVVKVVK


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| UniRef90-Q17CX9 | F |
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| UniRef90-D8SAZ4 | F |
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| UniRef90-B3RW05 | F T |
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| UniRef90-H2TRS8 |  |
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| UniRef90-W5JSY8 | F |
| UniRef90_O97043 | F |
| UniRef90-R4WDK2 |  |
| UniRef90-B4K676 | F S |
| UniRef90-N6TR79 |  |
| UniRef90-R7U489 |  |
| UniRef90-B7PF17 |  |
| UniRef90-F1KUM4 |  |
| UniRef90-B4JFC9 |  |
| UniRef90_F2UDZ5 | L |
| UniRef90-A0A059AHE5 | F |
| UniRef90-Q7QH78 |  |
| UniRef90-A0A016VJD1 | W |
| UniRef90-Q29JU3 |  |
| UniRef90-D6WL14 | F |
| UniRef90_U5EV98 |  |
| UniRef90-U6PPC9 | W |
| UniRef90-UPI000441D033 |  |
| UniRef90 U4UKH6 | F |
| UniRef90-B4KHR0 |  |
| UniRef90K7J216 |  |

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UniRef90 B3MLZ UniRef90－B4N084 UniRef90 W8C2M5 UniRef90－Q9VLH9 UniRef90－UPIOOO359858E UniRef90＿EOVV82 UniRef90－E9H264 UniRef90－U4UAT3 UniRef90－B3MLZ7 UniRef90 EOVA20 UniRef90－D6WI17 UniRef90－L8GX61 UniRef90－V3ZUY9 UniRef90 B3MLZ UniRef90－E3LPV2 UniRef90－B4NO85 UniRef90＿G3T1X4 UniRef90－G5BYY UniRef90－T1PFVC UniRef90－U6D3H－ UniRef90 O54782 UniRef90－Q9VLIO
UniRef90
U5DK92 UniRef90 V4AHZ5 UniRef90 ${ }^{-}$B3N7E3 UniRef90－B5DK93 UniRef90－D6WWZO UniRef90 UPI00032AE85E UniRef90－F6X3R5 UniRef90＿UPIO0042ACF4B UniRef90－Q9VLI2
UniRef90 E9C445
UniRef90－В3МММ01
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UniRef90 T1KWK2
UniRef90－UPIOO0359589B UniRef90－A0A034V617 UniRet90＿D6WWY9 UniRef90 U3ICP7 UniRef90－O18497 UniRef90－E9IED8 UniRef90 W8APD9 UniRef90 ${ }^{-}$K1 QAPO UniRef90－A0A044RKX4 UniRef90＿F7B602 UniRef90 B4N086 UniRef90－UPIO00359F8CE UniRef90－T1FWY2 UniRef90 UPIO003F06BD8 UniRef90－T1DPQ0 UniRef90－UPI0003C37A42 UniRef90 G3W200 UniRef90－M0W8M8 Uniref90－H2ZRX8 UniRef90－N6TP39 UniRef90 H9J6K0 UniRef90－V5G1A6 UniRef90－D8RD8 UniRef90 UPIOOOOS959205 UniRef90－I1F9P5 UniRef90 W2TGV4 UniRef90－UPI00034F379F UniRef90－I3JS27 UniRef90－UPI00038716AO UniRef90 U4TTZ9 UniRef90－T1HHY4

1 － 10 YF！LDDHEKLYYGRPREQTILTF PSGVQARFVTFYNPLT

T $\square$ NQEYCAM $\square \mathrm{N} \square$ SQCQTT
SEENDMFTFVVYNPLS EQNSPF VTLLYNPLA

NITSQCGVSEHSEQFVTLYNPLS NISSCDVSEQSERFVTLYNPLG SVCPLSQTSARFQVATYNLA保 FLLSEDERDNFSKLPRKTPTPLNGNGATDEFSFVIFNSLA YEPEESRSKFNMLAVKKSVRL ASGQARRVVFFNPLE ETFRPKYNKEPVKQLLNLQKSSNC
$\mathrm{N} V \mathrm{SVCLL} \mathrm{Q}$
EPVGTFVI YNSLA
SEKSDTFMAVVYNPLES
SVCAFTQESANNLVVTLFNSMA
Y $\square \mathrm{YPDVQRPTYDVLP} \mathrm{\square K}$
LP LTVPEDHGRKIVLYNSHA FTKDNADNFVVTLYNPLA SVCAFTKDSADNVVVTLFNPLA LQLNTSECAFT SUKF KDADNVVVT YNPA
 YFFFDDERKYANEWSPRKV FQFNNNEPDTVVLFNSLT QLNVSQCDPTEKNNRFVVIYNSMA पN【NTSECAFT KDNADNLVVTLYNPLA TPIVVVEKNGKRTIVVFNSLG
NVSSCDKTNSDRFTLVVYNPLS SYCPHपNMSVCPATAQLANNKAVP VVAYNPLA LNLNDSEAFTKDNADNQLHIYNPIA EMDEKRVNENLLPEKLVYKV GONVVLFNTLS

SVCAFTKDSADN NVVVTLFNPLA FQVTVYNPLG

QVTPVLSVDTRPGYSASVYNPLA KDGADNVVVTLYNALA FTKDSADNVVVTLYNPLA EK $\square \mathrm{N} \square \mathrm{T}$ ECDVSESNAQFFVTYNPLS पQपNपSECAFT KDSADNVVVTLFNPLA
 SSNQFVVMVYNPLA
FTKENADDFMVTLYNPLA
 LNLNTSECAFTA

DNADNLVVTLYNPLA
VESNDKVVTLYNPYA
NTSSCAVPEQADKFVTLYNTLA NVSICEETKSDRFVVTVYNPLE
DVYSSVYSKDSGKPDID
EVEWETYGKPPKK D DDQVS $\square \mathrm{DKKKVILFNPLA}$
 PEQADKFTLTLYNPLA
LLMEENRRTFDLLPEKR【VTHESE
VYNPLA
 QVTPILSVDTGPVGYFAVYNPLA EMDEKRD DSKLLSTDTSKYDHFRNVVLFNTLS QQQATTANSSMDPGVHTAVVYNPLA
ATSSPNSDNSACDIT


F $\square \mathrm{DVDD} \square \mathrm{WRRHDE} \mathrm{\square}$
DNSGEQENKEEQLVVYNPDA
$N I S Q C E F S E S S E F V V V Y P L S$ S S DAVQCPH■D

 $V$ LCVGTRPAGHLAVYNPLA EQHVIVYNPLA QYVVVYNPLA


UniRef90_U6NZA6 UniRef90-A0A023F1Z6 UniRef90-UPI00033448F3 UniRef90-L7MRI6 UniRef90_A0A026VXZ2 UniRef90-E9GA05
UniRef90-F1QYK1 UniRef90-F1QYK1 UniRef90 UPIO00206262A UniRef90-UPI0003C38427 UniRef90-G1SUF9 UniRef90-UPI0003EBD2FB UniRef90 W8BKY7 UniRef90-D8SH82 UniRef90_V4A535 UniRef90_D6WI15 UniRef90-B4NK70 UniRef90-W4WAG7 UniRef90 W5F1Z3 UniRef90-B4MUB2
UniRef90-B4GFB4
UniRef90-J9JTZ7
UniRef90_L7MFZ2
UniRef90_B3MLZ6
UniRef90 B4N084
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UniRef90-Q9VLH9 UniRef90_UPI000359858E UniRef90-E0VV82 UniRef90_E9H264 UniRef90_U4UAT3
UniRef90 B3MLZ7
UniRef90_EOVA20 UniRef90_D6WI17 UniRef90_L8GX61 UniRef90-V3ZUY9
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UniRef90-T1PFV0 UniRef90-U6D3H1 UniRef90_O54782 UniRef90_Q9VLIO
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UniRef90_AOA044RKX4 UniRef90-F7B602 UniRef90 B4N086 UniRef90_UPI000359F8CE UniRef90-T1FWY2 UniRef90-GONGX4 UniRef90_UPIO003F06BD8 UniRef90-T1DPQ0 UniRef90-UPI0003C37A42 UniRef90 G3W200 UniRef90_MOW8M8
UniRef90 H2ZRX8 UniRef90- N6TP39 UniRef90_H9J6K0 UniRef90-V5GIA6 UniRef90-D8RD81 UniRef90_B3MJI8
UniRef90_UPIOOO3959205 UniRef90-I1F9P5 UniRef90-W2TGV4 UniRef90_UPIO0034F379F UniRef90-I3JS27 UniRef90_UPIO0038716A0 UniRef90_U4TTZ9 UniRef90-T1HHY4
 FARNEIVTLRVENRLVQVRDSNGDVVIHQUSPICDLMDDL
 FRSSHTVR\|PVTDGSYAVTDHEGRLVASQMVP\|AEA
$R P V T E F V R \square P \square P S E A Y S V V D P S G L R L T V Q F V P L P S A$ HTTDEYVRLPVPDVNYVVKDYKDVVLDVQYVPVAE

RKVNWMVRLPVSKHVFLVKDPSGAVVPSNVVTMPNSDDQ QKRLEVITLRSPVPNVKVLNERGEEI RMQI NPVWNDTDAY EAVEHVVMVVVDDPAVCVFGPSWASVDSQI SPEWDETG




HTSTQYVRVPVKNESYVIADEMGREVTFELVPVPS QKRVE VVTLRVQHPNVKI LN HEGVELKHQ NPVWNDTTTT RAVTTPVRIPVKYADYKVTGPNGANVPYELV FIPG



 $R$ SVDKYVRVPVSGTIFQVHDPQGNVVASQTVPIAEY



RSVIYYVRLPVVGSEYNVVGPDGKPI QNQIVPDASDTM
 RNRNEPVVCIVRVDSVDAGIVAEPPVTVKQQVSPVDEYNEES

RKVDWMVRLPVSEGLFLVKDPSNKTVPSKVVELPSSDNP
HPSTQYVRIPVKNGTYIVTDAAGRQVKSDVVPVPKELIDLD
WK $\square$ T T I TTLTVAFPNVSVT DELGHPVSTQDQ
HTTKQYVRVPVKNENYQVTDEKGRVVASEVVPVPAE

HTSTQYVRIPVKEERYQVTDEKGRAVPSQVVPV $\quad$ PW






YSSDSFARLAVVPEGSYVVRNDRGQTVASTLUPDPASVIDLD HKRVEALT RTTTPYVKILNDAGQELVVVQINPVWNISDPY QERHSVVSVYVSSSKVKVLTDSGKPVLTQUSAVWE
WN TT TF TTVS LTYSSVSVYDEEGNPVPAQ TQ
$R Y V N K Y V R V P V W G K S Y Q V Q E P S G G G Q T V Q 11] P 1 \quad H P$

 HTSTQYVRVPVPKENYIVVTDEKAREVPSELVAV WNDT T FVTVSVSSEAMSVYDELGRSVPAQVQ
RPYTGMVHI PIMMESVLVTDPDDDAVPVQVVPDSNVTKSM RTRDEPTCI HVNSVRAMLKVDADREIK QQV SPLET
 WNITTVVNVTVTTQPSAAVFDDDGQPVPAQLQ WNI TTFVTVSVSHMAMTVYDEDGHSVPAQVQ RNVDKIVRLDI LGTGYSVHDRVGENITTQIVPDPEF FTRNEGVTLRVENRLVQVRDNNGNVVAHQUSPMCEF


| UniRef90 U6NZA6 <br> UniRef90-A0A023F1Z6 <br> UniRef90_UPI00033448F3 <br> UniRef90-L7MRI6 <br> UniRef90-A0A026VXZ2 <br> UniRef90_E9GA05 <br> UniRef90-F1QYK1 <br> UniRef90-UPI000206262A <br> UniRef90_UPIO003C38427 <br> UniRef90-G1SUF9 <br> UniRef90-UP10003EBD2FB <br> UniRef90 W8BKY7 |
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UniRef90_V4A535
UniRef90-D6WI15
UniRef90-B4NK70
UniRef90-W4WAG7
UniRef90 W5F1Z3
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UniRef90_UPIOO0359858E
UniRef90_EOVV82
UniRef90_E9H264
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UniRef90-B3MLZ7
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UniRef90_D6WI17
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UniRef90_B5DTK2

## S\|YRAP

90
90
YElL $\overline{\text { Pr }}{ }^{100}$
120

VQNTPGRQSKATNETVFRAEDPPFGLKYY LVGKKKEENV $V L L L P G R N S N A T N E L I F R A E L P P L G L R S Y H V K T P E G K P G$

VLRTPGRESSATVELVFQAELPPDGYKSYLVTKESSSSY PVQNLTFRESQAKYELI F $\square A E L P A F G Y K S Y Y I T K S N G H H M$

LLPQPEGQKPSPELLFSASVPALGFSDYSVARVSLQNP EMS $\square G R \square R V S T R Q Y E V M F D A E L E P L G B A T Y N G V V V D E K N F$ D LK V
VDETTSPNS
 YNMGFGGR $\square$ S TRRYEVMFVTELEPLS LTTFRVVYCDDCTE


DVLADQHRSNDTQHELVFKASVQK ADN
TGT GRDRTSTRQYEVMFVAELEALSLSTYRVQVDEYCDD Q $\square F R L G G R T S N A T H E L L F I A E V S P L G L V N Y H V E R D N E P E P$
 DFRS N NTQHDLVVFKASVDKIAHFY DKKVDSGDSDS SFRAKQA THELVFSAYVEKL RNYYVR

 EFRETDTQYELVFKATVDKIAN YYVKKVEGQSA EVIENEFK\VEGVYELMFVADLPGLSLTTFTIEYNDGDNG TDFTYVEDATTSANTVQFAAKLPPHGYKVYQFEATKKEETSGDASGLPFDLEFSLDLPPMGYLSFVLQRGSSAND ERKGS LAAKHELVFNTTLQPLGFTTYFIQMTS EFRETDTQYELVFKATVDKIAN YYVKKVESRNA $K K L V A K$ DGVFELCFLASLGPMESVSLKLVKSTTTSK

 T HLRPNASQHELVFSAYADKIANYY LKVQPQPREQR

NS TKDPSAYDLLILTT\PGLNYRHYQVMHARGDQA VLADEFRDSDTQHELVFKASVDKIAN YY KK VDDSKS QVLAMEHRANDTQHELIFKATANK I KS IP GRKSTAANEIVFLLTLPPFGFKTVYVSAQLGSGN QVLALA YRPNDTQHELVFQATANKI ASYYI KKVESSEA PVLALKYRENNTQHELVFKASVNKI ASSYFIKKIEKTES TNFGTPSPK ELVVFAANVPGFGワRDYYVEKTSAK EQAVSQTAYEI SFIAHMPALGLKVYKILESEGSSP
LSVRRNRGSANCELVFLAKLPALGHNTFQVTKHKT
 V PSTFSLAFEAQI PAVGDATYFVRCTRAEPA
 EVLADEHRPNNTQHELVFKATANKVAN YFIKKIENSEG FPERKSSATHELLFKATLPALGFASYFVEKVSSNKP A Q DPDPTNRTAHFEVVFLASVPALGGSTYFVRRQSTSN PVQDLNFRKSSADYELVVFLASLPPRGYKSYYITKTNGDRM KNTGVPSPK

SSAESHSTYDLYILVEI SGLSYKKYIVKPSNGKRS
 $P V Q D L N F R K S S A T Y E L V F T A T L P A L G Y K S Y Y I T K T N G N N M$
 VLA NSTEFPSTYDLYILATIKGLSFRRYYIKATSKFEE QVLALE YRSND GQHELVFKASVDKI ASYFIKKVDSGDS A EFRNSTSQRQLVFHVHVPSLGYATYFVNM KKLVVKED VFELCFLVTLGPMESASLKLV NSGVAPSAFELHFLVTIPGLSYQRYSIRPTVRTWE

 $K \| L K \square P G R T S N A T L E L V F Q A R V P P L G F K S F Y V Q R A E G D D$ VAGERRLGLANNKYQLSFPVTI GPLALTVYSVSLRDAMS■ K ITEDK RKLHAELDDGVDPYSLVFKAVVPPLGFSSYLVKPSK QILSLEHRPNDTQHELVFQATVEKISNGYIRILPDPKH
S

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NSTKVPSAYDLLILVTI PGLSYRHYSI RPTTGTQA
 VK

S SVGGSHSTYDLYILVAVSGLSYRKYNVRPLNGKQS

UniRef90_B5DTK2

UniRef90 U6NZA6 UniRef90-A0A023F1Z6 UniRef90-UPI00033448F3 UniRef90-L7MRI6 UniRef90-A0A026VXZ2 UniRef90-E9GA05
UniRef90-F1QYK1 UniRef90-UPI000206262A UniRef90-UPI0003C38427 UniRef90_G1SUF9 UniRef90-UPI0003EBD2FB UniRef90 W8BKY7 UniRef90-D8SH82
UniRef90_V4A535
UniRef90 D6WI15 UniRef90 B4NK70 UniRef90_W4WAG7 UniRef90_B4G755
UniRet90 W5F1Z3 UniRef90-B4MUB2
UniRef90_B4GFB4
UniRef90-J9JTZ7
UniRef90-L7MFZ2
UniRef90-B3MLZ6
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UniRef90-B3MLZ7
UniRef90_EOVA20
UniRef90-D6WI17
UniRef90_L8GX61
UniRef90_V3ZUY9
UniRef90_B3MLZ8
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UniRef90 G3T1X4
UniRef90-G5BYY
UniRef90-T1PFV0
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UniRef90 B3N7E3
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UniRef90-B3MLZ9
UniRef90 T1KWK2 UniRef90_UPI000359589B UniRef90-A0A034V617 UniRef90_D6WWY9 UniRef90-U3ICP7 UniRef90-O18497 UniRef90-E9IED8 UniRef90-W8APD9 UniRef90_K1QAP0
UniRef90_A0A044RKX4 UniRef90-F7B602 UniRef90 B4N086 UniRef90-UPI000359F8CE UniRef90-T1FWY2 UniRef90-G0NGX4 UniRef90-UPI0003F06BD8 UniRef90-T1DPQ0 UniRef90-UPI0003C37A42 UniRef90 G3W200 UniRef90-M0W8M8 UniRef90-H2ZRX8 UniRef90-N6TP39 UniRef90_H9J6K0 UniRef90-V5GIA6 UniRef90_D8RD81 UniRef90-B3M1018 UniRef90-I1F9P5 UniRef90-W2TGV4 UniRef90_UPIO0034F379F UniRef90-I3JS27 UniRef90-UPI00038716A0 UniRef90_U4TTZ9 UniRef90-T1HHY4 UniRef90_B5DTK2


140
150
160
$\square$ T P LIF A S K V V K
EELVTDENE

AEPEADPEPENF $\square$ NTEL KRMLRS

Y NTTVNDK GELMVQWNK R P R T I QLPNKE D L L V S A Y G
$\square N T \square R A K R S A E S E P V D \square G D R R L G L T \square D D S D P R R F V L Y V D N$ K
 SQLTMMATDYT DPTVPTTPNASTNFVVKAKPSGDIQLENNF
 HNVFPSRISLFNFEDPKKTKFYTNPPVLNPESQLELENDN
TNTGSGSTSTPERPVTANVTALPDFETRKPGGDI QLENPH VEQPQSANF DSNELYN DSVNTNGGLTVHWNKQNI NVVVQS F FLR P S F S

P K K T S S L TVIGNE
F Y VR VLS S P K S S S A K K R I LG Y Q G P S D D N E L VI Q N S L CHEGSASASATTPEGTTGATVNDFEVRAKPAGDIQLENPH P P R P MPY
 S DVIPQNNKSR Q Q T STHD DGETVV QT S Q
 KRIVNRRSVNEPERDKSNELLAGSDLEKDDQTRAEIVVKNS A A HTK SKRSDKAEEANDEVPKRFKKVHSDDEGETVVQTS Q T S Y LIA A IT V V N T E T L A V P P S LIK F H Q NRPEPRRT EPI LIDD N EMNNFSKIKIFNLLKEVRYNKYFTD IVVKGGEDFYVENSK HE

RSAVERKL
A QPlK A V K S VS G
 GKPSPRRV V Y Y N RK LAA L N D EAEPATGGAVAHKQLLSSGDRAGRVLVENY A K K T K T L E T T K VK QLT G T E DTVL S N K Y $\square S$ LTFD G S S A QP $\quad$ K AVKSVSGG ETREDGETVVQTST SEIRTNSSK QQVDSSFKSSTVGNGDF VVQNDKVKAEFDGEN

QARLLQPRPQKFGSPVLS
RVLVI Q N E H
NE IVKLP K R F L R Q H L T KL E VA PASET $\square E P$ MA VGDVVVVNS Q
GTRELVAPRANTLKFSLKLRNQPS QEGKRLVPVMNDC S NGVVRV
L L P

K H S T $\square K Q \square S P$ GED GN S
$K K \square V L H N R L P G E D G N S$
RKDETQSDVDS
ETVVENSL
SRPVKQSPKVKFGTDTTGFEI DEKT
$R \square A E Y T L Y$ N GAAKDNGIFKMKNVIDAEEADTI ENS F


 A Q S P V I Q K R S R

D S E S E VVVGENSLL VLR F QREYYRTQVSTDNSDKGK
$\mathrm{K} P \mathrm{~V} P$
L M K
$\begin{array}{lll}\mathrm{V} & \mathrm{F} & \mathrm{D} \\ \mathrm{H} & \mathrm{K} ~ \mathrm{~S} \text { VK Y Q R }\end{array}$
HC Q K P QVKFGT DTTGFE I DEK T K DAT R GVQQ S P DLLPVVNDC VEQSEPTNYISNEMFNDSVNTD GNLMDKWNDRDLNVVQSF K PVPDPPNQSSFTS SGNEFI RLNF
SK TS K V VPVSS G

 AK A S H P S GKRLFPVANKC
 DTKEPVVPLASTLKFSPKLRNQTS QEVKLLIPVVTNDC K S T VP SK S E $\square R T$ N S EVVKVD S S F K T S S T S GD F IVVENDK $G \boxtimes R E P A A T L A H T T Q F R Q R L G R R A S R$
S NAPTTV
$R \square M S T I V$



KESTSVGRLVEFDRQP VGR】EKP
GRK L L P V DN N C
 $K V S S V S N S V R E E A M A V D Q M G F E D$
F S D N S VY AFVGSSVKYKRRDLARAGQRRQ
E Y T Q Q S SVI
 A A A EASTVRF GRRLRHASREHRRLVPVANDC YEAKAVSFERRSVKDRAKAGRL
AF $\square G R S V K Y K R K D I T$
QREMPYENSDSES EVFFDDPKTGLITSNKQSRQLL PVVVNC
ENE A HV ENSDSES EVGDP KTGLIT SVVVNDVSVPVSQNF


## UniRef90 U6NZA6 UniRef90_A0A023F1Z6 UniRef90_UPI00033448F3 UniRef90_L7MRI6 UniRef90_A0A026VXZ2 UniRef90-E9GA05 UniRef90-F1QYK1 <br> $D$ DS LLLFDENGLVSSTTEKATNRTYPFRQQFFYYGVMNGA 200 $\square$ SAAFTKEGFKA $\square$ TLKQETNVVT $\square$ PVHLSFVKYSTRRGPE <br> QK NMNLVQSFQYYEGAE GDNKVFENRS $L S L K F D R Q T G H L V Q \square G N E S V Q Q Q L L F Y P A M A G N N S R F E F R$

 UniRef90 UPI000206262A UniRef90 UPI0003C38427 UniRef90_G1SUF9 UniRef90 UPI0003EBD2FB UniRef90 W8BKY7 UniRef90_D8SH82UniRef90_V4A535 UniRef90-B4NK70 UniRef90_W4WAG7 UniRef90_B4G755
UniRef90 W5F1Z3 UniRef90_B4MUB2
UniRef90_B4GFB4
UniRef90_J9JTZ7
UniRef90_L7MFZ2
UniRef90-B3MLZ6
UniRef90_B4N084
UniRef90-Q9VLH9
UniRef90_UPI000359858E
UniRef90_E0VV82
UniRef90 E9H264
UniRef90_U4UAT3
UniRef90-B3MLZ7
UniRef90_E0VA20
UniRef90_D6WI17
UniRef90-L8GX61
UniRef90_V3ZUY9
UniRef90 B3MLZ8
UniRef90_E3LPV2
UniRef90-B4N085
UniRef90 G3T1X4
UniRef90_G5BYY1
UniRef90 T1PFV0
UniRef90 ${ }^{-}$U6D3H
UniRef90 O54782
UniRef90_Q9VLI0
UniRef90 B5DK92
UniRef90_V4AHZ5
UniRef90_B3N7E3
UniRef90 B5DK93
UniRef90_D6WWZ0
UniRef90 UPI00032AE85E
UniRef90 F6X3R5
UniRef90_UPI00042ACF4B
UniRef90_Q9VLI2
UniRef90 E9C445
UniRef90_B3MM01
UniRef90_B3MLZ9
UniRef90-UPI000359589B UniRef90_A0A034V6I7 UniRef90 D6WWY9 UniRef90 U3ICP7 UniRef90_O18497 UniRef90_E91ED8 UniRef90_W8APD9 UniRef90 ${ }^{-}$K1QAP0 UniRef90_A0A044RKX4 UniRef90_F7B602 UniRef90 B4N086 UniRef90_UPI000359F8CE UniRef90_T1FWY2 UniRef90-G0NGX4 UniRef90_UPI0003F06BD8 UniRef90_-T1DPQ0 UniRef90_UPI0003C37A42 UniRef90 G3W200 UniRef90-M0W8M8 UniRef90_H2ZRX8 UniRef90_N6TP39 UniRef90 H9J6K0 UniRef90_V5GIA6 UniRef90_D8RD81 UniRef90-UPI0003959205 UniRef90_-11F9P5 UniRef90 W2TGV4 UniRef90 UPI00034F379F UniRef90_I3JS27

EEVPLDQEFLYYKSM
VGD NLK D Y K R

 I S A S F D P D T G L L V V MK N L E Q D QTLGF DSSTTGMMLRSIQQSKAASPSTELVAVE E DVA Y Y S S A $M V V L F N S K T G T$ ES S E Y F TYRS Q
 HYY I GAE GNNKK

$\square K L V F D N S T G K L K T V A M N G V T E N \square E Q T F A I Y K G Y W G D N N R$
 I A AFSHETGLLRSIRLRKSGLERRVNVSF NAYRSDER I K L V I D N Q T G R L K T V E M N G L S E K V E Q S F G M Y K T A
I KLVIDDNSSGRLKTIVMNGVSESVVEQKFAVYETKD
LVKL T F D GTGHLNKVEMNGITENI RQDFYYYKGAAGNNNR







GMIKKATSSLVDDKPI D LN SHFVVHGARKARRKFANGNEDN
I KLLTFDNK S GRJLKTVEMNGVTESDEQKFAVYKTKD


G N S LS S Q


II ELAFD GNTGGVKSATNLNSGKAVKLEQDFYYY DGDTSMR VKLVIDNQTGRLKSVEMNGVSEQIVQNFGVYKTRT
$\square K L V I D N Y T G R L K T I Q M N G V V E E \cup E Q N F G V F K$
$T \quad T$
 YKVKF DGNTGGMASIVNDAS GITVVVVKQQFSWYGTTNKR D
 I K L VID N N T G R L K TVVEMNGDS EDI D QT F GMYK TA
L R V TII EPAD GMI QKAVHKNSGKEVLLNENYLKYSTY
$V$ K LVI D N N S G L L K T V E V N GVVS E N I D D Q S Y G I Y $\quad$ R T Y




 HYYVGAE GNNEVF
$D T N G F L$ VTVTSDGMTRIVNQEFVYYEAATGNN

 $\square K L V D D N K T G R L K T V S M N G V S E S I E Q K F A V Y K \quad T Q$ YTLLFD QD S NMLH SII QERQSN RTVRMTQEFLEYWAN GQGP
 IK AEFD GENGM』KKATS LVDN KPI DDNSHFVHYGARNEDN
 M R L L F D E K T GF L K T NT RK G Q Q L L N P M Q CA DK FA A Y R S A Q F MKLDFSG S GLMEKDTNKEDGKVHEVKLEFAWYGTRNGRD
$Y$ I L M M D Q S N N L LY S $T$ T E R D S K R TVVKVT QE F LE Y H A N NK G P $V G L D V D P T A G I V G K I H F E N N V T V D I N Q T F Q Y Y A G S V D K A K$
 STEYFWYT GQVGGQQ $\square K L V F D T$ TTGGVLKTVEMNG】TENDQQSFGDYKNNGEAQNR


 $Y$ QVLF DQNTNLVMQSLTERETNQTVQLTQEFWEYHVNGDGP Y Y Y


## UniRef90 U6NZA6 UniRef90-A0A023F1Z6 UniRef90_UPIOOO33448F3 UniRef90-L7MRI6 UniRef90_A0A026VXZ2

 UniRef90-E9GA05UniRef90 F1QYK1 UniRef90-UPI000206262A UniRef90-UP10003C38427 UniRef90-G1SUF9 UniRef90-UPIO003EBD2FB UniRef90_W8BKY7 UniRef90-D8SH82 UniRef90-V4A535 UniRef90 B4NK70 UniRef90_W4WAG7 UniRef90-B4G755 UniRet90_W5F1Z3 UniRef90_B4MUB2
UniRef90 ${ }^{\text {B4GFB4 }}$
UniRef90- J9JTZ7
UniRef90-L7MFZ2

| UniRef90- B3MLZ |
| :--- |
| UniRef90 |
| U4NO |

UniRef90-W8C2M5 UniRef90-Q9VLH9 UniRef90-UPIOO0359858E UniRef90-EOVV82 UniRef90_E9H264 UniRef90_U4UAT3
UniRef90 B3MLZ UniRef90-EOVA20 UniRef90-D6W117 UniRef90-L8GX61 UniRef90-B3MLZ8 UniRef90-E3LPV2 UniRef90-B4NO85 UniRef9-G3TM4 UniRef90-T1PFV0 UniRef90_U6D3H1 UniRef90_O54782 UniRef90-Q9VLIO
UniRef90
U5DK92 UniRef90-V4AHZ5 UniRet90-B3N7E3 UniRef90_D6WWZO UniRet90 UPI00032AE85E UniRef90-F6X3R5 UniRef90_UPIO0042ACF4B UniRef90_Q9VLI2 UniRef90 E9C445 UniRef90-в3ММ01 UniRef90-B3MLZ9 UniRef90-UPIOOO359589B UniRef90-A0A034V617 UniRef90_D6WWY9 UniRe990_U3ICP7 UniRef90-O18497 UniRef90-W8APD9 UniRef90 K1QAP0 UniRef90-A0A044RKX4 UniRet90_F7B602 UniRef90 B4N086 UniRef90-UPIO00359F8CE UniRef90-T1FWY2 UniRef90_UPIooo3F06BD8 UniRef90-T1DPQ0 UniRet90_UPI0003C37A42 UniRef90 G3W200 UniRef90_MoW8M8 UniRef90-H2ZRX8 UniRef90-H9J6K0 UniRef90-V5G1A6 UniRef90_D8RD81 UniRe90_B3MJI
UniRef90_UPIOOO3959205 UniRef90-I1F9P5 UniRef90_W2TGV4 UniRef90-UPIO0034F379F UniRef90-I3JS27 UniRef90_UPIO0038716A0 UniRef90_U4TTZ9 UniRef90-T1HHY4
UniRef90_B5DTK2

210
220
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PS GAYVVFRPDGDA $\quad$ TKVDKAQLEVTKGD|LVUEVVRQTFNP


SGAY $\mathrm{S}_{\mathrm{FRPR}} \mathrm{REASARTFVYTGTYK} \mathrm{\prod HKGPVVQE} \mathrm{\prod HQT} \mathrm{\prod NE}$
 $\stackrel{{ }_{\mathrm{S}}^{\mathrm{N}}}{\mathrm{N}}$










HSGAYLFEPDASDPFVNVTGPIVRVVQGPDTSEVSAYADG


DSGAYVVRQYHQADFIVQYEVEFTVVDGALVKEVHQQFSE

## $\stackrel{S}{\mathrm{~S}}$ <br> P

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P
A S G A Y I F R P P N V H M F D K P Q L K L L K N Y I K Q G E I V Q E L T Q S F S S
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V
A S GA Y I F R P SRAA K P FP P S H WA Q TH L V V K TA L V Q E V H Q K F S A





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 $\square S$ D N Y L F T P N G S A V
 K S GA Y I F RP E GVVA GN F S D $P$ A GA Y L F LDP D G EA R E L K K Q S G D WV V I E G D L V R K V L I N D L K






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## UniRef90 U6NZA6 UniRef90-A0A023F1Z6 UniRef90_UPIOOO33448F3 UniRef90-L7MRI6 UniRef90-A0A026VXZ2

 UniRef90-E9GA05UniRef90 F1QYK1 UniRef90-UPI000206262A UniRef90-UPIO003C38427 UniRef90-G1SUF9 UniRef90-UPIO003EBD2FB UniRef90_W8BKY7 UniRef90-D8SH82 UniRef90-V4A535 UniRef90-B4NK70 UniRef90_W4WAG7 UniRef90-B4G755 UniRef90 W5F 1Z3 UniRef90-B4MUB2
UniRef90_B4GFB4
UniRef90- J9JTZ7
UniRef90-L7MFZ2
UniRef90-B3MLZ66
UniRef90 B4NO84

UniRef90-W8C2M5 UniRef90_Q9VLH9 UniRef90-UPIOO0359858E UniRef90_EOVV82 UniRef90_E9H264 | UniRef90-U4UAT3 |
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| UniRef90 B3MLZ | UniRef90-EOVA20 UniRef90-D6WI17 UniRefofo-L8GX61 UniRef90-B3MLZ8 UniRef90-E3LPV2 UniRef90-B4NOB5 UniRef90 G5BYY1 UniRefo-TTPFVO UniRef90-U6D3H1 UniRef90- Q9VLIO UniR Ref90-B5DK92 UniRef90-B3N7E3 UniRef90_B5DK93 UniRef90_D6WWZO UniRef90_UPI00032AE85E UniRef90-F6X3R5 UniRef90-UPI00042ACF4B UniRef90_Q9VLI2 UniRef90-E9C445 UniRef90-B3MM01 UniRef90-T1KWK2 UniRef90-UPIOOO359599B UniRef90-AOAO34V617 UniRef90-D6WWY9 UniRef90_U3ICP7 UniRef90_O18497

UniRef90-E9IFD8 UniRef90-W8APD9 UniRet90_K1QAPO UniRef90-A0A044RKX4 UniRef90_F7B602 UniRef90_B4N086 UniRef90-UPIO00359F8CE UniRef90-T1FWY2 UniRef90-UPI0003F06BD8 UniRef90-T1DPQ0 UniRef90-UP10003C37A42 UniRet90_G3W200 UniRef90-M0W8M8 UniRef90-H2ZRX8 UniRef90-H9J6K0 UniRef90-V5GIA6 UniRef90-D8RD81
UniRef90-B3MJI UniRef90-UPlooo3959205 UniRef90_11F9P5 UniRef90_W2TGV4 UniRef90-UPIO0034F379F UniRef90-I3JS27 UniRef90_UPIOOO38716A0 UniRef90_U4TTZ9 UniRergo_-_BLTM

WI IA QVVRILKKGTKPIIEFDWII IGPIIPKKEVVVGYTTD\|IKNAN LVHVVILYKGTEIHNLVNIEGIDNNYELAMRISSDI NNQD VHQVVRLYGLSLDVSALVDDRDHVKELALRLHTDAASG WVSOVRVYPQSVEVSN DWLVRA NTMQIRLHRDESFIEDDWILGPIPIKEYISRFTAPIUNNG WVSQVRGYNGSVEICNTVDIRGETNREAMMRITSDLNSKD WISQVRVYKGQRYAEFEWLVGPIPTKEIITRFNADTKSEG
 WCSQVRLYPGQRHLELEWTVGPDWGKEVISRFDTALETKG S $\downarrow$ ATGRKSVQALSVEDNYHDHRFNNKEIARFKTGIDSGR YYHVPSLQAQGITHENTLDDRPDTDREFVMRFKTNUNKDG FLA TVVRIFNTRYIENDUDFEPPPKNELFMRFVTNGQEG WI SQVRIYSEEQHIEFDWLVGPDPRKEVVTRYSSNLQTDK WI YQTRVYKGKDYVETEFIVGDENGKELSTEUITSMATNK WI SQVRLYDGVNRVEFEWLVGPIPANEIVTRFKSDMSSNG
 LTHTFRVYGLEMSVVFDLSKRSDYNVEMFMKMDTDVDSGD

 VKHTPELWNLGIIEVVNYVDI LTRENNYELAMRLTSNVKNGN WVAQTRLYKGQEHVELDWVVGPTPGKEIINRVTTSUASSG WITQDIRVYKQNYI EFDWLVGPLNDMEVVTRFTVDNFNNE YVSQVRIYEDRETI EFDWQVGPIPRNEVVITFTSEDESEG MLNHFVRIYHANYI ENVIDFEAPPKNELVMRVVSDITNGD WARQFIKVYDQSFLEFDWITGP WTESFILYYNAKWAEDQWTVGP:PDNEVISQYTTDRQTDS YLSQVRLYEGKNTVEFEWLVGPLPRDEVITVFSSE:ESNG
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WVSQVRVYRQQHHAEFEWLVGPIPGKE
NVTAQYY:YGCHRIEQEYSVGPEVN
FLVHTIRIYNVPDLETDVDFEAPPKNEALEMRLDTNDSGQ WI SQVVRLYTGPHIEFDWLVGPMPGKEIVTRYSSNLQTDK WVSQVRVYRQQRHAEFEWLVGPIPGKEIVSRFNSDISNAD EASQVRLYNNKPYVEFEWTVGPIVIKEYITLYDTYVESGD NFTVKDYTYGCHRIEQEYRVGPLENREAVLRTSTDLNSGQ WI SQVRIYEGVNRVEFEWLIGPI PTREIVTLLFKSGI SSNG NI IDQDY WASQVRLYKGAKHFEDEWTVGPDPDDEVVSSFETSIKSQN APEDPEPQYLCGRVEQEYQVGPLENREVVLSTIDTDLDSQQ FLAHTVRDFNADYIENDDDFEPPRKELFMRFDTDIDNDP WIYQTRLYKDKDHAEVEYTIGPGPGKEVITRRTANMVTNH NQTARDYQYVCQRIEQTYRVGPMINREAIDRTRTDLKTDK MVSQTRLYHDEKFVEFDWIVGSLPNFEVITKYSTQLDSNG LSVTVYNNPSLPHAELEVIDPQVDDLELALRGSTSVRNGD WI YEHRLYNGETHNEDETTVGPTPGKEVIVKVKANTTSNS FVSQVRIYDGПNRVEFEWLVGPIP NITSQDYIYLCHRI EQEYSVGPLDNREAVLRTSTSLNTRQ
 A 1 H SRLAHVLCYRVEQEYRVGPLENREAILRTSSDLDSRQ EESDKDYAYSCHRLEQTYSLGPLSNTEVVLRTSTSVKNNR VTSQDY YA LCHRIEQEYSVGPLENREAVLRTSTNLNTKQ YVSQVRVNA DNYVEFDWVIGPLPQNEVVTKYTSTLKSDS

## UniRef90 U6NZA6

 UniRef90-A0A023F1Z6 UniRef90-UPIOOO33448F3 UniRef90-L7MRI6 UniRef90-A0AO26VXZ2 UniRef90-E9GA05UniRef90 F1QYK1 UniRef90-UPI000206262A UniRef90_UP10003C38427 UniRef90-G1SUF9 UniRef90-UPIO003EBD2FB UniRef90_W8BKY7 UniRet90-D8SH82 UniRef90-V4A535 UniRef90-D6W115 UniRef90 B4NK70
UniRef90 W4WAG UniRef90-B4G755 UniRef90-W5F1Z3 UniRef90-B4MUB2 UniR Ref90-B4GFB4
UniRef90_-99JTZ7
UniRef90-L7MFZ2

| UniRef90- B3MLZ |
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| UniRef90 |
| U4NO | UniRef90-W8C2M5 UniRef90-Q9VLH9 UniRef90-UPIOO0359858E UniRef90_EOVV82 UniRef90_E9H264 UniRef90_U4UAT3

UniRef90 B3MLZ UniRef90-EOVA20 UniRef90_D6WI17 UniRef90-L8GX61 UniRef90- B3MLZ8 UniRef90-E3LPV2 UniRef90-B4NO85 UniRef90_G3T1X4 UniRef90-G5BYY
UniRef90-TTPFVO UniRef90_U6D3H1 UniRef90_O54782 UniRef90-Q9VLIO UniRef90-B5DK92 UniRe990-_B3N7E3 UniRef90-B5DK93 UniRef90_D6WWZO UniRef90_UPI00032AE85E UniRef90-F6X3R5 UniRef90_UPIO0042ACF4B UniRet90_Q9VLI2 UniRef90-E9C445 UniRef90-B3MMO1 UniRef90-B3MLZ9
UniRef90
T1KWK2 UniRef90-UPIOO0359589B UniRef90-A0A034V617 UniRef90-D6WWY9 UniRef90_U3ICP UniRef90-O18497 UniRef90-E9IED8
UniRef90
W8APD UniRef90-K1 QAPO UniRef90-A0A044RKX4 UniRef90_F7B602 UniRef90_B4N086 UniRef90-UPIO00359F8CE UniRef90-T1FWY2 UniRef90-GONGX4 UniRef90-UPIO003F06BD8 UniRef90-T1DPQ0 UniRef90_UPIOOO3C37A42 UniRef90 G3W200 UniRet90_MOW8M8 UniRef90-H2ZRX8 UniRef90-H9J6K0 UniRef90-V5GIA6 UniRef90-D8RD81 UniRef90-UPIOOO3959205 UniRef90-I1F9P5 UniRef90_W2TGV4 UniRef90_UPIO0034F379F UniRef90-I3JS27 UniRef90_UPIO0038716A0 UniRef90_U4TTZ9 UniRef90-T1HHY4
UniRef90-B5DTK

290
300 310
VFFTDSNGRQMMKRQKNFNPPVVGNYYPVITNRAFIKDEKR VFYTDLNGDQUIKRKRLNRLPLQANYYPLSSSAYIQDENT AFFTDLNGFQVQPRRYLRKLPLQANFYPMPVMAYVQDAQS AFYTDSNGREMLKRVRNYRPPVSGNYYPVTSKIAI|KDEEK TFFTDSNGREMLQRQLNHREPTAGNFYPVNSFAYVEDKSS

- LVYTDSNGREDLERRRDYRPPVAGNYYPVNTMDYY TDRGNM

 VFYSDQNGFQYHERIKVPADGI EGNYFPITSGAFMQDSHL
 TFYTDSSGRDFIKRVRDYRQPVAGNYYPINDGIYVEDGSK VFYTDSNGREMLQRKRNEREKVSANYYPVTTRISSLKDEKK
 TFYTDSSGFQMMKRVTDVRIDPVEANYYPVTAAAYLEDELS VFYTDSNGREMLRREKDWRQPVSGNYYPVTSRDALQDNSR VFYTDSNGREMLKRQKNKRQPTSGNYYPITSRIAALEDSKK VSYTDSNGREMIKRVKDQRQPTAANYYPVTSRIAALDSKK SYFTDQNGFQFIRRRPNPSQSVEANYYPMTSAAILEDRTT EFYTDQNGFQUI KRKTFSKLPI QANFYPMPSSVYIEDGKS MFYTDANGRQTLERRFNDRDPIAANYYPVNSHAYIKDAGN

 EFYTDSNGREFDKRTRNHRQPVSGNYYPVNNRDADRDDDQ TWYTDSQGQEMQKRRYNYRPPVAGNYYPMNSAAFLRSGNA
LFYTDANGREILQRKRDYREPIAGNYYPVNSRTYMQDTDK VFYTDANGRELLKRRKDQRQPTAGNYYPITSRIALQDSKK
 VFYTDANGRELI WRKKDKRQPDSGNFYPVTSRMVLEDSNK SFYTDSNGREVLIKRRRDYRPPVAGNYYPVNSRTYTTDGKM
 $V L Y S D N N G Y Q M Q R R P Y F K S N P I P R N Y Y P M V Q S A F I E D D K S$ V FYTDSNGRELDRREKDKRQPTSGNYYPDTSRDALQDSNK
 VFYTDSNGRELMKREKDKRQPVSGNFYPVTSRMALQDDAK





 VFYTDSNGREMLKRKRDHRDTWAGNYYPITTK A L E K D DNA TFFTDSNGRELIKRQLDNKRPVSSNYYPVTSKGVI RDEAK LLYTDDNGYQIQKRKTYVNNTAARNYYPMVQTAYI EDNAT


 FLYTDNNGYQQURRTYYTNNTVARNYYPMVQTAFI EDNKT VFYTDANGREMDKREKDKRQPI S GNYYPVTSR DALQDGNK



 TFYTDSNGRDFLKRVRDYRQPVAGNYYPVNLGMYVTDGKY $T$
$T$ VFYTD $\square$ NGMQMI KRRYFEK $\square$ PDQANFYPLPAAAYI EDENI
 KFYTDSNGRDFLERVRQVTQPVAGNYYPVNDGIVYINDNQT LLYTDNNGYQMQKRPFYVNNTVARNYYPMVQTAYUE TFYTDSNGRDMQKRVRNYRPPI AGNYYPD
DLFTDLNGLQMQRKRQLGKDPLQAHFYPMPSSAFDEEKNV VLYSDNNGYQMQRRREYVNNTIARNYYPMVQSAFI EDSRS


UniRef90 U6NZA6 UniRef90-A0AO23F1Z6 UniRef90_UPIooo33448F3 UniRef90-L7MRI6 UniRef90-A0AO26VXZ2 UniRef90-E9GA05 UniRef90-F1QYK1 UniRef90-UPI000206262A UniRef90-UPIO003C38427 UniRef90-G1SUF9 UniRef90-UPIO003EBD2FB UniRef90-W8BKY7 UniRef90-D8SH82 UniRef90-V4A535 UniRef90-D6WI15 Uniree90-B4NKMG7 UniRef90-B4G755 UniRet90-W5F1Z3 UniRef90-B4MUB2 UniRef90-B4GFB4
UniRef90--J9JTZ7 UniRef90 LTMMFZ2
UniRef90 B3MLZ UniRef90-B4NO84 UniRef90-W8C2M5 UniRef90_UPIooo359858E UniRef90-EOVV82 UniRef90_E9H264 UniRef90_U4UAT3
UniRef90 B3MLZ7 UniRef90-EOVA20 UniRef90-D6WIIT UniRef90-L8GX61
UniRef90 V VZZUY9 UniRef90-B3MLZ8 UniRef90-E3LPV2 UniR Refo-B4NO85 UniRef90-G3T1 X4 UniRef90-G5BYY1
UniRef90-T1PFVO UniRef90-U6D3H1 UniRef90_O54782 UniRef90-Q9VLIO
UniRef90 B5DK92 UniRef90-V4AHZ5 UniRef90-B3N7E3
UniRef90-B5DK93 UniRef90-D6WWZ0 UniRef90-UPI00032AE85E UniRef90-F6X3R5 UniRef90-UP100042ACF4B UniRef90_Q9VLI2 UniRet90_E9C445 UniRef90-B3MMO1
UniRef90- B3MLZ9 UniRef90-T1KWK2 UniRef90-UPIO00359589B UniRef90-A0AO34V617 UniRef90-D6WWY9 UniRef90_U3ICP7 UniRef90_O18497
UniRef90-E9IFD8 UniRef90-W8APD9 UniRef90-K1QAPO UniRef90-A0A044RKX4 UniRef90-F7B602 UniRef90_B4N086 UniRef90-UPIOOO359F8CE UniRef90-T1FWY2 UniRef90-GONGX4 UniRef90-UPIIO003F06BD8 UniRef90-T1DPQ0 UniRef9O-UP10003C37A42 UniRet90-G3W200 UniRef90_MoW8M8
UniRef90
H2ZRX8 UniRef90-H2ZRX8 UniRef90-H9J6K0 UniRef90_V5GIA6
UniRef90 D8RD81 UniRef90-B3MJI8 UniRef90-UPIOOOO3959205
UniRef90 UniRef90-11F9P5 UniRef90_W2TGV4 UniRef90-UPIOOO34F379F UniRef90-I3JS27 UniRef90_UPIO0038716A0 UniRef90 U4TTZ9 UniRef90-TMHY4
UniRef90_B5DTK

