## QUERY

 UniRef90-E9GES2UniRefor
VgLDK UniRefoo - C3zowz UniRef90 F7F239 UniRef90-UPIOOO3F06636 UniRefi90-UP10003D08864 UniRef90_H3CNC0 UniRef90_A7SJ66 UniRef90_J9JM84
UniRef90_W4Z6U9 UniRef90_M5GAW2 UniRef90_K2QN17 UniRef90_F1LFV1 UniRef90_U9SN32 UniRef90-B7FIJ9 UniRef90-T1JP18 UniRef90 T2M4J3 UniRef90_UPI0003597FEA UniRef90_-UPIO00258F210 UniRef90 UPI0002B4AC9C UniRef90 M3ALH4 UniRef90_UPIO00462331E UniRef90_S2K3Z9 UniRef90-R7TZU3 UniRef90_D7STL2 UniRef90-V4UNM5 UniRef90_B8LMP6 UniRef90_G7XU53
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MKNTVVRTKAELENVKRLFCDDEYLWIFNITRDTSSLTRD MVKILGLKVRARLDNVTLRSDEDFRWYLKVKCGSCNEVSD MVKEGLQKATLENISKLRPDEDFRYLKLKCANCREASD MVK ALQLKAVLENITNLRPGEDFRWYLKKCLSCGEVSE MVKEGLQKANMENVTNLRPDEDFRWYKKKCLNCGEEPD MGK MVR GLQRKANLENVTLKAGEDFRYYMLKCMNCGEVTK MVR: GLAKANLENTNLGDDDFRYYKKKCSNCNETE


 $M V K L A L H F K A E L E N V T E V G P D D D Y E W H F K V K C T S C N E E N D$










 L S L V L S A E L S GVVT D LRRP K D P Y Y Y T F K V Q C T S C R E T H P $M V \operatorname{R}$



 L L T L T A D L

 $M V K L C L E I G K A E L E N V T D L A P A S D F E Y F F Q V K C N S C H E V H P$
 $M \bigvee F Y I L D F T A E L E N L T N L Q S D P N Y T Y Y F K V K C E N C G E I S K$
 M M V L FA A L
Y A LT LA D

 FALALTAELNGVTNLRPADPFWYTFKVQCTSCRETHA

 MVNYVLKITADLENLTNLQPDSNFPYDFKLKCERCGETQK

 MVK FALT
MVK

 YYLKLTAELEGVTDLRPGDPFFYMFKVTCDSCREEHD M

## M

 KFLLQTAADLENLTNLQPDPNFSYLFKLKCERCGELSQ MVYFALYVGAELDGLTNLQPDPNFPYYLKLKCENCGEVTK MVN $\qquad$ MVNFLLEI KAELLENL
 MVLLLLELKAELE AD DDNV却
MVKYFLKAS MVRVGLQLSAELEEVVSSQPADPFEYTFQVQCTSCREDHK MVILGLALTAETLAGVTNLRPNDPYYYTFKVQCTSCRETHP
 MVKIALKLKANLENVESLTPSPDFRWYLKFACNNCGEGSN

## QUERY

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QUERY
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90
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UniRef90_KGULLA

1
MPVFTLS RAELLENVESLSIPSSSHFCLDVKESAGSEEKK MVK GLEISAULENVAQSSIGDEFRWYVKLKCTSCGEVSS MVKLQVLIKATLENCTDLQGDDFNWMFRVQCGSCREEHP MVRVGLQISATLENTDSLETHPDYAFFVKIKCTNCGETSD SLVLSAELSGVTDLRPTDPYFYSFKVQCTLCREITP MPTIALQLKANMVNVTSLQQMMGFRWHLKKKCTNCGEEPA MVKFALKMYATLEGGDVEPVDPQEYIT QCTKCRTHD LTLSVEAQLEGVTAALPTPDYFYTFRVQCTSCHETHP

GVTELRPDDPFWYTFKVQCSSCRDVHS MVKDARQTCRDDNEELKPGPEFRWCRKTCSNCGQASE MVKIGLQUKATLENVEALKCHPNYAFFVKMKCTNCGEESD MVKFALKITAELAGVTGLHPQDPFEYTFTVECTKCREVHK MPNFELLFSAQLTNVKEILPPNDTDWF TKVLCTNCGEDHE
 MVALGLFLSALLENITSLEPFDPHYYTFKVQCTSCREUHP

MVLFYLKVKAEMANVTNRP MVRLQLSUKADLENVTDLVPSDFEYFFVKKNSCQQHN MVKFYLKAKAELSNVTDLEPNDPFEYTFRIECTKCREVHD
 MVKVALWUTCRLDNDELKPGPEFRWCLKFICCNCSNKSE