330
340

360 RLTILSAQPLGFASLSGGQIEVMQDRRLLQDDNRGLDQPV

 RMTVLNDRAQGVSSSLLPGSLEFMIHRRLLHDDAFGVGEALC R L S L L T A Q S L G A A S L K S G QL EVIVMDRRLVNQDDNRGL GQGV RLA LLTDDRAQGGSSLAD GSLELMVHRRLLHDDAFGVDESLL
 RFTLLTTHAQGAASYEPGQLEVMLDRRTLYDDYRGMGEGUV RLTLLSAQSHGCAGMEKGWLEVMLDRQLDYDDNRGLGQGV (
RLTLLTTHAQGAASYEPGQLEVMLDRRTLYDDYRGMGEGV

 RLTTLTTHAQGAASYEPGQLEVMLDRRTLYDDYRGMGEAGV
 RMTL NDRAHAA RFAVLNDRAQGGS RLALLNDRAQGGS RLTLLSGQPHGVS $R$ TVVSGQP LGAS QVTMLVDRPQGGSSLKEGTLEILQDRRLQQDDNRGLGQGV

 RMAVLNDRAQGGTSMQDGQ ELMLHRRLVRDDNKGVGEVL ELAIITDRSQGGSSLND Q T VVNDRSQACG RLAALNDRAQGGS | $R M T$ | $H S A Q A L G V S$ |
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| $R I M A L L T D R A Q G G T$ |  | QLTVLTDRSGGGS QLTVLTVRSQGGS

$R M A L L N D R A Q G G S$
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促 RLVLLNDRSQGGSSMNDGRLEMMLHRRSYFSDGSGAAEALL
 QLTVVLNDRSQGGSSLSTMGQLELMGHRRLLGEDSKGVGEAL
 RFSVHSRQALGCASLKEGTFEMMLDRRLSQDDERGLGQGII
 QLVVLTDRSQGGASLNDGELETMLHRRLLHDDSLGVDEAL QFTVLVDRAQGGTSLNEGDVELMLHRRLLVDDGKGVGEALL
 RLTLLAERAHGVSSQGNGQMEVMLHRRLWNNLDQDLNFNL RLTLLTNHAQGAAAYEPGRVEVMLDRRTLYDDFRGIGEGV QLSALVDRAQGGTS LA DGVIELMLHRRLLKDDAFGVAEAL
 RMTLLSARPSGIANLASGQLDDVMLDRRLNQDDGRGLVDGV RLAILTDRAQGGSSINNGELELMLHRRLDRDGYGV B I RLVLLADQAHGVSSQENGQVEVMLHRRLWNNDDWNLKYNL
 RLTLLSERAHGVSSQGNGQVEVMLHRRLWNNAEWDLGYNL RMAVLNDRAQGGSSLEDGQLELMVHRRLLRDDAFGVGEAL RFSLLTTHAQGAASYEPGQLEVMLDRRTLYDDYRGMGEGI $R$ TLLAA QSLGVASLKN VKNGWYRDKKDGRKKDKKK SK ELSVLVDRAVGASSUQDGQIEFMFHRRILHDDGRGVGEPL
 RFTVLTSTPLGMAALQPGQVEVMQDRRDSRDDNRGMNQGV EFAVLTDRSEGGSSLNSAEVELMLLRVATDDDSRGVGENLL DLSLLVDRASGASSTNDGEVELMLHRRLMADDERGVSEAL RI TLLNDRAQGGAS LRDGELELMLHRRLLNDDAFGVGEAL
 RFSLI GAQALGVASLKSGQLEVMLDRRLSQDDGRGLFQGV RLVLLSERAHGISSQGGGQVEVMLHRRLWNNLAWDLNYNL RLVLVSDRAHGVSSQTDGQLEVMLHRRLWNNLQWNLGYNL RLVLLAERAHGVSSQGNGQVEVMLHRRLWNNLQWDLNYNL DLVVLVDRAQGGSSDKDGEI EVMLHRVCLHDDAFGVGEAL


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UniRef90-L7MFZ2
UniRef90-B3MLZ6
UniRef90-B4NO84
UniRef90-Q9VLH9 UniRef90-UPIOOO359858E UniRef90_EOVV82 UniRef90-E9H264 UniRef90-U4UAT3 UniRef90-B3MLZ7 UniRef90-EOVA20 UniRef90_D6WI17 UniRefofo-L8GX61 UniRef90-V3ZUY9
UniRef90 B3MLZ UniRef90-E3LPV2 UniRef90-B4NO85 UniRef90_G3T1X4 UniRef90-G5BYY1
UniRef90-T1PFVO UniRef90-U6D3H1 UniRef90-O54782 UniRef90-Q9VLIO UniRef90-B5DK92 UniRef90_V4AHZ5 UniRef90_B3N7E3
UniRef90_B5DK93 UniRef90 - D6WWZO

DEGILVARGTHYVLLGETKTAAADHRP
MDNKSTLADFRI HLERVPNCKKDDANKVWGSLSDISHEAV KDNKRTHNHFRLLLERRVLGGEVHDDQPTSYPSLLSHLTS HDNKDTANLFRLLLEKRTVVNMEEEKKSVSYPSLLSHITS NETAFGE LVARGTHYLFGGAVKNVD NETAYARGSHWLGVENSRSVARF

L A O E ELIA LDNKDTANSFRLLLEKRTSVEENEATAPYSYPSILSHMSY NETAFARGHHYLTYGPVDKLFEVERL NETAYARGKHYLTFGSSQLDQSPTLQAVERFTQLEKTVAP LEESWVRGRHLVLLDMVGKAAMGHRL LAQ LETSWVRGRHLVLLDKARTAAWGP VDSRLTRHKFWVLIEDMPTKNENSYQU PSLLANQLA $M D N R P L N V F Q L L E E N D T S S A S H Q K \square S V P S L L S H R V G$ RDDKIITSSFILLLEKRNTLKANRHSD YALPSLLSDSTN冋EYGHVRGKHFLVLGPVSGNGEKS VDSHLTRHKFWLLVEDMPAGQHEVKPPNYKIPSLQAQHLA NETAFVRGTHYLFGGKVKNGFFGGQSGDRFGVKEKELALC NETEHGKGOCEGLIARGKHLFFFGQSGTRKGLSLTERIVQ NETQFARGKVYLILNNDTEKATGTES VDSHLTRHKFWLLVEDMPRGQHAAKPPGYQVPSDQGQMLA DENMVTRGKHपLHFNELDKAAKAHRLS
LDVRETRADFWLLLEPRGDEDGGRKSQDLPNLSSLAHSLS NEQQYGKG NETAFARGKVYLVLGRVKDT
pSRYERDEQ
 LDNKVTPNVFRILIEKRKNCNVSLIKLMNVFPSLNSYKSS NETAYVRGTHFLILGDKTNSMKM
NDTEFARGQHYLILGPSSTLLEQGKTVAAQERDLAH
NEEKTARGKVHLVL
NEQEFVRGKHYLVVGPTSGQEKKS
NETEAVRTVHRLSFTSVQEAGR
NETGVVRGSHFI FhDTIKESAAVQRPF STAERHWV
SSLAFAHMS
SAL

NE K BGKVF V
RDNKRTVAHFRIVIEPMSPTSSNKKDERVGFHSHVGHLAT
NEQKDARGKVHLILNTVGSKA AAAGHRLLAEK
NETVNGKG LEGGWVRGRHLVLLDKVSAAATRHRL QAE NDTSIVHPVLWLMLGPKST MTADHPRSG NEEKYGQP NEEQTARGKDFVLSSMKEKN
 DDEEFARGQLYLVVGSTDSNVSGGKGYSTAAQEREL NETGISRGKHWLLLDTVTSSAKQHRL S DEAE MNSKIVRGRHLVLLSSVSDAAERHRL NEQQUARGKLFLYLNALEDGA HDNHENELLFHLTLEDFESPHARGESTGVYFPSLLSHLAR NEEKDARGKVYLILSSTDDSTTVE EGSKSERGAE

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NDSSVVHPVFWL LGTKSAT

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\text { NETAFGEG } \text { VVVRGTHYVYGRDNSDEYE LGEKNLE }
$$

NETAYGEG

$$
\begin{aligned}
& \text { NEGGADGQGLVVGGKAKSSWSEKGWK } \\
& \text { TDNKKTSFFRLKEEPYQNVPVNTQAR }
\end{aligned}
$$

NDTSVVRPTFWLLG

$$
\begin{aligned}
& \text { SEEKIARGKVFLI } \\
& \text { NDTVVADAKAAAEAVEE } \\
& \hline
\end{aligned}
$$

NDTSVVHSGLWLLGPKS VTGGL
NEPGUARGGHYVGLDTDD siv
DESVCVDSKCDGLMARGTYYVNVNK AMGGHGAHWRRTQG

$$
\begin{aligned}
& \text { NDTSVVRPVFWLMLGPKSTPUVLYERFPVMVPKLQWPRQQ } \\
& \text { FDGVVRGLHYMVAGHINPTSEEEQTIVA }
\end{aligned}
$$

DEQVRR
NEEQIARGKMSLLDAASED PNHAERSTQ
NDSSVVRPVI WLI GSKPVTNN GNGAYQTSG

NETGIIRGKHLLLLDNVDNSAH
LDNHRTLSRFRLLVEPLAPPEEKVNLERVGFHSTVGLAQS
NDTSVVPVLWLLLGPR A DTAALRPQSALALQHR
NDSSVVRPTL WMMLG
NDSSVVRPVIWLILGTK
NETAFVRGSHYVTVGHROTNNSEGDAATTKDNARBLISG
MDNRPTLTMFRLHLEKVPNCKKAETNKUWGSLSDTSHSSL

$$
\begin{aligned}
& \text { DERDARGTHYLLLDSIENSSR } \\
& \text { DDEEFARGQLYLI GSTDSNVENK }
\end{aligned}
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UniRef90 W8C2M5
UniRef90-Q9VLH9 UniRef90-UPIoo0359858E UniRef90_EOVV82 UniRef90_E9H264 UniRef90_U4UAT3
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UniRef90 B5DK93 UniRef90_D6WWZ0 UniRef90 UPI00032AE85E UniRef90-F6X3R5 UniRef90-UPIO0042ACF4B UniRef90-Q9VLI2 UniRef90 E9C445 UniRef90-в3мMM01 UniRef90-B3MLZ9 UniRef90-UP1000359589B UniRef90-A0A034V617 UniRef90-D6WWY9 UniRef90_U31CP7 UniRef90-O18497 UniRef90-E9IED8 UniRef90-W8APD9 UniRef90-K1 QAP0 UniRef90-A0A044RKX4 UniRef90-F7B602 UniRef90 B4N086 UniRef90-UPIO00359F8CE UniRef90-T1FWY2 UniRef90-GONGX4 UniRef90-UPIO003F06BD8 UniRef90-T1DPQ0 UniRef90-UPI0003C37A42 UniRet90_G3W200 UniRef90-M0W8M8 UniRef 90 -H2ZRX8 UniRef90-N6TP39 UniRef90-H9J6KO
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PPFIVHLIMTL MTVLHPLHSLAWTQEEGVNKRPKYDPGL PIPSHIHLVSV AHLNSPALALPVATRPPPGPLRSFHPLASPLPCDFHLLNL SFLNHPVFSMTEKDPVPTQLLGEFSPLLSSLPCDTHLVNL
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 PDRQVTSLKEGDLLQ QYVVVYNPGLA EASGEVSIIAYNPQA PDLPPQFQVTVYNPG|G VSGTDTGPVGYFVVYNPLA
$N T S E C K L S E E R S T F L V V Y N P G G$ SVCAFTKDSADDVVVTLFNPLA PEQHI IVYNPLA EYLDDSVCPVTEGGDFSMVVYNSLG YFDVDD DWRRHDEDP S R ITI TLDAM FPSRRDVLYNALC RPTYDKLAQ KTTLELATTEQTEKTVILYNSEA EMDERRENENVLPEKRVF
 APRFVVLFNPLE
 EQHVIVYNPLA
S VCAFTKDSAD DVVVTLFNPDA EQY। IVYNPLA
 $N V S$ GPEPGGHFAVVYNPLA


LEPEEVKTSYDSV TKKQVLHVTKTGVP VILFNSLA YDQIKNTPTTARTDSENVPEQHIFVYNPLA ESARSFDITIYNPLS


FELEQSRSHFTLLPDKK VINDTANHMARHTDFNPLA SVPGPDERHVVI YNPLA


$H G \square D T S D \square T G S \square Y G K T G \square E Q H V I V Y N P D A$ S GPEPGGLFAVVYNPLA LA GSEPKGHSAAVYNPLA

$F L I E E S \square R T S E S \square P \square K R \square V V \quad H G S G V I L F N S L G$
FLGMDETRSSQDSLPERTVVKLDTS PRFLVVFNPDE YLQFSEKKQSYETLPVRMP LRISPRQPNVLVVYNSHG
 VYNPDA $\square \mathrm{TV} \mathrm{Y} N \mathrm{PL} \mathrm{A}$




 HCKDVISSVITEGSSNLTFFYNPLLA
QDSAQHVA $\square G S D S R P E G H L A V N P L A$ F $\quad$ GENRMSFDSDQEPVGHSAVVYNPLAA
 EEKRAAPAADSGPEGHSAVVYNPGA

Q $\square$ N $\square S$ QCRFTETQESMVLL
NELQPQAPMAA ISDAGPAGHFASVYNPLA DK QQPQSYFTLGVDQALEQHVII YNPLA DK L QPQAPMAASSGAGPAGHFASVYNPLA GHTASVYNPLA
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UniRef90_UPIO0042BCDA8
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UniRef90_UPI00020E3485
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UniRef90-H2PCV0
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UniRef90_UPIO0032AFE5F
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QARSSVVISVIVVSSSAA QVVSASGKPVVDQMSAVWDTATT WNIT T FVNLSIA Y S V V SVV D DAGNTVP S QI Q
$W N$ I T T F V T L
$R P Y S T H L R I X V L G T A W R V L D A N R N L V P S Q I$ TQD



 WNTTTFINVTVTFPVARVYDEDGKPVPAQI Q
 FRRYEVLTLDVSSPHVEVGDQEGSPLMSQVSPV
H HRDE MV RLKTSWP Y I RVLD S DGNKMV H QV N PVVTLQ H
 Q E R F S V V Q E R F S V V V S L L V V N S P R R V R V F S E E G G Q P L A A V Q I I S A H WS S A T S L


K A RVELTTSVLVDTDKVIVKTRDHEEDPY QLNPVWQNSASV WNISTYVNVSVQYAMAVVLDDDGKAVPAQIQP $R$ YVN K L I R F PVVT QLS Y I I R G P N G E N
WT R NEPVR $\quad$ P $\quad$ P $\square A N V T V T S S S N G S I T S Q V N Q I$
$R P \square P T Y V R L P V E G N A Y D V Q L V G Q N D$

$$
\square S E A \square G S \text { A S Q V VP } \square P \text { E S }
$$


$M \square V D H V M V L L V D S P L F C V F D K K M R S I K S Q V A P E W T$


WNTTA I I NVTVVTFPMASVFDDQGQPVPAQ
$H S S T Q Y V R V P A K N E N Y V V T D E K G R E V F S E V V P V \quad P$ EERTDVISLRSNTTNDRVYDTRRKEVQYQI MPNIE DRENK

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

WTV T T L I NLTVVSFPSVVTVTES GHPVKAQVQQ




QEHZSMVPVLVDTPHVRVLSEEGQPLPS QLSAVWNSATDV HVVQDVI RCVVTGPVQKVVGPGNKEFVFQLNPIWEYS
 WTIT T IVVTLT LGGFPRVSVTDELGHPVPAQVQQPDEEY
 WDVTTFVLVPMNNSVSGVYDKFGQPVPAQIQQ

$$
N V T \text { CNATRF LV FS LL M }
$$

WN $\square$ T T F VVVAMS Y S VV S V Y D E L G H P V $V$ P A $Q$ I $Q$
QFRTSVI SVVIDDSPDAAVVEETGRAVDS QVSAVW



 WGVREAVKLPVTYGHYEVYAPNGDK VVQLVEDPDE
 R A V S K Y $\square R \square P$ VD C P S Y $\square$ F V V I E L V T LT T QL VP VS E A T E S

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

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

WNVTTVI NV S V K Y S M ALLV Y D D N G K V V PA Q I Q P


UniRef90 UPIO0042C984B UniRef90_UPI0004571794 UniRef90-UPIO003835511 UniRef90-L7MGV3 UniRef90_S7Q1Q6 UniRef90-JOXHHO UniRef90_UPI00042ACBF2 UniRef90_UPI000252BB98 UniRef90-A0A023F0Z5 UniRef90-B4N088 UniRef90-W5MVK3 UniRef90-I1G420 UniRef90-G6CYB3
UniRef90 E9G740 UniRef90-H2W6S4 UniRef90-L9KNT2 UniRef90_L9KNT2 UniRef90_UPI0003C27622 UniRef90-H3D634 UniRef90-UPIO003F11F37 UniRef90-B4N087 UniRef90_UPI00046BF35B UniRef90_R7U6Q4 UniRef90-D6WI16 UniRef90_UPIO003AF8968 UniRef90-D6WWY7 UniRef90_UPI00038BB23C UniRef90-A0A058ZSU4 UniRef90-M4ANV9 UniRef90-10YWI4 UniRef90-G3U4S0
UniRef90 K1QL96 UniRef90_K1QL96
UniRef90 E7F2X1 UniRef90_A0A023F2H0 UniRef90_UPI000258E617 UniRef90-P34098 UniRef90_E2B6B9 UniRef90-E2ABS8
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UniRef90_H2ULZO UniRef90-UPI0003C8738C UniRef90_UPIO003BBDE49 UniRef90_T1L4M9
UniRef90_J9K9U5 UniRef90_G3VAF4 UniRef90_UPIO00161C58E UniRef90-HOYLU3
UniRef90-A5B9Y9 UniRef90_UPIOOO3596BD9 UniRef90_UPIO0026579ED UniRef90-D6WWY8 UniRef90-D6WWY8 UniRef90-UPIO0027423A7 UniRef90_V5H0D6
UniRef90-UPI00038EDAE7
UniRef90_A8WGI3
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UniRef90-K7FPL6
UniRef90-Q4TB39
UniRef90-E1ZKM9
UniRef90-V3YVL3
UniRef90-T1KNF0
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UniRef90-E4YOC3
UniRef90-H9IWR3
UniRef90_UPI00042BCDA8
UniRef90_H2Z3Z1
UniRef90_B4FGT7
UniRef90_HOVAJ5
UniRef90-UPI0003ADDCB1
UniRef90_UPI0002B4869A
UniRef90-V5GPY0
UniRef90_UPIO002C4659D
UniRef90-T1GTD2
UniRef90-UPIO0045E39D5
UniRef90_UPI00034F996F
UniRef90-E1FGS6
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UniRef90-H2LRV8
UniRef90-H2PCVO
UniRef90-W5KUJ4
UniRef90-UPIO0032AFE5F
UniRef90-F7G214
UniRef90_F7G214

90
100
110
P P G GLK
KSSESNNTFDLYILVTLNALDYRRYLVKPEKSSS $\square$ GVLN L P S A E S S S T Y D
S R L
S S S A D
 $N$ S T K D P S A Y D L L I L T T I P P G L S Y R H Y K A IP GRK S N A M Y EL V FLA S L LP L GYK S Y A I K R

QVLALEHRSNDTQHELIFKASVDKD ASYYワTKSKSTKT S S A ES P S TY DLYI LVTI S GL S YRR YCVVKLSADKES S QIS S R QF ELVFL ARLNPVSLHTE QIK AVK Q GLG
DD F S Y V N NV P T S P Y T C Y F A K L P P L G Y K $\quad \mathrm{C}$ T F T K V E S S K EMP S A Y D L HVLAT T I P GL S YQ HY S I R P SR S S Q E Y $\square$ T E E T K P S A R E L V FAA R I P P L G L K L $\quad$ Y Y V NSTKDPSAYDLL LLATI PGLSYRHYKVRRTRGDQA R N F Y VK A H L G VP K Y WL I F QVV Sil P P L G WS T Y F I S K A A T E G E RSAQCNASYDL F F VVVQLGGLQHRKYSI QF SETDCS QS Y MVQEHSAAAAYEVAFLAEVPPLGYSTYTISPAQAGQP


HQSQFEEI I LLKKLAAL S LDVVVYLVRVEEGEE SMESSTVVYDLFFVVELGGLQQRKYTVQFPQSPCD



 $Y N G A Q L K K S F S A P Y E L L D P A N I P A L G F T T F F L S N Q$ KESLFTGRHRAQWETHLPALGFETYFL MESNSYG RSARSNVTYDLF IVVALGGLQHRRYLI RFSEEKCS


QVLALEHRPNDTQHELVEEASVDKTAN K F V I S D M N F D L L F V



 WVIDSKL

YELC FVSTIP PLSF QKY LIFKS GVP HN K

VP D V

 S F D Y V $V$ E




VEPSRASTEAF QLDFVAELPPLS LVIVHVTEASVGS S

 D D $\square A$

EACF F A DL E P L S L VQY T I E K
 VK R IIP N R R S E A T H E L L V


$\square$

SKQSSES

 N S T S TP S TY Y L HI LTT TI PGGLSYRHYSITTPTVGAQE P F R D S T S LKELVFNANI LKLDSFLIQQ
 NS T ETPSAYDLLI LTTMIP GLLSYRHYSIRPTAGAQE HS A Q S N A S Y D L FVVVVQL G GL QHRKY LI R F S GK S G H
 $\mathrm{V} \mathrm{PG} \square$ NSTKVPSA

[^1]UniRef90 UPIO0042C984B UniRef90＿UPIO004571794 UniRef90＿UPIO003835511 UniRef90＿L7MGV3
UniRef90＿S7Q1Q6
UniRef90－ЈохННО
UniRef90－UPI00042ACBF2
UniRef90－UPI000252BB98 UniRef90－A0A023FOZ5 UniRef90－B4N088 UniRef90－W5MVK3 UniRef90－11G420 UniRef90－G6CYB3
UniRefoo E9G740
UniRef90－H2W6S4
UniRef90－LGKNT2
UniRef90 L9KNT2
UniRef90－UPI0003C27622
UniRef90 H3D634 UniRef90＿UPI0003F11F37 UniRef90－B4N087 UniRef90－UPI00046BF35B UniRet90－R7U6Q4 UniRef90－D6W116 UniRef90＿UPI0003AF8968 UniRef90＿D6WWY7 UniRef90－UPI00038BB23C UniRef90－A0A058ZSU4 UniRef90－M4ANV9 UniRet90＿10YW14 UniRef90－G3U4S0 UniRef90－K1QL96 UniRef90－E7F2X1 UniRef90－A0A023F2HO UniRef90－UPIO00258E617 UniRef90－P34098 UniRef90＿－ 228689 UniRef90－E2ABS8
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UniRef90 H9IWR3 UniRef90－UP100042BCDA8 UniRet90＿H2Z3Z1 UniRef90 B4FGT7
UniRef90 HoVAJ5 UniRef90－UPIO003ADDCB1 UniRef90－UP10002B4869A UniRef90＿V5GPY0 UniRef90－UP10002C4659D UniRef90－T1GTD2 UniRef90－UPIOOO45E39D5 UniRef90－UPIO0034F996F UniRef90－E1FGS6 UniRef90－UPIOOO20E3485 UniRef90－H2LRV8 UniRef90－H2PCVO UniRef90－W5KUJ4 UniRef90 UPIO0032AFE5F UniRef90－F7G214

HL AKYD 130 YNGNTANEGGFNMNNTKNAHEATTLIENSF 160 K QHYSKKQKAYRGKVVAFDRKMMNTSKKTGHRLLPVMNEC AF $\square G R S V E Y K R$ QPRHDIKKGTGPL TRDTTGRCDNLGATEMVLEGRF RADRPEPRFQKSLSWDKSSSRVK AMDQSSFT TASTGKFSGKGRNQSSDFDTAPLGNFTFDNGL HTRELVVPTASTVKFSDK RGNQTSREGRS TTFPASELLEEDFKETNSGKNTDGFAETVNGMLTVVNFGLV AFDDGESKVPGRFKETNSMKNDTFADDSSRETVVKTSLC ESTQKSSVI NKYYSHVRIYNADYWSVDDPRMFAVEOPNRED QANETAKTLVYSTFDNTTLNGPFKSQRDEQLVDDQVENRK AAVKTNSANI Q\｜DSAFKSSTSSGDFTLENDMIIRAEFDGEN TLPSSVRVYLHGRQLPVSRHEFPVRVIDSDSSDFALRNRY TLPSSVRVYLHGRQLPVSRHEFPVRVIDSDSSDFALRNRY RKSECGHTY RAKGVLFERRRVGGSLKTGRRLLPVLNEC
 SHLSFIDTLGNHPPKSNKHHTRFQVRPATEKELSLENDA ATGETAPFVASTQHFGHRDRRRGGQVGBRSELTFGNSN VEGEDGRPLEMGEYY DTREHAAPMASTLKYSLKLRNQTS QGGRFLVPVTNDC SKSTVLSTLSNTQNDTIEVGP GKFKCKRTYEAQGVAFERRHVRDWRKTGRRLLPVMNGC GSYHPAARTL VSSWANSTKGDSGRRET HKQNPQTGSSWLNPQKSQSSGLVGENEH TKSVYPAK TSDFNSQQLNDAPELIFEKENHQSNISLENEY TGSACGATHVAKVVKFNKTNV RQWKKTGRKLLDVVNEC DFFISEAVELSQVSDDLF DGNEFYNVS DND DGIVVDWKK EPNS DPA $\square 1$ QDEIIVSGGGK $\square N E K V S Y N D P$ IILENDY PEVQPENFISSEL YNISTNNDGNVVVNFNK SVNKESQEKDIKPEPTEFINNELYNISVNKDG TA I KMVEYARHRSVQTENKKEDEEVKTTI MRNE FCQKAVLATLTMSENGDACPEPYQCTTFPNSKDTQUSTRT GGECDWTYEAERVTFERRNDRDGRKT GRRLLPVMNGC
 EGSAPEPAWVKSFKRGNVSQEYKGQV

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hatprastr SK円paVsVkLFLSDTWGDSNGHLFNFENSGHGDVSLTNDN SKITPAVSVKLFLSDTWGDSNGHLFNFENSGHGDVSTLTNDN SYKPFKEVKSDDAYFGTETNGFTDDTETGKLVS：T：RGNN PVATVASTLQFGRRPR ERGRSRGRRLVPVENDC KETVHSADKDFNHYGEVQAPSGFDPEVSPSSSEFT G QNS R A ATMAS
NDRLVTGRKTTF
LSNQTTTKVVE AF $\square_{A R S} \nabla K Y G R$

F LHHSKTQA KVIKDSDHQSGHLIDPVLNNC FRAQYT FDHHSKTQAVPGPADPEGAAAVGSGPPAA HDSS四GKLEEAAHRSAPKPAGPTDAKLLQASNGSLLRSM Y $\square R L Q G S V K A$ ALIDTFHMSFTDDKLTGKLSTVSNDE A SDTNSSYESSTNFLYNFPDDPKSPPAAMELEMEG SEVPLAKDSLGGSADGQNIELNFATSRVSGDPELVSPQLK
 YQSSTVIVVITNKTSQSYDTHFLL
DRYVATMVSPRN SQSYD ARYMASMVSPRN GRRQRHTSRGNRRLVEVGPGS AATMASTVWF SY母SVTTTHNDNQPTDNEKFKVSASNAKELYVKNDY HEIYPA HNUNQPTUNEKFKVSASNAKEDYVKNDY G】QEPAAALASTVQFGRRPRRRSSHRGR

RTSNVVETTDKVENPTAKKFVVVNDC
GSQEPAATVASTMRFG RRRRRHTNRGGRHLFPVVNDC
ENEYAKK SAKGHVEAGQEVATSUSNEY
VEYA RHRSVQK
GTQEPAATVASTLQFGRRDRRTSH TYEAKAVVFER
GTQEPAATVATTLQFGRRDRRRTSHV
GRyLVPVAND KGSSCGITHAARVVKFERRDV SEWKKRGRKLLPVLNDC TTRLLATRRFGRRRRGRDSRGRLVPVGNECYTVLLDADT

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UniRef90-UPIOOO3835511 UniRef90-L7MGV3 UniRef90-S7Q1Q6 UniRef90-Јохнно UniRef90-UPI00042ACBF2 UniRef90-UPI000252BB98 UniRef90-A0A023F0Z5 UniRef90-B4N088 UniRef90-W5MVK3 UniRef90-11G420 UniRef90-G6CYB3
UniRefoo E9G740 UniRef90-H2W6S4 UniRef90-L9KNT2
UniRef90 L9KNT2 UniRef90-UPI0003C27622 UniRef90-H3D634 UniRef90-UPIO003F11F37 UniRef90-B4N087 UniRef90_UPI00046BF35B UniRet90-R7U6Q4 UniRef90-D6W116 UniRef90_UPI0003AF8968 UniRef90 D6WWY7 UniRef90-UPIooo38BB23C UniRef90-A0A058ZSU4 UniRef90-M4ANV9 UniRef90-10YWI4 UniRef90-G3U4S0 UniRef90-K10L96 UniRef90-E7F2X1 UniRef90-A0A023F2HO UniRef90_UP1000258E617 UniRef90-P34098 UniRef90_E2B6B9 UniRef90-E2ABS8
UniRef90 A8PRF6 UniRef90_D8TD14 UniRef90 G3Q6J2 UniRef90-UP100046BE4C2 UniRef90-UPI0003C01D01 UniRef90 COHAA8 UniRef90-UP10003EAC36E UniRef90-Q9VKV2 UniRef90-G6DPI3 UniRef90-T1HKR4 UniRef90-UPIO003C8738C UniRet90_UPIo003BBDE49 UniRet90_T1L4M9 UniRefolo-jgk9 UniRef90 G3VAF4 UniRef90-UPI000161C58E UniRef90-HOYLU3
UniRef90 A5B9Y9 UniRef90_UPIO003596BD9 UniRef90-UPIO0026579ED UniRef90-D6WWY8

## UniRef90-D6WWY8

 UniRef90_UPIO0027423A7 UniRef90-V5HOD6 UniRef90-UP100038EDAE7 UniRet90_A8WGI3 UniRef90-A0A044SQ47 UniRef90-K7FPL6 UniRef90-Q4TB39 UniRet90-E1ZKM9 UniRef90-V3YVL3UniRef90
T1KNF0 UniRef90-T1K631 UniRef90-E4YOC3 UniRef90-H91WR3 UniRef90-UPI00042BCDA8 UniRe990_H2Z3Z1 UniRef90 B4FGT7
UniRef90 HoVAJ5 UniRef90-UPI0003ADDCB1 UniRef90-UP10002B4869A UniRef90_V5GPY0 UniRef90-UPIO002C4659D UniRet90-T1GTD2 UniRef90-UPIO0045E39D5 UniRef90-UPIO0034F996F UniRef90-E1FGS6 UniRef90-UPIOOO20E3485 UniRef90-H2LRV8 UniRef90-H2PCVO UniRef90-W5KUJ4 UniRef90-UP100032AFE5F UniRef90_F7G214
 YLLKLDQDTNLLYSTTDRTSQKDVKLTQKFLEYRANGQGP ASATDDCTTGLLRSUSYNGTHDPPVNQSFYWYAAFPGNN ISAVFDPKTGHLASVSLKQG KSIPVKTSFVWYGARMKSN YTLLFDQDTNMLHSIQERQSNHTVRMTQEFLIEYRANGQGP EKNMTVTQSFHYYEGMEGNNKEFKNRS
 YKVEFDGESGHIKSITNTVSGDTSNVNQQFFWYGDKISPV NNTRLVVTKDGLLKALVGPNGRTTPLHMDFVQYDTQKTPD TKLLFDGQTGFLKSDRSKATDRVTPCAMQFAAYPSSMF GMI KKMTSLVDGKPIDLNPHFVHYGSRKSKGHFANGNEDN MQVWFSGLTGLLKSI RRVDEEQEQQADMEFLVYGTRASKD
 YKLMLDQDTNMLHSIT THRQDKRRVRMTQDFWEYHANGDGP TRAIFDTHSGLLKEVENRDQKLVLPVYQAFFWYNANSDTR YTVMFDQNTNLMHSITDRKTNQTVQVTQEFLEYHVNGDGP LRATFSASTGFLLQSVTTKHDGKTTRTAVDFRMYKSRN TAFERDEDSGLIKSHMMNGVTMDVSQDLYYYKSGSKNHGP
 YKMLF SSTSGQLVRUQNSKTGVDVLVVQEFYEYYANGQGP QATVSVSSGAVTLTVTVCEQMMYYNSSDSYWRHDADGKPE TRAVFDTHTGLLKELENRDKKLVLPRRQAFFWYNASKG LRAEFDPKTGLLKCLKDKRTGNTTRLDQTFMQY GTTLSLTPEGLIKTLHKKHPDREDPFHQNFLYYRGAVGNN QNNMSLTQSFHYYEGMEGNNEVNKNRS
$\square N D Q F S S Q D G S \square L S D T N K T S G V T S S D T Q E Y \square W Y G N D D S A Q$ QKNMNFVQSFHYYEGAEGDNKVFENRS
NLMVHWNKEKDMNLVQSFHFYEGAEGNNEVFENRS
Y IELTFDGSGQLDTSKNRKTEKTDAFKQEFLVYKGMGFSN QTLGF SHSGFMKWIKDTQTQEKIRVEEEMLYYSTQ YELMFDQDTNLLHSITHLQEKRRVRMTQDFWQYDANGDGP YTVFLDPDTNLMHSIWERWNNRTVSVTQEFLDEYGDSNDGP Y I FMDLDTNLMHSVWERQSNRKVYVTQQFMEYHANSQGP RHEKRTVRMSQDFWEYQVNGNGP
RGQAVDTQLNQGFYWYNAEDSPQ VKRTFDTTTGGLKTVKMNGFTENDQQTFGDYKNNGESKNR LKLLDRNSGLLRQLYRKDDRKRNVVEDQFGAY QSAQR

 LTVLFDHSTGFPKLIKSSSGSWTHPTYDSLGHYKSDAF
 VDDP TQQSYLWYGSSDGGQ LQACFLGRTGLLQSRRQAGEQQVHRVSSEFLVYGTRTSKD
 YTVLLDEDTNGMHSVQERQSNRNFFYYGGKGSNGGSENR YTVLLDEDTNGMHSVQERQSNRRVKVTQEFLEYHVNGQGP YTVLLDPNTNLLHSVQERQSNRTVRMAQEFGEYHANGRGP
 GPVSVVRNQSQPGKERRLSVPAQPGGGPALLFTRTSSGSG
 FNHAKVDQEYLYYYGDVGQPRNPSVHTLY VKLLFNGADGMLRKVILHQGFKTDDLRDKFMFYGTNKKVE AVLNGKNGLLKEVSIDGRVHKVELQFAKYGCKGRGNSQ D EPLWEDANGTGAAFKGTMKKRETDDFKDSFAYYPGCLGNN YSVNFNRNSGLMDSVVNDESGIKMPVHQDMDWMGNNASKQ LKKLSFSSASGQLERIFNSVSGVDLPIGQSFFWYSSNQDAQ YTVLLDPDTNLLHSVQERQSNRTVRMSQEFLEYHANGRGP LKAVFDADTGLLTDLSTDGIVLKKVQDITFMSYGTVANMD VGFQIDNETNLLKSVTMNGGSVDITQNFYYYKSETGQFDE VYLEFDD TGRLSLVRTNGVEVPVKQDLLYYDGAAGNNR YTV LLDQDTHLMHSIRDSWSNRTVHVTQEFLEYGANGQGP YIEJTF YIVLLDQDTNLMHSIWERQSNRTVHVTQEFLEYHVNGQGP
 YKVLFDQETNLLHSITNRDEGQKVII HQDFWEYDANGDGP



UniRef90_UPIOOO42C984B UniRef90-UPI0004571794 UniRef90-UPI0003835511 UniRef90-L7MGV3 UniRef90_S7Q1Q6 UniRef90-JOXHHO UniRef90_UPI00042ACBF2 UniRef90_UPI000252BB98 UniRef90-A0A023FOZ5 UniRef90-B4N088 UniRef90-W5MVK3 UniRef90-I1G420 UniRef90_G6CYB3 UniRef90-E9G740 UniRef90-L9KNT2 UniRef90_L9KNT2 UniRef90_UPI0003C27622 UniRef90-H3D634 UniRef90_UPI0003F11F37 UniRef90-B4N087 UniRef90_UPI00046BF35B UniRef90_R7U6Q4 UniRef90-D6WI16 UniRef90_UPI0003AF8968 UniRef90-D6WWY7 UniRef90_UPI00038BB23C UniRef90_A0A058ZSU4 UniRef90-M4ANV9 UniRef90-10YWI4 UniRef90-G3U4S0 UniRef90-K1QL96
UniRef90 E7F2X1 UniRef90_A0A023F2H0 UniRef90_UPI000258E617 UniRef90-P34098 UniRef90_E2B6B9 UniRef90-E2ABS8
UniRef90-A8PRF6 UniRef90_D8TD14 UniRef90-G3Q6J2 UniRef90-UPIO0046BE4C2 UniRef90_UPI0003C01D01 UniRef90-C0HAA8 UniRef90-UPI0003EAC36E UniRef90_Q9VKV2 UniRef90-G6DPI3 UniRef90-T1HKR4
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UniRef90 A5B9Y9 UniRef90_UPI0003596BD9 UniRef90-UPIO0026579ED UniRef90-D6WWY8 UniRef90-D6WWY8 UniRef90_UPIO0027423A7 UniRef90-V5H0D6 UniRef90-UPI00038EDAE7 UniRef90_A8WGI3 UniRef90-A0A044SQ47 UniRef90_K7FPL6 UniRef90-Q4TB39 UniRef90-E1ZKM9 UniRef90-V3YVL3
UniRef90-T1KNF0 UniRef90-T1K631 UniRef90-E4YOC3 UniRef90-H9IWR3 UniRef90-UPI00042BCDA8 UniRef90_H2Z3Z1 UniRef90_B4FGT7
UniRef90 HOVAJ5 UniRef90-UPI0003ADDCB1 UniRef90-UPIO002B4869A UniRef90-V5GPY0 UniRef90_UPIO002C4659D UniRef90-T1GTD2 UniRef90-UPI00045E39D5 UniRef90_UPI00034F996F UniRef90-E1FGS6 UniRef90_UPIO0020E3485 UniRef90-H2LRV8 UniRef90-H2PCVV0 UniRef90-W5KUJ4 UniRef90_UPIO0032AFE5F UniRef90_F7G214

VT 250
 NISAAANEYQCNRI EQEYRVGPEMNREAIIRTNTDLKTDR
 WCSQV RLYPGQRHL ELLE WTVGGPI WGKEVVISRFDTALLETKG FTHDIKMPLLSPSIEDENTFDNVQNVELAMRDEAGIDNGD NVTDWDHTYLCQRI EQQYRVGPLENREAILRTSSDLDTQQ WVS QVRVYNGDE YVEFDWLVGPIPDKEII TRYYSNLNSSG WI SQVRLKKNDCSVEFTWLVGPIDIKEVITRYKTGIKSNN WI SQVRGYEGVNHVEFEWLVGPISTDEVVTYFQSEIVSNG


 THQTYTLYQGLP WLDNEVDVRSKDNDELALRRFSTSVNS GD
 NITALDHKYLCHRIEQEHRVGSLENREAILRTSTNLNTKQ ITTRVPECYGCHRLEQTYSLGPLRNTEVVLRSSTSLQNNR



 ITTDQDYIY A LLCQRIEQQYHVGPLENREALDRTSSDLNSQK

 LRHSVKEQAHGDHVQNFDDMKNLQDTEIIMRDNSDIQNT VTRVPVGFKGCFRLEQSYKVGPEVNRETVFRTRTSLQNNR WLS QVRLYNGSDHVEFQWSVGPIPGKEVITRYTVSLHNNG
 WVSQVIRVYEEEHVEFDWLVGPII GKEI I TKYTSNLKTDG

 EEGDKDYTYSCHRLEQTCSGGPLHNTEVVLRTSSGLRTNR ThHTYADYSRCSRI EQEDRVGPEVNREALLRTSTDLHSDR EVNDSEPTFLCHHIEQEYRVGPLENREAILRTSTDLNTGQ VPQSFPRGRLCYRLEQSYSLGPVVNTEAVLRTKTSLKNNR


 TLHTYADYSRCHHLEQELRVGPQVNREAVLRTSTDLQSDR


 $W I Y Q T R L Y K D K D H A E V E F T U G P I P G K E$
$V Q T V V R L Y N$
TVMMQRARRVY
ELTQRARVVYEDAGVVELETSFDRREYFEFFMTDKSDVSSGCQ ELTMQI RVYEDAYVEFDWLVGGHLQNKEVITRFTVDNFTNG
 LA HVSQGPGGCHRI EQEYRVGPDENREAVLRTSSDLDSRQ WI SQVIVRGYGKNFVEFEWTIGPMPKKEIITRYTADI HSAG

WATVTR
WTS QVIRYRGQPQV Y I S Q T RL H Q H S D S i E F E WTVG P I D G R E IV V S H F A T DLL N T K S L R H Q $\quad$ T L V R G K P Y I E N E F H M G S $\operatorname{S}$ F D N K E

 $W D N$ Q T R L Y K N K E H A E V E Y T V R N
V S Q GPGA E LLLCHRDV QE Y R V G P L L E N R E A V L R T S S D L D S Q Q K V G D R N H T Y L C R R I E Q E Y R V G P L E N R E A I L R T S T S L L M N Q Q VI HKVR
 SRLAHVPPRGCGRIEQEYRVGPLENREAVLRTSTDLDSQQ WI S QVRIYYEDK S YVEFEWLVGPI P IVEVI SRF S AV H S RLA H V L C G R I E QE Y Q V G P L E NREAVLRTTSTNLDDS QR WV S Q V R L Y R G E E F V E L E WLI G P V P G K E VV MLLF S T N I S N S G WV S QVVRLLYR GK N L V E F E WTI G PI I P K K E EI I T R Y T T DII N S A G VDTWFDEEMNCSGVCMLAAFACAVSRWLGAKFRAGRETHR GENDS DYAYSCHRLQQQTYSVVGPLQNTEVVLRTSTSSLKNNQ LT HVP Q GHDGCHRI E Q E Y Q A G P L E N R E A V L R T S T N L N S Q Q EASDKNYTYGCRRLDQSYALGPVVNREAVLRTTTSSLSNKK


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UniRef90－E9G740 UniRef90－H2W6S4 UniRef90＿L9KNT2
UniRef90 L9KNT2 UniRef90＿UPIO003C27622 UniRef90－H3D634 UniRef90＿UPI0003F11F37 UniRef90＿B4N087 UniRef90＿UPI00046BF35B UniRef90＿R7U6Q4 UniRef90＿D6WI16 UniRef90＿UPI0003AF8968 UniRef90 D6WWY7 UniRef90＿UPI00038BB23C UniRef90－A0A058ZSU4 UniRef90－M4ANV9 UniRef90－10YWI4 UniRef90－G3U4S0 UniRef90－K1QL96 UniRef90－E7F2X1 UniRef90－A0A023F2HO UniRef90＿UPIO00258E617 UniRef90－P34098 UniRef90＿E2B6B9 UniRef90－E2ABS8 UniRef90－A8PRF6 UniRef90－D8TD14 UniRef90＿G3Q6J2 UniRef90＿UPI00046BE4C2 UniRef90＿UPI0003C01D01 UniRef90 C0HAA8 UniRef90＿UPIO003EAC36E UniRef90＿Q9VKV2 UniRef90－G6DPI3 UniRef90－T1HKR4
UniRef90－H2ULZ0 UniRef90＿UPI0003C8738C UniRef90－UPI0003BBDE49 UniRef90－T1L4M9 UniRef90－J9K9U5 UniRef90－G3VAF4 UniRef90＿UPIO00161C58E UniRef90－HOYLU3
UniRef90－A5B9Y9 UniRef90＿UPI0003596BD9 UniRef90＿UPIO0026579ED UniRef90－D6WWY8 UniRef90－D6WWY8 UniRef90＿UPIO0027423A7 UniRef90＿V5H0D6 UniRef90－UPI00038EDAE7 UniRef90－A8WGI3 UniRef90＿A0A044SQ47 UniRef90－K7FPL6 UniRef90－Q4TB39 UniRef90－E1ZKM9 UniRef90－V3YVL3
UniRef90 UniRef90－T1KNF0
UniRef90－T1K631 UniRef90－E4YOC3 UniRef90－H9IWR3 UniRef90－UPI00042BCDA8 UniRef90＿H2Z3Z1 UniRef90＿B4FGT7
UniRef90 HOVAJ5 UniRef90－UPI0003ADDCB1 UniRef90＿UPI0002B4869A UniRef90－V5GPY0 UniRef90＿UPI0002C4659D UniRef90－T1GTD2 UniRef90－UPIO0045E39D5 UniRef90＿UPI00034F996F UniRef90－E1FGS6 UniRef90＿UPIO0020E3485 UniRef90－H2LRV8 UniRef90－H2PCVV0 UniRef90－W5KUJ4 UniRef90＿UPIO0032AFE5F UniRef90＿F7G214

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RFYTDTNGY ${ }^{290}$
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MAY｜IQDAER TIYTDNNGYQIMKRRTYSQNTLARNYYPLVRTTYIEDNGT
 LFFTDSNGREILERRRDYRPPVAGNYYPVNTRIYITDGNM EFFTDLNGFQMVKRRRFKQLPLQAHFFPMSSSAFMEDETG VLYSDNNGYQMQQRPYFKSNTVARNYYPMVQSAF EFYTDSNGREMLKRKRDYRPTVSGNYYPVTSK $\square S L K D E E R$
 TIFTDNNGFQMLKRKMFVNNTVARNYYPMVRTAY I EDNSM TF

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




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$\stackrel{\rightharpoonup}{\mid}$
， RFY D S NGREMLKRK LINFRQPVAGNYYPVTAADYI EA GA
 TLIT D N NGYQMMK RTYYANNTVVARNYYPMVRVAYMEDESS

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




 TFYTDSNNGYQFFRRKFVVAVGVARNYYPMVQSAY
 VF Y T DSS GRD FLLKR

 V LYT DNNGYQMQRRRAYTNNSIAARNYYPMVQSAF










 $V 1 H T D D N G Y Q M Q L R P P H T D N S I A R S Y Y P M V Q A A F I I E D H R S$ I FYTDSNGRDMLKRTRFEREDFEANYYPVTANUALEDSR』 V I H T D D N G Y Q M Q R R P Y HVN N S I A R N Y Y P MT Q A AF L E D S R S

 PWGS QSTCSSMMR A DNYYPMVQSAFMEDGKS S LY T D D N GF QMMK R T Y F Q N N T L A R N Y F P M V R TA Y DK D D R S VI Y S D N N GY Q M QR R P Y Y V N N S I A R N Y Y P MV Q S A F ME D G K S TL Y T D N N GY QMLLK REHYINNTVSRNYYPMVRQAFDEDEDS $V L Y S D N N G Y Q Q L Q R R P P R S H V P L A R N Y Y P M V Q S A F I Q D T R S$
$L C D S M S V C P Y Q Q S V R R D D E E R E Q R V$

UniRef90 UPIo0042C984B UniRef90_UPI0004571794 UniRef90_UPIO003835511 UniRef90_L7MGV3 UniRef90_S7Q1Q6 UniRef90_J0XHH0 UniRef90_UPIO0042ACBF2 UniRef90_UPI000252BB98 UniRef90_A0A023F0Z5 UniRef90_B4N088 UniRef90_W5MVK3 UniRef90 I1G420 UniRef90_G6CYB3 UniRef90-E9G740 UniRef90_H2W6S4 UniRef90_L9KNT2
UniRef90 L9KNT2 UniRef90_UPIO003C27622 UniRef90 H3D634 UniRef90_UPI0003F11F37 UniRef90_B4N087 UniRef90_UPI00046BF35B UniRef90_R7U6Q4 UniRef90_D6WI16 UniRef90_UPI0003AF8968 UniRef90_D6WWY7 UniRef90_UPI00038BB23C UniRef90_A0A058ZSU4 UniRef90_M4ANV9 UniRef90_IOYWI4 UniRef90_G3U4S0 UniRef90_K1QL96 UniRef90_A0A023F2H0 UniRef90_UPIO00258E617 UniRef90_P34098 UniRef90_E2B6B9 UniRef90_E2ABS8 UniRef90_A8PRF6 UniRef90_D8TD14 UniRef90 G3Q6J2 UniRef90_UPI00046BE4C2 UniRef90_UPI0003C01D01 UniRef90 C0HAA8 UniRef90_UPI0003EAC36E UniRef90-Q9VKV2 UniRef90_G6DPI3 UniRef90_T1HKR4
UniRef90_H2ULZ0 UniRef90_UPIO003C8738C UniRef90_UPI0003BBDE49 UniRef90-T1L4M9 UniRef90_J9K9U5 UniRef90_G3VAF4 UniRef90_UPI000161C58E UniRef90_H0YLU3 UniRef90_A5B9Y9 UniRef90_UPI0003596BD9 UniRef90_UPIO0026579ED UniRef90_D6WWY8 UniRef90_D6WWY8 UniRef90_UPI00027423A7 UniRef90_V5H0D6 UniRef90_UPI00038EDAE7 UniRef90_A8WGl3 UniRef90-A0A044SQ47 UniRef90_K7FPL6 UniRef90_Q4TB39 UniRef90_E1ZKM9 UniRef90_V3YVL3
UniRef90-T1KNF0 UniRef90_T1K631 UniRef90_E4Y0C3 UniRef90-H9IWR3 UniRef90_UPI00042BCDA8 UniRef90_H2Z3Z1 UniRef90_B4FGT7
UniRef90 H0VAJ5 UniRef90_UPI0003ADDCB1 UniRef90_UPI0002B4869A UniRef90_V5GPY0 UniRef90_UPI0002C4659D UniRef90_T1GTD2 UniRef90-UPIO0045E39D5 UniRef90_UPIO0034F996F UniRef90_E1FGS6 UniRef90_UPIO0020E3485 UniRef90-H2LRV8 UniRef90-H2PCV0 UniRef90_W5KUJ4 UniRef90-UPIO0032AFE5F UniRef90_F7G2I4

R|LT|LLS RLVMLS R RAH



 RLSLLTDRAQGGTSLKDGEIEMMVHRRLLKDDAFGVGEAL
 RLVFLSERSHGVSSQDHGQVEVMLHRRWWNNQKWNLGYNL RLTVVTSTPQGTAALQPGQLEUMQDRRLSRDDNRGVNQGV


RLTLLAERAHGVSSQENGQVEVMLHRRLWNNFEWDLNYNL RLVLVSDRAHGVSSQANGQLEVMLHRRLWNNLPWNLGYNL QLTVL TDRSQGGSSMKDGSLELMVHRMLCSDDGKGVNEPL RMSLLNDRSEAGTSMEDGRLELMLHRRHVFHDGSGADEAI RLILLAERSHGVSSQGNGQVEVMLHRRLWNNDEWDLNYNL
 RLVLLSEQAHGVSSQGNGQVEVMLHRRLWNNDKWALDNTL EV AVL N D R A Q GGT S L K D GVI E L MV HR K L VR D DG Y GVVEVL RLVLLAERAHGVSSQESGQVEVMLHRRLWNNDAWNLNYNL
 QL AVVTDRAQGGSSLHPGQVELMVHRRMFHDDGRGVSENL

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QLN VV V DRSRGCA $Q L$ S V L N D R A Q G G S
$\begin{array}{lllll}Q L & T & V & T & D \\ R & R & S & H G G T \\ R & H & S & R & A \\ L & G A A\end{array}$
RLALVS DRAHGVS SLG
RLVLLSEQAHGVSSQGDGEV EVLLHRRGWNNLELLTFNVNS
 RLVLLSERAHGVSSQSEGELEVMLHRRLWNNQEWTLGYNL

 RLVLLSERAH GVVSSQRS GQVVVMLHRRLWNNFDWALDWDNL


 EFSVLVDRATGGGS T L GVMT
RLTLLANHPHGVTSSSPGHLEVMLERKLRHDDARGLGEGV S L A V L N D R A Q G G S S L S S D G S I E L M V M R S C S R D D S F G V E E V L SLAVLNDRAQGGSSLVDGSIVLMVHRSCSRDDSFGVVEVL
 $R$ R L V L L A A E R A H G V V S S P G G G Q V

 $R L T L L S A Q S Q G V A S L K P G E L E V M L D R R L Q Q D D N R G L G Q G V$ QLAVLTDRAQGGASLRSGQMEVMVHRRTLTDDARGVGEPL


 S L E I S T S P A V G Q R D P S P C P V D L Q V H R R L L K D D G R G V G E A L QLTVLTDRSQGGSSLSSGALELMVHRRLLGEDSKGVAEPM


 $R L V L L S E R A H G V S S Q G S G Q V E V M L H R R L W N N L Q W D L G Y N L$ RMAVLNDRAQGGSSLSDGTLELMVHRRLLRDDAFGVGEAL $R$ L L L L S E R A H GVVS S Q S D G Q V EVVMLHRRRLWNN F E WDLL G Y N L
 RLVLLSERAHGVSSQGNGQVEVMLHRRLWNNFDWDLGMNL
 RLLSLLSERAH GVVA SLAE GEVIVVMLHRRLWNNQEWNRGYN L


UniRef90_UPIo0042C984B UniRef90-UPIOOO4571794
UniRef90 UPIOOO3835511 UniRef90-L7MGV3
UniRef90-S7Q1Q6
UniRef90-ЈохННО
UniRef90-UPI00042ACBF2
UniRef90-UP1000252BB98
UniRef90-A0A023FOZ5
UniRef90-B4N088
UniRef90-W5MVK3
UniRef90-11G420
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UniRef90-H3D634
UniRef90-UP10003F11F37
UniRef90-B4N087
UniRef90-UPI00046BF35B
UniRef90-R7U6Q4
UniRef90-D6W116
UniRef90_UPI0003AF8968
UniRef90_D6WWY7
UniRef90-UPIO0038BB23C
UniRef90-A0A058ZSU4
UniRef90_M4ANV9
UniRet90_10YW14
UniRef90-G3U4SO
UniRef90-K1QL96
UniRef90-E7F2X1
UniRef90-A0A023F2HO
UniRef90-UPIO00258E617
UniRef90-P34098
UniRet90_-E2B6B9
UniRef90-E2ABS8
UniRef90 A8PRF6
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UniRet90-V3YVL3
UniRef90-TTKNFO
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HDNKITANTFR\|LLEKRSVVNTDGSWHSR
NDTSVVRPLFWLMLGSK
NDSSVVHPVMWLLLGTK
DERYYVRGTHRVTLGAGVNULYWTGG LETSWVRGRHLVLLDKARTAAVGHRपSVHEAAKIHRPGA TDNRKTTSSFRLLEEVPSRKISVNTKARTAYHSMHAYQE NDTSVVHSELWLLLGPKP


















































 NEKGIVKGGKGLIYRGKYSVK乌 D GROREKHRD KDNSTTRNTFKI ILESTSPSSNPDSI
NETVVVRGKHRILLSTSPSSNPDSI
DEDRWGRGHLVLLDKVRTAATGHRLDPVITAKVFQM
NETGTTRGKHWLLLDTVTSSAKQHRL QAE
GEVVCLDGSCKGLTVRGTYYVKVDKI GHGAHWRRTYG NDTSIVHPVLWLLLGS QAVTTALHPQSALALQHR NDTSTVYPVLWLLLG MDNRVTLSAFRAILENFENSPPPKTSLIAYPSMLSMSGS NDTSAVRPVLWLLLGPA QAVTAALRPRGGLABQQR NETVIARGKHYLMIGANNKQTKINE NDTVVRPMDWULGTPP RVAADRPGQQ NDTSVVRPMLWLLLGTPP VVAALRPRGGLALQHR NEESYVRGKHRILFGNRQEDE ELSFSERVSQAARRWRYEP NDTSVVHPV NDSSVVRPTLWMLLGSANAT NDTSIVHPV
NDSSVVRPSIWMMLGS
NDTSVVHPVLWLLLGPRS
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GS WS LT SAAMVATALS VTTGLRPQSSLALQHR

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UniRef90 L9KNT2 UniRef90_L9KNT2
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UniRef90-K1QL96
UniRef90-E7F2X1 UniRef90-A0A023F2HO UniRef90_UPI000258E617 UniRef90-P34098 UniRef90_E2B6B9 UniRef90_E2ABS8 UniRef90-A8PRF6 UniRef90-D8TD14 UniRef90-G3Q6J2 UniRef90_UPI00046BE4C2 UniRef90 UPI0003C01D01 UniRef90-C0HAA8 UniRef90-UPIO003EAC36E UniRef90_Q9VKV2 UniRef90-G6DPI3 UniRef90-T1HKR4
UniRef90-H2ULZO UniRef90_UPIOOO3C8738C UniRef90-UPIO003BBDE49 UniRef90_T1L4M9 UniRef90-J9K9U5 UniRef90-G3VAF4 UniRef90_UPI000161C58E UniRef90-HOYLU3 UniRef90-A5B9Y9 UniRef90_UPI0003596BD9 UniRef90_UPIO0026579ED UniRef90-D6WWY8 UniRef90-D6WWY8 UniRef90_UPI00027423A7 UniRef90_V5H0D6 UniRef90_UPI00038EDAE7 UniRef90_A8WGl3 UniRef90_A0A044SQ47 UniRef90_K7FPL6 UniRef90-Q4TB39 UniRef90_E1ZKM9 UniRef90-V3YVL3 UniRef90-TTKNF0 UniRef90-T1K631 UniRef90-E4YOC3
UniRef90 H9IWR3 UniRef90_UPI00042BCDA8 UniRef90_H2Z3Z1 UniRef90_B4FGT7
UniRef90 HOVAJ5 UniRef90_UPI0003ADDCB1 UniRef90-UPIO002B4869A UniRef90-V5GPY0 UniRef90_UPI0002C4659D UniRef90-T1GTD2 UniRef90-UPIO0045E39D5 UniRef90_UPI00034F996F UniRef90-E1FGS6 UniRef90_UPIO0020E3485 UniRef90-H2LRV8 UniRef90-H2PCV0 UniRef90-W5KUJ4 UniRef90-UPIO0032AFE5F

$A L E F R P V V L Y V S G K D V V I P \square R N P G G G T \square E N \square P S N D H L L T L$ LAALEHRPVVMFGASSGDKPQQNSVHGSHVTVPPNLHEQTL QA Y Y APTLHFSSKPYKYKYQTNCTALAKPLPPNVHLLTL KELLAPQLVLARGSGTP LSLLYPPVVLLSSLNE GYDDNYKDMNDLFSCDDHLITL

 VALEHRPVVMLIDTPAWTASEPEQTGLPVTLCDVNLHLLSLC



VALEHRPVVMFGNLMGEPKLHRQPSPVQSDLPPNDHLQTL
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TMLNYPPIVLQSTQADQRELTEQVSFRRQPTACDLHLLAD KKLLAPWILVADASDEQNLLHFQFEGLTRQLPNNVHILTF KKLLAPWILVADASDEQNLLHFQFEGLTRQLPNNVHILTF LIALQHPVVLFGELAGTAPKPPKSWKQEAVMLPPNLHLQNL LLSGELPADGAAARGPAPKPQAPQQQTAVTLPANLHLQIL ALEHRPLVDYSLHTGQEKRSYKTSDDPUTLPDNIHLQIL LALEHR QQLNDPPLLAFSADPHELGSRRTFSLSEGHLHSNVHLLTM
 EYMHSPFIASLLTGSVTKDS SFTGLATTLPHDAKLVNL HLPPVVFVSDASQWMRLENCKKFVKTPMPDGLHLLTL KEVLAPQVVLAPGGGAPPPRFPQFSGLRRELPPSVHLLTL
 LALQHAPVVLREKGSAQAVPGPQQQQAAVTLPPNSLHLQLIL HQLQNPDYDFVVAASVPINQNSVFSGLKIPLPCDLHLLNL

$\qquad$ $P$ HWKI F
$P V V L C G$ WDFFAPGEK GLRGKWQNVRNKYSQLRRGL EFYNSPGMTFAERKMAPWDYGRAFSALNRPLPLP NVLT ALQHRPVVLFGDLAGTAPKLPGPQQQEAVTLPPNLHLQNL VELQHRPVVMPIDDPRKPRQEKTVLGWNYSSNHSIHLNHI MALQHRPVVLFGDLAAQAPHLSQDSGWRRSLGLHCHLPSV YLQHRPVVLPDDKPQKPWSEHERWNGPSVQL


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$R$ Y S S N H T D H DQ S $\quad$ A V L L R L M H L Y E V G E D A I L S E P V N L L K V
 ENWNKDD
$R T \square A A P T \square P R N S Y A V V L H R F G \square D C R F T T E T C S A M L D M K R L$ S IP GWNYSRSNLRRVLLRLHHLYEAGEDPVLSQPVTVLGG E PWKKDS LLLERLEHI FEDGE TE NL S K P V N I Q D L ERRTNNT
EPFTEK E l L L R L
 RYSSN H R H WRDVLVLLR MHLYE E GEDPVLS QPVEVLVR
 RTLSET DLPSSNSALLLTLHNRAADCS DTDDGATDPEDRVFH RTNSRSTFAEKKAALVLHRVVPDCRSNSSCLRSGFDVIKL

HKGNHKEEAADFSRVLLRDRHLYEVGEDPMLSQPVNLKKG RRVQS GEDEPDYRRVLLRIMHIFEEGEDAELSKPVEVLRG


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E P WGDQ
A RWDQKT
ATTNSGE
Q NLDDD D T T



 EPWNDNE VLLRLENI LEK
 E PWK S G S
E MLDAPK
$R 1$ I I
 HS GK D FPP EP D Y D R V L L R I M H L Y E E G E D P E L S K P V P K G N R G E V Q A D L H R V L L R L H H L Y E V G E D P V L S Q P V T V L Q A
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LGTVVSVEERSLTGTKDTRRLTEGFTVTDQPKEDRTFFVY LLGSVMIMEERSLTGTWD ${ }^{\text {L }}$ FRNITSLTEMNLAATKTREET

 $\stackrel{F}{F} \mathrm{~T}$ I I S S K K T T FKH HQMQELTLGGNQNHRSLRNMFSVLLQPMEI KTLLLIT




LGTVVLVEERSLTGTWDTNALNRNDTVTTHPKEDRTFFLY VGEVRTLEERSLTGTWDISSLQTNFTVTI RPKEI KTFFVQ



## $\stackrel{L}{F} N N L T S A S K A S L S L M Y D Q Q E L D D G F S T S M S A M D L H A Y R D K$



$\square G E V R D L D E R S L T G T W N \square T S L Q Q G F T V T \square S P K E \square R T F F \square H$

$\square \quad V A L \square T E T S L T G T T N G K T V P G K R \quad \square Q V A P H E L A S F V L$
$\square G P M A A V E E R S L T G T W D V N T L R G G L T \square T V H P K E \square R T F F V Y$ TVNDK R L M H K S T

$\bar{L}$ QYRE

LS RUSAGQQPTLSLNHVLNSNLNVSSUNLDQMDFAVF
F N HDK SVKETYGAANQWLDDYDK
FF T IT Y L Q E T TLVANQLRASAS DPAT $\square T \square Q P M E \square R T F L A S$
FGTDKELAETNDSANQKKSEMKK LNVVEDGPMEDRTELLK





LGSVVAVEERSLTGTWDLSRPPGGP\|ITVHPKEDRTFF贝H





FDLDETRREHHD $\square$ P RPN V ID L L N $\square$ S Y C P P T
 E E T GSGKS LVVYNPLGG EFSMIAYNPQG GSGPAVSRACSLCAGPERGGHFAVVYNPLA
 N P D A LDD A K L VI C P L L N N E T V G C P F L S A V V


> D S GPAGRSAVVYNPDA
> $\begin{array}{lllllll}P & I & V & L & Y & N & S \\ F & A & S \\ F & A & V & V & Y & N & P \\ L & A\end{array}$
> $\begin{array}{lllllllllll}E & P & G & G & H & F & A & V & V & Y & N \\ \text { K } & P & L & A \\ K & E & S & F & V & L & T & L & Y & N & P \\ L & G\end{array}$

E E N D H F S VTVYNP LA
GS GSRPE GHLAVVNPLA $S G P E P G G H F V V V Y N P L A$

ETARSFVI TI Y N P L S



QL L NVS QCDVSETS GRFVVIYNS LA $S$ L AV Y N S V E F V L V T T N P L T



$\square N \square S V C P A T S V L T N H G T S V V \quad P V I L Y N Q L G$ DKLQPQAPTAASSGAGPAGHFASVYNPLA PEPGGHFAVVYNPLA F T A V V Y N P L A

 S S RACS LCA CPEP G GHFAVVVNPDAA QAPVDDSDSARRASLLWKGSKTGYYAVVYNPLA
 SES GTQVI FTNSYT $E T S S G$
$P E S$
$E G$

V V I Y N P L A
$\square N \square T$ Y C P P S E L N F S Q GK S L V $\quad$ V $\quad$ V V Y N S LG NPNGVEPKLVICPLLNETQEEFSVVIFNSHG
 RTLVIFNPTE
 D AFTVFAYNPQG

D NPSSER ITTLYNPLG
 $N \bigvee S \square C N S T T S D P F T F V V Y N P L A$ STSASEMFEVVVYNPLP

TVNAYNPSS
 ERYNVL GLLK S E 1 S S E GK T Y A V Y N S

$F L L L L E N P Q P T Q S F E V L P S K V P L T V P G V I G R K V V L Y N S H A$ T S S G Y F A S V V Y N P S S RVVLDFKKSSYD



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WTVTT 50
T T TVGFPGVLVDESGRPVPAQ Q


RKVDWMVRLPVSKHVFLVRDPNGTTVPSDVVTLPSSDSQ

 WTVTTVITTLTVEFPNVSIVTDESGBPVPAQVQP WTVTTLVTLTVGFSRVSVTDESGQPVAAQIQ QSRKSUVTLHVTTAYVAVFDQAGRRVRSQI SP TPRSEAI AI PIDDAKDVEVLDETWKAVDSAULPNRNYLQNP
 WTVT TI ITTLTVEFPNVSI TDESGHPVPAQFQ
RPVRSHARLPVHHAGYQVTDEPKRAVPVQLVPVDDGT WTVTT IVVTVTVGFPSVSVTDESGHPVPAQVQKMRS KRFNGTVRI PYSEKSATVKDSNKKVLESQVVPTFQVGQLK RVTSYYIHIPATGYYYEVEGPTGEVVESHLTSLIDYFTEV

WTRDEYVRFPIPDSTVSVSTSSGTVPSQTTLELDGTT

RPVSKYVRLPVNEEQLDI RNPSGGRVIAQIVPDHES YQVLKYI RLPVNGMHYSIKDPDDNTVKYQVVEV

R QVT H Y L R LP VNGQSYTVTAPNGKPVKTQMDKVTQQTAK


AERQLQVRVPVDSSALEVSAETGEVIASDVLPPTPLASSLL
RHVDKYVR $\square P V G G E S Y Q V L D P D G K V V D S Q L \square P \square S P Q$ RRRFETISLVVSTYMVRVM HGGKTI QAQI EPFVDPHSGS IQ WK SVVTVRTSSPSAVKTKGGGLVAYQI NPVLDENLKP RCFNGTI RIPYGNPYADVKGANNESLNYQI EETFQVNQLK WNITTFVVVAMSYSAVSVYDELGHPVSAQIQ WTVTTGVPLTVGFSRVNVTDESGRPVTAQVQ RAVSSKY $\operatorname{V} A \operatorname{R}$ R

QTRFEHVNTPTPVANVTVSDSNG IVRSQVTPNSNSSLG WTVVTVVTLTVGFPGVRVTDEAGHPVPSQIQ
 WKITTTI TLTVAFPNVSVTDELGHPVSTQ\|Q RSREHVLKLLVNMSKINVRKQVKQPQAVQLSILCDNSKTP R Y Y N F TV RI P Y K H E S AVVKNSKKEVIK SQVIF YCSKVGVA

 RYFNGTI RIPYSQKTAVLRDAHKNVLESQUVETFQDDQLK WTVTT IVTPTADFPEVNLTDETGNPVPAQVQQ
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WKREDVLRTPVMSDS VVVDSEGRETESQLLP DANASSDL RYYNGTIRIPYGQKSATVRDANKNVI ESQVVETFKVDQLK

$\qquad$ QS GEF RTTSHYI QVPVNDGTWKVTGPTGEEI ESHLTPARNFEY $\square$ T WTRYEHVRVPIPVSNVSV SSTDGPIPSQVINYNS S RPASQVLRVPIKGSTASVTGPEGQTVESQVIADDAREREL WNRVEYGUVQNAVYFNQQP SQUQRFDDN
 KQYSGFVTVPYYSKQAMVMNPKGERVAVQLMKTFQVSSMD VA H S Y T I ELP I FAHTFGVSLPIDTPSAEVLASTNVPVASAVVPYVPVHLDA


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NS TA $\square P S M Y D L H \square L T T D P G L S F R H Y S \prod K P T S G 母 Q K$ WVSFTAHVPPMGYNTYIVSPSSNTEN S S K EMP S A Y DL RMLT TI P G L S YR HYSI R PSRSSQK



VR GPRGNATSELVFPVTVEALGYSTYLISRATNRAT NSKEMPSVYDLLVLETI PGLSYRYYVIKPSRRAKG



QELQ Q A D $\square$ ASSLVLSSFPALLDP LCFRAFLI QPNQ
 L T S H
V L G L
 Y DVVFEADLQALSVKLYVVS E H

 VR R N R G N A N C E E L

$Y$ VLT F LA Q IP P L G F S T Y I I E N S GQEE S NSTETPSAYDLLILTTIPGLSYRHYSIRPTAGAQE HSKEMPSAYDLHVLTTIPGLSYRHYSIRRSRSSQE

 E T F KVVA QL N S T D Q Y EVI HA F V S I P P L G Y S T V F V S K G E R K S S K E M P S A Y DL HV LIT I P GLL S Y Q HY S I R P S R S S Q E AKGM A K GM
D T D R L P FEAIFRPVE, RGLGYR RFSVRASKPS DA NSKETPSA


R D R HVKAY L G T P K F WVAFPASVAP LGFSTYFISSGKRSAS NADRSL Y E I HVLVRVP PL GYT T I TVVS K P A P PP A P LAA G A A P T H T Q L L L L L Q A D V V A P L VEPSRASTEAF QLDFVAELPPDLSLVIVHVTEASVGS S



$P E R Q \square A R \quad S S T D M D V V F R S A V P A L G F R T Y Q V D V A P N \square G S$



ARK $\square$ GE S
 RTD QLYF F A T $\square P P \square G Y$

 A M M S TEEVFEVVF DAE LQP LSSLTAYTVYS DVGARN A VLS LT G RTS S A I Q EL CFEA E I P P L G Y T S Y Y V T L V R D QL E


D D L


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G|VIREPAATVASTTQFGRK $\square^{140} R$ RTS DSQEAAATVPSTDQFGLKLRRQDGQV DTEKTATTKA DTLRFRLRPRRRTEAR GNTWLGS
ATTMATTLRFK
QAHNLHSIFQK
GAGELAATLRFGRRPR
SKLRRHPALA

N

NTGEPE DKDVKENPVIKNFPLSLSLSLV KTGEPEPFVAKTMQFGGRLLRRSARGAV
DTKQLAASLAKTSNFARKPETQAG

PGGRHLISVENDC MVEFASVAF RRRGGPSVGRLQQGPTSFDAQSDRVKSNREDKRGDVFSNGD TSTGSELVNEAAASASTFASPFSAVRIANEY DTGEPVTSLAS SRRFGLRLRRSGSSLVPVKNDC
 GRPRTP ${ }^{T} G V G G$
$N K K P D R E K V K N E L G E$
$M K N A T F V E Q V D Q M G F$ MKNATRFVEQVDQMGFQDNYVN
GSREPAATVTRTLHFGRKLRRHASHR GKHLLHTVNC N ATGETAPFVASTQHFGPRLRRRGRQV GCHEVLVEDC AGRVTKS YRNLQTRAV

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 AATVASTVRF DFYSSEVSELL MGGGEVKLGYEN QS LSTLYCTACDAEEDDVTPDSPFTLHPVETGDVQLENYK IPKQRSVVRHVDINGKDVVISNKF SRKKQEAPRRFEKAVWTEEAEEQLVVENKF

RHSFKSKSQRLVPGEDH
ITTTDK
TF DAEVAYVNDRHEEVVIRPE DFAKSFNVKLVKPDEFF SHGKYVSVTLIFGKQLEPVMFVEDFKAKSSTVETIETENLL SSKKN
AFIDARSVYGR KVIKHADHQSRRLIPVGNDC DTKPLGASLARTSNFGRKTETHAGA GGRHLI RVENDC

tmtey V e
PKMDKPSSSNTTFANQF GTQEPAATVASTLQFGRRRRRRTS PAGRHLVPVANDC ETGEPEPFVAKTTQFGGRLRRYGGQVGRS LVPVKNDC NKRLLT GTRELVAPRANTLKFSLKLRNQPS QEGKRLVPVMNS PAVLIVKPTLFRYPE 1 AHSTETFY KKGEPRAFESKLNSYF ATGETAPFVASTQHFGHRDRRHGGQVRKGCGNVPVENDC GSASVARVTRFGRKATDPSRPG GGDRLFPVGNDC H YSGVKVINGKVISPDPD DFKPEEANPTQEGFTVNTR VHFNNRKKF
DTQETGASVDSTKQFGRRPR TNRRQAGRRPVHMENDC
TMAMPKRYGRRKRTPKGP
TNRRQAGRRPVVMENDC
GDKNLLSVQNDC
$\square$ SSTST $\square$ NSQGSKSTN $\square Q \nabla G Q G Y \square K \square Q Y D A A G A \square$
GNSIVNVHSKSRKKGDAKVEIQNEHLIDAGFDAGY TSSSADD\|S ПPETADAEAAEETGASESDANDGGAVSVS VGTDNDGG FRAQYTFLHHSKTQAVQAQHFQVSHLDDAAPAHLSLSNKH ERPAEQVY KSNETSVTKENTANPIVFENKY SSHTTSYNRRVNEPDTDSNDGYSVSVGSTDKSTVGGDDGF QQYNYVPNSNDLEYPUPSYVSKPUEIRPTEDLDVVIGNTQ KFNDLED DNSTSVRTTTPHPSTDTPTEQPVTDQNEEDSGTFDANGL EESTKGWDVVTESTMSAE
STAADISTLENDHVKA
GEMVTISQREVVHSSTFPRNVLSE EQFNUVSPV
YPRNSVPHRNRSTCFRVEVPTYRRDRPGKREFVERRG NKRपFT STHATVHFTNPPAGFGKRTRS
QSQCPTVRSYGAATEDAGGMDGGEGRGDSEGDEDSDENGC SASTPRARARAWTYSSAPSUVTTSNEF NVHP
RPAKTRVSLIVADAWAGSDAESTFAFESPASETDEDETPY ENEYAKVLLVKNLPNLVDLCVEARQLVQDSKEECKVEHSK EPAATMAARVLRFG VRRMTRTSHGGRRLMPVANDC TAPLRASDDFYK $\begin{aligned} & \text { GSCSNSGGGVFQVSSSDEKNMKIQTSG }\end{aligned}$ DTQETGASVDSTNQFGCRPRTNRRQV LP R G


VKVRDDGTTGLLSSVTVNG EEYFVQQEFDWYPGYNGDN I ETDAVRTTHSPENGLINTDRTKSVGEMEFAQTDDHYVNS L RTTFSSCTGTLQYTHRKLDDVIHKTADKFVGYGTGSWSD LTTAGFDAQGYLSYVIDKTNNVKRSTRQEFFYYEGVDSKDD
 VVVITNKTSQSYITHFLLVGFCDDYLHDNFFLLYYFTNKPT

## $\square K L V I D N N T G R \square K T V E M N G V S E N \square D Q T F G M Y K T A$

VSVTFDSATGGTMSTTNTSSGDQTQTSQQYMFYGDSASGQ YIVLLDQDTNLMHSI WERQSNRTVRVTQEFLEYHVNGQGP Y V VFLDLDTNLMHSIWERRSNRKVYMTQQFMEYHANSQGP SIVIVVITNKTSQSYITHFLLFGYFLSSQYFERYDIFKSP YILLFDQDTNMLHSTQDRQSNRTVRMTQEFDEYQANKQGP LELNFDGETGFARTLHNKDTSETHKLEDGFHYMNPSQKPG LIATFDNRGYLTSLQNRKTGKSDRQEFFFYEGDDSKDDQ YDVLVDQDTNLMHGI TDREAKRTVKVTQQFMEYHANGRGP QLDVTFSKKGLLKSVCRKGKNEKLCTDTKVGWHWYKGVN LIAGFDSQGYLSYITEKATKKKRSIRQEFFYYEGDDSKDD YTVFLDLDTNLMHSUWEREGNSTVNVTQDFLEYRANRHTW

SHYSDSKTRVEANFEQKYKYYVGQDGYGNDPQ
LSYVTEKATNKKRSKT
RQEFFYYEGIDSKDDQ LKATLDLTKGSLASLLDKATKTEVPMSTKFGYYQSYGNGN LVDDFPPETGLLQKVRATFNLTAKMTAAFYASHDGSDGF RYVT IDDLTGLVKSITLNGVTLGVSQKLLYY NGSTG DSAQFNPNDGSLISITNVTSGATLNTQQEYVWYGNYDSTQ
 FELHFQPNNNYLLESLKYYVDLNNNGNRDELNQQLVEYDSM \FKLSADKTGVQDKATHSGSGKEFAVNVEMMYYKGSTSSS VRVEVNSVTGSLVSLTNKATQTKVNVTSSLLYYQAYGKQG $T L D L T K G S L A T L L D K A T K T Q V A V A T K F G Y Y Q S Y F N G D D V$
$Y V A T E S S T G L L K E L K H T N K D N K N G Q L E F F V Y K S K S Q S Y ~$

DTEDRDHPTRGLVRMTMNGVTTNATAGYYYYESHAGDNHD YSVNFNRNSGLMDSVVNDESGUKDPVHQDMDWMGNNASKQ YKTKFQLDDGMLRAVTTVRDNMKTKLAMDFAMYSSRQAKD


LKASFSHQTGLLTSTRDTESGTENQLNDTF SAYRSDEF YLKIISIEQSTGLLSSIQHVDGVSIAASQNFHYYGQGKSSQ YTVLLDEDTNLMHSVWERQGNRSVHVTQEF DEYHVNGQGP DTATFSAYTGLLTRLTQNAAQASTEISFWKYQGSGNTNRD YTMFLGKDTNLMHSVWERQSNQNDQVTQEFMKYHGNSDES
YKLTFAENGLGQSVEKQEGRTVFTDMLYQYTGRFNQGR


PS GAY ITFRPNTYPFNYNNQTVKVTVSQGSTVQVLTRYWSP I S D N Y L F TP GKAAVP A WEAVGMEIVA GQLVTEI RQYFYR V S D N Y V F TP S GRAEPAWEA VRMEIVVEGPLVTEI RQYFYF
 TA G A Y $\operatorname{l}$ G C S F V V S N E P L L S K E P
 1 S D N Y L F A P TGPAVQAS RA V GLLEIV A GELLTEEVRQYFYR



 NS GAY I FRRNTHAFPAVSSHGCDVVPDRQSCWFRFGNMGV $P$ S GAYVVFRPDSSQEATPPLRTPSFRAFRSGVLDATRVVAGGD $K S G A Y L F L P S Q E G A Q V S P E P P L V R V S R G P V F S D D T T R F Q H$

 TDDCYKFRTH GYAHP LDATAA QFY LT E GP I AS M V TV DYR N





A S GAY ITFRPNDSS PVPDP DTSQE\|ITKGKTVTEDHNTYTD QS GAY F RPNSSTPFHCSND』VYLQGSNPLVQEVYQKFSD KS GAYL F LPS S GPA EPPDTYRPLVRIIDRGPVMSSVMVLLPN TSNNYVGRPYGPATGDSSVRTQLNVSTGVLVNETTQHFYG SSGAYVVLHPNTSAVHAVPPVTSSFDCHTHSSAVVASCDVFRG AS GAY I F R P N S S DP $\square P$ V S G S QR $\square H L V K N S L V Q E L H Q T F S S$

HS GAY LIF QPDASNPFDNVTGP V VRVIRGPVASEVMVAYPQ QSGAYSFRPETQRPVPVTDKATYNVVRGTLIGEI RQRFND VSDNYMFTPSAAAVPTWEA VGMEVVAGRLVTEIRRQFYR RS GAYLFMPEKDAPTDRFNPSTVVVI QGSLLSEVDSDTPD

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UniRef90_L1ISF2
UniRef90_I1GBX2
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UniRef90_D8MB36
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 WATQVRGYKNEERIEFDWTVGPIPGKEVVLRFESNLLSDG WVQQIRGPKGKNYLEMEWIVGPDPKKETVTRYTTEVRSGN GI NQURIYKDEDFIEFDWLYGYQDTKEVVTRYTTNLETGD
 MLQVFRLYTNVDYLEVEETVGPDDUKEVTTRFNTSLNTNN EVQSSDGELLCHRIEQEYRVGPLENREAI LRTSTDLNTGQ GLSAVRRYKGQQHAEFEYTVGPGPGKEVISRFDTSHKNDG WA HTTRIYAHSAEVEVEWSVGPIPDKEVVVEYSSNLDNGA FLIHTDKIFDVDDVENIVDFEDPPKNELFMRIQTDVQNGE WVTQVRLYAGQRHAENTVDVEETNNFEVVMRMATNIDSKD TVNDRDPYYLCHRMEQEYRVGPLENREAIWRTSTNLNTAR DAKARTYMYLCHR1 EQEYRVGPLENREAALRDSSNLNSQQ KVNDSEPTFLCHRIEQEYRVGPLENREAILRTSTKLNTGR WVSQVRLQNGKDYI EFQWTVGPIPGKEVITRYTMSLHNNR FLYHSVTIYNLVHVETK KDYDLSPKHEVFMS QQTDUNNGN WI QTVRLFSFSKEVEVEWTVGPIPGKEVISRFQTNTSSSS WVSQVRLYENRPAVELEYTVGPIPGKEVSHFTTDLKSDS WVSQVRVYRGQEHVELDWVVGPVPGKEVISRVTTTVQSDG VVHRAVLYNVSGPVTVYLTPPLYDNKELVMRVESDVDSPD WVSQVRLPKGKNYLEFDWIVGPIPKKEVVTRYTTDVESKN KVHVPVGHGGCRRI EQEYRVGPLENCEAI LRTSTSLHNRQ WAYQVRLYKGDKHI EVEWTVGDQWGKEVI SRYETNIDSNG WGSQYKLRAWDHSVVVEWTVGPDPGDEVILRFDTSIUSEK WISQVRIYEGVNRVEFEWLVGPVPDDEVVTBFKSGASSGG
 NMTARNYTYCHRLEQYRAGPLENREAVLRTSTSANQQ
 VNHTLRFNKLDQEVENVVDLTNADALEAVLAATKTGINNDG YVSQVRLDKNKNYVEFEWIVGPDPKKEFVTRYTTEIVNSS DVTSKDYQYACHRIEQEYRVGPLENREAILRTSTDLNSGQ LQHTTTIYNTNDVHGKYVYIENVRDKELFMELQTSVQNPN FVQQDRLPRGKNYIEFEWIVGPIPKKEFVTRYTTEVHSKN VAHMPLGSRGCHRLEQELQVGPLVNREAILRTSTGLDTQK

 LSYELRPWDTSLVVEWTVGPIP:|DDHEVILRFDSNVASNK VTHRVRLYGRSLETSNLVDI RSEVNNELAMRLLTDVANGN WITQVRVFRDEDFVEFDWVVGPDDTKEVVTRYSTELETDG
 NVTQLFTVYNDQYFEVENVVSVGFDHE SMRFNSSIVNGK VTAQYYTHALCHRIEQEYSUGPEVNREAVLRTSTNLNTGQ WVAQVRLRKNAKHIEFDWIIGPI PKKEVVTRYITDIKNQD WGSQYKLRAWDHSVVVEWTVGPIPDDEVILRFDTSIQSEK MSYQLRPWDTSVVVEWTVGPIDPDDHEVILRFDSNVASNK VLHQFTVVKESLHIRNTVDITTEEDFEIVMRLKADINSDH WLSDVMRMTGDGKVEVEWVIGPDPGKEDYWRMDTDVDSGS WAYQVRLYKGGKHIEVEWTVGDQWGKEVISRYETNADSNG LFDVESRYSSCSHIEVDFKVGPLDNKELVMRLISSGLSSGD
 WVVRVYKGKDYVETEFTIGPIPGKE STEFITNMATNR
 NMHVPQGHDGCQRI EQEYRVGPLENREAVLRTSTGLDSQQ


UniRef90 UPIO003F101DF UniRef90-Q28949 UniRef90-F7E3D4
UniRef90 UniRef90-13M384 UniRef90-S9X7N0 UniRef90_UPIO00328AA60 UniRef90-V7CIE1 UniRef90-EOVU63 UniRef90-W5PMZ6 UniRef90-M3Y6R5 UniRef90-T1EF56 UniRet90-KOSEK4 UniRef90-BgSXW2 UniRef90-F2UC33 UniRef90-UPIOOO26598F0 UniRef90 UPIOOO2C689CA UniRef90-K7H8Y2 UniRef90-V5G1A0 UniRef90-Q8W347 UniRef90-L9KM73 UniRef90-D3B0W9 UniRef90-UP10003C01D4E UniRef90-N6TVU1 UniRef90_UPI0003F09F8A UniRef90-A0A059LKF8 UniRef90-H9JRV7 UniRef90 U4UDM8 UniRef90-СЗХQH5 UniRef90-UPIO0023ACC5C UniRef90_UP1000333F591 UniRef90-UPIOOO29D866E UniRef90-T114B4 UniRef90-G6DPI6 UniRef90-T1IVT5 UniRef90-L1ISF2 UniRef90-11GBX2 UniR Ref0-E9H262 UniRef90-F1KSB9 UniRef90-UPIOOO3592723 UniRef90-GoM896 UniRef90-M7С396 UniRet90_UPIO003EE1145 UniRef90-H2Z3Z0 UniRef90-W4FQD4 UniRef90-UPIO003596FE9 UniRef90 B4HYQ9 UniRef90 W5JQY8
UniRet90 F4PRG5 UniRef90-UPI0003ABAC05 UniRef90-UPIOOO42CE606 UniRef90-H2Z3Y8 UniRef90-F6TMZ3 UniRef90_U6IRTO UniRef90-A8XK50
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UniRef90 O4TGN2 UniRef90-V5GTT1 UniRet90-FOZUC9 UniRef90-A9V447 UniRef90-D3B6P2 UniRef90-F1NQF6
UniRef90-G7YAW4 UniRef90-A0A016V8M7 UniRef90_W4FN45 UniRef90-TORBY9 UniRef90-E5SMC5 UniRef90-UPIOOO26572B2 UniRef90-H2Z3Z5 UniRef90-H2YSQ6 UniRef90-UPIO002652AD9 UniRef90-A0A024UL77 UniRef90-UPIOOO3831B5D UniRef90-11LG2 UniRef90-B7Q4P5 UniRef90-H9.JPC4 UniRef90-UP100046B24CF UniRef90-UP100026594AO UniRef90_D8MB36

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LFYSDSNGRELLERRVGS AASHSPLPH
 EFYTDSNGRDFLKRVRDYREPVAGNYYPLNLGAYI KDNKS

 KFFTDSNGREFVPRRRNDTEPVAQNYFPVNTADFEDEDEKS HFFTDSNAREMVERVYNKREPAAGNYYPVNALMALEDKNV VLYSDNNGYQVQRRRNYKSNTIARNYYPMVQSAFIQSRRS VLYSDNNGYQMQRRTYYANNRIARNYYPMVQSAFIGDNRS QSFTDSNGRQAIDRFFDDTEPVAGNYYPITSFGYIKDNVE

 VLHSDNNGYQMQRRRQNMWNTVARNYYPMVQMASIEDLDS IDFYTDSNGRQUMKRRRNHRDPVAGNYYPINTKIF:KDNNT EFWTDSNGHRMMRRVRDEFEPVARNYYPAAAAALIRDEAA
EFYTDNGFQYQKRTKDDKGGIEANYYPITTMAWMQDKET EFYTDQNGFQYQKRTKDDKLGIEANYYPDTTMAWMQDKET YFYTDSNGRELLERELDHREPVAGNYYPVNSRDFIKDNSR

 ElVIDDNGFQYTARTUNMSRRVESNMYPMTSMAF:|ODHKN

 TVCVDSNGLQLLRRKYNEAVPVKANYYPMPTSLMLQQRSRR


 LFYTDSNGREMMERQRDARETISGNYYPITSRILIKDRNV VFYTDSNGREMMKREKDKRQPGSGNYYPVTSRMALQDSSK TWWTDSNGQEMQERVYNFRQPVSDNYVPINADSY\|QDKNप VIYSDNNGYQMQRRPYYVNNSIARNYYPMVQSAFMEDDES VLYSDNNGYQMQRRRNYKNNTIARNYYPMVQSAFIQDRRS


 | V LHSDNNGYQMQRRRQNMWNTVARNYYPMVQSAF |
| :--- |
| ILYTDNNGYQMQKRRYYNNSVARNYYPMVQAAF | MYYTDSNSFQLIMRQTRKNYPMPANDFPVTSMAVLEDPET QSFTDSNGRQAMERFFDDTEPDAGNYYPITSFGYI KDENA VLYSDNNGYQMQRRKQYMVNTHTRNYYPMTQSAF: QDRQS

TLYSDNNGYQMQQRKEPREDSRAQNYYPMVQSAFI QDSSN



 VFYTDSNGREMIYYKKNYRPPQAGNYYPVNTKILVKDEVN TWYSDSNGMEMQKRDTNYRQPTSGNYVPVNATTYYQDKNL TLYHDSNAREMDERKYNLREPVAGNYYPVNALLALEDKNL LLYTDDNGFQIQKRPWYEKYNIAGNFYPTVNTGY TDENS LFFTDSSGRRLQRRTSNLQDPAASNYYPVINRILI KGAGL VFFTDANGRQMMRRQKNYNPPVAGNYYPVTNRVFLKDDNK TWYTDSNGLEFVKRVRDYRETVAANYVPI TDATYIRDKSN RWYTDSNGLEYVERIRDFRETVAANYVPITTGAYLRDDKV SFYTDLNGLQMLKRKYFSKIPLQGNFYPMTTAAFVEDSAH EFFTDSNGRETLKRTRDSRPPVAGNYYPVNTRMAIRDKDA



 TFFTDASGFQMMRRVTNVELPI AGNYYPITSAAYLEDKTS EFFTDSNSRQMMKRTCWQKKSISASCYYPVTSRDCD ECANS VIYSDNNGYQMQRRPHYANNSIVANYYPMVQSAF: EDGGS



UniRef90_UPI0003F101DF UniRef90_Q28949 UniRef90-F7E3D4
UniRef90 H3BYW5 UniRef90-I3M384 UniRef90_S9X7N0 UniRef90_UPI000328AA60 UniRef90 V7CIE1 UniRef90-E0VU63 UniRef90_W5PMZ6 UniRef90-M3Y6R5 UniRef90 T1EF56 UniRef90-KOSEK4 UniRef90-B9SXW2 UniRef90-F2UC33 UniRef90_UPIOOO26598F0 UniRef90_UPI0002C689CA UniRef90 K7H8Y2 UniRef90-V5G1A0 UniRef90-Q8W347 UniRef90_L9KM73 UniRef90-D3B0W9 UniRef90_UPIO003C01D4E UniRef90-N6TVU1 UniRef90_UPI0003F09F8A UniRef90-A0A059LKF8 UniRef90-H9JRV7 UniRef90-U4UDM8 UniRef90- C3XQH5 UniRef90_UPI00023ACC5C UniRef90_UPI000333F591 UniRef90-UPI00029D866E UniRef90-T114B4 UniRef90-G6DPI6 UniRef90-T1IVT5 UniRef90_L1ISF2 UniRef90-I1GBX2 UniRef90-E9H262 UniRef90 F1KSB9 UniRef90-UPI0003592723 UniRef90-G0M896 UniRef90-M7C396 UniRef90 UPI0003EE1145 UniRef90-H2Z3Z0 UniRef90-W4FQD4 UniRef90_UPI0003596FE9 UniRef90-B4HYQ9 UniRef90-W5JQY8 UniRef90-UPI0003ABAC05 UniRef90_UPI00042CE606 UniRef90-H2Z3Y8 UniRef90-F6TMZ3 UniRef90_U6IRT0 UniRef90-A8XK50 UniRef90-W5PLY4 UniRef90-F7BP21 UniRef90-K1Q1N1 UniRef90-Q20829 UniRef90-UPI000331927A UniRef90-J9E8K3 UniRef90_M0X5M0 UniRef90-E3LEC2 UniRef90-T0Q1P7 UniRef90-C1EEA2 UniRef90-V5GTT1 UniRef90-FOZUC9 UniRef90-A9V447 UniRef90-D3B6P2 UniRef90-F1NQF6 UniRef90-G7YAW4 UniRef90-A0A016V8M7 UniRef90 W4FN45 UniRef90-TORBY9 UniRef90-E5SMC5 UniRef90- W4ZYB0 UniRef90_UPI00026572B2 UniRef90-H2Z3Z5 UniRef90-H2YSQ6 UniRef90_UPI0002652AD9 UniRef90-A0A024UL77 UniRef90_UPIO003831B5D UniRef90-I1LLG2 UniRef90-B7Q4P5 UniRef90-H9JPC4 UniRef90_UPI00046B24CF UniRef90 UPI00026594A0 UniRef90_UPI0003AF719B UniRef90_D8MB36

THTSVVRPVLWLLLGPRT
NDTSTARSLDWLLLGGPRPGDAD $N D S S V V R P T L W V M L G S \square$ NDTSIVSPMLWLLLG
LEGLWVRGRHLVLLDKAQSAAAGHRL
NDTSIVHPVLWLVLG
NEQVCQNNKCQGLRVRGNYHVA I HN
NEMAHARGSHWLLFGNKDSKMKKR ZKM NDSSVVHPVLWLLLGSRSGLSR FAREKHLQP NDTSVVHPVLWLLLGPRTGLRQRSGLALQHRPVVMLREMN HDNKKTPNKFK VIGEKPQNPPPTFNSDSQGFFTPKSHFAS

NETMCGCNCTGLI IKGDNY L
Y $\square \mathrm{DS} \square \mathrm{D}$ NTNAARRTGS NDTSVIHPVLWLLLGSR $A$ L T S GLHQRSG
 DEGLVAMGKHILLFTDVKTSAAE K VVGTHYV THGVSAEGNGGRTMAAVERNVQQ NEVVCVDQKCDGLVDERSW
NDTSVVRPVDWLLLG SWPVTTADRQRSA NESTQI $\square$ TTTKIVEHPDGNAAQQYYRPRALEHA NDSSVVHPVFWLL LGPRT NEEAFGVG VVVTRGSHLLIPTGSVYASPDDLTPKEDS NE T $N E T A C A C T P C P C V G D P A R G F H R V L L Q A P G P E A A K Q R R D A Q$
$V D N K P T T F Q N W L L L E T M P G A S P E Q K T N H Y E D P S H S A D Y L D S$ LDNHPTKHDFRVLVEKRPPGCETSVSHPSGFPTVSASVAS NET
NDTSVVHSVLWLLLGG PSTLTRDLGQRSG
NDTSVVHPVLWLLLG
NDTSVVQPVLWLLLGSR
PRAVTSALRPRSA ALL S GLLRQRSR DEDAFA!GSHYVSLSRDANARMLVQEKVLDSWTFISSTQG A DNTAAWQTHYILLETFTSYQKEELKMSLMDPSFSA DYDA NEPGFVRGKTVVMLNRVKDAM
NETQPYR $\square$ GKGLVVRGKHVLADASPETAAEG

DEGLIIRGKHLLILDTIDDSAYTQRM


NDTSVVRPLFWLL LGLATSAKQ
NDTSVVHPVLWFLLGGDTSSAKOHRDPRPLTSGLRQRSG
 $N E T E T V E T T T Q G L T V R G S \square A D S V G P V H S \quad A M E F L R V E$
$D D G \| V F T G K H W L C L D T K E R S A E$

 T L N D $\qquad$ TSVV

ALAALGQRSAV

NDTSIVHPVLWLMLGPKST

DEGLVAKGKHVVLFTDLEESA VGVIVP SLTADAHFVL NDSSVVHPVLWLLLG PLEATSGGLRQRSG NDPSVVRPVLWLLLGSRPVAA A LIFPRSSLALEHRPVV TDNKPTVSKF:IQVESFNKEEPLTKDHRVAHPSMESFDIN
 MHSFNLUTLDDVVSPVFWLLLGTLPDTTAGHHQSG MDNRKTTSSFRLLFEPSRNVPVNTKARVTAYHSAHAYDRM
DEGLVADGKHIILFTDVKASAVQQGHEAADE R R R LVS
 TDNKLTASLYRLLVEDR
NETEYARGSHFVTLGKSSEGNGGRTM AAVERDDA
NESTQUITTTSKLI FHDDSEVAQSHY RPTA
NETMCGCGTNWULYLDTDPNTN
NDS SVVRPVFWLILGTKSAT SVLYRTSG
MEQSVVRGVHWLVLDETAEVEQ
DEGLVVRGTHYVLTGDTKTAAADHRP
$N E T E T L S L N T Q G L T V R G S F A L S V G P L A L A T E \quad Q L R A E M S$
NETETIQPRTQGLTVRGQFYLSVGPHEAADE RLRTTTY

NEPGYIRGTHTGVVQTPDEFDNVK LGHGAHWRRSQG
NETGDTRGKHWLLLDTVTSSAKQHRL
K D
TEPSVATSTFWLLLGNASTT SELRHRSW NETETGNKQTQGLTVRGTVA $\square$ SVGPLDAAVE $\square L R T D M H$
TETVCFDKQCEG $\square$ N $\square E G K Y Y \square K \square \quad D P L G E G A R W R R T F G$ M D N R
NEESYVRGKHRTLFGNFRQEHH पNSENPEG
$N D T S V V H P V L W L L L G P R P V A D Q H R P V V L F G E L T S K G R P R R$ TDNVPALSSFRLSIES QEEEDPRPSLLSLLSYHAR

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UniRef90_-Q28949
UniRef90_F7E3D4
UniRef90_H3BYW5
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UniRef90_L9KM73
UniRef90_D3B0W9
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UniRef90_N6TVU1
UniRef90_UPI0003F09F8A
UniRef90_A0A059LKF8
UniRef90_H9JRV7
UniRef90_U4UDM8
UnRef90_U3XQH5
 LD L
DHMFS QP LVF VGSEESAVQFSRSSLS LHNS $\square$ PRNVM DT F
$E D L N S P V V A F S A S K \quad P T K P S F A G L G Q D L P Q N V K L M T L$


 R K L I Q P P WL F F T T D D D S
 HPLYPMFTTTRQQSNNYQGSYSPDNFDLPE GI R L M TLL



 UniRef90_UPI00023ACC5C UniRef90_UPI000333F591 UniRef90_UPI00029D866E UniRef90_T114B4 UniRef90_G6DPI6 UniRef90-T1IVT5 UniRef90-L1SF2
UniRef90_IGBX2 UniRef90-E9H262 UniRef90 F1KSB9 UniRef90_UPI0003592723 UniRef90_G0M896 UniRef90_M7C396 UniRef90_UPI0003EE1145 UniRef90_H2Z3Z0 UniRef90-W4FQD4 UniRef90_UPI0003596FE9 UniRef90_B4HYQ9 UniRef90-W5JQY8 UniRef90-UPI0003ABAC05 UniRef90_UPI00042CE606 UniRef90_H2Z3Y8 UniRef90 F6TMZ3 UniRef90_U6IRT0
UniRef90_A8XK50 UniRef90_W5PLY4 UniRef90_F7BP21 UniRef90_K1Q1N1 UniRef90_Q20829


ENFHQPVLAFSKNSEKEFNRK LEYSGGTQELPLYLNLLTL

 LG LA H P L Y P M F T S T Q Q S S S Q N N Q Y T GII Y S P V P T G I K I Q T L


 E FHRPQPTEASVKNATTYSQ




$\square Q L E N P P V A V S V K E V N W S A L Q S R R S A D A N \square L P K N \square H L L T F$


$M H L M T A L V H V S R A R V S A L K P P G P R Q P E A V T L P P N L H L Q V L$ $T S P L L P L V V N G \square G K D$ S Y S S S S T L Q P C GLLHLVNV $T T R V H P D F Q Q Q E A V T L P P S L H L Q D L S D P G W M Y N S N H L Q N L$


UniRef90 UPI0003F101DF UniRef90-Q28949 UniRef90-G7E3D4 UniRef90-13M384 UniRef90-S9X7N0 UniRef90_UPI000328AA60 UniRef90 V7CIE1 UniRef90-E0VU63 UniRef90-W5PMZ6 UniRef90-M3Y6R5 UniRef90 T1EF56 UniRef90-KOSEK4 UniRef90-B9SXW2 UniRef90-F2UC33 UniRef90_W5PLN7 UniRef90_UPI0002C689CA UniRef90 K7H8Y2 UniRef90-V5G1A0 UniRef90-Q8W347 UniRef90_L9KM73 UniRef90_D3B0W9
UniRef90_UPI0003C01D4E UniRef90-N6TVU1 UniRef90_UPI0003F09F8A UniRef90-A0A059LKF8 UniRef90-H9JRV7 UniRef90_U4UDM8 UniRef90_UPIOOO23ACC5C UniRef90_UPI000333F591 UniRef90-UPIO0029D866E UniRef90-T114B4 UniRef90_G6DPI6 UniRef90_T1IVT5 UniRef90_L1ISF2 UniRef90-I1GBX2 UniRef90-E9H262 UniRef90 F1KSB9 UniRef90-UPI0003592723 UniRef90_G0M896 UniRef90-M7C396 UniRef90 UPI0003EE1145 UniRef90-H2Z3ZO
UniRef90 UniRef90 UPI0003596FE9 UniRef90- B4HYQ9 UniRef90-W5JQY8 UniRef90-F4PRG5 UniRef90 UPI0003ABAC05 UniRef90-UPI00042CE606 UniRef90-H2Z3Y8 UniRef90_F6TMZ3 UniRef90_U6IRT0 UniRef90-A8XK50 UniRef90-W5PLY4 UniRef90 F7BP21 UniRef90-K1Q1N1 UniRef90-Q20829 UniRef90_F1MPT2 UniRef90_UPIO00331927A UniRef90-J9E8K3 UniRef90-M0X5M0 UniRef90-E3LEC2 UniRef90-T0Q1P7 UniRef90-C1EEA2 UniRef90-Q4TGN2 UniRef90_V5GTT1 UniRef90-FOZUC9 UniRef90-A9V447 UniRef90_D3B6P2 UniRet90-FNQF6
UniRef90_G7YAW4 UniRef90_A0A016V8M7 UniRef90 W4FN45 UniRef90-TORBY9 UniRef90-E5SMC5 UniRef90-W4ZYB0 UniRef90_UPI00026572B2 UniRef90-H2Z3Z5 UniRef90-H2YSQ6 UniRef90 UPI0002652AD9 UniRef90-A0A024UL77 UniRef90_UPIO003831B5D UniRef90-I1ILG2 UniRef90_B7Q4P5 UniRef90-H9JPC4 UniRef90-UPI00046B24CF UniRef90 UPIO0026594A0 UniRef90_UPI0003AF719B UniRef90_D8MB36
 QKGHYRRAKADFRRVLLRLHHLYEAGEHQALSRPVTLLRG QKGHRGGAKA HLHRVLLRLMHLYEAEGDSVLSQPVVVLRG RKGHQPKAQADLHRVLLRLHHLYEAKEDPFLSQPVTILRG
 RTDQKGEHHSDNHHTII TQPHLI WCPHPSLCSVLQSVLGG EKGHGRKAKVDLHRVLLRLHHLHEVGEDQVLSQPVSLLQG

NA $\square$ A G D GSF $\square \square R \square G H Q Y G E N E D N \square Y S N P V D L Q D \square$
GVV SPQYNDRVF LRRDHLLEAGEHPELSKPVNLAKV SIPGWKYSSNHTEHLRTLQKGAADKGPSSELSRLCSVLRG
 QKGHRGETKANLRRVLLRLQHLYEAREDPVLSQPVSVLRG


Q WLDSSDPSVILRLQNIYAQDTVNTQPVTVDLSNL S $\square$ PGWKYSSNHTKHLRTLQKGAACAKEEAK
EPWGDST
VLLRLENFFQEDEDHSD $\square G L V N \square Q D L$
D GRADDRLLLR LVN RTDTDDQFPSTSSYMVLQRPGYSCIGKFSKRVPSFNSKSK KTNVFMKG TYHTGLVLHRQFLDTCFLDEALIGKVNLRGL

RKDNKGEAKAEFRRVLLRDHHLYEVDEDPVRSQPVSVLQG RTGHRGQAQADVRRVLLRLHHLHEVGEDPVLSQPVTVLRG QKDRKHEPKADLRRVLLRLQHLYEVDQDPVLSRPVTV
 KETMLAADRTKPVG DFRWKYENNE
EKQPLNT HGEYTVLLRVAHKFGDGEHGTLSQPVSLARL E ETULNQGKLDQSTVLLRLDHQFESTDPEKWSANVKLKDL

$H L D Q S T L L L R L D H Q F E S T D P E K W S A N V K L K D L$
$K K D S Q R L V H H$ RRLPVPREEGQSALMIVQKAGLDCSYTEDCDMQRFILLDK EKWHKK LALI RFEHIYHDDGPQSDPAKAEVFKE

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ATTNSGE LLVRLEH
KTFFSKSERGSQLGMVLRHKVNGCGSTQNPTVSSLNTRDT EMLENRVDGKNNVLLRFEHDYHNDSAKAAPQULDLDNL
 EKWHKKSS LI RFENDY HGEEGNSDKEFDPTHI QKGHQGQAKVDFCRVLLWLHHLYEKGQHPVLSQPVSVLWS KEGRQAQAEADLHRVLLRLQHLYEVGEHPVLSQPVKLLRG RTGAAPTTPRNSYALVLHRFGIDCRFTPEICTATLNVKRL

EKWHKKNS
LVRFEHTYDGPESEQLAVSFNPKNL


ERLEYQQHSTHQTG
 NRQWDDNQE VLMRLIDNIYEIGGQNIYSKPVTFQEI HMGKQKQGDADFSRVLLRI RHLYEVGEDPVLSQPVSLLKE $\square R W P L T Q N N S S S D K I L L R L E N L E S A E G R E Q Q V T E L D I G Q M$


KTPGWNGSPLN LS R I LLRLQHLYEVGEHP ILSRNVT LLSP EVKSSR

QELEDGN ILLRFAHLYEAGEHKDGSATVDLKRV

S $\square$ PGWNYSSSHT
RTLES SSDEPRFLVTLHNEGYSCSEVVPTEVCQDDLTTLL QKGHQGQAKVDFCRVQLRDH H LYYKGQHPVLSQPVTVTQL

|  | UniRef90＿UPIO003F101DF |
| :---: | :---: |
|  |  |
|  | UniRef90－F7E35 |
|  | UniRef90－H3BYW5 |
|  | UniRef90－lıM384 |
|  | UniRef90－S9x7N0 |
|  | UniRef90 UPI000328AA60 |
|  | UniRef90－${ }^{\text {V7CIE1 }}$ |
|  | UniRef90 EOVU |
|  | UniRef90－W5PMZ6 |
|  | UniRef90－M3Y6R5 |
|  | UniRef90－T1EF56 |
|  | UniRef90－KoSEK4 |
|  | UniRee90＇${ }^{\circ} 995 \times W 2$ |
|  | UniRef90－F2UC33 |
|  | UniRef90－W5PLN7 |
|  | UniRef90－UPIO0026598F0 |
|  | UniRef90－UPI0002C689CA |
|  | UniRef90－K7H8Y2 |
|  | UniRef90－V5G1A0 |
|  | UniRef90 ${ }^{\text {O8W347 }}$ |
|  | UniRef90＇L9KM73 |
|  | UniRef90 D3B0W9 |
|  | UniRef90－UP10003C01D4E |
|  | UniRef90＿N6TVU1 |
|  | UniRe990－UP10003F09F8 |
|  | UniRef90－A0A059LKF8 |
|  | Ree90 ${ }^{\text {－H9JRV7 }}$ |
|  | Ref90 U4UDM8 |



FSVISSVVEMNLSANQRपKETQPKNS DEDQPDEDRTFVVT
FLTVTAAQEVSLTGNRTPQELEDSDTVTRRMETRTFTV LGSVVSVEERSLTGTWDVSEMPGGPEVTIYPKEIRTFFIH Lic
 FFT TTSVTEMN【SATMK SSSNDDFT $\square$ TVSPMDVRTF $\square 1 T$ FFKVLS पRETTGGANQK\｜VQEDDDF\｜VILEPMQПRTF\｜LK

VE GAR R VRESSTANRD DS A A DVD VK $\square$ E $\square E P \square Q \square R T F$ FSGMNNLTSVSLTGLKTYQHL
FPHQTSLYQATLSFLKTEK ILHVDDDपSGCPMEMKAFY

FFS\｜INIKEMMLGGN
LRNAKAVYQTNLVGTSEGVPTS ILNKANFPPMETSTFRDH IPDFRRDEE HRNEEVDNSLSFTपNPMQLRTF DAT FKVRKKKE
 SSSSDKQTNVRSSHSDEFPD LRSALKVQKTTLNGDEKDEELDNAMKLHEEPMDFATFIV $\square F T N F D\|D V S K L L L L G G D R D R E P S L P F T U E P S E\| R T Y$


F P H LTKKVVK TLLT LIPD DKSVSKTVSEVIVNPMETESYLL FKSFKFLEKMTLGGNKKLRF I RKKGNVELHPSE ILT
 FFDIVSFKELLLGANR
LGSVVSMEECSLTGTWDVGTDQRWSDTATHPKETRMFF贝H


FTNLD\LSFKPLLLGANKQKGSSKS\｜VTDRSSETLTFEDE VPGAGHVVVKELTLSANAVKGPSPTTVTLQPMEVKSF FPGRS TVAVDELTLSGTP\RPGDAVVTLEPMQ】RAAKVE

FTNDAS DTEMNLTGVQKDTNDNRGNVYSVSPMQMRTFVIT
 LGGSVKLVEERSLTGTWDVNKDSDDFTVTVHPKEURTFFVY

LGDGVHVTEDN【SGNRVVGP\QG TTVTLQPMHVREFEVT VPGAEHVVVKELTLSANAVKGPSPTTVTLQPMQVKSF FTNVKAVKEMSLTALYQLNDTKPDEPLYVEPME：KTYKTE FDRUENVKETFLAANQDRPRTGADRSVRGYPMEURTFLVT

LGMDKTVDERSTTGDWNTTQMN
LFATFHVSE $\square$ SLTHNRVIQDVAASAVV पDAMQVRAF
FRDKK【ITETN【SANQERAAMENKLLVELGPME【RTF！口R

FGRVENAQFTSLSDLHPGEDFHTTENTHVPTNTKAVK口S LLGLSSLIKMGLPULSDLSPGGSADITHPKEIQTFFIH


DK LQPQAPMAASSGAGPAGHFASVYNPLA
$Q$ Q NES DCSQDA



LSERLEDTKILYLFNSLA

ETNQNFAVVVYNPFS
NTSVCDVSTQNTFEVLVHNALA
DEYPLVYHNGLG
DSQYSFTVTIYNPLG
$\square$ NES $\square$ CS WTEELSTRPFSVL DSQYSFTVYYNPLG




HLS LCLLSNDSTCETSTSQQFEVYVHNALP
NTSVCDVSTQNSNFVLVHNALA NNDGVLEDKNVLDUNWMSSDTKKLVLINNTLAA RSPALSGVGSKTSCPCAGPEPGGHFAVVYNPLA

NVSVCEVSTSNEKFVLVHNSLP
$D \square D \square Y P R \square H D G V E \square Q Q V V D F S E D P T D K E \square R \square F N S L L$


ENVIDLSNEDNNQYSLVFHNTLG
$\square \mathrm{N} \square \mathrm{SYC}$

$\square N K N Q \square P V N E T F E Y Q N V V D \square T \square N S Q E A Y S \square V F H N S \square G$ EYRNVS $\square C A D E T A K E F T V G V Y S P A S$ $\vee T V T N N L A$
$\square N \square S F C P A T E \quad E D D P D G K S G V V Y N G G$ QCNWNATASQCNDTFSQ $\square N A K K P V L V N I Y N P Q S$ ENA DD $\square$ S NESNNQYSLVFHNT $\square G$
 $K N G L P D A L V A V Y N P L G$

ES S GTFLVI LYNP $\square G$
LLLNDSYC PPSEVDLSNGKNLV


QLNVSQCDPTEKNNRFVVIYNSMA

UniRef90 FOZND5 UniRef90 UPI00042CBF6E UniRef90-A0A024UMW7 UniRef90_UPI0002B4B93E UniRef90 D2VQG0 UniRef90-G1TTH3 UniRef90-W4FPL0 UniRef90 G7Y5S9 UniRef90 UPI000343FC9F UniRef90-B4Q795 UniRef90-K4E2E6 UniRef90_K7H8Y UniRef90-W5P687 UniRef90-H2PCV1 UniRef90 UPIO002C424C2 UniRef90-A0A058Z1W4 UniRef90-W4FPZ0 UniRef90_UPI0002ADB6C1 UniRef90 H3EBI7 UniRef90 B5Y3K7 UniRef90-UPI00026595C6 UniRef90 T1H555 UniRef90 UPI0003C48306 UniRef90-F2U4D3 UniRef90-T1HT15 UniRef90 U6HB65 UniRef90-FOZNU5 UniRef90-E1FYU6 UniRef90 H3GT35 UniRef90-L8HEV2 UniRef90-G7YAW6 UniRef90 C5LDP5 UniRef90-FOVYN9 UniRef90_F4QE18 UniRef90_Q6DIG4 UniRef90 B7QEJ4 UniRef90-H3G219 UniRef90-EOVRZ4 UniRef90 A0A024G3G2 UniRef90-D0NE48 UniRef90-D3BM45 UniRef90-W5P5E3 UniRef90 F4Q2T9 UniRef90-F4Q441 UniRef90-G1LIA9 UniRef90- W4XHD5 UniRef90-UPI0000123F25 UniRef90_UPI00029D8925 UniRef90 G4Z5K4 UniRef90-H9JS14 UniRef90-S4R9X5 UniRef90 FOY5C0 UniRef90 E3LVI0 UniRef90-Q54YF7 UniRef90-X6LVU4 UniRef90 Q1ZXI8 UniRef90-F1A4A7 UniRef90-V4U7V3 UniRef90 Q23BN3 UniRef90-UPI000329AFF9 UniRef90-D0A1U2 UniRef90-UPI0003AF8792 UniRef90 X6P9N3 UniRef90 F0Z8X6 UniRef90-D217W8 UniRef90_E4XSB7 UniRef90 F4PYP9 UniRef90_U1LXI8
UniRef90_G6DAV0 UniRef90 G6D500 UniRef90 A0A044S8HO UniRef90_UPI0003C012F4 UniRef90-A0A059AH58 UniRef90 Q241T5 UniRef90_Q54YC4 UniRef90-M4BTE0 UniRef90 K1 Q9S7 UniRef90 O01574 UniRef90_U6HUE1 UniRef90_C5KX28 UniRef90 H3HAE2 UniRef90-K7G5P5 UniRef90_C5K5D2 UniRef90-UPI00042B0775 UniRef90 HOYNG5 UniRef90-F0Z8X5 UniRef90-H2KRH8 UniRef90 D3BKL3 UniRef90-E91283

SVHTYTVTLPFRAENAHVRLANGSTVPSAVVPFVSVYGKV YSRTLSTTLTLQGPAPKTLLVTQSTLKEQLISQRDLIVQL WTVT TFVTLTVGFSRVHVTDEFGQPVAAQVQ

HSVKT\|VHDPVPRSDVIVSGEGVLRYSVFESPVQDSDYAN
NFPKVSVTDESGHPVPAQVQ
WTVTT\|VTDTVGFPGVHVTDEAGHPVPSQUQ
WPRHTVHTLPLDRSDVVVRDADGALVPSQVIP VAHTFA $\square \mathrm{T}$ LPVTSSPSSTNDPNGS $\square V P S A V V P$

S V
PARECTTKT
SEVSS IIR DPVSTNQTY VEERVERNATVARSRQVETVQAV FNIS T FLLRFPLRDANVEVHDELGS IIKASVTTUSDA

QPFS GP RRDFVS SPHVQLKS QDD DPVPQQLMPVFDSDGLP KVVNADVSVNISSPYVSV SHCGSEVDHQIV RARDHVLRLRVNDTKLQVKQPQTDSISVQ】TPLSVQLEPW
 QMVGQYI KLPVTSNQLTVFDDKLMKLDVQFVPVSSETKKL RTSVQTLSVPI WT RYQYVQVKVSTAK LRVFDADGSAVPVQTSP L WS LDD LVVRI PVVGVPEVNVENPTQFSFNYQLLPVSDRT,W HPITSVVSVPIASPKQEAESPEADKRHCQGVAVSRQSVKS RNSNQTISI PVTQQNAKVKADSDDUV IHNQKVVI WSRVEYLPIQAGQQNYAVFDYDQNPVPSQTV QNRLCVVSLLVNTYNVRVLTEDGQPVAAQLSPVWQSVTDM TAVATYARFPVSGDGYEVWKLPGTLVEAQVRATGYLPRDS YVRHSVVSLLVSTEKCSVVDSDGNEVEAQIEPT
RNSKQT DS TP TK QS TATVKAMSDDVV $\quad$ THNQKVVT RTSVQTFSI PITHKSAEVTLLSGN AKVREQNVY WNRTGHTSI RVKGSRDKV GRDRVVEADTDSVKQTQTIP WTVTTIVTLTVNFPEVNLTDETGNPVPAQVQ
WIRNEIVSI RIVCDRIII SDH $\quad$ GGHQQIIQLVPINKDKNNN WIRKE IVS IDRVNCSETSLLDENGVSQTLQUVPIVLQRRCI

RKS V H TVS $\square$ PVNY

WTVTTIVTLTVNFPEVNLTDETGNPVPAQVQ
RTTVQTVSIPITHKSAAATVSGDASIRAQDVFV

QA QDAMLRVPVGVAHWTCDDASGAPAPTQALPDDDRTKSL FTITDVFGI RVNNREV VVS $\square E G K T V E A Q L E P Y F Q$ WD RIETVSIEIPFVNMAVYDYQLNPIQSQ\|VQRFDKSNNW
WEVNQHVSFRTKNKNDNQLLESTQLVEATSNKT\QTQ\|!P WEINQHYSFRIK SNSKVNIERLKLFDSDLNEIQNIIQINS WKREEVVQDPVSSEKVIVKDSGGRTVESQLLPLSNATLRD VSRSIVVKIKVPNVSFSIIDSDNKHIYGEVFCLNNYDRT RPVTWPVRLPVNGTAYSVSDASGKAVDCQVVHVSQATH HPVNTFLQ $\| P V P R R D \square R V E G N G V K S F P T Q V S D Y S N V N A N W$
 HAFHYHVRVPVNGSSYDVTNQVGEKVPV DVVPVSD WNRIVEYLALESTIQNYAVFDYNLNPVVSQV

TDDEVEYQLVPLPAA】INL
LLIS DPNVIVIGTDGPDQAQ DEPYFDTV
WNRTDVIRTPVTDSNFVVRDSSGNTTEAQFDDLDSVTDNL VTRIINIRIRVPDANDTVINQKNQLLQADLI C WEVNQHVSFRIKNKNDNQLLES $\square Q L V E A \square S N K T \square Q \square Q \square 1 P$

FEDTDVFK ITVKEREVIV S $\square \mathrm{DGK} \| \square E A Q L E P F F Q$


WKREDVIRTPVIDENVIVKDSGGKETESQLLPLQNASDAD QERFSMVSLLVNSPRVRVLSEEGQPLAVQISAHWSSATEA
 WS RVE YVDI PVGIQNYAVYDYNQQPI PSQLVQRLD

UniRef90_FOZR85

UniRef90 FOZND5 UniRef90＿UPI00042CBF6E UniRef90－A0A024UMW7 UniRef90＿UPI0002B4B93E UniRef90 D2VQG0 UniRef90－G1TTH3 UniRef90－W4FPL0 UniRef90－UPI000343FC9F UniRef90－B4Q795 UniRef90 K4E2E6 UniRet90＿K7H8Y1 UniRef90－W5P687 UniRef90－H2PCV1 UniRef90 UPI0002C424C2 UniRef90－A0A058Z1W4 UniRef90－W4FPZ0 UniRef90＿UPI0002ADB6C1 UniRef90 H3EBI7 UniRef90 B5Y3K7 UniRef90＿UPIO0026595C6 UniRef90 T1H555 UniRef90 UPI0003C48306 UniRef90－F2U4D3 UniRef90－T1HT15 UniRef90 U6HB65 UniRef90－FOZNU5 UniRef90－E1FYU6 UniRef90＿T1FPH3 UniRet90－H3GT35 UniRef90＿G7YAW6 UniRef90 C5LDP5 UniRef90－FOVYN9 UniRef90＿F4QE18 UniRef90－Q6DIG4 UniRef90 B7QEJ4 UniRef90－H3G219 UniRef90－EOVRZ4 UniRef90 A0A024G3G2 UniRef90－D0NE48 UniRef90－D3BM45 UniRef90－W5P5E3 UniRef90 F4Q2T9 UniRef90－F4Q441 UniRef90－G1LIA9 UniRef90＿K3X179 UniRef90 ${ }^{-}$W4XHD5 UniRef90＿UPI0000123F25 UniRef90＿UPI00029D8925 UniRef90 G4Z5K4 UniRef90－H9JS14 UniRef90－S4R9X5 UniRef90 FOY5C0 UniRef90 E3LVI0 UniRef90－Q54YF7 UniRef90－X6LVU4 UniRef90 Q1ZXI8 UniRef90－F1A4A7 UniRef90－V4U7V3 UniRef90 Q23BN3 UniRef90 UPI000329AFF9 UniRef90－D0A1U2 UniRef90＿UPI0003AF8792 UniRef90 X6P9N3 UniRef90 F0Z8X6 UniRef90－D2I7W8 UniRef90－E4XSB7 UniRef90 F4PYP9 UniRef90－U1LXI8
UniRef90 G6DAV0 UniRef90 G6D500 UniRef90 A0A044S8H0 UniRef90＿UPIO003C012F4 UniRef90－A0A059AH58 UniRef90 Q241T5 UniRef90＿Q54YC4 UniRef90－M4BTE0 UniRef90－K1Q9S7 UniRef90 O01574 UniRef90＿U6HUE1 UniRef90＿C5KX28 UniRef90 H3HAE2 UniRef90－K7G5P5 UniRef90＿C5K5D2 UniRef90－UPI00042B0775 UniRef90 HOYNG5 UniRef90－FOZ8X5 UniRef90－H2KRH8 UniRef90 D3BKL3 UniRef90－E91283 UniRef90＿FOZR85

YAHP DQHAAPNQLVVQANVPPLSWLVYHVTPTSTGAN RNYHVKA YLGG $V P$ TATPKFWLAFPVSV Y L Y F K A SVVPVGFSTYF I IQQDFKAT
 EPSV QYNSPRGVEL FTARI GPVVMG

ESKEKENA YDLHVLT T $\triangle P G L S Y Q H Y \square I K R A Q G T Q G$

NSKEMPSVYDLLVLTTIPGLSYRYYVIKPSRRAKG NSTETPSVYDLLILTTIPGLSYRHYSIRPTAGAQE

A LF DEPSLGRDPYELAFEARLPAAGYRVYFVEDAPDDQV． PVYSGHSVVSTASHQLIVQAA】APLTSQVYHVVA ESSSE

FQNQVQSVQPRAPFELSFPVKVSPLGFATYF
$N L R T$ TDKPRYTVMFDTPLPPI GVALFRVSM VFN $\square A E R Q S S T R F E L C \square P V T G G A K F R H L R L S P A R S R R S$

VK D $\square F A D W F T V T V A P \quad \square S V V S D Q L H A T P T A Q Q P P V P T \square$
NQQGFSGKYNLILYPTLPPLSVTIF
$D \square F R K P G A L G P G F H L S A G P D H L E P L E V V R V T \square K P V S K A S Q$
 A EFQGSASQFELVFPVQVPPLGYATYFVNKSKKAMD VAVPVHPETSVAPNSFVFSVELKPLSTARFDVKQKDASDD NTKAEKS GSVFF LNFMAEVPPLGVSTYFVRVVD LIPEREPLDGKANMELDFSPRLTALGFTTF WVTDNDHHRGTPTPTLYFTAEVPPMGSA $\square Y R \square T S G A N G H T$ SLPSHPSRHEEAPYKLEFTAELKPLVFHRFMVEQFPHEPF
 EDSAVYNGG EAPAI DNGVRAVQRNWNRCP
LI HEKWRSEGVILSFRVT LPPLSSRVYVLHHSDSPSK
S LP S HPSRHEEAPYK【EFTAELKPLVFHRFVVEQSPH
VALPVHPEVQVAPYSFVFSAELKPLSTTRFTVKQKDDEAE
 NNNNNNNNNVIHQYNIYFLASIKALGFSTYFLSLSPTPLL R D Q P

## TS QYSVYFTANVKPLGDSTYF $\square$ S

HAFDVQVISELDPLSDARFMVQKKSAKS G
KGKAETDSFS LLFKATVPPLSM $\square K V R \square Q K G D S G Q H$
NSKKTPSAYDLL VLT TI PGLCY A L P V V P VT QVAP Y S FVVFSVELK PLSTSRLLVKQSDASD

## PLLYVNAFNMTDAQVLADRAS DPAVGLTTDSCAPTPAAPR KGKAEADSF TILLFKATVPPLSMIKVK\｜QKGDSEGM

 YSENVTVILDNVINTLI K DSSSTDGEILDN
TQDDSNCQS TENNYTVFATINLPPLGLNTYY LS
I QYDNQCFNEMDQYILFSIISVPPLGFSTYYITVDSNKSN RNRYVKAYSETDKYWLAFSASVPPLGFSTYTVSIAKPTGP

DCDLYFEDNFDGYSYKYYKLVPGSGK


Q Y QLD E
$\mathrm{Y} \square \mathrm{L}$ F A $\square \mathrm{V} \square \mathrm{P}$ A $\square \mathrm{G} \square \mathrm{NT}$ Y T $\square$ N F E E D P S K
NTKNTRRNRGFAKNELWDTAKTDGLDFATF
IQSVGGPTNWTLYFEVNVPAIGASSYFD
PGRSSTA $\square$ QE L VF EAEVP P $\square$ GFTSYH $\square$ S
SGNFTENY LLVFFAF $\square$ KA $\square$ S F $\square$ HCK $\square$ QKTHSA
 SHPQNQKDCDLYFKDQFEGYSFQYYKIIFQDSKYQ【QDDSNCQS $\square E N N Y \square V F A \square I N D P P L G L N T Y Y L S \square A N S E D S$

K S K VEKDSF LLLEQATVLPLSMMKVKVQRGDSGGD


VQ G E
PA L
WGRD
RNYYSKFPSATPKYWLAFSASAPPПGFNTYFDSRGKRPVI VP DV $Y Q V S V P V R L P A L G L G V L Q L Q L G L D G H R$ LNYKNRCFENDDLYLLFAII EIPPPMGYSTYYLSLNENKSN PERKSSHHLDANMELFNDAAAGPPTGFTTFYLALKQPQST

VKS $\quad$ PGRVSDEWHLYFEASVPALGIT TYF MC GGNRDN


UniRef90 FOZND5 UniRef90-UPI00042CBF6E UniRef90-A0A024UMW7 UniRef90_UPI0002B4B93E UniRef90 D2VQG0 UniRef90-G1TTH3 UniRef90-W4FPL0 UniRef90 G7Y5S9 UniRef90 UPI000343FC9F UniRef90-B4Q795 UniRef90_K4E2E6 UniRet90_K7H8Y1 UniRef90-W5P687 UniRef90-H2PCV1 UniRef90 UPIO002C424C2 UniRef90-A0A058Z1W4 UniRef90-W4FPZ0 UniRef90_UPI0002ADB6C1 UniRef90 H3EBI7 UniRef90-B5Y3K7 UniRef90_UPIO0026595C6 UniRef90 T1H555 UniRef90 UPI0003C48306 UniRef90-F2U4D3 UniRef90-T1HT15 UniRef90 U6HB65 UniRef90-FOZNU5 UniRef90-E1FYU6 UniRef90-T1FPH3 UniRef90_H3GT35 UniRef90-L8HEV2 UniRef90-G7YAW6 UniRef90 C5LDP5 UniRef90-FOVYN9 UniRef90-F4QE18 UniRef90_Q6DIG4 UniRef90_B7QEJ4 UniRef90-H3G219 UniRef90-EOVRZ4 UniRef90 A0A024G3G2 UniRef90 DONE48 UniRef90-D3BM45 UniRef90-W5P5E3 UniRef90 F4Q2T9 UniRef90-F4Q441 UniRef90-G1LIA9 UniRef90- W4XHD5 UniRef90_UPI0000123F25 UniRef90-UPI00029D8925 UniRef90 G4Z5K UniRef90-H9JS14 UniRef90-S4R9X5 UniRef90 FOY5C0 UniRef90 E3LVI0 UniRef90-Q54YF7 UniRef90-X6LVU4 UniRef90 Q1ZXI8 UniRef90-F1A4A7 UniRef90-V4U7V3 UniRef90-Q23BN3 UniRef90 UPI000329AFF9 UniRef90-D0A1U2 UniRef90_UPI0003AF8792 UniRef90 X6P9N3 UniRef90 F0Z8X6 UniRef90-D217W8 UniRef90_E4XSB7 UniRef90 F4PYP9 UniRef90-U1LXI8
UniRef90 G6DAV0 UniRef90 G6D500 UniRef90 ${ }^{-}$A0A044S8H0 UniRef90_UPIO003C012F4 UniRef90-A0A059AH58 UniRef90 Q241T5 UniRef90-Q54YC4 UniRef90-M4BTE0 UniRef90-K1Q9S7 UniRef90 O01574 UniRef90_U6HUE1 UniRef90_C5KX28 UniRef90 H3HAE2 UniRef90-K7G5P5 UniRef90_C5K5D2 UniRef90-UPI00042B0775 UniRef90 HOYNG5 UniRef90-F0Z8X5 UniRef90-H2KRH8 UniRef90 D3BKL3 UniRef90-E91283

$A \square E S W A V V R$ D $D$ D VAADNEF $P$ PLGF S TY Y $\square$ S $\square$ S RKA GVNS $\square K$ S S $\square H \square F P S A E L S T F Q V G N$ T I E

KKQTQYENVVNMENGY IKATFELTN
PPSVHGHVERENSPPTTPPPSSPS DQAKPMKWEVSTGNAF MSLTRLSVQVDGKT\|VTPLQPSSRDSSDSDATDIVLSSDT ATPVKTSKFVRRTK $\square H A G S G G R H L I R V E N D C$
$S R L V S$
IVRPSEDDDEDSNEA PYSEKSATVKDSNKKVLESQ DTQE TEAMMANTKQFGHRPRRHDSSGRRLAHVENDC GTQEPAATVATTLQFGRRLRRRTSHV GRHLVPVANDC

S EPRSVLNADTPDT DRNEADSLAVTPGQRNDADVQTDL TQNSNQVTKDALPSSSWSVVRGSVVTASNDFVQLQVDTAT

VN NATSNRATRVTHP\KTTFDNDEDMFDENKL TNKVFSSSLRSNDLTETRRLFRAADGKDVVVSNELL PGRSAQKV RDGTSVVKA

Q $\square$ AHRDGAKPSARLAEEQGDGTFSVEAFDPQDDVVVRSGD DLYPTSTPRQCLNTIPTTE


$$
\square \text { P F A A E } \square \text { MY S A P RGRRSSSG } \square \text { T TMENDF }
$$

E IVTDSL DDATDVIVLENHLL K DTWSTISENYFFDTNYK $\quad$ EN Q F $\square T \square N F N S H G F I N S I T R Q$ DTLDSTNQFGCRPRTNRR
NH VESNDHQUISNPENDGQLTLDNSLL
$\square A S S P \square Q P L V Y D P S N V Q P \square H R N R Q T Q P L T \square S N$
RSASFASSDVTVDAVTLENDL

 S IGNT IVHEQNVSEDVDDEVVVLENHH E PT IGPFSVQPLQTGDIQLENHK
YA $\square$ S DPPVTVADNADGTTTVANGF TKMAKV EAKDSSAWELGNNWKVEASTESSSEMETP DNSKNLPTP $\square$ QS $\square L S \square S N E L L F N D N D D E T T T T T \square G N S N F N$

■S S NEDSKPNT\|LSKPKLLKK GNETNFNNNR
 S STISMVYTSE DSTSNSIEVGQGN NSVNNIIGRHVSFQKKSQKVKVSDKVSLITVNRFN $\square Q D G P P P A P A Q Q R A P P V I Q N K F$
HFGYS $\quad$ K S VVSRDRR GGFTLTSDH

QT DS $\square$ S $\square$ GRVLDTNSNVPTFETDRY NVKETSDGLDFATFNVKETSGNDVVTSLTGDSNMDENEN VGVDSNVLTTKDRKRIGQVVGLQDPDN\|ILSHRS
$P \square R D Q \square$ T TE E $\square$ A Q L S P $\square$ K S P NT $\square$ KY $\square$ S NHFHVK T $\square$ S K DEF VLQTS SKSTVLSTLSNPQNDT\EVGP

W $\square Y \square S$ P P S WP $\square T$ R RAPVGGQG $\square$ PRWRNEGPAG $\square$ FSPSPQH ATASKSHVVYSSEEKRSDV $\quad$ DEVGPGD T L P S SVRIIYLHGRQLSVSRHEFPLRVIDSGTSDFALSNRY SNQUVHGKUI YFPNNL PQSSASVFSKDFTSCL SGVARLSQTTTLSLDRGS QFEYVPNQGELYYP $\square P A Y R S \square P N E \| \square S Y G N C Q D I G N D Q F Q$ PQNKFA ISNEK

UniRef90 F0ZND5 UniRef90-UPIO0042CBF6E UniR Refo-AOAO24UMW7 UniRef90 UPIIOOO2B4B93E UniRet90 D2VQGO UniRef90-G1TTH3 UniRet90_W4FPLO
UniRef90-B4Q795
UniRef90-K4E2E6
UniRef90-K7H8Y1
UniRef90_W5P687
UniRef90-H2PCV1
UniRef90 UPI0002C424C2
UniRef90-A0A058Z1W4
UniRef90_W4FPZO
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UniRef90- B 5 Y 3 K 7
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UniRef90-F2U4D3
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UniRef90-T1FPH3
UniRef90-H3GT35
UniRef90-L8HEV2
UniRef90-G7YAW6
UniRef90-C5LDP5
UniRef90-FOVYN9
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UniRet90-K3X179
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UniRef90-UPIO0029D8925
UniRef90 G4Z5K4
UniRef90-H9JS14
UniRef90-S4R9X5
UniRef90-FOY5C0
UniRef90-E3LVIO
UniRef90-Q54YF7
UniRef90-X6LVU4
UniRef90-Q1ZXI8
UniRef90-F1A4A7
UniRefefo-V4U7V3
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UniRef90-D0A1U2
UniRef90_UPIOOO3AF8792
UniRef90-X6P9N3
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UniRef90-D217W8
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UniRef90-F4PYP9
UniRef90-U1LXI8
UniRef90 G6DAV0
UniRef90-G6D500
UniRef90 ${ }^{-}$A0A044S8H0
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UniRef90-M4BTE0
UniRef90-K1Q9S7
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UniRef90-H3HAE2
UniRet90-K7G5P5
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UniRef90-Foz8X5
UniRef90-H2KRH8
UniRef90-D3BKL3
UniRef90-E91283
UniRef90 FozR85
 VHVEVDTATGSLVSLTERRSNRTVRVTQSFMEYHVSNHGP GDLQLKFSSDEGKIIYNSKSSVNELVDQSYSYYPGYDGPQ GKLP YVLKSITNKYTGTTTTUSQK $\square A Q Y V S Y G D G$
VEMTDNTATGSLVSLTHKASHTTVHDTSSLMYYQASDVSF VELRFDAQTGLIKQFIDRLSGLYLDVLVDFVQYHTAQNKP YTVFLDADTNLMHSTLERESNSTVRVGQEFMEYHVNNLEF LVLKF GRNGLIESVTVRSSGQTVAVKQDWCYYISNNGDT FLIAGFDAQGYLSYVTDKVQKKTRSIRQEFFYYEGSKDNQ Y VVYLDKDTNLMHSIWERQNNQTVQVAQQFMEYEVNSDED


VEVSCDAQTGYDKSTTAGGNTVHAGMSFDDYTSRTGKDD QKLYFDDGLLNF VEMNGQLYRTILKLKGYEPVAGD LMLTFDRETGFSQVVLNKGTGESHKLADSTEMMRATSEPT
 LKLTFDNKTGLLSSIMNKERKLEITNAVQSLKYYNWNGSRQ LRAEVSKKTGSITKLANKKKNLQI PLSLDVYYQAFQGDGH LK VT PQTGGPDKLFNKVTGQEDALHQKYAEYQTS NGRNILLWVKHVTSEKQFKVLIEMMYYDGETEYN GDGGSGGPYRFTLKNLKAGLLEVKFNVTLAYYESSVGYQGQ TRVEIDTSTGSLLVSVNKAERISVPIGTLSLYYRAFQSGSP胃TVGNNDFNLEFQANKKNNGDMELVGYQDLVQGDTGPGSQ YRLFVDPVTGLLERVLVLSTSQEDPFRQSFMYRAYEGLSE LT TTHYAGSGMMKSAKSSIVG
$D V S L E G V T Q L T G S$
TRDETDRSTGS LVSVYNKAEKTSLPVTLATYYRSFQASSP MRAEISKTTGSITKLANKKKNIQUPLSLDVYYQAFQAGGP LTAAATTTVQLNETMQQYTTMK
YTMFLGKDTNLTHSTWERQSNQTDQVTQEFMEYHDNSDEG YQ QKFNS NGMIKS DTKNNSTDNLTNSMSQYK
 LN $\square$ N RESNRTVQGTQEFMEYRVNGNDK VRVKDDKNTGS VS TTNKAKNDELPDNSSYYQAFQGDNEQ MDVLFDGKKGMLKSIKTDNHN】RTNVEDEFVTYGTGRDKT $L K V A L N D S N G A I Q T V V K Q S D K S T F E C Q Q S W H L Y K E A G G G$
$Y T M F G K D T N L T H S T W E R Q S N Q T I Q V T Q E F M E Y H D N S D E G$ LRAE GKK T GSITTK LANKKKNDQUPLSDLDVYYQAFQGDGP QRLTFDEDTGFLKTVFEKETNIEKNI ILDYGAFRGSNLN
LE LT F A DKA LVS LK N LD A G DS T T LT A T WG WY NS SVGGCTD FLKATFDPT GSLQTVTKQNDKSKFDCQQSWHQYREAGGG LNFKFDRDNNNLLTLNSYDDLTNNKGGQPWSQHLIAEYTSG
 YEYEFSKRDGLLKSVKDLQTKKKDWITQDFQQYKAK LRLLYSADEGKLTHYVNNRNKVTASAGQSYSYYSGNDGTD TIFKLKTCSRRTSENENSVCTVNDFEVLYHYYPAYQGQGQ


T $\square$ T F K K N G H $\square E T \square L D K K S G T \square K K \square N Q Y F R E Y H T$
Q
YK TSFGS LGVES TNGMP TTNEL LYFNSSQGYGQ YPINGKEKQLSSLIVGNNVYNLQFQVNNGNGGL
Y $\square K \square T V D K T T G L L E S F Q H V D G \square K \square S L S Q N F Y F Y S Q T Q Q V L$ KYIRI SLDS HRKVSSMSLANGVNTSLDQQYYFYTVENQKR MLVELSNPD GLLDALSNDTERLKCKQEFSCYKNSF
LK MLFSSTSGQLVR\|LNSKTGVDVPVQQSYDYYGDPVDSQ
$M L F S S T S G Q L V R I L N S K T G V D V P V Q Q S Y L Y Y G D P V D S Q$
$L Y Q V W E T E K Q S S F E V Q K L K E Y T F S L Q Y N F Y Y S S Q N W G Q$ NGLISK TTDKNSNEDKTDEQTFHQYSTKKSGPYDFNVKGG


FK V S N D P $\square$ T GA $\square$ Q S V N K L S D N S K F H C Q Q S F Y N Y K E A G G G TQEGQTVTMRL MKYDASTYYKP

VRVLFNPVTGLLREDRNDDKSGSDPVSQFPRYGDDDSAQ VKLVYSKNQGKLTRYTNSRTMVKESVRQSYSFYSGDDGSQ MQVWFSGLTGLLKSIRRVDEEHEQQVDMQVLVYGTRTSKD $\begin{array}{lll}E & \text { I Y E F S R N G Y L K S I K N N I K S N K M T L I }\end{array}$



## UniRef90 FoZND5

 UniRef90-UPIO0042CBF6E UniRef90-A0A024UMW7 UniRef90-D2VQG0 UniRef90-G1TTH3 UniRet90 WAFPLO UniRef90 G7Y5S9 UniRef90_UPIO00343FC9F UniRef90-B4Q795 UniRef90-K4E2E61 UniRef90-K7H8Y1 UniRef90-W5P687 UniRef90-H2PCV1 UniRet90_UPIOOO2C424C2 UniRef90-A0A058Z1W4 UniRef90_W4FPZO UniRef90-UPIO002ADB6C1 UniRef90-H3EB17 UniRef90-B5Y3K7 UniRef90-UPIO0026595C6 UniRef90 T1H555 UniRef90_UPIOOO3C48306 UniRef90-F2U4D3 UniRef90-T1HT15 UniRef90-U6HB65 UniRef90_FOZNU5 UniRef90-E1FYU6 UniRef90-H3GT35 UniRef90-L8HEV2 UniRef90-G7YAW6 UniRef90-C5LDP5 UniRef90-FOVYN9UniRef90_F4QE18 UniRef90-Q6DIG4 UniRef90_B7QEJ4 UniRef90-H3G219 UniRef90-EOVRZ4 UniRef90-A0A024G3G2 UniRef90-DONE48 UniRef90-D3BM45 UniRef90-W5P5E3
UniRet90-F4Q2T9 UniRef90-F4Q441 UniRef90-G1LIA9 UniRef90-K3X179 UniRef90_W4XHD5
UniRef90_UPIOOOO123F25 UniRef90_UPIO0029D8925 UniRef90-G4Z5K4 UniRef90-H9JS14 UniReffo-S4R9X5 UniRef90-FOY5C0 UniRef90-E3LVIO
UniRef90_Q54YF7 UniRef90-X6LVU4 UniRef90_Q1ZXI8 UniRef90-F1A4A7
UniRef90 V4U7V3 UniRef90-Q23BN3
 $\square$ SDNYVFTPSGRAEPAWEA VRMEIVEGPLVTEIRQYFYR
 AYILRTTGYAQDLVFETEYCIISNGKVVQSLSQRYTN

S S GAYVFHPNTSAHPLPSVTSFECNSQSNVASCVFDFGSW HS GAYI FVPEGAGKVMEPKTPQLRIVRGPLCEEITVYTQY ESNYYLFLPNGTAEPAWEG VKLEIVAGKLMTEURQFFYR PRVGWQIDPFGH VSGAY MRPNATCNPDTDSPVELRLVDQRMGVVEQRFGKD QGP $\square N V F T S N E T M K S A W E T V G M E D V K G E E V T E I W Q Y F Y R$ ■SDNYLFTPGKAAVPAWEA VEMEVVAGQLVTEVRQYFYR
NSGAY $\quad$ FRPMED THLPLDRYTFVTPGATSLVQEVRQKFSA
 $\square$ SDNYLFTPGKAAVPAWEAVGMEIVA GQLVTEIRQYFYR TS GAYVFRPKDNTEKHPATAAKIELSK
NSGAYVFRPSTPEEK LNASPSGAKFVDTSVGTEVHVAFPW ASGAYVFRPDGPK DAVVL RGEKQVNSDDFVEDRQTFSDN HS GAYLFKTDPEQHEAEYDMDWDFITSGGIASDVTVVYGQ HSGAYDFMPDGPAKPYTFNGTVIHVIKGPFVSEVQVQTTH SGAYLFRPYSH $\square W S T D R T Y G I V T A L G G Q L Y D E V S T K F L Y$ RAGAY IGASFATKEPLARKPLSMRVLRGSLTEEVTTYYPQ SDSAYTFRPNGPPVNLKPVNPKYYITNGTLVKDVTIIYTS GDGAYTMAQNAKLTKLKMIDLETFEVSGPLRQTAYSLSEF KSGAYVFRPDSNQTYPVIGGSGTAASAVPDVTMVELQTKW
 ASGAYIFRPDCPEAPYVRSSPTMLMGQADDGNTLRVNVAQ KSGAYAFRPTSNMTYPCVNVDTELNSYGTRTKLAFRLGQW
QDDVYEFRPYNP DPLANTSPQVYLTEGPLVQQVTVVYSN

## K

KS GAYSFNPATEAPDDLGGSVNYS V NGGAYDMRTHGVARNVSMTSVLFV SGSLQSSAYSSFR KSGAYVFRPTSNFKLVEFVDVETKLNSYGTPTSVAFRLGK KSGAYVFRPDSNKTYPVAGKENSLLDNGGLASVPRVAFKW SGAYLFDPDDKSNDFSSDKKKYYYITGPLLSQVLVYSYU NSGAYIFKPDDEPKSFIFGQIKIIRINGPIFDSI DHYRYS SGAY FVADSDPKKVIEKDKVFKITGHLFDSVVHYQYYV
Y G
 KSGAYLFMPDGDAHP LPPSQDPDRVTRGPDESHVDVVY
 K S GAYI FRPDSNKTYPVTDGASNGAASAPLPDVTMVELQW


YS GAYMFRPNSSFGFDPAFEPTMEVEKGSLVTEVRLASAD AYLMRLH TNPKEVTEFQWMRITGPLRHSVYQKSKN S D D A Y K F R V Q G L P IP LT P I N P Q F Y L T IG P V V Q 1 Y E V S Y VA F ER GL I F K S DDPPVDVVF LEGPLV SEMQQVWQ T
 K S GP Y I F EA GK LED T L N Y P DYY LL F D GP L V S QL S MI YN S
 PSGAYI FRPNSSTPFDISSRTAKTEI IKTSVVQEVRQWFAP

 | $M$ | $E$ | $V$ | $E$ | $G$ | $P$ | $L$ | $V$ | $T$ | $E$ | $I$ | $Q$ | $Q$ | $Y$ | $F$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


 LE L VG Y E DLVE G GVTIPLH QHLVDNNASQVFTV
QS GA YSFRRPEKEKPTPVTDKVT FHTDRGPGVKEDRQRFND
 S GAYVMK QNHQLQK LKMDDAETFIVSGPLRQ\|AYTLSKF

AS GAY IVRPDGARPT VVSREVPLKVVRGPLVDEVHQQFSS S S GAYI FRPDNDQTYTYSQIKNITIYRGQLVTIVLLQGEH K K H GF L ENPDK F DY H DGP LV S QLTMLYGVDDYCVQRIYK N KSGAYAFVPDSNKTHAVTGKSEATSNMLSDVIMMEUQTTW $M V R V V S G L Y S T T V I I ~ N H A L ~$ A Y L M R L H T N P KE I DE Y Q WL KV S G P L R Q SI Y Q K S T N


ASGAY TFRPNRSEPFRVATVARSHLWKNKVVQEVYQNFSS AS GAY F RPDCPEAPDRSCRPEMAMTP T ILMGGQADD GSTN ASGAYI FRPNHTYHTRSDGQASFTVLRGPLLDEVHQRDNS

 HD DCYHF RVVHGEPHPDLDATSSAQFY L


## UniRee90-FOZNN5 UniRei90-UPIOOO42CBF6E UniRef90-APOOOO42CBEF UniRef90_UPI0002B4B93E UniRef90 D2VQG0 UniRef90-G1TTH3 UniRet90 W WFPLLO

 UniRef90 UPIOOO343FC9F UniRef90-B4Q795 UniRef90-K4E2E61 UniRef90_K7H8Y1 UniRet90_W5P687 UniRef90-H2PCV1 UniRet90_UPIO002C424C2 UniRef90-A0A058Z1W4 UniRef90-W4FPZO UniRef90-UPIO002ADB6C1 UniRef90-H3EBI7 UniRef90-B5Y3K7 UniRef90-UPIO0026595C6 UniRef90_T1H555 UniRef90 UP10003C48306 UniRef90-F2U4D3 UniRef90-T1HT15 UniRef90-FOZNU5 UniRef90-E1FYU6 UniRef90-T1FPH3 UniRef90-H3GT35 UniRef90_G7YAW6 UniRef90-C5LDP5 UniRef90-FOVYN9 UniRef90-Q6DIG4 UniRef90-B7QEJ4 UniRef90-H3G219UniRef90 EOVRZ4 UniRef90-A0A024G3G2 UniRef90-DONE48 UniRef90-D3BM45 UniRef90-W5P5E3
UniRet90 F4Q2T9 UniRef90-F4Q441 UniRef90-G111A9 UniRef90-K3X179 UniRee90_W4XHD5
UniRef90_UPIO000123F25 UniRef90_UPIO0029D8925 UniRet90_G4Z5K4 UniRef90-H9JS14 UniRef90-S4R9X5 UniRef90-E3LVIO UniRef90-Q54YF7 UniRef90-X6LVU4 UniRef90-Q1ZXI8 UniRef90-F1A4A7
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UniRef90 M4BTEO UniRef90-K1Q9S7 UniRef90_O01574 UniRef90-U6HUE1 UniRef90-C5KX28 UniRef90-K7G5P5 UniRef90-C5K5D2 UniRef90_UPIO0042B0775 UniRef90-HOYNG5 UniRef90-FOZ8X5
UniRef90 UniRef90-H2KRH8 UniRef90-E91283
UniRef90_FozR85
 EVQSSDGELLCHRTEQEYRVGPLENREAILRTSTDLNTGQ WALEYKLHVWDKSIVVEWTVGPIPDDEVILRFDTSVQSEK NVTQTFVIYNEYNIPENGFVLDMDNKEMITEFSLGDDQT YSDVWGKVVISRFNTPDDKG GTDQYKLSRHDVSVQVEWTVGPIPIDEVILRFDTSQQEK VNHTVRLYKDARYLQNTVDLCSTNNMELVMRVRTNUSSHR YAGTCTRKSGSMSVP
DHNDKGRRMNDLALEMTWDTEEEFGTEVVTVFSSEDASNG LVQRVILRGDLVDVEFTIPI HDNFGRELVARFRTSVESGD WVQQIRLPKGKNYLEMEWIVGPIPKKEIVTRYTTEVRSGN TVNDSDPTYLGHRIEQEYRVGPLENCEAILRTSTNLDTGR LTHVPQGHDGCHR1 EQEYQAGPLENREAVLRTSTNLNSQQ EHHAVGSVADQAQVHVDSRLGEIPYNEVVVHIDATDEADT GVLEYKLHPWNSSVQVEWTVGPI PGKEVILRFDTSVASKK LTHVPQGHDGCHRIEQEYQAGPLENREAVLRTSTNLNSQQ ПRQVTRILKGQPYVEDEYTIGPIPTREFVNRYDTPIKS VYQNTRVYSSKAYVEADWIVGPINGKEFVMTVRTDVVSNG FLSHTVRITFNTNYIENDVDFEPPPKNELFMRFVTDIENGG WCSQVRLYPGQRHLEDEWTVGPDWGKEVISRFDTALETKG FRHTLRLFNQDVEIENTVDMSYLQEADLVMRVKTDIUAGT ATLTTRLYYGELASLVELSDESLYNDELTMELDTDMNDDA VKHTLRI HKLAVEVENIASGTDVQSVEVVMVIQTGMNTKG NCSQSYIVYNSNYFE DDNIVAAGWNKEVASKFSTNINNNN DKQRLSVNNDSLHMQLRVDVRNMSSVELDTKFTTDMIADD VTDEYRVNDDDEFLEDEWTVGPVPDDEVIVRFDASAASDS APQDPLSHPEVGGVLFTSHLIDAPNREVVVRYKTDVPTDD
WATVVVHESDQKVEVEWTVGPIVSREVVVRYTVPNTPG QSLEKEDEGDSPALDVADDVGDGVGKEAVLLLDTDINHDG VTVVYKLSDVDEFVEVEWTVGPGPIIEVILRIDTKIQSNG VQQVMRLYGLSQDVSSLIDIRDGVNKE:SMRLSTDIASED VQHWTTVRSDQVHVSMRVDLRAEHNTEMVWSVVSEGDDSY WVSQVRLYKGEPYLEVEWMVGPDPGKEVITKYKTNDQNGG
 VLHRVYRSDSSQPCSLEYSVPGEGNRETVENYQTSMKSGK TTSQYDRLYKNDLI EYGYSVVGEKNRETVINLSTNANNTN RLYKDTNQTDKDLIELGGYVKGEPNKETVIDDETSLINQQQ DVHMPVGHGGCRRMEQEYRVGPGENCEAILRTSTGLHNQQ VRHTVIADGTALSIKNLLDI RNMQNKELVMRTKSDVNSDR VLQKTSANGEEDDISMSLDVTKERNTELMTRFTTNWAKPR TVNDRDPAYLGHH QQEYTVGPLENREAILRTSTN|LITGX FLAHKTKLFNAMYVESKDDYDVSPNNELFLTDQTDISNGN
 NYSQTYRVFNGDYVDVEVHLGPMDQGEFVTRWRTSLDSSG IVVQRIYKNNEIDNSNYSINGDMNRETTVNYKVKDLENDD WISQTRVYKGKEHAELEFT GPDPGKEVTTQDTTSMMNK WVSQVRLYADSRALELEWTVGGPVPGDEVVIRLLDTSVIKNSE KVNYSRLARGPQGSDGELLC GQHRAALLRTTTQQSNSGQ NYSQTYRVFNGNYTEVEVHLGPDDQGEFATRWSTSVDSNG NAHMVVGHGGCRRMEQEYEVGYSLEGEMAHYKVESVSNRN WASQVRLWKGENTVEVEWSVGPIWGKEVI SRYQTDTQGRP FNQTSQASGESDYILIENKVAVGWDREIVMRFDTTA品DNN TMHQRNSSAKCDYVQI WPNVTCLDDVT MMHIDEALNNSD WIIQVRLHRGEEFVEDEWIVGPVPDKEVVTIYQTNUNND VKQRLSVNNNRLHMQLRDD RKMSSAELITKFATDMIADD WDYQTRDYKDKEQADVEYRVGPGENHEAIWRTSTHLNTAQ TTTQLRFYFNDKGVEVETFIGPINGKEVVMIVNTNLKNKK NNEGNNSNSKSLITENYYINGDMNRETTINYKVKDLENDD VTLEYRVNDDDEFLEDEWTVGPVPDDEVVVRFDTSIASDR LQ QTTTI YNTNDIHGKYVYIGNVRDKELFMELQTSVQNPN

 WCSQVRLYEGQAYVELEWTVGPIPIVETACKQIISWPMCG WAQQSSEEGSAPALDVADDDGDGVGKEAVLLQDTDVNHDG
 MVNQRIYNNPEKYLETSYSFTGEMNKEKIIRYKSFSSNNN WASLVVRLYGDGDLEVEWTAGPIPDRELVVRYTVHPKTSG


UniRef90_FOZND5 UniRef90-UPIOOO42CBF6E UniRef90-AOAO24UMW7 UniRef90_UPIo002B4B93E UniRef90_D2VQGO UniRef90-G1TTH3 UniRet90_W4FPLO UniRef90_UPI000343FC9F UniRef90-B4Q795 UniRef90-K4E2E6 UniRef90-K7H8Y1 UniRef90-W5P687 UniRef90-H2PCV1 UniRef90-UPI0002C424C2 UniRef90-A0A058Z1W4 UniRef90_W4FPZO UniRef90-UPIO002ADB6C1 UniRef90-H3ЕВ17 UniRef90-B5Y3K7 UniRef90-UPIO0026595C6 UniRef90_T1H555 UniRef90-UPIOOO3C48306 UniRef90-F2U4D3 UniRefefo-T1HT15 UniRef90-FOZNU5 UniRef90-E1FYU6 UniRet90-T1FPH3 UniRef90-H3GT35
UniRef90 L8HEV2 UniRef90_G7YAW6 UniRef90-C5LDP5 UniRef90-FOVYN9
UniRef90_F4QE18 UniRef90-Q6DIG4 UniRef90_B7QEJ4 UniRef90-H3G219 UniRef90-EOVRZ4 UniRef90-A0A024G3G2 UniRef90-DONE48 UniRef90-D3BM45 UniRef90-W5P5E3
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UniRef90
Q54YF7 UniRef90-X6LVU4 UniRef90_Q1ZXI8 UniRef90-1A4A7 UniRef90-Q23BN3 UniRef90_UPIooo329AFF9 UniRet90-D0A1U2 UniRef90-UPIO003AF8792 UniRet90 - X6P9N3 UniRef90-FOZ8X6
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UniRef90 M4BTEO UniRef90-K1Q9S7 UniRef90_O01574 UniRef90-U6HUE1 UniRef90-C5KX28 UniRef90-K7G5P5 UniRef90-C5K5D2 UniRef90-UPIOO042B0775 UniRef90-HOYNG5 UniRef90-FOZ8X5
UniRef90 UniRef90-D3BKL3 UniRef90-E91283
UniRef90_FozR85
 VLHSDNNGYQMQRRRQNMWNTIARNYYPMVQLASIEDLPS TWYTDSNGLEFVKR QNMWTVAANYVPMTQATYLEDAS S TFYTDSNGRDFIKRDRDYRQPVAGNYYPINLGDYTQDNEK TLYTDSNGYEMI ERPYYFFNKIAGNYYPIVESSFTRSND YFYMDSNGWEDLKRRRNYRPPVAGNYYPVNTQDYITDRKK TWYTDSNGLEFVKRVRDYRETVAANYVPITDATYIRDKSN TFFTDSNCFQFIQRTYYDKLPLQQNLYPMTCAAFVKDPHD VFYTDSNGRELIDREKDKRQPTSGNYYPITSRIDALQDSKK VFYTDSNGREMQRRRVDHREPVAGNFYPVTSVFSINDTQT QSFTDSNGRQADQRFFDDTEPVAGNYYPDTSFGYUKDNVE TLYSDNNGTKMQCRAYHHENNI AQNYYPMTQSAFIQDRQS VIYSDNNGYQMQRRPYYVNNSIARNYYPMVQSAFMEDGKS CFYTDSNGREDLERRRDYRPPVAGNYYPVNSRDYD TDGNM VFISDNNAREMHARRPYDGSAPQKHFYPIVSQAVLRSDGT VIYSDNNGYQMQRRPYYVNNSIARNYYPMVQSAFMEDDKS KVYTDSNGREFLERRRNYRPSVAGNYYPI NAAAYYEDSDA TFFTDSNGRDVIERVRDFREPVSGNYYPITSRDNDNDGDH ETFFTDSNGREDERRRDYRPPVAGNYYPVNTRTYVTDGNM DAFFDLLGGOVTRKVRREDVGUNGQYMPATLLAFVQDSTR KWYTDVNDFHFRQRMYAENLCUAANYYPMSSUVY: ENEDW
IFFTDSNCYQMDQRKYYAKIRQWGNDYPMTCAAYI EDGQH IFYT SNGLEMMQRQYKPWSVIDANFFPSTNTAQULDQVQ IFYTDSNGLQLIKREYDTSNRPEMNYYPMPTALGLQDRSK TLYTDSNGLEFMKRVRNHRDTVAANYFPITTGAYYKDAKR TEYTSDGGERQKRSRNTNEAQETQYYPSISDAMLRHDSQ EFFTDSAGRRLTRRIRNETDPGAANYYPVINRLLKGRKQ KWYTDSNGLEFVERVRNYRATVAANYAPVTTGAYVKDKSI DFFTDLNGFQ
TFYTDSNGRQTVRRVRNVQRPWSSNYYVVSWПYLKSDND SFYTDSVGLQMLRRKSYSTLDTPANYYPMPTAAILEDGKK

 KKFYMDNGLESRTRCCNESVPI GERYYPLLNSADRLKDQKN VLYSDSNGYQMQGRRDHASNSIARNYYPMVQSAF EDSRS

## $\stackrel{\rightharpoonup}{\mathrm{V}}$



 THF T D S V G GMQQLL L R R R D Y Y K M P V Q A N N Y Y P MP T A A V L Q N G K Q


 T F Y T D S NGRR F $\quad$ GK R
TFYTDSNGLELQKR\|LNYRPTWNGNYYPVNGMDTMQDSNK YFYTDSNGREVLQRKKDFRPPDAGNYYPINSRAYI VFYTDSNGREMQRREVDKRRSVAGNYYPVSSRAVFIVDTET
 DEFFTDNGLETRKRIH QKSSVTSNYYPTLHYANNQQKNQ


 | F Y O |
| :--- | :--- |

 $V L Y S D N N G Y Q M Q R R K Q Y M V N T L T R N Y Y P M T Q S A F I Q D R Q S$
$T F Y T D S N G R D F I K R V N F K T Y$ TFYTDSNGRDFDKRVNFKTY
TFYTDSNGLSLQKRILNFRPTVSGNYYPTGSMDQTQDENQ TLYTDSNGLEFMKRVRNHRDTVSANYFPITTGGTYYKDDKR MYYTDSNSFQLISRQTRKNYPMPANDFPVTSMAVLEDPET LTYTDSVGMQLL RRDFYKLPVQSNYYPMPTAAVLQSGKQ EFYTDSMGNDLIKRERYWWIRIEGSYYPVVNRILLKGTDY DFVTDSNGRDWVHRRVNYRDPVAMNYYPI NSGLRISDNAR TLYTDSNGDEFMKRVRNHRDTVAANYFPITTGAYI KDAKR
 TFYTDSSGRDFIERFFGWH A APTVS
EFYT DNGLETRKRV YREGSTSSNYYPTLHYVNTKDKDE EFFTDSSGRRLIRRVRNQRQPVAGNYYPDI NRIMLKGSAM TFYSN NGGETI KREWMEKFNI VGNFYPSINTAIIKDSNS


## UniRef90 FoZND5

 UniRef90－UPIOOO42CBF6E UniRef90－AOAO24UMW7 UniRef90＿UPIo002B4B93E UniRef90＿D2VQGO UniRef90－G1TTH3 UniRet90＿W4FPLO UniRef90 G7Y5S9 UniRef90＿UPI000343FC9F UniRef90－B4Q795 UniRef90－K4E2E61 UniRef90＿K7H8Y1 UniRef90－W5P687 UniRef90－H2PCV1 UniRef90＿UPIO002C424C2 UniRef90－A0A058Z1W4 UniRef90－W4FPZ0 UniRef90－UPIo002ADB6C1 UniRef90－H3EB17 UniRef90－B5Y3K7 UniRef90＿UPIO0026595C6 UniRef90＿T1H555 UniRef90 UPIOOO3C48306 UniRef90－F2U4D3 UniRef90－T1HT15 UniRef90－FOZNU5 UniRef90－E1FYU6 UniRet90＿T1FPH3 UniRet90＿H3GT35 UniRef90＿L8HEV2UniRef90＿G7YAW6 UniRef90－C5LDP5 UniRef90－FOVYN9 UniReffo－F4QE18 UniRef90－B7QEJ4 UniRef90－H3G219 UniRef90－EOVRZ4 UniRef90＿A0A024G3G2 UniRef90－DONE48 UniRef90－D3BM45 UniRef90 W5P5E3
UniRef90 F4Q2T9 UniRef90－F4Q441 UniRef90－G1L1A9 UniRef90－K3X179 UniRef90－W4XHD5 UniRef90－UPIOOOO123F25 UniRef90＿UPIO0029D8925 UniRef90＿G4Z5K4 UniRef90－H9JS14 UniReffo－S4R9X5 UniRet90＿FOY5C0 UniRef90－E3LVIF7 UniRef90－X6LVU4 UniRef90－Q1ZXI8 UniRef90－F1A4A7
UniRef90 V4U7V3 UniRef90－Q23BN3 UniRef90－UPI000329AFF9 UniRef90－DOA1U2 UniRef90－UPIO003AF8792 UniRef90－X6P9N3 UniRef90－FoZ8X6 UniRefofo－D217W88 UniRef90－F4PYP9 UniRef90＿U1LXI8 UniRef90－G6DAVO UniRef90－G6D500 UniRef90－A0A044S8H0 UniRef90－UPIOOO3C012F4 UniRef90－A0A059AH58 UniRef90＿Q241T5 UniRef90－Q54YC4 UniRef90－M4BTEO UniRef90－K1Q9S7 UniRef90＿O01574 UniRef90－U6HUE1 UniRef90－H3HAE2 UniRef90－K7G5P5 UniRef90－C5K5D2 UniRef90－UPIOOO42B0775 UniRef90－HOYNG5 UniRef90－FOZ8X5 UniRef90－H2KRH8 UniRef90－D3BKL3 UniRef90＿E91283
UniRef90＿FozR85



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QLNVVTDRAQGGASLKEGHLVEVMVHRRLLADDDKGVGEHL QFTVISSQSMGTTSYVDGGLELMLHRHLSQDDGRGLGEGV AFAVYTDRAQGGTSLKDGQVELMVHRRLTRDDNLGVDENL QLNVVTDRAHGVGSLEDGQMEVMLHRRLLVDDGKGVNEHLD
 RITVVADVEHGVMETGKMGMEIMIDRMLNQDDGKGLGQGP DLTVFTDRAEGGSSLKDGDDELMLHRRLLHDDGFGVEEAL QLNLVTDRAHGVGSLQDGQMEVMVHRRLVADDSKGVHEHL QLNVVTDRAQGAASLVDGQVEVMVHRRLLADDNKGVSEHL RLVLLSEQVHGVSSQGSRQMEVKVSRPVWTGCDGPVGSGL QFTVFSDRSHGATVPKIGETEIMIHRNLHQDDHRGLAAPP
 QFNVTDRAQGAASLEDGQIEVMVHRRLLADDGKGVGEHL RLTLHSAQALGVSGLKEGWLEVVLDRRLMQDDSRGLQQGV RLVLLSEQVHGVSSQGSRQMEV
QLNLVTDRAQGAASLVDGQVEVMVHRRLLADDGKGGGPSG RLTVVTDHAQGVTALQEGQLEIMLDRRVLIDDGGRGTNEGL RLTVHSERSHGVASLHDGEMEVMVHRRMWNNENHDYNLTL ELSVVVDASLGGASIDDGSLELMVHRRLQADDNRGVQEPL RVSVVSNVEGARFLENGSVEVNI DRULNQDDGKGLGSGS QLTILSKQTFGASSQTNGEFEVLLDRRSNY TQWSVHEPM RFATIVNQAHGVASDRSGEMELMLHRRCLSDDGRGVGEVL QFTVYVDRSVGПTLRPENK】E IMLHRT】ERDDWKGVRWPT

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R\SLVNDRSQGGTS\QEGQ\E\M\HRR\LDFDDARG|GEP\square
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QFNVETDAAMGGTSTNNGEVLLTTHRRLLLDDQKGVSEP RLVLLSTQAHGVSSQRNGQVEVMIHRRLWNNDKGALGNNL RFATIVNQAHGVATFRNGEMELMLHRRCLSDDGRGVGQVL QFTVYVDRSVGVTSTGGGDEMMFHRTEFDDQKGLGWAS LFSVLVDRAEAGGSMREGSIIDMIHRRITADDHRGVDEPL ELVILNRQSMGGSSQSPGSLEVMLDRRSNYTQPSIGQKM RLTLLSGQPTGVTSSTVGNLDVMIDRRQTGDDGKGMGFGE GMCVLTDRTMGG VGREGGLEMMVHRRLTDDGFGLDESL RLSIGSNVPHGVRTVDKINFEIMLDRRLSADDGKGLGYDP RLVLLSEQAHGVSSQGNGQMEVMLHRRLLIKQQWAVNVTL
Q $\ S V V N D R S Q G G T S \square K E G Q L E M M H R R T D Q D D N R G V G E S \square$ QYTVYVDRSVGATSPSDGEMEIMI HRTMDTDDWKGVNWPS QLNVVTDRAQGVASLVDGQVEVMVHRRLLADDSKGAGEHL RLSIVSNVEHGARFLESGTVENIDRILNQDDGKGLGTGP AFGVYTDRAEGGSSLAEGEVELMLHRATVVDDGLGVGEPL QLNVVTDRAQGAASLVDGQVEVMVHRRLLADDDKGVGEHL QLTVLTDRSQGGSSVTDGSMEL
QLTLVPDRAHGGASLLPGQLE IMDHRRMDFDDGRGVGEAL
QYTLYVDRSVGVTYPSKGEDETMLHRTMENDDWKGVQWPS 여NuTb

 $R L V L S E Q A H G V S S Q G N G Q V E V M L H R R W N N D G W A L D N N L$


Q

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| UniRef90 FOZND5 UniRef90 UPI00042CBF6E |  |
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| UniRef90_A0A024UMW7 |  |
| UniRef90_UPI0002B4B93E |  |
|  |  |
| UniRef90 G1TTH3 |  |
| UniRef90-W4FPL0 |  |
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|  | UniRef90-B4Q795 |
| UniRef90-K4E2E6 |  |
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| UniRef90-H2PCV1 |  |
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| UniRef90-B5Y3K7 |  |
| UniRef90-UPI00026595C6 |  |
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| UniRef90-F2U4D3 |  |
| UniRef90-T1HT15 |  |
| UniRef90-U6HB65 |  |
| UniRef90-FOZNU5 |  |
|  |  |

 NETETLQQLTQQGLTVRGSFALSVGPLDAAMLTAGLLRQRSGB
 $L E E K W G R G C H L L L L D A V G M V A A G H R$
$N E T E T L Q T P T Q G L T V R G S V A I S V G P H D P ~ A M A T L R F E M A B R$

 NEEMI ARGKVFLIL D EGLVAMGKHDLLETDVKTSAAE
 QEGLWVRGRHLVLLDPKRGRTTHEGEGQRG PQ NDRSVIRS RLTMMHRTGNVSMDRTRAQLNIINMFP $N E D E T L S V V D Q G L T V R G S V A L S V G P L D A A M E \quad R D R D D M Y$ NDTSVVHPVV L WLLL GS WS LIS TALLHQRSA NEPGV DGRGLIVTGTHVVQIGSVKGASERARLGQQCV NETVVIRGVHRLLVGAKGAGLARSQMDATFAEPLIFVASS NESGVVRGTFRVVFGDAPS FNTPVEGQYQV VSRLD PSDFSNFS AADHITTSKFVLHLEARPPSSSAVQRDHVPRILSAVRLS



NETEAVYDSANKKLVTKGLAVRGNFFVNVGMRSLRSKMES RDHNVVTDQQWLMLGHTEDAE MENGIVRGQHWI HLD DEVDCVESLCRLLLEPMRTSTTEEESH


NEGLIAKGKHLVFLGSVAESQRK LRTVG $\begin{array}{ll}T \\ N \\ N & L P V Q M Y F T L V I \\ N\end{array}$
 NETESVKQVTKGLVVRGNFFVNVDSAED GMRSSIRTKME
 LLGQTVAMPQVLKLHLMWRALNARRRSLAQTLSLLSILAE

 NETESVRGNFFI NVDSATEGIRSMRTK AE DDMKPVVMKFKLVVFDNLGGEDQPNDHYST HTFRAQQAV QETTRVHPDF QQQQEA NETESVLHVTKGLVVRGNFFDNVDSADD GMRSLRSKMES ADNSATYQRHFVILEGLNDYNQPPNVKLLNLPSSTALYLSS
$N D T S U V R P L F W L A L A R K S N S V$
NETMCGCN
D DMKPVDMKFK LVFDQLDHEDPPKDHYST F DQLD HSFRAQQAV NDTSNPS LRVLCIF GDPNFSNEDRTPHS LDFENPL
 $V S Y L S R \frac{L}{R} H Q \| Q$ N NQLQNEK
$\square S \square K \square D \underset{H}{R}$
NETEPYNNS TGLTQRVRHY IVFEEGDQTLSRKDQTHVDT
NETEFDTAYEGSMNEKGRGKHYGNPLRVRGTDTDSVGRSG NDTSVVHPVLWLLLGSR
NETTHIEPRIFVTYDTSNE
RDSSRSDGKFYFNFDS $\square D N Q K Q N E K$
NDTSVVHPVLWLLLGPRPLTLR
MDGLMVRGRHFLFLGK
$\vee \mathrm{S} Y \mathrm{~L} S \mathrm{R} R \mathrm{~L} H \mathrm{Q} \mid \mathrm{Q}$

NDTSTVTDAHR LFGRKTTRD $\square R T P H$ LFGRKTIRDIIRTPHSIVHENPV AESYPSELKYRIVVEKRD QSSNDPTLYHSSTVQRCL NEEAYVRGKHRLYVG NYHQEVDDQTFFERTAQLACR NETVVVRGTHYLYLTRASHRPNRVFEK VDNLPVNMAFTFVLEKLQVDDKQRQERQFSYNT LNAHKA L NDTSVAHSVLWLLLGGPSTLTRDLGQRSG
$N E \quad$ V $\quad$ DESGQNGLSQK $\square R H Y \square V F E S Q S R R V Q$ KDIGRSDAKLYFNMDLVNNQLQNEK RUS NETESVAYVTKGLVVRGNLFIHVDSAADGMRSMRSKMES TDNKPTVSKFII QVESFNKEEPLTKDHRLAHPSMESFLIN

 NETEAVYDSANKKLVTKGLAVRGNFFVNVGMRSLRSKMES

Y REMA

 NDTSTTR IGSRGLVGQPERVELLRAQHTLIDENPLLKMFA


UniRef90 FOZZND5 UniRef90＿UPIO0042CBF6E UniR Refo－AOAO24UMW7 UniRef90＿UPIOOO2B4B93E UniRet90＿D2VQGO UniRef90－G1TTH3
UniRef90＿W4FPLO UniRef90－G7Y5S9 UniRef90＿UPI000343FC9F UniRef90－B4Q795 UniRef90－K4E2E6 UniRet90－K7H8Y1 UniRef90－W5P687 UniRef90－H2PCV1 UniRef90－UPI0002C424C2 UniRef90－A0A058Z1W4 UniRef90＿W4FPZO UniRef90－UPI0002ADB6C1 UniRef90－H3ЕВ17 UniRef90－B5Y3K7 UniRef90－UPIO0026595C6 UniRef90－T1H555 UniRef90－UPIO003C48306 UniRef90－F2U4D3 UniRef90－T1HT15 UniRef90－U6HB65 UniRef90－FOZNU5 UniRefofo－E1FYU6 UniRef90－T1FPH3 UniRef90－H3GT35 UniRef90－L8HEV2
UniRef90 G7YAW6 UniRef90－G7YAW6
UniRef90 C5LDP5 UniRef90－FOVYN9 UniReffo－F4QE18 UniRef90－C6DIG4 UniRef90－H3G219 UniRef90－EOVRZ4 UniRef90－A0A024G3G2 UniRef90－DONE48 UniRef90－D3BM45 UniRef90－W5P5E3 UniRef90－F4Q2T9 UniRef90－F4Q441
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UniRef90
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UniRef90＿C5K5D2 UniRef90－UPIOOO42B0775 UniRef90－HOYNG5 UniRef90－FOZ8X5
UniRef90 H2KRH8 UniRef90－D3BKL3 UniRef90－E91283
 LALQQRPVVMLREMNETASWNGSWKQEAVTLPPSVHELQTM

NS LYAS LATDSDTKEAVLTYVGKFSRFDNEDPSNTHLLSL KEVLAPQVVLALGGNPRAALCTQFSGLRQELDPSVHLLSLC RYLSPLQWLTEFNQSTTEPSKTTTSDWANRLPSNVGLTLL
 KEFHLPLWKFFSKNTGSTTAAAKSVPSFDDFPNSVHLLTM俍 TARIHPRPQHQR
MALQHRPVVLF
RTEMKPV DW FSVLCQELPPTVHPLTL PLLAACCGPAANATVWEVDTPVFSMLQAPLPDSVHLLTV YRYLTPLVAVAHGHIVPSSSHDHHSWLDR L P LVGLTSL
 PKPSTPVGALVATQSSLSALQLSVGPVEGMSNVMLITLV




QFF RPLAVFRKPVASGVEAKVPWLAVGEFPPNVGLTTL QQQDHPATTVTDTKAPETHFVNSYTPLSASRPANVGLESLC


 QELLYPTVPLVTTK PHMVLTDVGSVNFETLQSNYKLDYTGMSEPGPSNAQULTL KQFYHP VGFKKSEADEELLQMKLPWLRVDVPPNLGLTT QFFYRPLTIFRKPVPSEVEAKVPWLTVNDDFPENVGLTTL TTRVHPDFQQQEAVTLPPSLHLQLLSDPGWMYNSNHTKH
 KQFFTPLVALKKPPSEEVEGKDPWLKIDNEFPENVGLTTLC
QSVIYPPLLFDAKPKKEEDDEEDEENSNDRFPCDVQLLTV VTLPPSLHLQULSTPGWMYNSNHTK QFF RPLTAYRKPVTSDVKAKVPWLTV GEFPPSVGLTTV
 QSVIYPPTLFDGNPKKEEDTEETEENSNDNFPCDVQLLTV QPVYSLIPNSDPDEKYIDTYNTLFKPLQTSHPYNLHLLTF HYGATKFYGLASSUSSWTSKYGSWTALSSNLPSNOHHLQEM $\square Y$ L $\square K K \square S N \square K Q Y Q K E Y K Q S Y S G L I K S L P N H \| H L D S L$

## YP VFQSLSQTANFN

PSAMRRVEQLDEKYFSPDAVYST GSTPNTNCSLELTQT $\square A L Q H R P V V M L R E L N E T A P R S G P W K Q K A V T L P P G V H L Q T L$ HYGATKFYGLDNSISNWTNKYGSWTATNSSLPNNIHLQEL LETNHPVMYMAKKQSYRSNYNSEFSPLAKDLPDNI HLQSL LALQHRPVVL
EK』LMKPQVFLYPGQT F QTKSSPLLTKTMDPQLKTT DELLYPPSLFUDSGDSQKNSSPPSISLEPPLPCNIQLVNM KWMFEPWPFMTSAEKKWQNDRNKFSVLRHGLPRHIGVLTM
 VALQHRPVVLILSETARDHPHPQ HQEAVTLPPSUHLQNL
NEDDSPDIFFAESDKGDFNFKVDKNLNK ITKNSNTYL
LLITNQQI MFVKKHNNQTGYLLKYSPNSNQLDPSNIHLQSL俍 QTIVYPPMMFNRPPKKEEDDEEDEESSNLKFPCDVQLLTV

QFF RPLAVFRKPVASGVEAKVPWLAV GEFPPNVGLTTL

$\square Y \square I K K \Pi S N \square K Q K N N P D Q H Q S Q F \quad ~ T L K D \square P D N \square H Q Q \square$ PVVSFAPVKQPPSSS



UniRef90-UPI0002C424C2 UniRef90-A0A058Z1W4 UniRef90-W4FPZ0 UniRef90_UPI0002ADB6C1 UniRef90-H3EBI7 UniRef90-B5Y3K7 UniRef90_UPIO0026595C6 UniRef90-T1H555 UniRef90-UPI0003C48306 UniRef90-F2U4D3 UniRef90-T1HT15 UniRef90-U6HB65 UniRef90-FOZNU5 UniRef90-E1FYU6 UniRef90-H3GT35 UniRef90-L8HEV2 UniRef90_G7YAW6 UniRef90-C5LDP5 UniRef90-FOVYN9 UniRef90-F4QE18 UniRef90-B7QEJ4 UniRef90-H3G219 UniRef90-EOVRZ4 UniRef90-A0A024G3G2 UniRef90-DONE48 UniRef90-D3BM45 UniRef90-W5P5E3 UniRef90_F4Q2T9 UniRef90-F4Q441
UniRef90 G1LIA9 UniRef90-G1LIA9 UniRef90-W4XHD5 UniRef90_UPI0000123F25 UniRef90_UPI00029D8925 UniRef90 G4Z5K4 UniRef90-H9JS14 UniRef90_S4R9X5 UniRef90-FOY5C0 UniRef90-E3LVIO UniRef90-Q54YF7 UniRef90-X6LVU4 UniRef90_Q1ZXI8 UniRef90-F1A4A7 UniRef90-V4U7V3 UniRef90 UPIO00329AFF9 UniRef90-D0A1U2 UniRef90_UPIO003AF8792 UniRef90-X6P9N3 UniRef90_F0Z8X6 UniRef90-D217W8 UniRef90-E4XSB7 UniRef90_F4PYP9 UniRef90_U1LXI8
UniRef90_G6DAV0 UniRef90-G6D500 UniRef90-A0A044S8H0 UniRef90_UPIOOO3C012F4 UniRef90-A0A059AH58 UniRef90_Q241T5 UniRef90-Q54YC4 UniRef90-M4BTE0 UniRef90-K1Q9S7 UniRef90_O01574 UniRef90-U6HUE1 UniRef90-C5KX28 UniRef90-H3HAE2 UniRef90-K7G5P5 UniRef90-C5K5D2 UniRef90_UPI00042B0775 UniRef90 HOYNG5 UniRef90-F0Z8X5 UniRef90-H2KRH8 UniRef90-D3BKL3 UniRef90-E91283
UniRef90_F0ZR85 Q



QTRNNVTTPNQRFTA LRQQHDYEAQES LIHSKPVTLQAD ARWGPQT ALLRLEHQFASGEDSNLSSPVDLPNL EVKCPR CKLRLRLTHGFADHEHSTWSAPGTVLNG KTYHSRNTKGAQDGLILMRLAFVKSSHPADDQAMVDLKTG
 QLI I HKKNS RKDNQAEAKAESRRVLLRLQRHYEVDEDPVRSQPVSVLRGG
ARWGHRT LLLCLEQQFSVREDTDSLVTLDLRHL K ADASAHWRTGLLLRQNDFEVDAGLPESLSEELDLCGI EAHSPK PKGHRGETQADDHRVLLMRLHHLYEVGEDPVDSQPVVVLQA
 $R T L T D P Q L P S Q S A L I V L H R Q G Y D C$ ARW GREMLLLRDEHQFADGEDMSSPVTLDLRDL


 $R P L I S D \square N R R L M L L Y R V G I D C T S L D P C R G N K L D L L K K$
 KARDAVSSE VVLRLDHDAEGTEADAAPTEV VAWPLTETEGKKQRLLI RLENFQKAYTKRHRPYLLRLSWL EVLHVNNTPKDRRCALLRVAHTY AQEEGGAPVQLDLAGK E ELTTKR
T RQWLDN

Y V VT NVEETVLSANQF LRRTLRFDTLDSVSTSVPEADMSGA RLISPTKM MITLFRNGIDCCSDSKDTDADRSLVNR E PWGKNT E ELSKK QELTKQ KFY NQYDSKGK QNLQKGQAKVDFCRVLLRLHHLYEKGQHPVLSQPVTV S KNHQDEEPSSSSNPTLHLRDQHDSSVDQSPPDQLSLSKLD
 QELDSKDS
$R P$ LSGDRQLMDFYR HATSCSSEKMSNCGADFKKS QKGEAGQAKVDFCRVLLRLHHLYEKGQHPVLSQPVTVNQL QELSKQCDMELGAED NRVGLEWKTTDDAY



RFNPLKTNTDPFLKVYYRPFGDLY LLR LNNLNEVDASSL
SPSVQTTQLLNKTTVLLRTAHRYAVGEDDERSKSVELRSL S IP GWDKAKAD LDRCVLLRLQHDYEVDQDQVLSRPVSVLRG RYAY NGLDYNQGLILQLQHMFEVGENPEWSVTI DLSMI
 $\overline{L V}$ SKHFGMFNNGRDVVI RI EHLYQVADKA GNDVDIDLTHF AREWL NSPAVLLRLVNIYEVGQSSEYSQPVAVSSL ${ }_{\mathrm{R}}^{\mathrm{R}} \mathrm{Y}$

R P $\square$ T S D $\square$




## पT

 LKNNTVGLRLFNIHEVDSNTSTTDTDKSTLFNE $L$ QEQSKQKTFIDSEQ
 RPLED
 QELSK Q CLLVRLSHLYAVEEHSTLSQPVDFSSL
E LLHANNTPKHHRCALLRVAHTYAQEEGGSPDQKGTLLKD

|  | UniRef90＿FoZND5 |
| :---: | :---: |
|  | UniRef90－UPIO |
|  | UniRef90 ${ }^{-10 A 024 U M W 7 ~}$ |
|  | UniRef90 UPI0002B4B93E |
|  | UniRef90－D2VQG0 |
|  | UniRef90 G1TTH3 |
|  | UniRef90－W4FPL0 |
|  | UniRef90－G7Y5 |
|  | UniRee90－UPI000343FC9F |
|  | UniRef90－B4Q795 |
|  | UniRef90＿K4E2E6 |
|  | UniRef90 K7H8Y1 |
|  | UniRef90－W5P687 |
|  | UniRef90－H2PCV1 |
|  | UniRef90 UPI0002C424C2 |
|  | UniRef90 A0A058Z1 W |
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|  |  |
|  | UniRef90 UPIO0026595 |
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|  | UniRef90 UPI0003C48306 |
|  | UniRef90－F2U4D |
|  | UniRef90－T1HT15 |
|  | UniRet90 U6HB65 |
|  | UniRef90－FoZNU5 |
|  | UniRet90－E1FYU6 |
|  | UniRef90－T1FPH3 |
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|  | UniRef90 L8HEV2 |
|  | UniRef90－G7YAW6 |
|  | UniRet90 C5LDP5 |
|  | UniRet90－FoVYN9 |
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|  | UniRef90－06D |
|  | UniRef90－B7QEJ4 |
|  | UniRet90－H3G219 |
|  | UniRef90＿EOVRZ4 |
|  | UniRet90＿A0A024G3G2 |
|  | UniRet90－DONE48 |
|  | UniRef90＿D3BM45 |
|  | UniRef90 W5P5E3 |
|  | UniRef90 F4Q2T9 |
|  | UniRef90 F4Q441 |
|  |  |
|  |  | UniRef90－W4XHD5 UniRef90－UPIO000123F25 UniRef90－UPIO0029D8925 UniRef90 G4Z5K4 UniRef90－H9JS14 UniRef90－S4R9X5 UniRef90 ${ }^{-}$FOY5C0 UniRef90－E3LVIO UniRef90－Q54YF7 UniRef90＿66LVU4 UniRef90＿Q1ZXI8 UniRef90－F1A4A7 UniRef90－V4U7V3 UniRef90＇UPI000329AFF9 UniRef90－DOA1U2 UniRef90－UPI0003AF8792 UniRef90 X6P9N3 UniRef90 Foz8X6 UniRef90－D217W8 UniRef90－E4XSB7 UniRef90 F4PYP9 UniRef90＿U1LXI8

UniRef90 G6DAV0 UniRef90 G6D500 UniRef90 A0A044S8HO UniRef90＿UPlooo3C012F4 UniRef90－A0A059AH58 UniRef90 Q241T5 UniRef90－Q54YC4 UniReffo－M4BTEO Rie90－K1Q9S7 UniRef90－OOH544 UniRef90－C5KX28 UniRef90 H3HAE2 UniRef90＿K7G5P5 UniRef90－C5K5D2 UniRet90＿UPI00042B0775 UniRet90－HOYNG5 UniRef90－FOZ8X5
UniRef90 H2KRH8 UniRef90 D3BK1 UniRef90－E91283
UniRef90＿F0ZR85
 LGSVVSVEERSLTGTWDVSELRRGPEVTIYPKEIRTFFIH LGSPWSVTELSLSGNRVLRSLRRRTVTLKAMHVRAFEIT

FSDTSNTVEMTMSTNYATKNL NFTKTILKPGETRTF
FFTITCLQETTLVANQPRASASDAAAITLQPMETRTFVAS HF IAFDVKE 1 SUTHNRVLHDKVGTTVKLEAMQVRAF FAPLKLSQAAKLRRLTMIPEPDWHSSVTVEPMELETFLLN LGPVVEVEERSUTGTRDGPHSRGSSSVTVYPKEIRTFFIM


FFTDTHLQETTVAAN
NTADHYVRPQWADDSGSVHVAQNPLSVLMRPMD\RTWRYK LGSFSTVWEDSLTGNR
$L G S V V A V E E R S L T G T W D P S R P P G G P \square I T V H P K E \square R T F F \square H$ FSNVTAKREVLLSGDRSPRRKKGLLRQSHSSP

F F T $\square$ T D DKETTLAANQLRAKASDPASDTLQPMEDRTFLAS MFSASSFEETSLTGVMPRERSSDSANI QLPQMDMASIVV GLRENK IVSATITGIKT KKDDDSFDEI KI LPPSTLTTLKI S FPQLKMAVRTPVTGIPDKSSASPDLDVVILRRMEMEGFLLV


FSRTHNCTEVNLTADQTTNSP
GTLLKDFEEVTLNAGRDIETAEEERNVELQPDQ\RTF\｜VS FKNVLNVVEFNLAGTQEI RPQDRLNEVEMQAMEVRAFKLC FFNUSQVDETTASGNA【IEQVNLPLVVTLNPGEIKTFIMD

ATNGTGGGGDDGSAETDD DD SRLFTVTपRPADПRTFLVT LGGKSS⿴囗十⺝刂 RTLLGDEVLQEYSSIDE
FNDTINVRETALDG
FKTVLKVAELNLAGTQEMRPQDDQSKVELQAMEVRTFKTc LLFSVKNVKELVLTGTKELAEQQKGTSVTLQADEVRAFRVC

FNSVTNVKETMLNGLNDपSQQD
LLTVSNVHETLLDGI
LGSMVAVEERSTGTQERPHHRGSTKVTTYPKETRTFFTH FAVVSEVTELTLTGVSPLEQLSKGTEVELQAMEVRSFRVV
पMNVREAQKTDLSGVTATG DKVNVENLPDVDTKTF LLGLSSLITKMGLPDLSTLSTPGGSADITIHPKEIQTFFTH GWSPQSLPVKGTTVTLQAMEVRAFRVC LRNVKAVYKTNLVGTSEGMPLLHYTLANFLPMELVTLRIY

LLGVKQVQKTDLSGVTrTGemVKVe YLSDVELKTF


PEGVE\｜VEEVTLTANQNKKE DENSSEQNLKPGELRAF\｜VS
TPNVESTDEVSLTTNTLLRTGLDTVVLKPMDVRTFL LGSVVSVEERSLTGTWDVSEPPGSPEVTIYPKEIRTFFIH FNSIEQATEMTLTASLPLANGHKTVITISPRQURTFVVN FKTRTFKEKGLSFM
GGSMVADEERSLTGTQERPHHRGSTKVT $\square$ YPKE $\square$ RTFF $\square$ H LANFQ
 FFRGR\｜F EMNLTGTIRGAEVGPIDAQRLSPLEIRSFGVQ
FVNIVPDEAVEMK पMKP\KKVDVRAGILLYPQQTRTFVVS LQDVITVQKTLLNGVKQIGKEMPYQEFSLEPNDFATYLIR LGSVVSVEERSLLTGTWDVSTLHGSFT TTUHPKERTFF！Y
PSNFQDMEELTTTANQSKQD
LFSVKNVTETLLSTGTKELSQESKVTSVTLQATEVRAFRVC FLTVKNAQRMSLTYLHEKEALTPNSEVNINSMELESFKIQ LMDLKQVQKTDLSGVTTVGGI DKVE YLPDYELKTF FGRVVKATEMSLTANQNRNSLEWPSEVVIQSEEVKTFTL FRDI ETAEEKRLKWSAHGVQSQSSVSLELQPLQIRTFIVS FSVVSEVTELTLTGTKELSVPVKGTSVTLQALEVRAFRVC

NPN HLVETGLSFLEDSKD


SF TE LMM K F S S L IS QR KYSYS $\square P \square V L F N S \square S$

P T K L D $\square$ ID DGG S LN F P K S F $\square \mathrm{L}$ F N Q LS
HQDFLPYS SGSEPKGHSAAVYNPDA
$P \quad 1 \mathrm{VLVNSLG}$
Q S H $\square V \mathrm{~V} A \mathrm{Y} N \mathrm{P}$
T LAANSSYSSPE WT $\quad$ S $\square$ S N P VA
ENVVD $\square$ D S LE Y DEYS $\quad$ V F H N S LS

S K S LHPNTLIAGYNP LG
S HCHCHAAD DC $\square$ N $\square$ S VCAATTGDAFT\AA WNP $\square$ TA
$P D F N Q D F D V G A Y N P S A$ T Q Q S LS A $\square A S Q \square K L P P P P H D A Q P L V V F N S D N$

LE P G GY VVIY N P LA S $\quad$ T H S D T D S L P L V F F N P L $G$ Q E S L LAA IA S H IT $\operatorname{L}$ L S E P P P K P S L $\square T$ Q VY Q D A LL

 S H $\square$ T L P E P P Q P S | $R$ | $P$ |
| ---: | :--- |
| $L$ | $V$ |
| $V$ | $V$ |
| $V$ | $V$ |

$T \square K \square \mathrm{~N} T \mathrm{~L} \mathrm{P}$
Q N LQ S P TYFTVYNPS F $R L T Q D V L T S A L E T L T N Q A G S A Q G Q P L F V F N A H G$

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UniRef90 F4QAD8 UniRef90 Q241S9 UniRef90_G4M0J4 UniRef90_Q23BP9 UniRef90_Q241T0 UniRef90_O96635 UniRef90-D8RZF2 UniRef90_UPIO0034FDA36 UniRef90-D3BEM6 UniRef90-A8PLR5 UniRef90-UPI00006CB878 UniRef90_Q241T6 UniRef90 K7HWG9 UniRef90-D2VGC3 UniRef90-F4Q548 UniRef90_Q55ER0 UniRef90-G4VTI2 UniRef90-G0QPY6 UniRef90-D3BRU7 UniRef90 A0CYI6 UniRef90-X6M566 UniRef90_U4V085 UniRef90- A0C584 UniRef90-A0EGD6 UniRef90-D2VI94 UniRef90 G1LIB UniRef90-Q5D8N0 UniRef90_Q54KN4 UniRef90_Q5C096 UniRef90_S7P8Y0 UniRef90-D3BPQ7 UniRef90-M3WDX UniRef90 J9IT42 UniRef90 F2UEV3 UniRef90-A0EBD3 UniRef90_F0Z8X7 UniRef90 AODS65 UniRef90_G4VTH4 UniRef90-A0EAB1 UniRef90 U6IQX5 UniRef90-A0A044VDLO UniRef90-R1DJ66 UniRef90_J9IIV8 UniRef90 K9XFR UniRef90 FOZLY3 UniRef90-K9SA38 UniRef90_UPI000298B271 UniRef90 UPI0003C00DCC UniRef90-D3BH49
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UniRef90_EOUFD1

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UniRef90_EOUFD1
 VKRQMN】R 1 R IPQANVT ILNDKNQFL
WSTKQH $\square S \square R \square K S P K K \square \quad P Q \square E F \square E A S T N K T \square Q \square Q A \square P$
 WKRNAPHSUYVKLPS YNSVADNCPVSVWSGDDQQQDC
VARSIVKVKVPNVIFTLTNSQNQPVYGEVECVNETDQT TTRQQLTRUKVPQUSLSVLNVENQQLTADVIC
M VDHVMVLLVDSP पFCVFDQKMRS $\square K S Q V A P E W T$
WKKQHHYT $\square R \square R \square N N V Q\|L D S T M E P L L I Q\| V P$
REYTLQ DTSESDVNYQQCNWNVTAS DKVPDANDTVIN VTRVINDRTKVPDANUTVINQKNEFLQADLIC FTITDIFEURVNVADELLLSTGGKAIQAQIEPYF WKLTNYV WDRVEPVT QQLNYTAYTSQPGMCAYSMQC WDYKSNS WDRSEYIQI QLPPSTVTVYNYNLISTQSQIVQRFDKDNQT WEQSTWI RLPMY TPQVILKDLRQNNLEYQLVPITERTLND VQRNTTLRLRVPNDPFYIDDNKNNYIE
VKREEVYRLFVNTPKVMVRNHLNTPIVAQVNPVWSDTDTS


WSKEELIS $\square K \mathrm{~V}$ QCPYVLAQEDF $\square$ NE $\square E \square D C S P R S D F K S D Q$ WTVTTLTNTTVSFPSVTVTDESGHPVKAQVQ
WNKVDVQSUQLNYQQVSPTATQCPVKLMLDSERETDYDC DSSWVS TVASGHPVPAQVQ YSQQYFMKLKVQFSNYKVSTWDSGNVKWNDI TDSAEVIC WRRRDVVQVDVTTSRV INVKTGEIVPSQVV

 HSVSEVARTPVSGGRWSVTDGVGRAVPSQVVPDDERTKGL
 WQRSEVVSVTLPDQDWVVCDLYGNQLPCQTLASRS
WDKNELVTVKVQTNDP NANGGSI CPYVLAEENSNMDC WSRAELVTLPDPGHAWQVWDLDGQPI LSQV DSSWVSITDASGHPVPAQVQ WTVTTTVTLTVDFPKVSVTDESGHPVPAQVQ
WNRKEVKMISM SMETYYNPGYCPFAVFEEDSQDPD WQRSEVVSVALPTSQWQTYDTSGKQLVSQLSEPST

 WTVTTVITLTVSFPEVSVTDESGRPVLAQVQD WQRSEVVVCSIPSGNWEVYDVAGQKLLSQLSA WSRSEVVSVTLPTPNYQVYDUDGNQLDSQLSEPST

FEKTHT ELSFSHARVYVSVWNPA SKSFDF品TT WPRTEVVDVEVPLGRWQIINETDQPVDYAVSRVSNP WQRSEVVAVPLPHQQWQI HDACGHKIVSQLS WTRSEIVQVPLPPQSWDVCESTGNALNSQLVRVSGRSED HNRS QYRNQTVAMLV NAVYNPSSLIVNYTQUAVPNGKVSV WTKKQUVTLKV KNANLYRDCPFTVTVSQGEAS N WQRSEVVTVSLPSPAWQI YDVSGQKQPSQLSEAST WERSEVVKIPPHPQHWLIHDFDGNQLPYQUTRDG
WQHSELVAVSLDWGQQQVNRQNSNPQSSAESTEASWE TYD WERSEIVTVNIENTEFTVFDCLGNPVRSQIVEAVISFEGE WQRSQVVSVTL PKT LTTASPSTQVDFNHNP DWT $\square Y D \square D$ WERSEIVEI DKNHE
WQRSEVVSVTLPDQTWKIY YDUDGNQLASQES

WERSEVVTIPLP WARSQVLVLPFSTPA QRTTATGQPLTTQVS
$W Q R S Q V V S L E L R E S A W Q V Y D S Q G N R V R S L T P$ WQRSQVVSLERPESAWQVYDSQGNRVRSQLTP
WSRSEVVAVPLPDSAWQUYDFSRRRLVSQUV
FDRNTKLQFPTSNSKVSAWQSKTQSFKS

UniRef90 UPI0003C4D8B8 UniRef90 UPI0001509F6E UniRef90-X6NUL9 UniRef90-FOZYD4 UniRef90 UPI0003F09895 UniRef90-D2VBS5 UniRef90-F4QAD8 UniRef90 Q241S9 UniRef90_G4M0J4 UniRef90_Q23BP9 UniRef90_Q241T0 UniRef90_O96635 UniRef90-D8RZF2 UniRef90_UPI00034FDA36 UniRef90-D3BEM6 UniRef90 A8PLR5 UniRef90_UPI00006CB878 UniRef90_Q241T6 UniRef90-K7HWG9 UniRef90-D2VGC3 UniRef90-F4Q548 UniRef90_Q55ER0 UniRef90_G4VTI2 UniRef90-GOQPY6 UniRef90-D3BRU7 UniRef90 A0CYI6 UniRef90-X6M566 UniRef90_U4V085
UniRef90 G0QTR7 UniRef90-A0C584 UniRef90-A0EGD6 UniRef90-D2VI94 UniRef90 G1LIB1 UniRef90-Q5D8N0 UniRef90_Q54KN4 UniRef90-S7P8Y0 UniRef90-D3BPQ7 UniRef90-M3WDX9 UniRef90-J91T42 UniRef90_F2UEV3 UniRef90-A0EBD3 UniRef90-FOZ8X7 UniRef90 A0DS65 UniRef90_G4VTH4 UniRef90-A0EAB1 UniRef90-A0A044VDLO UniRef90_R1DJ66 UniRef90-J9IIV8 UniRef90 K9XFR5 UniRef90 F0ZLY3 UniRef90-K9SA38 UniRef90_UPI000298B271 UniRef90 UPI0003C00DCC UniRef90-D3BH49
UniRef90-B2JA11 UniRef90 F5UH78 UniRef90_A0Z9N6 UniRef90-K8GI52 UniRef90 ${ }^{-}$K9T034 UniRef90-K9X014 UniRef90_UPI0003751218 UniRef90 J9IEK3 UniRef90-U6NTJ8 UniRef90-B7PIU7 UniRef90_J9EV56 UniRef90_U9VZ82
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UniRef90-J9HLS8 UniRef90 UPI000346531D UniRef90-UPI000477FC51 UniRef90_B1WUV2 UniRef90 K9ZGI6 UniRef90-T2JEA6 UniRef90-K9YNP1 UniRef90-K9VXE9 UniRef90-UPI000363039B UniRef90-K9TQA3 UniRef90-K9U6N5 UniRef90_K9VDB1 UniRef90-J9J2V9 UniRef90_EOUFD1
 $\square R P F \square D D E N T E Q E Y N L I S\|V N \square D A L G L N S F\| L K \square N S Q L N N$
 DCLFEEGFAGSMVLRIDWMVEMPASGDSTYFDKNQEPSAG CDLYFVDKFEGYSFQYY $\square K \|$ NVEKNSIVKPLKKEQSSDQI

DCDLYFQDSFEGYSYNYYKLVPGSGSNQ SNPQDDKDCDLYFLDKFEGYSFQYYKGV VSPL KESVFTGRHRAQWETHLPA LGFETYF $\square$ MESNSYG
 QKNEFSHPKNQKNCDLYFKDKFEGYSFQYYK I FQDSKYQ SHPKNQKNCDLYFKDKFEGYSFQYYKIIFQDSKYQ ITKGKLEKDSRLVLFEATIPPLSMDKVRVQK KNSGG
 $\underset{F}{ } \mathrm{~V}^{2} \mathrm{~L}$ ( PERHSDEHDAN YEVVFNVKLSPGGFSLFYLALNKTTYQ


VLADPGRNSEAKFDLVFVAE $\square$ PA $\square$ GYKSYF $\square$ QRTRQKS P


SDDHKEF $\square \quad Q \square$ DFPAK $\square$ KPFSSK $\square Y$ Y $\square$ KRKSNPNK
S S K E ITPHKYDLYVLT T IP GLSYRYYS IRPTEQAPE K K REKQPTYDLHVLTTF GLLSYRHYGI RSTKGAQT
 VDPLRGKNF VY I AVDLPPLAIATYRLELGVVDPQ
QPKGLTCFTSSSNYS $\square Y S \| I N \Pi P A L G \Pi K T F F L K V N R Q Y T K$ Y VR\|KVPKLNLT TYK KVIGD I IC $\square$

PERRVLHHKGSS ELIFKPS LKQAGFTLFADKGEASSGY $P \square L Y$ L VVICDKENYPPKYYQL NNCFLYVFYPLDAHQV L LF RADIPATGYRVFWLVALKF $\square$ A A
 $\square Q E D P D F P E P R L D F A A E V P A L G Y R T Y W L R Q Q A D A P V$ K S REKQPTYDLHVLTTFXGLSYRHYGIRSTKGAQT ONSKEMPSVYDLLVLTTIPGLSYQYYVI KPSRRAKG ECT $\square$ S S $\square G V E N F N W T$ AFV DD QAL SYKVFKIQTDGNE

L L F L A T:I P P V GY R I F WL S P S S P S F P RGDRLES QS T L L QS QYRPPGNS $\quad$ LY Q L L

SKETPSAYDLLHVLTY I PGLLSYQHY IIXPDRKARE


Y $\square R N G K V D S K T F S \square V F H V R Q P L G \square A F Y R \square L F D K N Q T S$
 LVEEAESERQVLSFVANVPAVGYRLYALVADATENT


## ELLS $\square P Y Q$

TAFNYETNKFEKVNASVLCEQETEQDNSVVDNCQLYVDYA LQLDCVYDS LINHYY ILEFFINMRPFSTKSVYLKS
$L L F L A R\|P P V G Y R\| F W L C S S L P K N G$


LS GQKLPS QLTEESTLLFLAKTPS TGYRVFWL
SQFKAEQ QLIFLAEIPSVGYRLFWLCPNKTSPQ GNQLLSQQSENS QLLELATVPSIGYQI YWLS

THDNKLLFLAEIPSMGYCVFWI
ENSLLFLATVPSVGYNIYWLSPSSHFPT
HDNKLLFVAEIPSI GYGVFYL
TEDNK LLVWVENI PPPLGYTQLT TVPTQGKEY
SGK ILLPSQ】SETSNLLELATDIPSVGYRVFWLVPANSEQA RNHQLLFLAE I PSUGYQLFWITPDSGEKP
VTEFTGDRQSSTGLIMSGAKIPSVGYRVYWLCPHPNFDA RGDRPQSQSTLLFWAHLPAVGYRVFWLCREDAQTV E $\square$ MCTK K P Q GK R E C D

UniRef90_UPI0003C4D8B8 UniRef90_UPI0001509F6B UniRef90-X6NUL9 UniRef90-FOZYD4 UniRef90_UPIO003F09895 UniRef90-D2VBS5 UniRef90-F4QAD8 UniRef90 Q241S9 UniRef90-G4MOJ4 UniRef90-Q23BP9 UniRef90-Q241T0 UniRef90_O96635 UniRef90-D8RZF2 UniRef90_UPIOOO34FDA36 UniRef90_D3BEM6 UniRef90-A8PLR5 UniRef90_UPI00006CB878 UniRef90-Q241T6 UniRef90 K7HWG9 UniRef90-D2VGC3 UniRef90-F4Q548 UniRef90- Q55ER0 UniRef90_G4VTI2 UniRef90-G0QPY6 UniRef90-D3BRU7 UniRef90-A0CY16 UniRef90-X6M566 UniRef90-U4V085
UniRef90 GOOTR7 UniRef90-A0C584 UniRef90-A0EGD6 UniRef90-D2V194 UniRef90_G1LIB1 UniRet90-Q5D8N0 UniRef90-Q54KN4 UniRef90-s7P8Y0 UniRef90-D3BPQ7 UniRef90_M3WDX9 UniRef90-J91T42 UniRef90-F2UEV3 UniRef90-AOEBD3 UniRef90-F0Z8X7 UniRef90 Aods65 UniRef90-G4VTH4 UniRef90-AOEAB1 UniRef90 ${ }^{-A 0 A 044 V D L O}$ UniRef90_R1DJ66 UniRef90_J9IIV8 UniRef90 K9XFR5 UniRef90-F0ZLY3 UniRef90-K9SA38 UniRef90 UPI000298B271 UniRef90- UPI0003C00DCC UniRef90-D3BH49 UniRef90-B2JA111 UniRef90_F5UH78 UniRef90-A0Z9N6 UniRef90-K8G152 UniRef90-K9T034 UniRef90-K9X014 UniRef90_UPIOOO3751218 UniRef90- J91EK3 UniRef90-U6NTJ8 UniRef90-B7PIU7 UniRef90_J9EV56 UniRe990-U9VZ82 UniRef90-K1W300 UniRef90-I1GC20 UniRef90-J9IQR4 UniRef90-D3B6R4 UniRef90-UPI00030425AC UniRef90 UPI0004751D49 UniRef90-D4TC19 UniRef90-J9HLS8 UniRef90_UPIO00346531D UniRef90-UPIo00477FC51 UniRef90-B1WUV2 UniRef90 K9ZGI6 UniRef90-T2JEA6 UniRef90-KgYNP1 1 UniRef90-K9VXE9 UniRef90- UPIO00363039B UniRef90-K9ТQA3 UniRef90-K9U6N5 UniRef90-K9VDB1 UniRef90-_J9J2V9 UniRef90_EOUFD1


PS ILSK $\square$ T
KTNNPDQLVFSSRK
DLLDTNDLYVKRMSQHYETSKK DQVRDПSSAKE\|LLENAH SK TNPTGDARPIILPV VYDRYDNPNVLENSM N $\square \mathrm{DLSQSQSLS} \mathrm{\| DTMTLNFTLSTREKKQDKNDHIKSNKFF}$ TSSSMVQVKPQLIPVINDAEMLVHNRPQLF RENDY VNSTVKPYDKKQSSDEKNVGLDKETEVVNVSDQUKLTMNR
FCQKAVLAT T TSENGDACPEPYQCTTFPNSKD DEDSTRT VEKDSDTSTDPRRSDMDNNGYVVSKDMFDSN NTPKLSKVSVYE TEKEFQSSKHRALSTRYLDDKFQPN
QK QPMD K S SQEQVVIELSKLSThKVDLKKPSF
QKI QPMDIKSSQEQVVIELSKLSTLKVDLKKPSF
KTVLSKLETSK LS DTWKELEGSFWSLKTTKPSTLSDETQF SISAFDNFTSNNSKTSVSFCETG $K Q S S K T L T Q Q N D N N G Y I V D N N K L S D T D S N D S N D M E S T Y D K$ NVDDDSKPILSEISEDSELSSSSSSSSSSSSSQITIGNSK NQDVYNHYVKDLVESGQLQPTVSSVHSPVDTDQLSSKTIE NVKNI TIPATSTTTSYGSMETSDFEPFVINQVRDGSQELNLENSM

AGRVTKS
QAFPGK $\square R S G A E T \square$

GS $\square \mathrm{NEET} \square \mathrm{N} \square \mathrm{EDKPYT} \square$ SNSKTSVTFCKKN

SNWVLPKTNHFNS $\square$ ENS $\square$ YTAN $\square$ DENY
GKQATTATMAFTSKLDRKPRKPSTRPW GKKLVSVKNDC
 STQGGRRPWTCTGPGDRHLLRVKND
SLETGPDAGATHQDNGFQETLVYSK QQQQESSSSSSFFSSSSSSSSSSGC N G A KGILSSEMIISKKDNATK円 NNDDDCDLYF $\square Y$ YRNPKQ\| DEYFR $\square \mathrm{PNQENPSA} \mathrm{\| IVPPQ}$

GKSY
RYGYKRPVNQQRFS LEDGPDNDP LIFRSE
GRATFHAAADAESTVARAAPSPVDAPAFAEAADTVVESDV GLTAVNYNVANDLQLKNNSTAPPTISTMFED\|IFLKEDPT STDVLNNTTKNEQEKGNNTK\|ITGVEYYSGNRDWTLENEF EGNTLSNWVRPTTTIIPSDQNHLFKINNDERYFAKSCFNF G $\square H E P V A T \square S$ STQFGRRPWTCTGPGDRHLLRHWKC DTQVTEATMANTKQFGRRPRRHDSSV GRRLVHMENDC PSPSLLS SPFSKLLTEQKDPGLKMLENN DNASASPETEKKTELSK■TDGDAQKNTVSQETEMVLENEF LP $\square$ S P

LCPGNTPAKLLNLPTHELLENGF DSQEAAATVPSTDQFGLKLRRQDGQV GRNLVPVKNXC ARQP亩T
TPQPS
HNKAYYEDTNपGLQKQQQF SHQNFILENEK EWVLENEF

TK $\quad$ AT $\square$ SASTPGKVAA $\square$ NSAFQ $\square$ TDGTEDFEDSSSS
 KASSTEK NNTEEYVLDNG HTY PHYEATNYSVLKQEHFSPENLTLENE MNQGFEPKHDFRLYYTDSGSRLDVNTNRKNSENWEFENQY KVMFVTKKTCSQEKQEGSNADRAMTLNNGVISLSFDAYNR ЏNPFQUGLLSLIINSEKDLSDQKKSYNDDQTITLSTQFEQ HNLTQSDYTNLGLQKQ PTPSTSV
KCGEEF
RTTL
 DQQEFMLENQY PTSQNPHDDNSEFPQNWILENEY
SPPH VPSNSQKNKQK!LQQNETIFDNGY

PDNSPQSEVKKDQQL VPNDKEREKEEVLQQNETHLENEY ПASETNTQKQTEYANYKQTIPEKSQQNQEDQKDWVLENQS PADGQSGVNTTUKPRTPPTHSMSGFPVACSEGNYTUENPT
S L S QVAS STEY
SSPEPDGEFVLETDK
DNASASKTELSQDTYGDAQKNTPCQETHFAAAQMVVENEF SLTNDTRVIE $K$ KPSKLPGNDSKPDEPQQVCNKTLYIENQN

|  | 170 |
| :---: | :---: |
| UniRef90_UPI0003C4D8B8 UniRef90_UPI0001509F6B |  |
|  | WETS QKYS DF Q M Q Q Y R Y D F S L N Y LYY S Q D WGQ |
| UniRef90-X6NUL9 |  |
| UniRef90_F0ZYD4 | Y K $\square \mathrm{E}$ F D M N G F $\square \mathrm{K}$ T $\square \mathrm{K}$ H L S T G H S K T $\quad$ LE Q S F N Q Y K S K K G G |
| UniRef90_UPI0003F09895 | S S D K TVKI SHLLFKEYNSNTHGD |
| UniRef90_D2VBS5 | Y A LT TD K S T G Y VK K VT S K K D G K V H E TVN Q F LE Y K T |
| UniRef90_F4QAD8 | VRVN F N PVT Q M A H T F D L I K D M S M L V D Q DA Q Y D GVG G S |
| UniRef90_Q241S9 | S QKHHSSKTKKSFQSSFQDQYNFYMSSTEVHQ |
| UniRef90_G4M0J4 | $\square$ QLE F D S K T G Y L Q K M L K L T G Q S M D M K I N F $\square$ Q Y K S LKFD S |
| UniRef90_Q23BP9 | FETKF QLQ T CLQ |
| UniRef90_Q241T0 |  |
| UniRef90_O96635 | HE GR N GLIE SVVTVRS S G Q TVAVK Q D WCYY |
| UniRef90_D8RZF2 | Q TLGF AHS GFMKWI K D S Q T Q K I R V E EEMLLYY ST Q |
| UniRef90_UPI00034FDA36 |  |
| UniRef90_D3BEM6 | GFLS SLSSKTVNNQAYNVLVKESINQYSTNF |
| UniRef90-A8PLR5 |  |
| UniRef90_UPI00006CB878 | LY QVWE A E E Q S GLE A Q KLK E Y S F S LQ Y NFYYS S Q N G Q |
| UniRef90_Q241T6 |  |
| UniRef90_K7HWG9 |  |
| UniRef90_D2VGC3 | KGTTLLCSYTKNSQNYEFSHHLMRYFGFKTTSFEEQ |
| UniRef90_F4Q548 | S L N T Q F S LR H T MVS Y N S GF G G S Y V L K LR GlK E Y Q L Y Q P S G |
| UniRef90_Q55ER0 |  |
| UniRef90_G4VTI2 | F NAHF IEDSHNPLII T M K H L K S G G Y M L S S Y Y L E T T YP Q |
| UniRef90_G0QPY6 |  |
| UniRef90_D3BRU7 | Y R L R LR H T S G S M E R L Y $\square$ K G K E $\square$ E M P L M Q N M Y Y |
| UniRef90_A0CYI6 | YYVASTDNVQ |
| UniRef90_X6M566 |  |
| UniRef90_U4V085 | G V S VE F Q Y Y T G N S G D S S A D S T |
| UniRef90_G0QTR7 | Y Y K S Y Q D F G Q |
| UniRef90_A0C584 | Y Y Q S Y Q QRDQ |
| UniRef90_A0EGD6 | NTM $\quad$ FKLNYNVYA S |
| UniRef90_D2VI94 | N MVVSLC S $\square$ E K E G N K Y E $\square$ S Q K L M T Y |
| UniRef90-G1LIB1 UniRef90 Q5D8N0 | S NRTVQGTQEFMEYRVNGNLK |
|  |  |

$\square \square K$ S $\square$ K S K S S R H G G G A N Q $\square$ T E $\square$ N Q Q $\square$
LT Y S D
YTVFLDPDTNLMHS $\quad$ TWERQSNRTVSVTQEFDEYGDKNDAP LKLIFDPDTRLLSKVEMNGAAGYRAHTVEDCQHTMKYYYD



L L E F T F D P Y GR L Q T I R N S D R SE $\square$ K NVS L S F S Q Y K A S K G S T T E S LT Y N S F S D Y $\square S L N N S K Q F K \quad L T Y K Y Y \square S S E D K Q$

GHK $\square$ SMRF
 $F S L T F D G A S G L L K S W T N K R S G A T T A L A \square S W G W Y N S S D V G G Q$ IGLIIFNDSKQTYKEIVQQVADLDR YYPAYQGGNK T LRVILDCENGNLKSLVDKTCDRE\|LDHSGNQLQGFTDSDQ



## C

YTVSLDKDTNLMHSIWERQSNQT\|QVTQQFMEYEANDQGP


## $\square T$ T $\quad \mathrm{V}$ H N G S N G MVT DV $\quad$ R K N K K E F Y F R P T F L VY P S S

$K L S Q D S Q R F D F Q F M Q Y Q A Y Q N K S Y Q$ LRVVVSADTGE IISCVHLATEREMFATAANQLQCFEDSGQ



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UniRef90 UPI0003C4D8B8 UniRef90-UPI0001509F6B UniRef90-X6NUL9 UniRef90_F0ZYD4 UniRef90 UPI0003F09895 UniRef90_D2VBS5 UniRef90_F4QAD8 UniRef90 Q241S9 UniRef90_G4M0J4 UniRef90_Q23BP9 UniRef90_Q241TC UniRef90-D8RZF2 UniRef90_UPI00034FDA36 UniRef90 D3BEM6 UniRef90 A8PLR5 UniRef90_UPI00006CB878 UniRef90_Q241T6 UniRef90 K7HWG9 UniRef90_D2VGC3 UniRef90_F4Q548 UniRef90_Q55ER0 UniRef90_G4VTI2
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UniRef90 S7P8Y0 UniRef90_D3BPQ7 UniRef90_M3WDXS UniRef90_J9IT42 UniRef90_F2UEV3 UniRef90_A0EBD3 UniRef90_F0Z8X7 UniRef90_A0DS65 UniRef90_G4VTH4
UniRef90_A0EAB1 UniRef90-U6IQX5 UniRef90_A0A044VDL0 UniRef90_R1DJ6 UniRef90_J9IIV8 UniRef90_K9XFR5 UniRef90_F0ZLY3 UniRef90-K9SA38 UniRef90_UPI000298B271 UniRef90_UPI0003C00DCC UniRef90_D3BH49 UniRef90-B2JA11 UniRef90_F5UH78 UniRef90_A0Z9N6 UniRef90_K8GI52 UniRef90-B0FRA8 UniRef90_K9T034 UniRef90_K9X014 UniRef90_UPIO003751218 UniRef90_J9IEK3 UniRef90_U6NTJ8 UniRef90_B7PIU7
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UniRef90_E0UFD1
3039B

ASGAY\|IFRPNRSEPFRVATVARRRGLKTKLVQEVVQNFSS S S GAYIFRPETQQSHTYSEIKNIVVYQGQLVTVVLLEGEH AY I L N P GKRERVLKRADQYY I YDGPLVS QUVIQRIV VSDNYV FRPMGSARMVTDNKVDLQLVKGQYVQEARQSYYS
 PS GAYVFRPAQTPNMPYSEDKSATVYQGEVVTVVLLDGTK HS GAYLI $\square P$ D G L G EP SPNPKSYRYTKGNLVDEVVVYTQY S S GAY I F RPD DDS S DP Y S QLLQN Q S VFN GK L AT IVVLI Q GN H S S GAYIFRPNQQSSMPYSEIVSATVYKGKVVTVVTLDGTK VS SAYIMRPNATCNPDTVSPVELRLVDRRMGVVEQRFGKD G GA Y V F S P LR R A DP L V EK G GLL I MA Q GP IMME ELH F G G K P SGNYV,

 S S GA YI FRPDN DQTHTYSEI KNITIYR GQLVVTVVLQGEH A YLMRLS SETT DITSNL
NS GAY FRPQS PTPEL LEQEESSRKDRVHSMQDSNMQDFT FWS GEVMKEFKSTDRANLQEEVSLK IYQTN
 PS GAYIF LP K N GTFI QKFPRPMVNVI DGPCVKEFHLTYSS

 | S N A A V |
| :--- |
| $P$ S |
| S $A$ |

 K S GAYI F RPAESIVYPYSDFQKKYLYDGQFVTIIYMQSPN A D GAYI F RPSNNSK $\quad$ MMYGNDSYTAIGGGR\|MRIVRTYTKS S S GA YVVFRPD GQSRPY G NYVKA YKF TGSLVKQYY DEKS Q

$\square G G A Y \square F R T N K Q V F Q P P R Q V Y S T F T Y \square G K F Y Q E A Q S \square L Q D$
 I G GAY S FVVPK NTEAALDKPDVMSSIIPGKFKQVYMTTFQD ISNNYASAPNETAKR PRKPVGMQUVAGELRTEDRQYYSR
 ASNVYDFTPDGTSTSDWPARPTLVVANGPIVWEQTATGS G
 YSGAY I F RTNDEALEFGE DK THRLY LGGRLIQ DFY I ERD Q



 Y WDA WN ID PNYAQHP LPPAQS IQWLEQGII QSR\|RVVRQE



 Y WD A WNID P NYA Q H P L P S T Q S I Q W L E E G P V Q S R V RVVR Q E

 TSDNY L FTPNGTAEPAWAA VRMEVVEGQLLSEDRQYFYR Y WD A WNIDDPNYAQHPLPPAKSIEYLECGPLQWRIRVIGKE
 T S G V Y M F S S D WF Q Y D S L R Y S Q L Q S V S Y G K V I Q Qul

 Y WD A WNIA PD YANNP L G L E WL A RTAMRQR LRVTRQQLNQS Y WD A WNI D P N Y A Q H P L P P A K S L Q WLEN GPVVQRRGRVRQV
 $\mathrm{R} S G A Y \underset{\mathrm{~V}}{\mathrm{~V}}$ HDENL DDSQRFTEWEVK DNEDP $\square$ NATSSQLII GWNT I E YRSNRFDAN Y WD A WN ID P N Y A Q H P L P P A K S
 RS GAA I FRPATNTSFKYSNGSYWYYQVGSVVSQQTLEYDD




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UniRef90 UPI0003C4D8B8 UniRef90-UPI0001509F6B UniRef90_X6NUL9 UniRef90 F0ZYD4 UniRef90 UPI0003F09895 UniRef90_D2VBS5 UniRef90_F4QAD8 UniRef90- Q241S9 UniRef90_G4M0J4 UniRef90_Q23BP9 UniRef90_Q241T0 UniRef90_D8RZF2 UniRef90_UPI00034FDA36 UniRef90_D3BEM6 UniRef90-A8PLR5 UniRef90_UPI00006CB878 UniRef90_Q241T6 UniRef90_K7HWG9 UniRef90_D2VGC3 UniRef90_F4Q548 UniRef90_Q55ER0 UniRef90_G4VTI2 UniRef90_G0QPY6 UniRef90_D3BRU7 UniRef90_AOCYI6 UniRef90_X6M566 UniRef90_U4V085 UniRef90-A0C584 UniRef90_A0EGD6 UniRef90_D2VI94 UniRef90-G1LIB1 UniRef90_Q5D8N0 UniRef90_Q54KN4 UniRef90_Q5C096
UniRef90 S7P8Y0 UniRef90_D3BPQ7 UniRef90_M3WDX9 UniRef90_J9IT42 UniRef90_F2UEV3 UniRef90_A0EBD3 UniRef90_A0DS65 UniRef90_G4VTH4 UniRef90-A0EAB1 UniRef90_U6IQX5 UniRef90_A0A044VDL0 UniRef90_R1DJ66 UniRef90_J9IIV8 UniRef90_K9XFR5 UniRef90-F0ZLY3 UniRef90_K9SA38 UniRef90_UPI000298B271 UniRef90_UPI0003C00DCC UniRef90_D3BH49 UniRef90_B2JA11 UniRef90_F5UH78 UniRef90_A0Z9N6 UniRef90_K8GI52 UniRef90_B0FRA8 UniRef90_K9T034 UniRef90_K9X014 UniRef90_UPI0003751218 UniRef90_J9IEK3 UniRef90_U6NTJ8 UniRef90_B7PIU7 UniRef90_J9EV56 UniRef90_U9VZ82
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UniRef90_E0UFD1

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R G S T DA LGGRRDYRATWNQTEP|V|AGNYYPDVSRDY|I|KGQK F TFYTDSNGLDMQKRVLNFRPTVSGNYYPIGALISLLKD NS



 | V |
| :---: |
| T |
| K |
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| T |
| A | VF Y T DSNGREMQRRRVDHREPVAGNFYPVTSVFFVHDTQT TFFTDSNGFQAVARQTYDK $\square P L Q G N Y Y P M S S L A C L Q$

 SNLYT DNGQESRSRPQNNNDKINFNYYPVLNYAHLKDNDL
 TFYTDSNGLSSLQKRLLN $R S Y$ T D S VGLL QL L R R EFY EF Y CD K N GLLETSKFRS ! KT F YT S N G L E L I E R R Y Y K L N



 VF Y T D S N G L H I Q K R KL L N K Y Q K V S S N Y Y P V N T I L Y I E D E K Q



 VLHSDSNAFQMQRRRDYPAHTISRVRW $Y Y$ T DNGMF LMMKRES LPF NGEIA EYFPTDAMTVLNDTKK
 AFFTDNNAFQRKHRTFDSSLDYSGNFYPVVGAAIVTDANT



 S F Y T D V N G L H L I E R K H D K R M K F E A N $\square$ Y P M I T E T M I E D D K L TWYT DSNGKEMVKRVY
TF YT DSNGMEMQERKLLNYRQS WQSNYYP DNSA $\square$ A $\square R G E G H$ $D Y A T Y E \square P C G A \square Q R T T K P E T P A E Q A K W P A L D W A D L I S A D N Y$ $D \square Y S$ D NGLELI Y R P S DT TE P P A QS YYPSNH DS LI K S K K T
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UniRef90-FOZBX7 UniRef90-FOZ887 UniRef90-G4VTH4 UniRef90-A0 UniRef90-U6IQX5 UniRef90-A0A044VDLO UniRef90_R1DJ66 UniRef90-J9IIV8 UniRef90-K9XFR5 UniRef90-FoZLY3 UniRef90-K9SA38 UniRef90-UPI000298B271 UniRef9-UP10003C00DCC UniRef90-D3BH49 UniRef90-B2JA11 UniRef90-F5UH78 UniRef90-A0Z9N6 UniRef90-K8G152 UniRef90-BOFRA8 UniRef90_K99034
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UniRef90-J9HLS8
UniRef90-K9WJG1 UniRef90-UP1000346531D UniRef90-UPIo00477FC51 UniRef90-B1WUV2 UniRef90-K9ZGI6 UniRet90-T2JEA6 UniRefogo-KgYNP1 1 UniRef90-K9VXE9
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UniRef90_EOUFD1


350
360



 $R V L V V N D R S Q G G T S L N E G E$

 QFNVFPDAPMGGT

RFS $\square F N D R A Q G G T S L T D G E L D L M \square \square R R \square T$ DETGTEMNL QF TVVTERSHGVGSNNPSDLEIMI HRT TLLDDDSKGLE IPG RMTLLSAQPSGVANLASGQLNNFLI
QIS $\operatorname{S} V \operatorname{V} \operatorname{D} R \mathrm{~S}$ Q G G T S L K E G Q L QI SVVNDRSQGGTSLKEGQLELMIHRRILRDDNRGVGESLL




 $K L G V L T R D P L G \backslash A G V N E G \square L D V M V R H R M A T N E G$ $H M A V V N D R S Q G G S S F N D G E I D I M I$ HRRMYSDDRRGVAEAL
 KI VVLNDRA Q G G G SVVVD Q T I E L M $R V G L I N D R A Q G G T S L L D G Q L E L M D H R R D L Q D D S R G V A Q N L$

 QLVLLSQQAH GVSSQGNGQVEVMLHRRDWNNFDWALD Y T L
 AIY T D R A H G GT S LD D GQIE L ML HR RLVRD DGF GVVSEPL

TFVCYNDRTRGTSSPKKGEFEFY $\square H R A L L Q D D N K G L V E$ GLVLPSQQARGDSSQGNGHVEVMSHHRLWNNDNWGLGTSL $Q M T V M N D R S Q G G S V L Q A G R I V E F M Q N R R M F F D D W R G V D E A L$ A LSLAASRPTAVTSPASGALEMMLHRRDMDDDLRGNDSSVV ACAVLNDRAQGGSSLDQGVIELMLQRRLVRDDNKGLFEVL QYTVYVDRTLGAT FGNRSI EIMLHRAVGNSDQ GAALLNDRSQGGTS LLHSGEL ELMMHRRLLKDDARGVGEPD

 $R C T \Perp L G A Q S T G V T S$ K Q GVLTLMIDREMHNDDGKGLGYYE
QMTVMTPRPQGGSVLRKGRDELMHNRRLYFDDHRGVNEAL GVSLLNDCKYGYDS QPHQLRLTLL RGAEWPN GL N FVV H D R T R G $\square$ S S Q C N G C L E F A M H S L T WE D S K GLLEVPA $G V S L L N D C K Y G Y D A \quad R P S Q L R L D L L R S D N W P D$
 EVSLLNDCKYGYDS K P NQL R LTTLLRSPNWPDS GVVSLLNDCKYGC DLQPNQI R L T L L L R S T WP DE Q A DVG


RGSEWPD


UniRef90 UPI0003C4D8B8 UniRef90-UPI0001509F6B UniRef90-X6NUL9 UniRef90 FOZYD4 UniRef90 UPI0003F09895 UniRef90-D2VBS5 UniRef90-F4QAD8 UniRet90_Q241S9 UniRef90 G4M0J4 UniRef90_Q23BP9 UniRef90_Q241TO
UniRef90_O96635
UniRef90-D8RZF2
UniRef90_UPI00034FDA36 UniRef90-D3BEM6 UniRef90-A8PLR5 UniRef90_UPI00006CB878 UniRef90_Q241T6 UniRef90 K7HWG9 UniRef90-D2VGC3 UniRef90-F4Q548 UniRef90-Q55ER0 UniRef90 G4VTI2 UniRef90-G0QPY6 UniRef90-D3BRU7 UniRef90 A0CYI6 UniRef90-X6M566 UniRef90_U4V085 UniRef90-G0QTR7 UniRef90-A0C584 UniRef90-A0EGD6 UniRef90-D2V194 UniRef90 G1LIB1 UniRef90-Q5D8N0 UniRef90_Q54KN4 UniRef90 Q5C096 UniRef90 S7P8Y0 UniRef90-D3BPQ7 UniRef90-M3WDXS UniRef90-J9IT42 UniRef90-F2UEV3 UniRef90-A0EBD3 UniRef90_F0Z8X7 UniRef90 AODS65 UniRef90_G4VTH4 UniRef90-AOEAB UniRef90 U6IQX5 UniRef90-A0A044VDLO UniRef90_R1DJ66 UniRef90_J9IIV8 UniRef90 K9XFR5 UniRef90-FOZLY3 UniRef90-K9SA38 UniRef90_UPI000298B271 UniRef90 UPI0003C00DCC UniRef90-D3BH49 UniRef90_B2JA11 UniRef90 F5UH78 UniRef90 A0Z9N6 UniRef90-K8G152 UniRef90 B0FRA8 UniRef90 K9T034 UniRef90-K9X014 UniRef90_UPI0003751218 UniRef90 J9IEK3 UniRef90-U6NTJ8 UniRef90-B7PIU7 UniRef90_J9EV56 UniRef90-U9VZ82 UniRef90_K1W300 UniRef90-I1GC20 UniRef90-J9IQR4 UniRef90-D3B6R4 UniRef90_UPI00030425AC UniRef90 UPI0004751D49 UniRef90-D4TCI9 UniRef90-J9HLS8 UniRef90 K9WJG1 UniRef90 ${ }^{-}$UPI000346531D UniRef90-UPI000477FC51 UniRef90_B1WUV2 UniRef90 K9ZGI6 UniRef90-T2JEA6 UniRef90-K9YNP1 UniRef90_K9VXE9 UniRef90 UPI000363039B UniRef90-K9TQA3 UniRef90_K9U6N5 UniRef90 K9VDB1 UniRef90-J9J2V9

NEVDQRNQRHFII FERQNEQ NETTHDEPRDFVVYD RDTSRSDGKI YFNFD NDTSVVMPTLWLLLGNKVRS NDTVVMPTLWLLLGKVRS SYLQHRGW NDQS SL KFRLLAVSY L ARTTNDDFVKL IDDDSTI LT QTQVYFDSSSE NEFDDI KPKQGLQQKVRHY IIFEKEKESTG HGEWLVKSQDHR RLQ IDKTQKMTIPSLTIFSQHIL
 LTKPPLSQATRGV GCQRQVIVA I IPPVAQPRMRRVRDP
NETE VVRGKHTLYATKMNHKPNMDYEKRDAKE $\square S \square E P L V S$ FDYSRVDAKLYLSIDD HPNRMASFEKQLSLL LLFFRYSFRLVFEPSRNVPVNTKAR|VTAYHSAHAYDRM NETDNESKQ DGLFQK $\square R H Y I V F E S Q N G Q$ R NETD

Y S THTLAAQQAV RDTVVVNVKVRLVQDRSWDEENVRRGILHARESLTNHF
 MEN
 NEENSAQQNCSKVVGLRQN\|IHKLLFFDQEKNPNLARKAQ NETTH $\square E P R \square Y L L Y D S S E S Y L S R R L F E R Q H Y G V T K F Y A M S$

NELDEVR\RHFLVFQSEKD\QNDNDN
LMRKMQL KET DEKGNGLVQNIQHKLTFFNIQNNPNQ DEQEEVDNKKVGMRQMMSHTGVQFYNPKSESNNLRQLQY NDE
NDTSVVHPVLWLLLGPRPLTLR
LR Q R S G



NETD
MDDVVLV T LAPASVVQARAAKMS DEQEIDKGQKVGDRQMDSHT\|I F F YNHQQQPNLLREHQY NEKQSLNQNFQHTLTFFNKNNQPNQARYFQYLQDLK
 NERAYGEGEF

NETDEFGNGGTVTSSYYMHLFDSQNEKSLQRQFQLAQ PDADRGNHYFTYAlYPHQGNWQQAQTVRRGY
 NDTSVVFPVLWPLLGPR

MPKKTTTVNHRCRLDR DPLNYKGQNYRFNEP EADKGFHEFTYTLYPHAGSWESAHTVRRGY

VSEFTCAVYPHS GNWQDAGTVRQGY
PETDRGFHEFTYALYSHAGSWETAHTVKRGY
PEADKGPHTFTYALYPHAGDWKQGQTVRRGY
P NADKGTHQFTYA $\quad$ Y P HQ GS WQAAKTVRYGY
FTYCLYPHANSWESAHTV HRG FTYALYPHAGNWK SAQTVRRG
NETDVISNYYDHVFNRLTELSEQRNTQDHTDEPLQY
DDNLPVDMKFTLLLEDLK QTDLDYSHYTVHTPAGHLSVQ
D DGVVI RGRHLLHLAP I QEAAV PGCDRGHHH FTYAIYP HPGNWQTARTPHQA FTYALYPHAGDWK SAQTVRRG

DDTS I INDTMLLGLINSAD VDSVGHGMQQD
NETQ $\square$ D SKAV DQHRCRFDNQTQ $\square F K N Y W R R S R D F \square N A V E V F D T$ FTYALYPHAGDWKSAHTV RRG EADRGFHEFTYALYPHAGSWESARTVRHGY DRGEHQFNYALYPHTGGWQAAETVRRAY
NESQAVQSTYFLQFFDREYEQSDQRKYQUIIDTPLQNYFG EADRGIHQFTYVLYPHNGSWQSAGTVQRGY

KSPRWP FTYALYPHSGSWETAHTVKC RGTHEFTYSLYPHLES WEEADTVKHGY

S DMM
PECDRGUHEFTYALYPHSGNWQSANTVKRGY
PEADLGWHQFTYCIYPHGGNWQSAKTVRQGYELNLPLQV
PEADMGLHEFTYALYPHAGTWQQAQTVRRGY
$\square \mathrm{E}$

UniRef90 UPIooo3C4D8B8 UniRef90－UPI0001509F6B UniRef90＿X6NUL9 UniRef90 F0ZYD4 UniRef90 UPI0003F09895 UniRef90＿D2VBS5 UniRef90＿F4QAD8 UniRef90 Q241S9 UniRef90 G4M0J4 UniRef90＿Q23BP9 UniRef90＿Q241T0 UniRef90 O96635 UniRef90＿D8RZF2 UniRef90＿UPI00034FDA36 UniRef90 D3BEM6 UniRef90－A8PLR5 UniRef90＿UPIO0006CB878 UniRef90＿Q241T6
UniRef90 K7HWG9 UniRef90－D2VGC3 UniRef90－F4Q548 UniRef90－Q55ERO UniRef90 G4VTI2 UniRef90－G0QPY6 UniRef90－D3BRU7 UniRef90 AocY｜6 UniRef90－х6M566 UniRef90－U4V085 UniRef90－G0QTR7 UniRef90－A0C584 UniRef90－A0EGD6 UniRef90－D2V194 UniRef90 G1LIB1 UniRef90－Q5D8N0 UniRef90－Q54KN4 UniRef90－ s 7 P 8 YO UniRef90－D3BPQ7 UniRef90－M3WDX9 UniRef90－J91T42 UniRef90－F2UEV3 UniRef90－A0EBD3 UniRef90＿FOZ8X7 UniRef90 A0DS65 UniRef90－G4VTH4 UniRef90－AOEAB1 UniRef90 ${ }^{-}$A0A044VDLO UniRef90－R1DJ66 UniRef90－J9IIV8 UniRef90 K9XFR5 UniRef90 FoZLY3 UniRef90－K9SA38 UniRef90＿UPI000298B271 UniRef90 UPIO003C00DCC UniRef90－D3BH49 UniRef90－B2JA11 UniRef90 F5UH78 UniRef90＿A0Z9N6 UniRef90－K8G152 UniRef90－BOFRA8 UniRef90 K9T034 UniRef90－K9X014 UniRef90＿UPI0003751218 UniRef90 J91EK3 UniRef90 U6NTJ8 UniRef90－B7PIU7 UniRef90＿－99EV56 UniRet90－U9VZ82 UniRef90－K1W300 UniRef90－11GC20 UniRef90 J9IQR4 UniRef90－D3B6R4 UniRef90－UPIO0030425AC UniRef90 UPI0004751D49 UniRef90－D4TCl9 UniRef90－－ 9 HLS 88 UniRef90－K9WJG1 UniRef90 UPI000346531D UniRef90＿UPIo00477FC51 UniRef90＿B1WUV2 UniRef90 K9ZGI6 UniRef90－T2JEA6 UniRef90－KgYNP1 1 UniRef90－UPIooo363039B UniRef90－K9TQA3 UniRef90－K9U6N5 UniRef90 ${ }^{-}$K9VDB1 UniRef90＿J9J2V9
 EYGGYGPYD KK K K WLGETNEFSA LKKKDPGGDHLLS
 NELDS PLLIFFAESDKGFFNFKVNKNVNNDFKNSNDYLVYL

QE

NFEMSPLTFYSASNSQQFQNNKESEKTNTLLQNKNEYTKП QYY $Q$ QD LLQPMVVF

पALQHRPVVLLKEDNSQAPPPPPPQQEAVT\PPSDHLQTL SDLLRPVHKFYVNQPTLNDLLVTDYHLMPTLPCDYELVTM保

T آHLLPVTVHAVS GRVTPKVATFAPMPKADPDGVHLLDV KQDLQPLLYFGKSTQPF DQYSSLLDQEQGEQSDKNLS



EELLYPAA LFSSSNTNSTD $\square$ MSLLAG $\square$ PCDPDNDQLITA DQPFQYFYNF NYTNDFTKПTKSLKRLPTQAELEAL ELNYPLQVMLMSPQAQVPQNLPPVGCFLDLSAD
 PLTGLI RGDWRDGAQRGPHCRPPSVPQG

TYQVQQNMVPNSKA YSKTENQLPENTHVLNF ELNTPLQVILNPPNENPPLSTGKDGLGVSF LDLSAENL




QSP LVHVAVVENKEKWTTSCSTWSPFSQPMDDNपH【ISV


YELNTP LK VLVNPPNQQSVLNSYQNQSF TNDSAD NL RELNIPLQVMIPK INNQGTLPPDFSGLTIQPDNLIVSAL ELIUPLQVLVNPEN【QSALNFSQNQSFLNLSENLILIAL


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UniRef90_UPI00034FDA36 UniRef90 D3BEM6 UniRef90-A8PLR5 UniRef90_UPI00006CB878 UniRef90_Q241T6
UniRef90 K7HWG9 UniRef90_D2VGC3 UniRef90_F4Q548 UniRef90-Q55ER0 UniRef90 G4VTI2 UniRef90_G0QPY6 UniRef90_D3BRU7 UniRef90 A0CYI6 UniRef90_X6M566 UniRef90_U4V085
UniRef90_G0QTR7 UniRef90-A0C584 UniRef90_A0EGD6 UniRef90_D2VI94 UniRef90 G1LIB1 UniRef90_Q5D8N0 UniRef90_Q54KN4 UniRef90_Q5C096 UniRef90_S7P8Y0 UniRef90_D3BPQ7 UniRef90_M3WDX9 UniRef90- J9IT42 UniRef90_F2UEV3 UniRef90_A0EBD3 UniRef90_F0Z8X7 UniRef90 A0DS65 UniRef90_G4VTH4 UniRef90-A0EAB1 UniRef90 A0A044VDL0 UniRef90_R1DJ66 UniRef90_J9IIV8 UniRef90 K9XFR5 UniRef90 F0ZLY3 UniRef90_K9SA38 UniRef90_UPI000298B271 UniRef90 UPI0003C00DCC UniRef90_D3BH49 UniRef90_B2JA11 UniRef90 F5UH78 UniRef90_A0Z9N6 UniRef90_K8GI52 UniRef90-B0FRA8 UniRef90_K9T034 UniRef90_K9X014 UniRef90_UPI0003751218 UniRef90 J9IEK3 UniRef90_U6NTJ8 UniRef90_B7PIU7 UniRef90_J9EV56 UniRef90_U9VZ82 UniRef90-K1W300 UniRef90-I1GC20 UniRef90 J9IQR4 UniRef90_D3B6R4 UniRef90_UPI00030425AC UniRef90 UPI0004751D49 UniRef90_D4TCI9
UniRef90-J9HLS8 UniRef90_K9WJG1 UniRef90_UPI000346531D UniRef90_UPI000477FC51 UniRef90_B1WUV2 UniRef90 K9ZGI6 UniRef90_T2JEA6 UniRef90-K9YNP1 UniRef90-K9VXE9 UniRef90 UPI000363039B UniRef90_K9TQA3 UniRef90_K9U6N5 UniRef90 K9VDB1 UniRef90_J9J2V9




K R LY N $\square$ H DFENAEFKLDSKF Q I LDE LT LTANQS KQAM LANK K TFHNHAAPNTQVGVIFRRHFYSECFNNHVGQNELNIHEL



E HFN QWNEATVLIRLENYLEKSDARSGDKRVYLRDV K HFNDFRRNGQALLNI RLSHLMADS QAS QNPISLNLNKI

$R P \square S D$ DRELLI LDWRHNFENCGEKELLKNSLTNLLVK EMRKYK S S K P H L L L QL Q H L G LT N CE DK NEEYYPVNLIEFSNG



$Y \square Q K V D D F N D L D Q \square Y L L R L C N L N D \quad K N \square S Y F E L$ LI YGDNLLK WNEDEI LL R I Q NMQEKFSMK DDK LIE F


S $\square P$ GWN Y S S N H T G H L Y N LQQ T LT LQ C S PA S S G T
 ERSGPRS I K R R I H N I ENNN Q S P I T F D L N G L F S F



$R L R \quad G S G F D E G V G M W L \quad Q G L \quad A G L D G G K V D P S E V L P C$
 K T F L N N R I G L R L F N I N NNDMDNQKNGKSNEFK L ERMFTPNSQA $\quad$ TTKFY L Q T $\square G V D Q Y \square Y R \square H N L G E E G T F Q V$ T S WP LY Y KPESKNQ L V RFENL H TLDNLKHTHDDASHL SKFY $\quad$ YE P W $\square$ N EN Q YL V R VHNFRE D G



K R F
ILMMALKPSEDNPQQLI LRC VLMAFKQSEDDSNVWILR

| $1 L$ | $M A F K Q S E D N P ~ Q Q F$ | $L$ | $R C$ |
| :--- | :--- | :--- | :--- |
| $K Q A E D S E S E W$ | $L$ |  |  |


I LMAFKQSEDDPNAWVLR CYECHGKTVKYS LKGD

 $R P$ L $H \stackrel{L}{D} G$

Y Q D A P GRVLMRLE H MQPAVP P DELTAVN■HAL
$A L K P S E A D P S Q F \square A R$
ILMALK QAEEDQQRWDVR Y Y D A Y G V A S E Q D P L L M T N S CYECHGETAQMDLQGD ERLT A S S T D S N H R $\square G M \quad R L I S V K G \square T R \square N L A D F$


|  |  |  |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  | F Y E CH

$G K \square A N \square L S F A K S$ K F $\square$ MRFYECCHGK T G N L L S L E S S D
$\bar{T}$ LMSFKRSYDDDNQUILR I L MAFKQSEYNPQQWI LRC IVLMALKPAETDSKTLI LRR



CYQSGNKVVNFDLKNS YECHGETAQLQLNSDVVDL CYES S GEAANLTI S GD



UniRef90 UPI0003C4D8B8 UniRef90 UPI0001509F6B UniRef90-X6NUL9 UniRef90 FOZYD4 UniRef90 UPI0003F09895 UniRef90-D2VBS5 UniRef90-F4QAD8 UniRef90 Q241S9 UniRef90-G4M0J4 UniRef90_Q23BP9 UniRef90 Q241T0
UniRef90 O96635 UniRef90-D8RZF2 UniRef90_UPI00034FDA36 UniRef90-D3BEM6 UniRef90-A8PLR5 UniRef90_UPI00006CB878 UniRef90_Q241T6 UniRef90 K7HWG9 UniRef90-D2VGC3 UniRef90-F4Q548 UniRef90 Q55ERC UniRef90 G4VTI2 UniRef90-G0QPY6 UniRef90-D3BRU7 UniRef90 A0CYI6 UniRef90 X6M566 UniRef90_U4V085 UniRef90_G0QTR7 UniRef90 A0C584 UniRef90-A0EGD6 UniRef90-D2V194 UniRef90 G1LIB1 UniRef90-Q5D8N0 UniRef90_Q54KN4 UniRef90 Q5C096 UniRef90 S7P8Y0 UniRef90-D3BPQ7 UniRef90-M3WDXS UniRef90 J9IT42 UniRef90 F2UEV3 UniRef90_A0EBD3 UniRef90-F0Z8X7 UniRef90 AODS65 UniRef90_G4VTH4 UniRef90-A0EAB UniRef90 U6IQX5 UniRef90-A0A044VDLO UniRef90-R1DJ66 UniRef90_J9IIV8 UniRef90 K9XFR UniRef90 FOZLY3 UniRef90-K9SA38 UniRef90_UPI000298B271 UniRef90 UPI0003C00DCC UniRef90-D3BH49 UniRef90-B2JA11 UniRef90 F5UH78 UniRef90-A0Z9N6 UniRef90-K8GI52 UniRef90 B0FRA UniRef90 K9T034 UniRef90-K9X014 UniRef90_UPI0003751218 UniRef90 J9IEK3 UniRef90- U6NTJ8 UniRef90_B7PIU7 UniRef90_J9EV56 UniRef90-U9VZ82 UniRef90-K1W300 UniRef90-I1GC20 UniRef90-J9IQR4 UniRef90-D3B6R4 UniRef90-UPI00030425AC UniRef90 UPI0004751D4s UniRef90-D4TCl9 UniRef90-J9HLS8 UniRef90-K9WJG1 UniRef90 ${ }^{-}$UPI000346531D UniRef90-UPI000477FC51 UniRef90_B1WUV2 UniRef90 K9ZGI6 UniRef90-T2JEA6 UniRef90-K9YNP1 UniRef90-K9VXE9 UniRef90 UPI000363039B UniRef90-K9TQA3 UniRef90-K9U6N5 UniRef90 K9VDB1 UniRef90-J9J2V9

PQNYOLLEEDTLTANOSKKS
F D P VE EV T EMTLTANLP LPPTPSNGTVVT DSPRQDRTFVVN SFKI NNI NQTNLAFLDSKDNTQKTQK KSFLDN F GNI ISLQERSLTGI WAQEDVQ FGSEVSDDLRERSLNLIVEVSE
GFAPTHAQETDLLSGFREPS

 YKWKADNGQTQPSFQSNLEQEKQTNSMTVKPLQLRVFKICS

$F$ L R D R S $\square A E C A L G G N V W L K D W S P$
F N S D Y S IT
FKSPSRVAETS LTMLYDY PGDVNNDSLEPMEVRTFRDD PSNFQ DMEELTLTANQSKQD

LG VQQVQQT DLSGTTDFGKVENLEQDDLETFDFDTFVL LLRGSSLNETNLSGSRQLSNISDSSSVYLAPYSFRTFIVE FDDGLKCYDDSHIVDTQDDTSKTTTTVEUHPMEQKTIL NFNDTNDRESSLTF

FFDVDHVFTSDTTLVQFLDGNNMSTVLPP
FPNDISTQETILSGLQKLRFVWKKNEVEVAPQQDKTFVIK F DPVNTVTETTLTANLPLSKLKKLS

QNNTQUVNQVTLNANQTVE
VGQAVRTTLTGNQKVNSLDEDDDDVLYPLQTQTYLIR FPS GLQQFKETTLTGNQELETQETYDEDQVGPMKIRTWIVT

FGS $\square$ S HADQTNLTMI PYSTDRKTKH\HDRPMELEAFYL ITKSIKSlK E YNLSLI NRFVDNNDDNIIS
$\square \mathrm{NGUK} \mathrm{I}$ I K EMULTADQ

LS T R D WERTSDDFRDSTNETRS
L S F FLNUTSTNETTLSGS
$P L D Q F Q 1 V E T T L T A N Q Q Q P K D Q P V H N E T V L P Q Q L R T F R \square T$



LDRAVDLLERPLT NQLVPS TI QPWKI ATF
LEDSVDLLECSSSTSNSKK DAQKN TVNPWKIASFKLK QDNUVIISETTLTANQLFTQMESLYEDALPPQSIRTFLVQ

LS TMKNFREVSLTASRWKNS

$\square K T \square K E \square T E T T P D F \quad G \square V K S S N D T A \square D L L P M R M A S L I L T$
FREVKS TQEVSTS G
FEESVDLLERPLS TSEFSSTADEQKFNVQPWKDVNLKLQ LGESVDLLER



LIF T LGE
L D
LF T L D E

L D L K DKNKVNN L LENH LNK DDDNNV K K W WE DASY LERPLETTEQSLNHQSAI DTPNK\|VSFT
LG LKLGQPLQPLDGQDSHHLSPWQDATFNLK $W K S L Q G V D L L E \quad Q K L E E G K V W P K G E V V P G S P W K V V T F Q L E$ L LG Le IVEPVDL


UniRef90 G6FYG1 UniRef90_K9PLC8 UniRef90-J916G6 UniRef90-UPI000304A622 UniRef90 K9RAS1 UniRef90-J9IDC9 UniRef90-K9Q8X7 UniRef90-B7K6Q3 UniRef90-K9V311 UniRef90-K9Y074 UniRef90-UPI0002F7FB49 UniRef90 UPIO00344BFE4 UniRef90-J9HRW7 UniRef90_D7DW98 UniRef90-UPIO00349053E UniRef90- UPI0004094E66 UniRef90-J9FYL8 UniRef90-K9QL06 UniRef90 A3ILF2 UniRef90-A0YWW3 UniRef90-R1DMK1 UniRef90_UPI00036A4465
UniRef90-L8LVT5 UniRef90-B1XKZ5 UniRef90-F7URP6 UniRef90 B8HSK2 UniRef90_L8LK58 UniRef90-J9IMK1 UniRef90_UPI00036DFAB1 UniRef90-D2RH80 UniRef90-Q10ZK8 UniRef90-UPIO00361C7A2 UniRef90_L8NXV2 UniRef90-D3EPK5 UniRef90-B7K3R5 UniRef90_Q3M4N6 UniRef90 K9FN46 UniRef90-A0DTM8 UniRef90-X5JT20 UniRef90 U7QHA4 UniRef90 F4PR53 UniRef90-R2SVD1 UniRef90_A9UU87 UniRef90 B4VZH8 UniRef90_UPI0002DAE837 UniRef90-UPIO0034831B0 UniRef90 K9ZOT0 UniRef90 F2KSV9 UniRef90-UPI000318B772 UniRef90_B4WM91 UniRef90 UPI00047BC13F UniRef90-K7WCL6 UniRef90_C5L4V9 UniRef90-UPI0003B574F3 UniRef90-K9UGT3 UniRef90_UPIO0040E41DF UniRef90 R7KEI2 UniRef90-H5SFK1 UniRef90-H3G4N6 UniRef90-UPI00046F5D50 UniRef90-E3GYG4 UniRef90_J911Z4 UniRef90 U5QPB3 UniRef90- R6NMR9 UniRef90-UPI0003762C36 UniRef90_G8NSB9 UniRef90 F3ZVA6 UniRef90-B8CY22 UniRef90_Q7NPH5 UniRef90 A4AN26 UniRef90-K8E316 UniRef90-J9IZH5 UniRef90_D4BW82 UniRef90 UPI000372C181 UniRef90_UPI0003B75DF3 UniRef90-UPI000307A2C1 UniRef90-U2DCE3 UniRef90-R6KBX2 UniRef90_UPI00035D950E UniRef90_K9E5E0 UniRef90 UPI00029A192C UniRef90-D1ARD9 UniRef90_UPI0003B3B22C UniRef90_R5Y6E6 UniRef90 F0Z4U8 UniRef90_UPI0003701933 UniRef90-F4XUM4 UniRef90-R5M7M4 UniRef90-F9VKA2
UniRef90_R6JNE3
$S Q \square L Q G A L S A \square A E Q \square S \square P H P P Q P G A P A I V F N A L N$ $N \square S Q C I H$ KLNERRPDARFSNDMETKTYFIVYNPNP T QVY Q D A L P E WQ QV E QVGGT K I LDD E S P II I F N S L N Q Q S L N A $\quad$ A S S Q I S L S $\square$ SVNF P S Q P D A QP I F QAS LEA $\square$ A SHFTLPEPPNPS LPPIFV FNSSLN $\square P$ LS P P P Q P D F P V L V WN S L N SHCHCHAADDCLN $\square$ SVCAATTGDAFTIAAWNPGAA I LIF N TLN
 D S T E R E T P VVFNSLN


V VF NALN
K E D DERDSDGEDFGDVIVVNPLS
P I I V F N S L
$\square T$ Q VY Q D A LP E WQ QVETVGT K I L Q E QA I FI F N A L N ALQA $\square A N Q \square N L P N P$ PHPAKP FLVFNSLN
 $\square T$ QV Y T D A L P E WQ QVVEQTGT K L LPP KT I F V F N S L N PEQGQPLFVFNAHG
 I I I QNLFD
 A E S $\square$ N A $\square$ AS Q $\square T L P S P P H P A Q P L I L F N P L N$ K P F V V VII F N SLL N
 S L G Al A S QI S F P T P P Q P S LIP V V V F N S L SLLK A I A S TUQ I P P S P P P H R E K LE E S L I G $\square$ T S K $\square$ N $\square P$ QP P PV I I F N S L N

 Q P L L L
$P G L_{\mathrm{L}}^{\mathrm{L}} \mathrm{L}$ I $V / \mathrm{F} N \mathrm{~S} \mathrm{~L} \mathrm{~S}$ $\mathrm{V} E \mathrm{C} T \mathrm{P}$ T K L P E G K V I $\quad$ A VP H GM K V T L L A F N P L L QLS Y S TI D Y L V R KI S E S I Q G I K E N DL I L F N T L P

 $P G \square A V V L F N S L A$
DHEVS AS A L N T L A D T DD T S S K S GAP
 D T S GDGKAI TVVFNSLS

| $D$ | G D S | 1 | $V$ | $V$ | $F$ | $N$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |



Q D G L E S A NQLLFDLD EA K QD GK K I I I F N S L P




$$
\text { P H P N A K } \begin{gathered}
P \\
\hline L \\
P \\
P \\
\hline
\end{gathered}
$$

GRSVVVYNPVS


 KRK V V S $\square$ T T D K Q D D RLTTAFNLLP


| UniRef90_G6FYG1 |  |
| :---: | :---: |
| UniRef90_K9PLC8 | WMR S QVVEI I I P NLEWQIY DF Q G N M L S Q |
| UniRef90-J916G6 |  |
| UniRef90_UPI000304A622 | WS R SEVVCVPESFSFACVYS S D A IIP S QL |
| UniRef90_K9RAS1 | WQRSEVVSVET N N Q W WLI Y S S G NQlT S QLD A D S |
| UniRef90_J9IDC9 | SEDY QKI K M P T D T Y NA SVW D NTKK |
| UniRef90_K9Q8X7 | WQRSEVVS LPTTNSVWQIYDVA G N Q I I S Q L |
| UniRef90-B7K6Q3 | WERSEVVAINVKS S S WDiY D S E G K L R T Q |
| UniRef90_K9V311 | WKRNEVVKLPANFPQDS CTPGEYKPVPSQLS |
| UniRef90-K9Y074 | WQRDEVVSI A A T K S NWEVYDLQ G N K L P S L S |
| UniRef90_UPI0002F7FB49 | WQRSEVVSVTAPNQEWQIYDYTGNKLVSQLGEAS |
| UniRef90_UPI000344BFE4 | WRRSEVVVSLPAPAAS WEVCDLQ GEP L P S QL S D SE T L |
| UniRef90-J9HRW7 |  |
| UniRef90_D7DW98 |  |
| UniRef90_UPI000349053E |  |
| UniRef90_UPI0004094E66 | WS R SEVVAVVP $\square$ P N S |
| UniRef90-J9FYL8 |  |
| UniRef90_K9QL06 | WQRSEVVTLP T P HQQWQI Y D T T G Q LI IS QLS EPS T |
| UniRef90_A3ILF2 | WERS QIVEI ENNYEVYDLE G K Q L T Q V S |
| UniRef90-A0YWW3 | WS CS Q GVEL P L S P A WRLY D A S GKAL QVQV |
| UniRef90_R1DMK1 | HSVSEVARIPVSGGRWSVTDGVGRAVPSQVVPLDERTKELL |
| UniRef90_UPI00036A4465 | WS R S EVVAL PLP T S T QL LT EVGG D M D WQI C L S GER |
| UniRef90_L8LVT5 | WMRS QIV SI PMQQEYYQVYDLERNPIPCQ |
| UniRef90_B1XKZ5 |  |
| UniRef90_F7URP6 | WS Q S QLVEIPI Q E G H Y QVY D GQ T K TVNS QIT AE G S |
| UniRef90_B8HSK2 |  |
| UniRef90_L8LK58 | WCREEVVSI STPPGDWG T C D LEGR IL VT Q R |
| UniRef90-J9IMK1 | HSRYY I K VK T P H N K F I A T L N Q T A G F VNVRQ T L C |
| UniRef90_UPI00036DFAB1 | WRRS QAVTLPQPGGDYQIHSADGQPCPSQTTPEG |
| UniRef90_D2RH80 | WDVT NWVEVVDLNF D E G Q VY R I E D E E D DVEVIRRFRRYD DES |
| UniRef90_Q10ZK8 | WQRSELVVSVPGNREKGEVFELTPNSQHLT FLLQGREDD WQV |
| UniRef90_UPI000361C7A2 | WERS QVVELT LP DTA Q SVV N WE\\|CDFQENQ\|LS QRHEQ |
| UniRef90_L8NXV2 | WERS QVI S L AVESVNCSVY DLN NCLCP S QLS |
| UniRef90-D3EPK5 |  |
| UniRef90-B7K3R5 | WQRSQVVECSKAAENCQVYNLEGHLLTTSQLSSENN |
| UniRef90_Q3M4N6 | WQ R S EVV SVTLPNQ Q WQVY T T T G K Ql |
| UniRef90_K9FN46 | WS RTEVVTAT LPLGGQWQI INCETKQ P P VEYVVYRA |
| UniRef90-A0DTM8 | HS Q T K I I ELLEVP SKNVVQILS Q L L VIP Q Q EMKV |
| UniRef90-X5JT20 | WERSEVITLL SLLRL GEQEK SQI Y WQVVV DTNGET |
| UniRef90-U7QHA4 | WS CS Q GVELLSLSS P EWRLY D A Y GKA L QVQV |
| UniRef90_F4PR53 |  |
| UniRef90-R2SVD1 | Y T R T DIVEEVSTK Q A DIIKLTEDESNNELEYQILLSTKKVYA GE |
| UniRef90_A9UU87 | H N Q T FVVVLPSVVT AVTTTHDGAPVPA Q AVP S G L Y G |
| UniRef90_B4VZH8 | WQHSELIJTI STNNQT WQI Y D S N EKI P SQT GFH\\|SEAK G |
| UniRef90_UPI0002DAE837 | WRRSHI I PLSFGPGQVLDSQGEALPCQVVD |
| UniRef90_UPI00034831B0 | WHR S QI VELLEINNDKNYQILDDNQQ\\|L ET QI SHE GK |
| UniRef90-K9Z0T0 | WIR S EIVVELDI E GEKYKI Y D GE GKELLTT QIS HE G |
| UniRef90_F2KSV9 |  |
| UniRef90_UPI000318B772 | WQRSEVVSVTAPNQEWQI Y D S T G NQlVSQLGEAST |
| UniRef90_B4WM91 | WS R D AVI S FDLS QLD WUVY DPNY QVI PS Q NAPELS |
| UniRef90_UPI00047BC13F | WQRSEVVAVVPTLNQEWQIYDTS GQQLVS Q |
| UniRef90_K7WCL6 |  |
| UniRef90_C5L4V9 |  |
| UniRef90_B0C8R0 | WPRSELVELPDTQKRWQ |
| UniRef90-UPI0003B574F3 | WDRDGLVRVPYF Q EEVTVLDDS GK\IPS Q |
| UniRef90-K9UGT3 | WQRTEVVSLSSLPPEWWRVYDAA GRALEVVCSRQTQS STGK |
| UniRef90_UPI00040E41DF |  |
| UniRef90_R7KEI2 | A Q R K ELAE A Y I N I KVVQVFD A G K EVPA Q L L |
| UniRef90-H5SFK1 | WARTDVVT F P DPVS DVEVRDPQGRRLTAEVIARDSETNRA |
| UniRef90-H3G4N6 |  |
| UniRef90-R2QT31 | Y T R T DVVEVS T K HEK\RLFDEMNNEVDS Q L L T E K V Y A GE |
| UniRef90_UPI00046F5D50 | Y TR T DIVVEVSTKLEKVKL F DENHKALEMQILSTERVYA GE |
| UniRef90_E3GYG4 |  |
| UniRef90-J911Z4 |  |
| UniRef90_U5QPB3 |  |
| UniRef90_R6NMR9 |  |
| UniRef90-UPI0003762C36 | WPRSETVTLSVQLP A |
| UniRef90-G8NSB9 | WERS GVFTV DVQMP EAVKGDIS\\|VDNKNHVL |
| UniRef90-F3ZVA6 |  |
| UniRef90-B8CY22 | WERTDLVEINYE GQKFSVRDENGKILPVQQ Wh |
| UniRef90_Q7NPH5 | TPRDAPVALP L R GA R LVAVDRTGKDVPVQAA G D W |
| UniRef90_A4AN26 |  |
| UniRef90_K8E316 |  |
| UniRef90-J9IZH5 |  |
| UniRef90-D4BW82 | HKRDA Q VR $\square$ T L Y T P D FCI KDD A GKPCRWQLI HEEKQ DMS L |
| UniRef90_UPI000372C181 | WERS GVAEAKVQMPDISLLDAKGRVLPS Q I V |
| UniRef90-UPI0003B75DF3 | WA H T GVTS VIV QMPNIS LL DEKNRVVP |
| UniRef90_UPI000307A2C1 |  |
| UniRef90-U2DCE3 | FERND I A SVPD G $\square$ P Y P A L V E A G K EVVCQRIEDNK A |
| UniRef90_R6KBX2 | FPVT DVAEVADEAPKVSVYNAEGKQVASQLLSYRNGTV |
| UniRef90_UPI00035D950E | WQQS QLVY TWI PND I ELLH N N S L Q WRI TidLE G NQIEK |
| UniRef90-K9E5E0 |  |
| UniRef90_UPI00029A192C | H NRQGLVEVEMEFDAVQVVFNEKGEKVPTQVV |
| UniRef90_D1ARD9 | Y ERTEEVEISRLR G G N F T I Y N K D G K El P Y Y V K K R E L D P GL |
| UniRef90_UPI0003B3B22C | WKRSEWVEAEVQMPAVSVLDAEGHVLPSAVV |
| UniRef90_R5Y6E6 | FRRKNAVSAHINSTFVKVLDATGKEVPSQI |
| UniRef90-F0Z4U8 | R PRKE IL Q I Ni D T P D F HI M D S D G L REQQEI A R TEAA Y PV |
| UniRef90-UPI0003701933 |  |



| UniRef90_G6FYG1 | $\text { HNTTQSDD T } 130 \quad 140 \text { NLSQKQEQFSPERLTLENEF }{ }^{160}$ |
| :---: | :---: |
| UniRef90_K9PLC8 |  |
| UniRef90-J916G6 | D M Q S K I E N S K |
| UniRef90_UPI000304A622 | P S T S D $\square$ T T P E F Q GFSLENE Y |
| UniRef90_K9RAS1 | TK SNT $\square$ ALL ${ }^{\text {L }}$ |
| UniRef90-J9IDC9 | D P D Y K E K S Q A A K $\square$ E Q S E G L N VKP |
| UniRef90_K9Q8X7 | Y SPSSNTDFVLENQF |
| UniRef90-B7K6Q3 | PPHSLDNT EEGFILEND H |
| UniRef90-K9V311 |  |
| UniRef90_K9Y074 | NSF P P PFILLENQY |
| UniRef90_UPI0002F7FB49 |  |
| UniRef90_UPI000344BFE4 | DRLPPCAV P P A G EEEWVLENEF |
| UniRef90-J9HRW7 |  |
| UniRef90_D7DW98 | TFPT |
| UniRef90-UPI000349053E | $V K P \mathrm{~F}$ E E V V L E E C |
| UniRef90-UPI0004094E66 |  |
| UniRef90-J9FYL8 | S VK E S E Y $\square$ F $\square \mathrm{E}$ N E V VT V V Y Y Q Q K T A V VT |
| UniRef90_K9QL06 | T S S S P PY PEFILENEY |
| UniRef90-A3ILF2 | K EEAK L LQQ NETIL D NEY |
| UniRef90_A0YWW3 |  |
| UniRef90_R1DMK1 | ARAAPPPVDVAGEAAQAAGEAAEAPAFAEAADTVVESDV |
| UniRef90_UPI00036A4465 | EE S Q K K VKL P Q VT P V I LA R D P D F E Q K Y F E A K D WIL E N E F |
| UniRef90_L8LVT5 | $\square T$ F Q Q K ELKLTT HKK Y SLENK Y |
| UniRef90-B1XKZ5 | Q REDDLCNEPDFILENDF |
| UniRef90_F7URP6 | S Q QLE S F S |
| UniRef90-B8HSK2 | $P$ SSSEVPAATTEFILENQY |
| UniRef90-L8LK58 | VK P V F R E P P D Y L L D N GL |
| UniRef90_J9IMK1 | HP ELLQP NKKVPIEASLQRYSYLAE N |
| UniRef90_UPI00036DFAB1 | SERGSERGSERGSERVPGAVPQTTPEATWDPQTWTLANP Y |
| UniRef90-D2RH80 | REKNFIR】T I E T K H F NVT F SPEDGGITTVTK NGKTIER D G N |
| UniRef90_Q10ZK8 |  |
| UniRef90_UPI000361C7A2 | S S QPTTA EFVLENQH |
| UniRef90_L8NXV2 |  |
| UniRef90-D3EPK5 | T NKKVINKTNS D D I L E N S |
| UniRef90_B7K3R5 | GKNLVNNVVLS Y P Q D Y I L E N Q Y |
| UniRef90_Q3M4N6 | TS P TS TS L D Y L ENEH |
| UniRef90_K9FN46 | DELVLD NGY |
| UniRef90-A0DTM8 | D LS E Q $\square$ K L LE K Q F S Y G E P IV T |
| UniRef90-X5JT20 | NKTPYYENTKTEFSEQAGFSTPN LTLLENEY |
| UniRef90_U7QHA4 |  |
| UniRef90_F4PR53 | VT T ILSSYLPTRSS Q S D GSSPFVIHYARLGTQQPVIEENQN |
| UniRef90-R2SVD1 | VKEQPSKS D N K T S L I K E V I E |
| UniRef90_A9UU87 | HAGQTHNTSRTVVVPHSTVLP R E D Q T F T T NGVFTLE G |
| UniRef90_B4VZH8 | CPTDTPPENNHPNPQPNNEF』LENDY |
| UniRef90_UPI0002DAE837 | E ESS F P P P P T S P P VTA |
| UniRef90_UPI00034831B0 | S RLP SKNK F S Q TL N N N T FIL E N S Y |
| UniRef90_K9Z0T0 | R GFREDHDT L L K E D T G GMPVP H N GMEIIE E D I T Y L E N |
| UniRef90_F2KSV9 |  |
| UniRef90_UPI000318B772 | Y NTTQSEDTKLSLLQKQ EQFSSERLTLENEF |
| UniRef90-B4WM91 | SPRLTKYV L E NEF |
| UniRef90_UPI00047BC13F | N NTVHYED TK L G LQKQEQ |
| UniRef90_K7WCL6 | LFF A T $\square$ P S IGGYS I F W |
| UniRef90_C5L4V9 | A A CP QEQQLS GQPSVSSSVGNENYKLFYGGDEGS GRLYR |
| UniRef90_B0C8R0 | PLVSAKPDQP D $\square$ A P K N WILLEND Y |
| UniRef90_UPI0003B574F3 |  |
| UniRef90-K9UGT3 | $V P Y F M M G M D P \square V D P K P R W K D L K \ L G S G D F I F K N R F$ |
| UniRef90_UPI00040E41DF | ADLENETEFILENAF |
| UniRef90_R7KEI2 |  |
| UniRef90_H5SFK1 | PLARRS PVPS SLSVT GLTMENEF |
| UniRef90-H3G4N6 | A A DEANTVVAKAKD S APGKS FA S L K S L |
| UniRef90_R2QT31 | S |
| UniRef90_UPI00046F5D50 | ENVETADLKK TMM ENEN |
| UniRef90_E3GYG4 |  |
| UniRef90_J911Z4 | CLQE S K Q C S T Y I P P PVKK Q Q A L R D D K |
| UniRef90-U5QPB3 | A A G P K S S ALS L S D Y |
| UniRef90_R6NMR9 | E F VE A P E LQ S P VA A D V LTI E N E Y |
| UniRef90_UPI0003762C36 | GETP ATDLHVDEQPAT |
| UniRef90_G8NSB9 | SDLK T S G G L L E N K |
| UniRef90-F3ZVA6 |  |
| UniRef90_B8CY22 | G D R $\square$ N S VY DEEA $\square$ M G S H G D G S Q LD HVY E K K D K K F S LiE N K Y |
| UniRef90_Q7NPH5 | P A P A T T GLE NA Y |
| UniRef90_A4AN26 |  |
| UniRef90_K8E316 |  |
| UniRef90-J9IZH5 |  |
| UniRef90-D4BW82 | E IQQQNIQQ ENTLENEWLKLELH Q GRLLLT DKRNQQQYPN■ |
| UniRef90-UPI000372C181 | S DLK A NGS T IE NA A LRVTVVDPQS G C I |
| UniRef90_UPI0003B75DF3 | S DLK ASGT A MENEF |
| UniRef90_UPI000307A2C1 | ASEEMDSF NGDWETPFYRVKWNQDG |
| UniRef90-U2DCE3 |  |
| UniRef90_R6KBX2 |  |
| UniRef90_UPI00035D950E | LLP K F P E T S |
| UniRef90_K9E5E0 |  |
| UniRef90_UPI00029A192C | EKS S L SVT D Y S L E NEYYKV |
| UniRef90-D1ARD9 |  |
| UniRef90_UPI0003B3B22C | SDLKVS GT T L E N G S LKVSVD A K T G CI T T S L |
| UniRef90_R5Y6E6 |  |
| UniRef90-F0Z4U8 |  |
| UniRef90-UPI0003701933 | NSYVSTNKVETDFYE\\|IVNPNGTLN\FDKKLVQ |





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| :---: | :---: |
|  |  |
| UniRef90 K9PLC8 UniRef9- 196 G6 | DFATYEIPCGALRRTIKPQTPAEQAKWPALR |
| UniRef90 UPI000304A622 |  |
|  | TYEIPCGAli QRTTKPQTAAEKAK |
| UniRef90-J91DC9 | DSNGLEMQRREWN |
| UniRef90-K90887 | DFATYEDPCGADRRPTKPQTPAEQAKWPALRWADL |
| UniRef90-37K603 | DYATYEIPCGAI ERPTNPQTPSEQAKWEVWADDTD |
| UniRef90-K9V311 | EFATYEIPCGAI QRTTKPQTDAEKAKWPAMRWAN |
| UniRef90-K9Y074 | DYATYEl ACGAI ARATEPQTKVEQAKWPALKWAD |
| UniRef90-UPIOO | EFATYEIPCGAIARPTKPETPAEQAKWPAL |
| UniReef90-UPIOOO344BFE4 | DFATYEMACGALARTTQPQTQSERAKWPALRWAD |
| UniRef90 Jghrv | DFFTDANSLKMKRRKDEYRPYHKAFYPVTSGIDF |
| UniRef90-D7PW98 |  |
| UniRet90-UP10004094E | DFASYEIPCGVIQRPTNPKFPEGKAKWPAIHWADI |
| UniRef90-J9FYL8 |  |
| Uni | DFATYEIPCGAL RRPTQPETPQEKAKWPALRWADLTETSD |
| UniRef90-A3IL | EYTSYEIPFGTI QRTNFPKTPYEKAKWPALRWADLT |
| UniRef90 Aorw ${ }^{\text {a }}$ |  |
| URi9-R19 |  |
| UniRef90-L8LVT5 | QTVAEKAKWE |
| UniRef90-B1XKZ5 | - |
| UniRef90-F7U | EFFTTEAPCAVVDRPTNPQTETEKAQWPHQHWFSLTDENY |
| Uni | DQASYE\ACGVIQRPTLPNPQLEARQVPALQWADL |
| UniRef90-L8L | VSYETACGVVNRPTQPQNLIEAAKWEVSALDWACLVDSNY |
| UniRef90_S91MK1 |  |
| UniRet90-UP100036L | DWAT EITACGTMARPIRPRSPQAAAQWPVHRWADLSEDPT |
| iRe990_D2RH |  |
| UniRet90_Q10ZK8 | DFTTYETPCGAIKRTTKPQTEREKAKWPALNWADISKDNY |
| UniRef90 UPI000361C7 | DFATYEIPCGA |
| UniRef90-L8NX | DFTTYEIACGA ERDHEPESSKWEVYAHKWA |
| UniRer90-D3EPK5 | ERNNNPETPEEKAKWPALRWAD |
| UniRef90-Q3M4N6 | YEiPCGALIRRPTPQTPQDKAKWPALRWADL |
| UniRef90-K9FN46 | TTDHEKAKWEVPALR WADLSDD |
| UniRef90-A0DTM8 | CNV |
|  |  |
| 770 | S E |
| UniRef90-F4PR53 | RHNNHQNSYHSSFYPMTSV |
|  |  |
| UniRer90_A9UU87 |  |
| UniRet90_B4VZH8 |  |
| UniRet90_UP100022 | CGTIERTTQPRTPAEKAKWPALNWADLSDNQW |
| UniRet90-UPIO0034831B0 | RTTKPETEAEKAQWPA |
| UniRef90-K9Z0 | VYYETACGNQRTKKPQTDEEKAQWEVYG HHWADLTD |
| UniRef90- UP1000318B772 |  |
|  | DVATYEIPFGATARKT1PQTAAEKAQWPALCWADIGAQNF |
| UniRee90 ${ }^{\circ} \mathrm{UPI00047BC13F}$ | DFATYEIPCGAIIRRPTKPQTPAEQAKWPALRWADL |
| UniRef90-K7WCL6 | EFATYEIPCGAI RRPTNPQTPAQKAKWPALHWADL |
| UniRef90-C5L4 | N |
|  |  |
| UniRef90-UPI0003B574F3 | WEKARFEVIR WADFSD |
| UniRef90_K9 | S |
| UP10004 |  |
|  |  |
| Ref90_H5SFK1 |  |
| UniRet90 H3G4N6 |  |
|  |  |
| UniRef90-UPI00046F5D50 | AMDHRMRLVVKTPVETKVSYADTLFGIVEREN |
| -3GYG | - |
| f90_- 91124 |  |
| USPB3 | ENASYEI PFATIERSTRRDTPERKAKWPALRWADVSDPRS |
| ef90_R6N |  |
| UniRef90-UPI0003762C36 | ATYEIPYGSIERTTTRSNSWEKAKFPAMRWA |
|  | ATYEIPYGTI ERPTTRDNSWEKARFPALRWAD |
| UniRefefo-F3ZVA6 | ATYD: YYGA NRPTHWNTSWDKAKFEVCAWAD |
| UniRef90-B8CY22 | A Y A Plua |
| UniRef90 A4AN26 | GSVRVGKDEI KTAGERYTPLCKDVHPII DWISATDDEV |
| UniRef90-K8E316 | LSVNNQADDHRMRLVVKTPVKSQVYADTLIGIVERNNN |
|  | YRVFTDNSAFSVERKYNKTFDNARKI YPYLLNGIWDVDEST |
|  |  |
| UniRef90-UPI000372C181 | kampalR Wadtudgah |
| UniRef90_UPI0003B75DF3 | G |
| UniRef90 UPIOOO307A2C1 | QKATYEI PFGTIERPTHKNTSWEQAQFEVCRFADLSDTNY |
| UniRef90_U2DCE3 |  |
| UniRef90-R6KBX2 | EKATYDLGUGSVQRGNNILTAYE VYAQYWADLTDSDGSY |
| UniRef90-UPI00035D950E |  |
|  | ATYDLGIGSI KRGNNTKTAYE VYAQYWADLTDQDEHY |
| UniRef90 UPIIO0029A192C | KVATYNLGVGTIQRANNDSKKFE VPSKQWLDLTDENY |
| UniRef90 DIARD9 | QFMATVDTANEVWEAKWKEKPVPAVYQMMSFT |
| UniRef90_UPIO003 | PMATYETPYGTUQRPTRNNSWEKAKFPALRWADLGDQ |
| UniRef90 Foz4U8 |  |
| 0003701933 | SIRRDVV]SAIYVWEKEG |
|  |  |
|  | RGNNVPTAYE VYAHYWADLTDKNESY |
| A2 | KDATYELQYGNVRPTHNNTSWD AAFEVGGWVDRSEGNF |
|  |  |



UniRef90 G6FYG1
UniRef90 K9PLC8 UniRef90－J916G6 UniRef90－UPI000304A622 UniRef90 K9RAS1 UniRef90－J9IDC9 UniRef90－K9Q8X7 UniRef90 B7K6Q3 UniRef90 K9V311 UniRef90－K9Y074 UniRef90－UPI0002F7FB49 UniRef90 UPI000344BFE UniRef90－J9HRW7 UniRef90－D7DW98 UniRef90＿UPIO00349053E UniRef90－UPI0004094E66 UniRef90－J9FYL8 UniRef90＿K9QL06 UniRef90 A3ILF2 UniRef90－A0YWW3 UniRef90＿R1DMK1 UniRef90＿UPI00036A4465
UniRef90 L8LVT5 UniRef90－B1XKZ5 UniRef90＿F7URP6 UniRef90 B8HSK2 UniRef90＿L8LK58 UniRef90＿J9IMK1 UniRef90＿UPIO0036DFAB1 UniRef90－D2RH80 UniRef90－Q10ZK8 UniRef90＿UPI000361C7A2 UniRef90＿L8NXV2 UniRef90－D3EPK5 UniRef90＿B7K3R5 UniRef90＿Q3M4N6 UniRef90 K9FN46 UniRef90－A0DTM8 UniRef90－X5JT20 UniRef90 U7QHA4 UniRef90 F4PR53 UniRef90＿R2SVD1 UniRef90＿A9UU87 UniRef90 B4VZH8 UniRef90＿UPI0002DAE837 UniRef90＿UPI00034831B0 UniRef90 K9ZOT0 UniRef90 F2KSV9 UniRef90－UPI000318B772 UniRef90＿B4WM91 UniRef90 UPI00047BC13F UniRef90－K7WCL6 UniRef90＿C5L4V9 UniRef90＿B0C8R0 UniRef90 UPI0003B574F3 UniRef90－K9UGT3 UniRef90＿UPI00040E41DF UniRef90 R7KEl2 UniRef90 H5SFK1 UniRef90－H3G4N6 UniRef90－R2QT31 UniRef90 UPI00046F5D50 UniRef90－E3GYG4 UniRef90＿J911Z4 UniRef90 U5QPB3 UniRef90－R6NMR9 UniRef90－UPI0003762C36 UniRef90＿G8NSB9 UniRef90 F3ZVA6 UniRef90－B8CY22 UniRef90－Q7NPH5 UniRef90＿A4AN26 UniRef90 K8E316 UniRef90－J9IZH5 UniRef90－D4BW82 UniRef90 UPI000372C181 UniRef90－UPI0003B75DF3 UniRef90－UPIO00307A2C1 UniRef90－U2DCE3 UniRef90－R6KBX2 UniRef90＿UPI00035D950E UniRef90＿K9E5E0 UniRef90 UPI00029A192C UniRef90－D1ARD9 UniRef90＿UPI0003B3B22C UniRef90＿R5Y6E6 UniRef90 F0Z4U8 UniRef90－UPI0003701933 UniRef90－F4XUM4 UniRef90 R5M7M4 UniRef90－F9VKA2 UniRef90＿R6JNE3


ADTGDHEFTYAL YPHAGSWESAHTVRRG NERQPVQATYYMQLFNRNQEESHQRSH
SEADKGMHEFTYAVYPHAGSWEEAQTVQKGY
PEADKGNHEFSYGLYPHAQSWEKAQTVKRGYEFLLCQNKS DEDTPVRTQFWVQUFNRSNQMDNDEQPQYFFSSQWTFQEE FTYALLYPRANTWKNA QTVKRGY

NEFTYA $\square Y$ PHADTWETSKTV R $\square$ G
FTYA $\square$ YPHAGDWKSAHTV RRG PEADRGCHEFTYAVYPHTGTWQSAGTVRRGY A DQTPVTAKFW WS LTKKRA L A

FTYALYPHVGSWEQADTVKRGY
PEADRGDHEFTYALYPHADSWETAHTVRRGY
PEADLGWHQFSYAVYPHGGDWKQAKTVQKGY EFNRPL NEQD
PEADRGLHKFMYALYPHAGSWESAQTVRRGY
KSPRWPDPTCD円GYHEFTYAlYPHQGSWQEAKTVQK A RGSTWPDPKADLG $\square H H F T Y A I Y P H V G D W K A A A K V T H R G$ NETMCGCN
EAADRG】HQFTYGワYPHAGSWQDAQTVRRGY
PNSDRGKHQFTYAIYPHRDSWQQARTVHKAY
DRGMHH $\quad$ AYA $\square Y P H S G P W Q R A K T V N \square A R N F$
DRGKHKFSYYFYPHQGNWQSAKTVAVGYG HHFSYALYPHRGEWSRGRTPQQAY
$S N G Q G V \quad P \square Q A T Y Y \square Q Y F N M K Q E T S E F Q R N Q M$
P D A RE $\square R$ Y S F K Y A VY P HE G D WK QA K VY K M G Y
FTYALYPHAGSWESAHTV RRG
P N CDKG $\square$ H Q F S Y A $\square$ Y P H K G T T K E A K T V H K A Y
ADT GG $\quad$ HEFAYTVYPHADSWESAHTVQKG PGCDRGHHH FTYATYPHAGSWQSAYTPHHARA A KRNNHFFRHFDQFNSECLRCKWNE
TEADKGKHEFTYGLYPHAGSWQTAQTVRRGYELNVPLEST PEADLGDHQFTYALYPHEGDWKVAKVTHRGY
ANNNHVVVPLWLNFDD QVSMSPSFPHHLS KEYQVMNSRLYLTLFRGVGLGRPELLRRPGDASGNQYRLL LLTVGEAPNQRLVL RTVLLECGHVRPHSWPA

RNTPLSYHQFSYSLYPHEGDWKKANTVKKAY
P DARELKYVFRYSTYPHEGNWVEAKSYKQGY
DAQSNQLRLTLLVHEFTYALYPHAGDWKSAHTV RRG
F T Y S L Y PH $\square$ GS WEEAETVKRGY
PGCDRGHH QFTYA $\square$ YPHAG SWQTARTTHKG AD RGKHCFSYALYPHKGDWREADTVRRGY ADRGYHEFTYA $\square$ YPHSGTWQAAQTVRKG

QDFGHHTFTYS $\square V G H Q N E A \square Q A G \square S H L A E S D N S H L A V$ DEGRHRF TYA $\backslash$ YPHAGDWVQAGTVQR
KEYQVIDSSLYDTLFRG
KEYQVIDSDLYLTLFRG
PDARFKRYEFWYS IYPHTGNWKDSKVYKQGY
KEDKHDHLQF
PQADLGAHNFRYLL YPHPGDWRAAGSVQAG

FTYSLYPHKGSWDQGGTVP

 KEYQVIDSDMY $\square$ T $\square$ F R G DDTSLTR

PNSD DGKHAFTYSLYPHENDWK SGLTVRAG ETTDQEEHFFTYSLYPHS GDWKEAKTDQNAY KNNYPYQDRQDLGYHTFTYS VVGHAG G G
 A NS QDWG』HEFKYG』YGHKGDWRNGQTDWQG

GAFTKQARQDLLD $\square$ GRNNFAFG】FSHEGGFANGTQRQS

PEADQG $\square$ H QF T Y A $\square$ Y P HQGNWRFADT $\square \mathrm{H} \square \mathrm{A}$ Y
PDADKEEHFFTYS $\square$ Y A H DK T WQEAKTVQLA Y

UniRef90 G6FYG1 UniRef90 K9PLC8 UniRef90-J916G6 UniRef90-UPI000304A622 UniRef90 K9RAS1 UniRef90-J9IDC9 UniRef90-K9Q8X7 UniRef90-B7K6Q3 UniRef90_K9V311 UniRef90_K9Y074 UniRef90_UPI0002F7FB49 UniRef90 UPIO00344BFE4 UniRef90-J9HRW7 UniRef90-D7DW98 UniRef90-UPIO00349053E UniRef90- UPI0004094E66 UniRef90-J9FYL8 UniRef90-K9QL06 UniRef90 A3ILF2 UniRef90-A0YWW3 UniRef90-R1DMK1 UniRef90-UPI00036A4465 UniRef90-L8LVT5 UniRef90-B1XKZ5 UniRef90_F7URP6 UniRef90 B8HSK2 UniRef90_L8LK58 UniRef90-J9IMK1 UniRef90-UPI00036DFAB1 UniRef90-D2RH80 UniRef90_Q10ZK8 UniRef90_UPI000361C7A2 UniRef90_L8NXV2 UniRef90 D3EPK5 UniRef90-B7K3R5 UniRef90_Q3M4N6 UniRef90 K9FN46 UniRef90-A0DTM8 UniRef90-X5JT20 UniRef90 U7QHA4 UniRef90 F4PR53 UniRef90_R2SVD1 UniRef90-A9UU87 UniRef90 B4VZH8 UniRef90_UPI0002DAE837 UniRef90-UPI00034831B0 UniRef90 K9ZOT0 UniRef90 F2KSV9 UniRef90-UPI000318B772 UniRef90_B4WM91 UniRet90 UPI00047BC13F UniRef90-K7WCL6 UniRef90-C5L4V9 UniRef90_B0C8R0 UniRef90 UPI0003B574F3 UniRef90-K9UGT3 UniRef90-UPI00040E41DF UniRef90 R7KEl2 UniRef90 ${ }^{-H 5 S F K} 1$ UniRef90-H3G4N6 UniRef90 R2QT31 UniRef90 UPI00046F5D50 UniRef90-E3GYG4 UniRef90-J911Z4 UniRef90 U5QPB3 UniRef90- R6NMR9 UniRef90_UPI0003762C36 UniRef90_G8NSB9 UniRef90 F3ZVA6 UniRef90-B8CY22 UniRef90_Q7NPH5 UniRef90 A4AN26 UniRef90-K8E316 UniRef90-J9IZH5 UniRef90-D4BW82 UniRef90 UPI000372C181 UniRef90_UPI0003B75DF3 UniRef90_UPI000307A2C1 UniRef90-U2DCE3 UniRef90 R6KBX2 UniRef90_UPI00035D950E UniRef90-K9E5E0 UniRef90 UPI00029A192C UniRef90-D1ARD9 UniRef90_UPI0003B3B22C UniRef90_R5Y6E6 UniRef90 F0Z4U8 UniRef90-UPI0003701933 UniRef90_F4XUM4 UniRef90 R5M7M4 UniRef90-F9VKA2 UniRef90_R6JNE3
 YELNIPLQVVFNPPHTHNSADSASDRMSFLNLSAENL
$E \square N T P \square Q V V M$ REDVTS G $\square E S S K D S \square S F \quad \square N \square G S E N L$


 $Y E L N V P L Q V M V C P V N H \square Q P S N T S H S G L G V S F \quad L D L S A E N L$ $E L N Q P L Q V M V L S E G S R P K G G I E L P A L G C F L$ DLSAENL



$$
\text { EFNYNLVA LQVPRNRRYR } \square K R S F \square R \square D \quad P D N V I L T A F
$$

YE $\square \mathrm{N} \square \mathrm{P} \square \mathrm{QVIL} \mathrm{Y} \quad \mathrm{P} \nabla \mathrm{V}$ AHNSQTTADDKTSFLNLSADNL $E \square N \square P L Q V \square K V S N E G E T K \square P P V F S G \square S T N D \quad N L$
YELTNPLQVILNPTQHFQLNTSKSTPNTRDKASFDNLENL LIIPLRTYLPKS IT SSNRSAPVSASQSFFSESDHLILAA
 ELNQPLEVQVLS PREHCQFSEQASGTQCDLNSDSLL S SI NQPFIVQLGSDNVVVSSRKSY GSDMNNDPPSVSVLIF GELEMSLSLMIADVFDPANVQKEYQLYSVTSPYQVQTLNR

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 ELDVPFEVLVNPDNYQCNSDGCQSQSFLYGSAD NL YE $\square$ NRP $L R T L I S L D Q Q K Q G \square Q N Q F \square S \square G T D \quad N /$


FNTPKHKGA $\square$ GREYSFVKVNTDRSLKKAEESDLY\IRL YELNYPLIPYPTNGHSG SLPPVHSFLRVEPNTVVLTALL

$$
\text { E F N Y G } \square \square G F Q \square N K K \square S E N K K \quad S F \square K \square E \quad P D N V I L T A F
$$

$\square D \square N T P \square H A L I E P \quad P H P G S \square P D Q F \square N \square D N S \quad Q \| V \quad L$

WQLNAPLTAVVASPHTGSLAAEQSMFSTDADNVIIDTV NEPLKGLTVI DVKGQNVLPPSHSFVNLDSD NVVLETL




E $\square$ F QKPL $\square$ A Y Q TS SRREGS LIESGYSF $\square K \square \quad$ NNENA $\square L$
$Q \square N \square P F \square S L L W S P P S S V V S N N S N N S Q P S L P S T G Q L L N L$


UniRef90 G6FYG1 UniRef90_K9PLC8 UniRef90-J916G6 UniRef90-UPI000304A622 UniRef90 K9RAS1 UniRef90-J9IDC9 UniRef90-K9Q8X7 UniRef90-B7K6Q3 UniRef90_K9V311 UniRef90-K9Y074 UniRef90_UPI0002F7FB49 niRef90 UPIO00344BFE4 UniRef90-J9HRW7 UniRef90-D7DW98 UniRef90-UPIO00349053E UniRef90- UPI0004094E66 UniRef90_J9FYL8 UniRef90_K9QL06 UniRef90 A3ILF2 UniRef90-A0YWW3 UniRef90-R1DMK1 UniRef90_UPI00036A4465 UniRef90 L8LVT5 UniRef90-B1XKZ5 UniRef90_F7URP6 UniRef90 B8HSK2 UniRef90_L8LK58 UniRef90-_J9IMK1 UniRef90_UPI00036DFAB1 UniRef90-D2RH80 UniRef90_Q10ZK8 UniRef90_UPI000361C7A2 UniRef90 L8NXV2 UniRef90-D3EPK5 UniRef90-B7K3R5 UniRef90_Q3M4N6 UniRef90 K9FN46 UniRef90-A0DTM8 UniRef90-X5JT20 UniRef90 U7QHA4 UniRef90 F4PR53 UniRef90_R2SVD1 UniRef90-A9UU87 UniRef90 B4VZH8 UniRef90_UPI0002DAE837 UniRef90_UPI00034831B0 UniRef90 K9ZOT0
UniRef90- F2KSV9 UniRef90_UPI000318B772 UniRef90_B4WM91 UniRef90 UPI00047BC13F UniRef90-K7WCL6 UniRef90-C5L4V9 UniRef90_B0C8R0 UniRef90 UPI0003B574F3 UniRef90-K9UGT3 UniRef90_UPI00040E41DF UniRef90 R7KEI2 UniRef90-H5SFK1 UniRef90-H3G4N6 UniRef90_R2QT31 UniRef90 UPI00046F5D50 UniRef90-E3GYG4 UniRef90_J911Z4 UniRef90 U5QPB3 UniRef90-R6NMR9 UniRef90-UPI0003762C36 UniRef90_G8NSB9 UniRef90 F3ZVA6 UniRef90-B8CY22 UniRef90_Q7NPH5 UniRef90 A4AN26 UniRef90_K8E316 UniRef90-J9IZH5 UniRef90-D4BW82 UniRef90 UPI000372C181 UniRef90-UPI0003B75DF3 UniRef90_UPI000307A2C1 UniRef90-U2DCE3 UniRef90 ${ }^{-}$R6KBX2 UniRef90_UPI00035D950E UniRef90_K9E5E0 UniRef90_UPI00029A192C UniRef90-D1ARD9 UniRef90_UPI0003B3B22C UniRef90_R5Y6E6 UniRef90 F0Z4U8 UniRef90-UPI0003701933 UniRef90-F4XUM4 UniRef90 R5M7M4 UniRef90-F9VKA2

VLMAFKQA EDSDKWILRR CYECNGKETEDKAQSD I LMAFKQAEDNSQQWILR CYESQGKTAEFQLTSD
 A $\square K$ QAENSPKEKPEW $\square \mathrm{L} R \quad$ CYECHGKVSE $\square Q \square K G D$

LLMAFKQAEDDSQNLILRC ILMAFKQSEESPNRWVLR
TLMALKPSEDNPQKF\| IR I LMAFKQSEDDPEQWI LR 1 LMAFKQSETKSKQWILRC
VLMALKKPEDEPDKLILR IVSAFKPAEAVNNNYILR ILMAFKQAEHNSQAWILR
VLMAFKQSEDDENПWILR FKGAENTEKQAGSDVILR KQAESNQD
KLREDYPDQW VLR CYEMSGESAQLEVITA LLMAFKQSEDHPNGWVLR CYGGYGRSAQLINLCSP RLMALKGGETGD WILR CYEYQGETAELNFQNN A PLDNMLVYP LDDMSLLIRFENLADGYDYPSNSTLND
K $\square$ AEDGD G I IVRREAEGSEVKAKL TF

ILMALKLSEDDPKQLILR
CYECHGDTAE LS $\square$ HSD $\square V$ AFKPSEDKKYTY $\square L R$ R YESEGEKTNDDFKSD VLMAVKPSEDDQQQLILRR FYESHGVTTEDSLQSD ALKPSESNPERFIA L RLQ G HRTNFDQULLYAENLRYEDFDNSTVQNYTITMNNTMG

 FTNPIQYFQSNKVDQLLPLKEFFEVNCSN

KTTENDPNK FLIRGYECHGESANDEV NG

$\square L M A L K P S E D D S E K F \square L R$ FECH GKTAN $\square S Q Q S Q$
VLMALKRSEDQPKAWVMRC YECHGEEAPLAVTNDLNLH KKTEDRET VI LR VLMAFKPSEALDRSWVLR FYE AEGINTDTLVTLL CYECHGVEGEDELSGE
YEMQGKSAQNVE DT FPDA $\square E S A Y E T N G \square E E K \square G E V T T Q K L$ KKAE DSDAW F Y $\quad$ R FAGKPTDVRIR L

KKSERDD SVI $\quad$ FREAAG $\square E S D \quad V K \square K \square F K K$ ATWKQAE DGKGW LLR

F YESTGRPASAQ LR $\square$


VDTVKPAENSQGVVVR KKAEDSDD KKA E S K S S D E YVVRRVR KKAENSDEY IVRV

RC CK【AEDGDG\|IVR
VNeGs GeALKNVEL
S $\square$ M A $\square K$ QSED $\square P D Q W \square L R$
CYESHGESANLSLVSD
KKAEDSDY LIVRLYEF
H N K R T S VS $\square$ E F $\square$ K

UniRef90 G6FYG1 UniRef90＿K9PLC8 UniRef90－J916G6 UniRef90－UPI000304A622 UniRef90 K9RAS1 UniRef90－J9IDC9 UniRef90－K9Q8X7 UniRef90－B7K6Q3 UniRef90＿K9V311 UniRef90－K9Y074 UniRef90＿UPI0002F7FB49 UniRef90 UPI000344BFE4 UniRef90－J9HRW7 UniRef90－D7DW98 UniRef90＿UPI000349053E UniRef90－UPI0004094E66 UniRef90－J9FYL8 UniRef90－K9QL06 UniRef90 A3ILF2 UniRef90－A0YWW3 UniRef90－R1DMK1 UniRef90－UPI00036A4465 UniRef90 L8LVT5 UniRef90＿B1XKZ5 UniRef90＿F7URP6 UniRef90 B8HSK2 UniRef90＿L8LK58 UniRef90－J9IMK1 UniRef90－UPI00036DFAB1 UniRef90－D2RH80 UniRef90＿Q10ZK8 UniRef90＿UPI000361C7A2 UniRef90＿L8NXV2 UniRef90－D3EPK5 UniRef90－B7K3R5 UniRef90－Q3M4N6 UniRef90 K9FN46 UniRef90－A0DTM8 UniRef90－X5JT20 UniRef90 U7QHA4 UniRef90 F4PR53 UniRef90＿R2SVD1 UniRef90－A9UU87 UniRef90 B4VZH8 UniRef90－UPI0002DAE837 UniRef90＿UPI00034831B0 UniRef90 K9ZOT0
UniRef90－F2KSV9 UniRef90－UPI000318B772 UniRef90＿B4WM91 UniRef90 UPI00047BC13F UniRef90－K7WCL6 UniRef90－C5L4V9 UniRef90－B0C8R0 UniRef90 UPI0003B574F3 UniRef90－K9UGT3 UniRef90＿UPI00040E41DF UniRef90－R7KEI2 UniRef90－H5SFK1 UniRef90－H3G4N6 UniRef90－R2QT31 UniRef90 UPI00046F5D50 UniRef90－E3GYG4 UniRef90＿J911Z4 UniRef90 U5QPB3 UniRef90－R6NMR9 UniRef90＿UPI0003762C36 UniRef90＿G8NSB9 UniRef90 F3ZVA6 UniRef90－B8CY22 UniRef90－Q7NPH5 UniRef90 A4AN26 UniRef90＿K8E316 UniRef90－J9IZH5 UniRef90－D4BW82 UniRef90 UPI000372C181 UniRef90－UPI0003B75DF3 UniRef90－UPI000307A2C1 UniRef90－U2DCE3 UniRef90 R6KBX2 UniRef90＿UPI00035D950E UniRef90－K9E5E0 UniRef90 UPI00029A192C UniRef90－D1ARD9 UniRef90＿UPI0003B3B22C UniRef90＿R5Y6E6 UniRef90 F0Z4U8 UniRef90－UPI0003701933 UniRef90－F4XUM4 UniRef90 R5M7M4 UniRef90－F9VKA2 UniRef90＿R6JNE3

$\square G \quad \square S L V E P V N \square \quad \square E K P \square N D P L V K$ F E F T V V P WK $\quad$ V V F K K VK
LEESVDLLERSLS TAEFSATADEQKFNTQPWK LG LEIEEPVDLGEQPAFAPEPDWQFR\｜SPWKUASF
FFNLEK
$A V D L L E T P \square N Q E \square D K V G P W T \square A T F$

$\stackrel{\square}{G}$

$\square \mathrm{G}$

FKE $\square$ KEAKVVNMEFGKDVK VDGNVVEVEMKPFEVVT $\square K$ VK LG
$\square G F V L D \quad K K V N \square \quad \square E Q E \square Q Q D Q D \quad Y \square K P W E \square A S F M L$
 LTVGK SLNLLEEPTDDS TARPYQI QT
 FASKSTVDPISLKANISLDHIVPPQQVSLLPGQISTFILS

LLNDDVKTRVN■

PKEVEVVEEKDEEFDKDVKVEGNK DF DEDNPFEVVT $\square R \square K$ ДE ESVDLLERS LS TSEFSATA AEQKFT IKPWK
$\square$
पS LGEPVDLLENK【EENQPWK【VTFQAT
FKQ T T DLLETNYEMDRPNVVAPWK ART
FRRPRETYE LDLMENRQHLDKSFTLKFGRSEIKT $\square D A \square N I L E E R L L G D P V D T L V K P W Q U K S F$

C F DMASYRPKT
PRPPRAASEVN LIERE $\square G P \square A V N G Q E V I V S P Y E \square K T V R \square E$
 AAP $\square R T A T T T D L D P K T \square P \square Q N G Q \square P \square Q \square G P Y E \square Q T$

AFNVQSAVECDLLERAQGEDDSGSFDVYワKPYELKTERDK PNWVIECDEEPLDNNSEMRVRGNRFSFEINPYEIKTFKID $\square P$ VRSVVK T DLL LERP $\backslash A A L D G Q A S \square Q L G P Y E \| Q T V R V Q$


$\square G \quad \square K V V H P V D \square \square E R P V S \square S P S P D V Q \square E P W K \square S S F$ $N \square Q L A Y E C D \square N N \square E \square I T$ P N A N K F D F E $\square K P$ F E $\square K$ T F K $\square K$
UniRef90 R2QT31
UniRef90_UPI00046F5D5
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UniRef90-J911Z4
UniRef90 U5QPB3
UniRef90 ${ }^{-}$R6NMR9
UniRef90_UPI0003762C36
UniRef90 G8NSB9
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UniRef90_Q7NPH5
UniRef90 A4AN26
UniRef90 ${ }^{-}$K8E316
UniRef90-J9IZH5
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UniRef90-UPI000307A2C1
UniRef90 U2DCE3
UniRef90- R6KBX2
UniRef90-UPI00035D950E
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UniRef90 UPI00029A1920
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UniRef90 R5M7M4
UniRef90 ${ }^{-}$F9VKA2
UniRef90-R6JNE3



$$
P R P!V M F N P L S
$$ QQGKKILVFNPLP




KRR\|VDAMSCEMALDK LVAFNLMP I I VFNTQG $P \vee V L C N A G$
ESRP【ISEGE

EEEKDMKPMVIFNPHS
 F $\square E A D \quad Q \square S Y S M V D Y \square T R K \square S E S Q K K V C E H Q V S I F N T D P$ SLEDSKAVFVFNPHP SVVVYNPVA PCQKNALILWEKDGEGAPVLVFNPHS QYEEVLRVT DE LK DSA $\square$ N G $\square$ AS Q $\square$ TS DGEAIVVFNTTG QQGKKIIVVNADS Y $\square$ KTTLSP $\square$ SPNTL SK $\quad$ TTEKEAEGSGVSGASYTVVNSSP LVVFNPLN पQDNLT GAGDVIVVFNPLS $K L V V Y N L L P$ SK $\square$ N $\square$ NEKS $\mathrm{V} V \mathrm{~V} \mathrm{~V}$ FNTMS S GEGRPYVVFNSLG KI TVVF S F S $K L V L F N L L P$ $\begin{array}{ll}K \\ P \\ L & V V V Y N \\ Y\end{array}$
KRK $\square$ T DS $\square$ DTDRKEDRLTAFNLL P


A UniRef90-R3W6R9 UniRef90_UPI00034C59F4 UniRef90-UPIO002FA8972 UniRef90_F7L4V7 UniRef90-U5Q9T4 UniRef90_U6RAE1 UniRef90-U2N480 UniRef90-M5E119 UniRef90-R7BFZ1
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| UniRef90_U2N480 |  |
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| UniRef90-A4IPC6 |  |
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| UniRef90_E8V415 |  |
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| UniRef90_R6DW95 |  |
| UniRef90_S3IV20 |  |
| UniRef90_R6RF03 |  |
| UniRef90_A0AKC1 |  |
| UniRef90_UPI00040ABA0D |  |
| UniRef90_B0K7M7 |  |
| UniRef90_Q1ZB44 |  |
| UniRef90 - UPI00034BF9AC |  |
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| UniRef90_R2PGT4 |  |
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| UniRef9 |  |

WS RSQVV|S|I $\int^{50}$ GQGKQG|V|K ${ }^{60}$ D NGNC WS RTEVIEI A ALLSPSPSPYEDDDRAKNLQFGLASVANLAN
 FPVTIDIVEVVSI ETSKVSVYDAA GKKVAS QLLS YQDGKMN Y R R K E S V

 WQRSD Y I E GREILLDNIPANGYKSYN



 WE R A DVAVI PAA E GAVSWTD ATGEP L R A Q F

HKRDAQVQI TLYTPDFCIKDHNGKACRWQLIKEQPQDMSL WPRSEVVTLELGTQAWTIQDSAGYPIRC


 WERS DVVTVEVQMPEV HVVDAKGKVLLSQV WK R D GLI S L T GGKEDTVV CDRDGSVVGMDVLVGED GNVTS YERKEVVT TTVKKLPSFTLEDAEGNTIPFEVLEKEEMDPGL


RTRDAEVVSLT LFTPAFRMVDENGNACVWQLLHEAPQDMSL
 WS R S R Y l E I S P EN P NLLA F F DE QN N P L P A QK L A N G S

FERSDDVEVLPEGWSNVLVYDGE KLITSQKVGSNKD
 WERRELLVELSDT D WNLENVS GVLEDETS QVLPDQVT DS G
YDRNE IVSTQQKMKAFE $\quad$ VF DKDNNK LDDFEVVHKEA DDAGL YEREDTVTVSARGEAAYACDCLGHRAPVQYVGEDT FEST QNVELSHIKPAKVTVLDASGNKVPSQILSYK D
 WTRDAVVE LALSSCGNFAVVGEDNVLLEADVLTEEAAVVGV
 F D R D D L L K L P Y EK D S $\triangle$ SL VD A E GK V Y P V Q R TEE G S L FTRND IVVRLPEG $\quad$ C GALV DAD GTRCPVQ
WEVTKRVNI KVSTENDQLKNTAGEALSFDVLARKKEYSGE WKISEIVVEVESSLRK Q S R C D V V TAT VDMADVVAVAPNGKKV GQLL $F P \square R Q P V Q L \quad N T T V A G G V C N A E G H P V P C Q Q V R G P Q T N L K D$ VAREDVVEAS LQ F P AVVHVVGPNGKTIP GQ\|VSNDDGKTK F V R T DVVVELPAFARKVTVYDGD RPVPSQRTPE GG
 WEVVRNWV EMELVNF EADKGLK S GKEEDDVEVIDKFARYEDDS

 WP R E E V I T I R R L R A S Q F R L L L D D K G N S I P Y F I I R C A R E L D P GL Y D R D D I V E V A I K E GT K VL RDLD GKNVD DQ I
WERTEVI RLEGGPELAAAVQ VFDED GLL
WD REEL $\quad$ I P LPA GVVK SVK S GE GE $\square M P V Q N D M G T Y Y A$




 WS RPR YIE IS P DNQHLDAFYDENNAP LPA QVNNTWLI QHP

[^4]

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UniRef90-R5M8 UniRef90-R5A9B6 UniRef90-E8V396 UniRet90-W4BIZ2 UniRef90-R8UWFO UniRef90-UPI00036F8241 UniRef90 Q648D9 UniRef90-17LIT6 UniRef90-D8K442 UniRef90- E3H757 UniRef90-G2S2SO UniRef90-U2DDV2
UniRef90 W4D494 UniRef90 M4Y2U4 UniRef90-E3G3T0 UniRef90-ROHFN3 UniRef90-UPIO0047AA8FC UniRef90-R5YDY1 UniRef90-W1SEBO UniRef90-UPI0004014C2A UniRef90 L8MZB6 UniRef90-K9SHJ6 UniRef90-S5KOZO
 EEYSDSSESSENSNDEQTII ENSD VA P $\square \mathrm{P} P \mathrm{P}$ V $\square \mathrm{T}$ S S E $\square \mathrm{N}$ $\stackrel{\rightharpoonup}{\mathrm{N}} \mathrm{S} \mathrm{C} \underset{\mathrm{Y}}{\mathrm{V}}$ YSDGVFTNDFFQVNVESG SGSREKEASSVPATILENSVYKISLNEYG
 NTT $\square$ TVDNTNK $\square$ EVRLNETSELTSTLNVTNNTLENDR DFRERQDQYLKSKSNSNNVGAASKKNLLK LK DDKKMDENR RPCCDKSEI STINSDNAMENQKY IVTLNRK AESAVS $\square$ SKNRMENQKY $\square V T L N P N$ AAASAATADE VPGRRNMESALKKVHDFTLENNN KVAEQKDYLLENEYYRDNV NDNGTLTDFDKETEQVFDQA保 TRVSVDSNALENSDYKTT DDTKGDIVSDFDKKNGKELVKP KQLPAAAAQTERQRPVASGGEDASYSSPPFETRPSGLRTP DVGGARVAFDGMNEKVIENEYLKLRVESGSGALVSLVDKK EFEPQIQEQTILENQWLKLEUNQGELTLIDKRNKQCYPHI

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KTDDKDSGHTLENSKYKVIFNKNGDLAFLLDKE SGNTLAQTDLFHI GSSEMTSPHYKDK WNDKGRITS $\square$ MVSAEANALENSMYKDRLDGKGDGVSLLDKKNNKELVKEG FAATTSNTLE NSDYKRTLDEKG ATGKSGDAFEGKWETAYYKVEFTSEGWIS
NTLAEKET TETDYYKVSVNPNGTLK DWDKQLEKEFLENGG GKLLAKNGTLENTDYK】ALNEQGD
NYDP PNYVT
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KAYEVCDM
 SGPAKEHPVLAAEHPGPDPEPSGFDAECPRPWPGFFENDW P UVNTATTQUENSVYK\|VFDKFGD\|VSULDKKNNKELVKS ECSSEASPVDSDENEYYQIVYEAGALVLVDKRNGKAYSHF DESHAESAAAEHNQTAVGAVPFGDARWETDYYRDTFNERG FDEVKVT
FELYAAQEKAGNRFFEDRDDDSAN VS $\square F D$
AARSPFVQEGNMLETPYYRILFDDDGMFSSDYDKKNRRED VINEAKQDY IENDYYK LQLHLFDKKMKQCYDNDLTFEDGG EEDTNPVNCI ADDLRDETPS KQLKAESN ILENS $\quad$ YKVVLDKNGD $\square$ AS $\square$ TDKR PVDHPAK GEGYTLENQY QASPLKVT ETSLENSRYRVQLDKNGDVGSFYDKQV LVAGVSVAQWEADRRHTHTPWYNI HLNESAEFTSVWDK EFAVPSSTEEALENPWLRLTLEGEKVVLVDKRSGKRWENL PYDPNFIMTVENRFFGVEVDSDTGLIDVIDQKEDGGKREKI PKVLREKRRYVQKSMQYDFQRFDENEFYKDEVNSDG PVKPEARSRLKTRGNTVQNQFFKMDVDPGNGGLIDLYLDGG VPTVKNTEALDENAFWQVEDNRDGTLRLEDKESGLIYDRV EAAEPAGVRLERQVDSAAGDGFPEQWETDHY ILKFNEDGE DNVKAGEYFLENECLRV
PAGKPEDALLENDDWR\TLNDDGTLRMADKTSGLVYDR


■SYVQEKNKVEESPFNEVP
FNQS
TANILEQPQEPHYVITSTHKQDSALSTGTS MNASQFSMENDR NGAKTPFYEVE SDSEK YYENKY
ANLEQPSFHYKNNQLETPFYQUKWN KAGQ

[^5]UniRef90_UPIO0045E9BC0 UniRef90-R3W6R9 UniRef90-UPI00034C59F4 UniRef90-UPIo002FA8972
UniRef90-F7L4V7
UniRef90-R7BGE0 UniRef90_U5Q9T4 UniRef90-U6RAE1 UniRef90-U2N480 UniRef90- M5E119 UniRef90-R7BFZ1 UniRef90_R5MGC5 UniRef90 K9E596 UniRef90-UPIO003B72127 UniRef90-U4ZQ34 UniRef90-A5GWIO UniRef90 E5V6G4 UniRef90-UPIOO0288093C UniRef90-UPIO0047BF22B UniRef90 K8WQM1 UniRef90-K9RRA1 UniRef90_R6QQ0 UniRef90_A4IPC6 UniRef90-K6AGPO UniRef90-18XTN6 UniRef90-E8V415 UniRet90 UPI0004150003 UniRef90 ${ }^{-}$W1SL26 UniRef90-R5M8WO UniRef90_UPI00034A094E UniRef90 R6DW95 UniRef90-S31V20 UniRef90-R6RF03 UniRef90 AOAKC1 UniRef90 UPIO0040ABAOD UniRef90-B0K7M7 UniRef90 Q1ZB44 UniRef90 UPI00034BF9AC UniRef90-UPIO002559D19 UniRef90-T3G5SO UniRef90- R5FOTO UniRee90 UPI00046AB59F UniRef90-R2PGT4 UniRef90 W4CD69 UniRef90 W1SDN6 UniRef90-S0FTA1 UniRef90_C6LGS8 UniRef90 F9V865 UniRef90_D1CC94 UniRef90-R5M8×5 UniRef90-R5A9B6 UniRef90 E8V396 UniRef90-W4BIZ2 UniRef90-R8UWFO UniRef90-UPI00036F8241 UniRef90 Q648D9 UniRef90 - 17 LIT6 UniRef90-D8K442 UniRef90_E3H757 UniRef90 G2S2SO UniRef90-U2DDV2 UniRef90 W4D494 UniRef90 M4Y2U4 UniRef90-E3G3T0 UniRef90-ROHFN3 UniRef90 UPI00047AA8FO UniRef90 R5YDY1 UniRef90-W1 SEBO UniRef90 UPI0004014C2A UniRef90 L8MZB6 UniRef90-K9SHJ6 UniRef90-S5KOZO


L
SGKSFYRV
VRVQDDLK
NEREVLKNNQKGNVLQAFEDKPH ELTNGSD

पNKTFENVLLMENGGDEGDEYDFSPDPNEKLTENDNUVAN YRAAFNDKMELVSLVEKGTGCQLKEGRVGNQLLTFEDRPM GKAIRLAMFEDNKSYSW
 FKLVIDKESGGПSSLFDKERQDEVFKDGAAПPVVMNDSSD KDERREVLKPGTRGNVLQAFEDKPL
DKPGRPGNRFCMYEDKPMN
YDNWD
DEGDTYDYSPAHFDLTLEGSERNTFCGEYYQELLLTGTWE
FVMQVDDSCGGTARLFDKRHNVEVFRSTAALPLVIADNSD
पR VEFDPFTGT UVSFYDKEHCRELAGGPMAKALVINDQPD AKEMLSAPTRMAISTDNPSQWPAWNMDYS DQTR LEGRELLQSG QLTRLYD RQAEREVLAPGARANVLQLFEDKPLNFDAWD CTANELVLEQEDGDLYHHRQTLDDPLKTETGEGVYFGAFR TLNDFDKKNCNYYERMHLFQDRSDAGNEYEYSPAYRDEFP EHLCFGNELVVEEETGDLYYHRQNMTGDDRTESEAGVTFG LLLEEGSDDGDEYDYSPLRPEEEMIITNESVKAD DD LEEIEESSDDGDEYDYSPSREEWRLTTAQGEHEVEVVHEGW
 VFNKTGQUVSIVDKQTGFETVKGLCNDFRMYRDVTS VLEFEEGSDDGDEYDYSPSREEWLLTSACGEHRSDVVHE DKKLDKLLLRMPDQMLLFDDRSDSFPAWEDVYETRNNTPS NATLIS SYOKKNRREVISKGGKGNDFRILFEDMPGGYDAWD YRMEFDTKTGWDNSLFDKRVLHEVESGPAAKPVVIDDRTD LQVETSRKTGAIAQMYDQRSQQFILRSASELDGVFEDKGQ IKVEDPHTGEVSQITDKRSGNKILRAP VQWQFFSDRGQ FTSIFDKKNNRQVIAENARGNVFQLFEDKPMWHDAWDIDD

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| :---: | :---: |
|  |  |
| Un | YWDA WNDDPAYES |
| UniRef90-UPIC | AGDEYDF |
| UniRef90-F7L4 | HWPAWE】MKD |
| 发90-27B |  |
| 5 |  |
| $\begin{aligned} & \mathrm{U} \\ & 112 \mathrm{~N} \end{aligned}$ | DASVNENVK |
|  | EWDAWDVDGDDDPVVINNLVSIELL |
| - | A WEMNFKEANKDADRTPNVVTVTV |
| R5 | A WEMDYNENKNAAD |
| UniRef90-K9E | NWPAWEDTVDSTPV |
| UniRef90_UPIOOO3B7 | A WDA WNI DADFEKVS |
| UniRef90_U4ZQ34 | FWDA WDDA DYTSHPMRWEAEEROGQSF |
|  |  |
| UniRef90-UP100 | AHEAWDIDLIFYQEKEIS |
| UniRet90-UPI00047BF22B |  |
|  |  |
| UniRef90-R6QC | SWEDRKEDDKDAYCYANTPKFEDGENGPARDA K R K Y |
| Unip | KKREVEDLRRV |
| UniRef90 18 X | A WEVTKET V ${ }^{\text {d }}$ |
|  | QYDAWNTDPLDHFTPIESVESVQLLDKGPLRATDRVTRTW |
| et90-UPIOOO4150 | DWDA WDIDPYFENQPVRNNRIKKMEVTHKG |
|  | R |
|  | YWDA WNTMP P YEEKPLEAATSITCLEYSEL |
| UniRef90-R6DW95 | TWAHNVFTFHDDEGDMKLERTEL VESGN |
|  |  |
|  | WEMNYK EANKDADR |
| UniRef90-AOAKC1 | LFYQEKQKEVKDLTSFELVDNGPLKQVLHSEKSQ |
| UniRef90-B0K7M7 | N |
| UniRef90-Q12B44 |  |
| UniRef90-UP100034BF9AC |  |
| UP10002559D |  |
| 3G5so | N |
| UniRef90- UPI00046AB59F | A WE |
| iRef90-R2PGT4 |  |
| Re90- W4C |  |
|  | TWGHGTLRFDGEFKPVQlKKLEEGPVRGVIRIVTSKFQS |
| OF1 | RYDAWDINIUYY |
|  | O |
| UniRef90-D1 |  |
| UniRef90-R5 | W |
| iRef90_R5A |  |
| UniRet90-E8V396 |  |
| $\begin{aligned} & \text { W4E } \\ & \hline \end{aligned}$ |  |
| UniRet90-R8UWFO |  |
| niRef90-Q6 |  |
| UniRef90-17LIT6 | T |
| iRef90-D8K442 |  |
|  |  |
|  |  |
| 990-U2D |  |
| et90 W |  |
| ef90 M M | NYDAWDIDSMYEKVPVPLDDIMELYQGNLEAALR NNSE |
|  | R |
| Ref90_ROHFN3 |  |
| f90 UPIO0047AA8FC | H |
|  |  |
| ef90-UPIO004014C2A | R |
| L8M | Y WDA WN |
| UniRef90_K9SHJ6 | Y WDA WNI |
| Ref90_S5K0Z0 |  |
|  |  |

[^6]|  |  |
| :---: | :---: |
| UniRef90 UPI0004 |  |
| UniRef90-UF | R |
| UniRef90-UPI |  |
| UniRe990-F7L4V7 | FRQYIRLYEGELANRIDENNEVDWQSNALLKAEFPLNLDN |
| UniRef90 R7BGE0 | F |
| UniRet90_U5Q9T4 | FVQLISLSDG |
| UniRet90-U6RAE1 | VQYIRLADSGV |
| UniRef90-U2N480 |  |
| UniRef90 M5E1 | QKMIIYANQRRIDFK |
| UniRef90-R7BF | 㑑 |
| $\begin{aligned} & \text { UniRef90_R5MGG } \\ & \text { UniRef90_K9E59 } \end{aligned}$ | Y TRLYYGELAERIDYNE |
| UniRef90-UPİ0003B72 | FSTDLVLYADAD |
| UniRef90-U4ZQ34 | GSRRIEVRMELDNQADDHRVRV |
| UniRef90-A5GWIO | GQSSVRLQAGSPWDELIITAQW |
|  | N |
| UP10002880 | M A Y T HRRTDF YTETDWHERQRLLKTAFPVEVRA |
| UP1000478 | APFLKIAFP NAS |
| UniRef90 KgRRA1 |  |
| UniRef90-R6QQC |  |
| UniRef90-A4IPC |  |
|  | FKQY ${ }^{\text {R }}$ LYEGSRAD |
| UniRef90 18 XTT | A ${ }^{\text {R }}$ |
| UniRef90-UPIO004150 |  |
| iRet90-W1SL26 |  |
|  |  |
| P100034 |  |
|  | QDFILGAEQKTLRV |
| UniRef90 S3lV20 | KKS SLP PDRA WLDDVEVEVNNTLRDHR |
| A0 | WIHFYHDCPEI RFETEVD |
| niRef90-UPIO0040ABA0D |  |
| iRef90-B0K7M7 |  |
| B44 | KVPKTL |
|  |  |
| UP10002559D19 |  |
|  |  |
| JP100046 |  |
|  |  |
|  |  |
|  |  |
| UniRe990-SOFTA1 |  |
| UniRergo Cblass |  |
| iRef90-D1CC94 |  |
|  |  |
|  |  |
|  |  |
| UniRef90_W4BIZ2 | VIEQTIIFYAHTRRINDRTFVDWKQEHLLLKAAFPLDUWS |
| Ref90-UPIO0036F8241 |  |
| iRef90-O648D9 | CVKKIIVYRDDPRIDFITEDEDHPKARIRVKFSTD |
| UniRef90-17L | H |
| iRef90 D8K | D |
|  | FEDEVSLKKGQKRVDVKVTIDNVSDHRLRMHLPTPYKSDQ |
| $\begin{aligned} & \mathrm{G} 2 \mathrm{c} \\ & \hline 102 \end{aligned}$ |  |
| UniRef90 ${ }^{\text {W }}$ | V |
| 俍ef90-M4Y2U4 |  |
| ef90-E3G3T0 | S A |
| Ref90_Lohta 3 |  |
| UniRef90-UP100047AA8FC | HQPIIKVDAE:DNQANDHRLRALIPTGMAASFSVSDNQFG |
|  | L |
| ef90 UPI0004014C2A |  |
| 0 | RNSKFLQETQLTAFEAFVTVKDWQEEQTLVKVAFPVLWRS |
|  | NHVTVKNQLDWQEENTLVKVAFPVNWRS |
| iRef90_S5K0ZO | QWI HFYHESPEI RFETEJVDWRDRQLLLKVAFPVAVH |
| niRef90_Q8DM33 |  |

[^7]

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm



[^8] UniRef90-UPI00034C59F4 UniRef90_UPI0002FA8972 UniRef90_F7L4V7 UniRef90 R7BGE0 UniRef90_U5Q9T4 UniRef90_U6RAE1 UniRef90-U2N480 UniRef90- M5E119 UniRef90-R7BFZ1 UniRef90-R5MGC5 UniRef90 K9E596 UniRef90_UPI0003B72127 UniRef90_U4ZQ34 UniRef90_A5GWIO UniRef90 E5V6G4 UniRef90_UPI000288093C UniRef90_UPI00047BF22B UniRef90 ${ }^{-}$K8WQM1 UniRef90-K9RRA1 UniRef90_R6QQ01 UniRef90_A4IPC6 UniRef90_K6AGP0 UniRef90-I8XTN6 UniRef90-E8V415 UniRef90 UPI0004150003 UniRef90 ${ }^{-}$W1SL26 UniRef90-R5M8W0 UniRef90_UPI00034A094E UniRef90 R6DW95 UniRef90-S3IV20 UniRef90_R6RF03 UniRef90-A0AKC1 UniRef90-UPI00040ABAOD UniRef90_B0K7M7 UniRef90 Q1ZB44 UniRef90 UPI00034BF9AC UniRef90-UPI0002559D19 UniRef90-T3G5S0 UniRef90 R5FOT0 UniRef90-UPI00046AB59F UniRef90-R2PGT4 UniRef90-W4CD69 UniRef90 W1SDN6 UniRef90_SOFTA1 UniRef90_C6LGS8 UniRef90-F9V865 UniRef90-D1CC94 UniRef90-R5M8X5 UniRef90-R5A9B6 UniRef90_E8V396 UniRef90-W4BIZ2 UniRef90-R8UWF0 UniRef90_UPI00036F8241 UniRef90 Q648D9 UniRef90_17LIT6 UniRef90-D8K442 UniRef90 E3H757 UniRef90_G2S2S0 UniRef90-U2DDV2 UniRef90_W4D494 UniRef90 M4Y2U4 UniRef90-E3G3T0 UniRef90-ROHFN3 UniRef90 UPI00047AA8FC UniRef90-R5YDY1 UniRef90-W1SEB0 UniRef90_UPI0004014C2A UniRef90 L8MZB6 UniRef90-K9SHJ6 UniRef90_S5KOZO UniRef90_Q8DM33

KEYQVIENNMY $\square T$ LFRG
LHADRGVSEFTYRLLPHQGSWQHAQ\|VREGYN
AEHYSYQDRQD LGYHTFTYS LIGHAGAD ADKAQVVKEA QD LGGNCFSFG $\quad$ YG GHKGDIENGTNKESMNFAR
 NDRGGVEDRGH QE $\square K Y S I Y P H A N D W K A A N T V$ RKG PEADQGQHSFTYSLYPHGGDWFEGETVKEAY

```
KNNYSYQDRQD\GYHTFTYSLMPHAGN LDKAQ\squareAKDA
```

PSADQGWHR $\square$ RMA LMPTTGS WHHAAVAAQARRFRQ
TEADQGEHRF TYSLLPHKGDWLEGFTVAE A

QD $\square G R N C F S F G \square F G H E G D D E N G T N R E S M V F A R$ QDQGHHDFTYSLLPHVGDWVEGQTVKEAWYLNNPDTYR\G DRQDFGYHTFTYSL DKQDYGHHNFTYSLVGHSGKDDHAST AD LGHQSFQYADYPHAGDWKQAGSMQHGG

QDQDHGHHAFR YA VVGHEDAAQAG $\square$ A WK A P DADF GEHRFSYA $\square$ YPHSGDWRDAETVRWGY

DSQMPG $\square$ HRFH LIVLPMNNGQDGAFWHAVE QWRTPA PEADLGVHNFTYSL FPHQGDF LDGETVQTA NETADDELHSFTYSFMPHEGTWKEAGT VA EEADKEDHEFVYSLYPHKGDWKDGNTVKMAYN


NENA D $\square$ GFHEFTYS $\square$ YPHKGRWQEARTVE MA

ATADLGEHDFTYSLYPHRGDWQEAHTVRRA DDQGUQTFTYQLLPHENSWEDAETVKH
PAADQEEHVFTYALYPHSGSLRECDTVREGY
$\square D Q G M Q R F R Y T L L \quad P H S G S W R D A R T P L A A$ AHQEH $\square$ DMGHH TFSYS $\square$ YGHKSD $\square$ AEAGTAWK A VE
$\frac{\mathrm{A}}{\mathrm{A}} \mathrm{T}$ QDWGHHEFVYG $\square \mathrm{A}$ GHGDDWRKGQTDWEAE

PDARELNKRYEF RYAVYPHEGDWREASSYKH
A

PEAD $\square G \square H E F T Y S \square Y$ PHKNTWKEASTQEMAYN
HE


[^9]

UniRef90-R3W6R9 UniRef90-UPI00034C59F4 UniRef90_UPI0002FA8972 UniRef90_F7L4V7 UniRef90 R7BGE0 UniRef90_U5Q9T4 UniRef90_U6RAE1 UniRef90-U2N480 UniRef90-M5E119 UniRef90-R7BFZ1 UniRef90-R5MGC5 UniRef90 K9E596 UniRef90_UPI0003B72127 UniRef90_U4ZQ34 UniRef90-A5GWIO UniRef90 E5V6G4 UniRef90_UPI000288093C UniRef90_UPI00047BF22B UniRef90 K8WQM1 UniRef90-K9RRA1 UniRef90_R6QQ01 UniRef90_A4IPC6 UniRef90-K6AGP0 UniRef90-I8XTN6 UniRef90-E8V415 UniRef90-UPI0004150003 UniRef90-W1SL26 UniRef90-R5M8W0 UniRef90_UPI00034A094E UniRef90_R6DW95 UniRef90-S3IV20 UniRef90_R6RF03 UniRef90-A0AKC1 UniRef90-UPI00040ABA0D UniRef90-B0K7M7 UniRef90_Q1ZB44 UniRef90 UPI00034BF9AC UniRef90-UPI0002559D19 UniRef90-T3G5S0 UniRef90 R5FOT0 UniRef90-UPI00046AB59F UniRef90-R2PGT4 UniRef90-W4CD69 UniRef90 W1SDN6 UniRef90-SOFTA1 UniRef90_C6LGS8 UniRef90-F9V865 UniRef90-D1CC94 UniRef90-R5M8X5 UniRef90-R5A9B6 UniRef90_E8V396 UniRef90-W4BIZ2 UniRef90-R8UWF0 UniRef90_UPI00036F8241 UniRef90_Q648D9 UniRef90-17LIT6 UniRef90-D8K442 UniRef90-E3H757 UniRef90_G2S2S0 UniRef90-U2DDV2 UniRef90-W4D494 UniRef90 M4Y2U4 UniRef90-E3G3T0 UniRef90-ROHFN3 UniRef90 UPI00047AA8FC UniRef90-R5YDY1 UniRef90-W1SEB0 UniRef90-UPI0004014C2A UniRef90 L8MZB6 UniRef90_K9SHJ6 UniRef90_S5KOZ0 UniRef90_Q8DM33

$\square N N P \square E \square F P S R P T G Q D D D R D C W S F \square S \square S \quad S K A \square V L S A F$
ER $\square$ NQR $\square K$ AFTAEKHSGT $\square G K T F S F V S S N N D N V V I K A L L$ DGQNNPLFALI TCEVKKSESKGEFSQLABLLK
A S LINQPMLAFQAPK
YEFNYP IT QEDDSHEGD $\square$ A NSSFGKVDKD NVVLTVL

E VLNQRVKAFEVEKHNGT LGKTFS LVSSDNSNVVIKAL
P $\square$ WRHPAAAGPAERRSWPNPHQHW $\square$ GFDSA
WN $\square$ NNP $L \quad T V T R G \square N E R G \square F S \square F H S S \quad C D Y \square V V$

QPVKETES KLITCEVKKQSEKGEFSQVASLLKLSHDNGVIM DKLNQPDMAFAANKHAGR LGKSFSFVNSD NTSVVIKTL VEMNQRLKAFQTTKHKGT LGKEFSFATSDNRNVI IKAL WE YNYPLRAMQV

ENFNQP LLAFTTTKHAGK $\square G R S Y S F A R T D R P Q$ RFNQPV FVRLGNSQTS S GHLDPSMSWLTV SGYLDTGWSRFRTNPHGRNFPSRFSVLNWE SQLHFSTL WELNNPDF SSKGE DEPFS LFQVTNPYVV ESFNVNVP $\square R T \square K G G \quad S A G N D F S F M S V D S D N V I L E T V$ $\square N C P M Y A K I E G P H D G V L P E R F S L L N V D K E N V I V E T V$

WH LIN NALYPL PQGS $\square$ SGDRPLIE DDSEAIVL KAFNHPLVVTEVSANGDGESPTQFGLLRSTLPDNVLISSV YDLNSPLVSALVPAKGAGAFWSMVSVDQPD CFVEMM

AELNHELYTFAASSTQQLPPTGSFTGFSGE HVVLDTT


$A L L N Q P P \square A D F E S F H P G V$ LPPTYSAMEVS PSNVIVSVL EAFNQLLLSFTTPKHAGT LGRKLSFVKTNMP

$$
R \square N Q P L \square G F A S N K H P G \quad G \square G K D F S L L K V S
$$

$\square E F N T D L D T \square Q L P K G M K \square P G N R S F \square K \square D \quad P G N V V L S A L$ $\square$ NVPMHSVIEDAHEGM $\square$ QNNMS $L \square K$ VNKDNCD

LEDNHPDVPVDDKSEGELGADKSFDTLASD


[^10]

[^11]

| UniRef90_UPI00045E9BC0 UniRef90-R3W6R9 |  |
| :---: | :---: |
|  |  |
| UniRef90_UPI00034C59F4 | F |
| UniRef90-UPI0002FA8972 |  |
| UniRef90-F7L4V7 |  |
| UniRef90_R7BGE0 |  |
|  |  |
| UniRef90-U6RAE1 |  |
| UniRef90-U2N480 | F N |
| UniRef90-M5E119 |  |
| UniRef90_R7BFZ1 |  |
| UniRef90 R5MGC5 |  |
| UniRef90 K9E596 L N | L N |
| UniRef90-UPI0003B72127 |  |
| UniRef90-U4ZQ34 |  |
| UniRef90-A5GWIO |  |
| UniRef90_E5V6G4 |  |
| UniRef90_UPIO0047BF22B |  |
|  |  |
| UniRef90-K9RRA1 |  |
|  |  |
| UniRef90 R6QQ01 | F |
| UniRef90-A4IPC6 |  |
| UniRef90_K6AGP0 |  |
| UniRef90_I8XTN6 |  |
|  |  |
| UniRef90_UPIO004150003 |  |
| UniRef90-W1SL26 |  |
|  |  |
| UniRef90_R5M8W0 |  |
| UniRef90 R6DW95 |  |
| UniRef90-S3IV20 |  |
| UniRef90_R6RF03 |  |
| UniRef90_A0AKC1 |  |
| UniRef90-UPI00040ABA0D |  |
| UniRef90-B0K7M7 | F |
| UniRef90_Q1ZB44 |  |
| UniRef90-UPI00034BF9AC |  |
| UniRef90_UPI0002559D19 |  |
| UniRef90-T3G5S0 |  |
| UniRef90_R5FOT0 |  |
| UniRef90-UPI00046AB59F |  |
| UniRef90-R2PGT4 |  |
| UniRef90-W4CD69 |  |
| UniRef90-W1SDN6 |  |
| UniRef90 S0FTA1 |  |
| UniRef90_C6LGS8 |  |
| UniRef90-F9V865 |  |
| UniRef90-D1CC94 |  |
| UniRef90-R5M8X5 |  |
| UniRef90-R5A9B6 |  |
| UniRef90 E8V396 |  |
| UniRef90-W4BIZ2 |  |
| UniRef90-R8UWF0 |  |
| UniRef90-UPI00036F8241 |  |
| UniRef90_Q648D9 |  |
| UniRef90_17LIT6 |  |
| UniRef90-D8K442 |  |
| UniRef90_E3H757 |  |
| UniRef90-G2S2S0 |  |
| UniRef90-U2DDV2 | F |
| UniRef90-W4D494 |  |
| UniRef90-M4Y2U4 |  |
| UniRef90-E3G3T0 |  |
| UniRef90_ROHFN3 |  |
| UniRef90-UPI00047AA8FC |  |
| UniRef90-R5YDY1 |  |
| UniRef90-W1SEB0 |  |
| UniRef90- UPI0004014C2A M S |  |
| UniRef90-L8MZB6 |  |
| UniRef90-K9SHJ6 |  |
| UniRef90-S5K0Z0 |  |
| UniRef90_Q8DM33 |  |
| lupas_21 |  |
| lupas_14 |  |
| pas_28 |  |
| jnet |  |
| ont 99 |  |
|  |  |
| sol25sol5 |  |
| solb sol |  |
| jhmm |  |
|  |  |


[^0]:[^1]:    

[^2]:    

[^3]:    

[^4]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

[^5]:    lupas_21
    lupas_14
    lupas_28
    jnet
    cont
    sol25
    sol
    sol5
    jhmm
    jpssm

[^6]:    lupas_21
    lupas_14
    lupas_28
    jnet
    cont
    sol25
    sol5
    solo
    jhmm
    inmm

[^7]:    lupas_21
    lupas-14 14
    lupas 28
    jnet
    cont
    sol25
    sol5
    jhmm
    jpssm

[^8]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol0
    jhmm
    jpssm

[^9]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

[^10]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf conf
    sol25 sol5 sol0 jhmm jpssm

[^11]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    cont
    sol 25
    sol5
    sol0
    jhmm
    jpssm