FGLFLSAELQGVTELGPTLPYEFSFKIECNSCHEVHE MGNYYVKVSAELNGVTDLTPDNPFEYTFKIECTKCREEHP MVVILLRMKADLENVVDSUEPGAGHTWVLRVKKANGEEVRE MVKFLLKVQAELSNVTDLEPDSPFEYTFEDECTKCRTVHD MVRLLLSIKAELDNVTDLAPASNYEYFFQVQCNSCHEVHP MPKLALQLKAQFTNVTHLLPDPDHTLMLKKLKCTSCHEEHS MPKFALQLQAQFTNVTSLDPGDDYTLMVKTKCTSCHEVHP
 MVLFVLYVKADLENVEKLEAPAFHQWCLDVKESNGDETRT MVKFLLKVSAELDNVTALEPQDPFYYTFRIECTKCRTDHD MVLFVLYVKADLENVGSIEAPALHRWCDDVKEPTGDETRE

 KSSLYIKADLENVTDLAPTDDCEWYFK MVKLQLYKAELENVTDLAPSDDFEWFFNASGPNTNRHPK MPRUGLEVSDDAEN】AKVEAGNDFRYFVKDCCGACGEDTD

TKARLENVEATKTHPDHSFSLKLKCTGCGETSD MVK LRVLISMELEGVTNVQPADDHEYFFTVMCGSCREVHS K MVRFSLYLSAEVNGVTDLAPADEYSYTFRVKCNSCREVHD MVLFVLYVKADLDGITDLRPDDPFWYTFKVQCGSCRELHP MVLLVLYVKATLENVATIEPSPDYHYCFDAKDSDSDDVRE MVLLVLYVKAELENVASITFPRNLQWCFDVKDAQSDETKE MVKFLLKVSATLEGVTDEEPGEDFEYTFQIECTKCRTTHD



MPVFVLKKCEDDNVASMQADENNKWILTMQSPDAGERRE MGKFALNLNAELTGVKNLAPKDEFYYAFKVQCSGCRETHD K KVNLKADLDNLTDLRVKDHHRFFFKVKCSNCHEVHH MVLFVLYVQAELENVETLAAPPLHRWCLDVKEPRSDETRE P I AL HFKANMVN MTUFILYTKAD\|DGTNE\|IFPDNY TWC TDIEQSAGPLTKS
 MVQVKCNSCNEASD
MKNTVLRDKAERENVKRTYCDDDF DWAFNI RDSVSTLTRE MVRLLLRMKADLENVEAIEFPADYTWNDDVTQAGGTEEKK MGK』ALQLRATLENITNLPGEDFRWYLK

LKCLNCGDETS
 MPVFVLYMKMEMENVAEVSWGDDMLWCVDLQQSGGNEVRS MTVFVLYVQADFEGIEELIFPENYTWCFDIEQSAGSLTKE




UniRef90 A4S0C6
UniRef90-G3VYF7 UniRef90_UPloo0386F930 UniRef90-A0A023F7P6 UniRef90 L7HSLO UniRef90-FOWHU4 UniRef90-C7YWF4 UniRef90 M7XHK5 UniRef90-UPIOO001240F0 UniRef90-E9ENR6 UniRef90-C5KNH1 UniRef90-A0A022PZR6 UniRef90-UPIOOO2743B66 UniRef90_F4QAL1 UniRef90 ${ }^{-}$W7AQUO UniRee90_UPI0002C2F7F3 UniRef90-A8Q3L2

MVKYALKTSCTVENTTQLTTGPDFEWHLKLQCRDCNEADP FSLTLTAELGGVTNLRPDDPFWYTFKVQCTSCRETHA MVLYLLYVKAELENVESLEMTPETLWHLDVSDSTGQDVRK
MVK【AVQLKAT LEGLTDLKPGDNFNWLFKVRCSGCREEHP LKLKCTNCGEAPD FTDT TKAEQTGVTNDRPDDPFWYMFKVQCTSCRETHD MNAKLDGLSQLSASPSHDWCDDVAGTNTDEVRE पA DALKADLEGVTDLRPVDPYFYSFKVQCTSCRETHP EHVSDLNPNKXLQWY DKMKCGNGSEDSE MVRDSLSLTAETEEI KNI FPCSDKVWFFKIKCSNCLTVSD MKNTVLRIKAELENVKKLYCDDDFLWVFNIKDSTSSLTRE

 $M L T Y I L Q A S A V L K N V T G L Q P V D P F D Y K F I V K C T G C K T E H N$ $M V V V G L Y V R A Q M D N V A A L R I P E K H Y W T F A L K D S V G Y E T R D$ MVVI GLFVRAELENASEVKVGPDHVWSLNLRESDGFEKRD
 $M V K L A V K I F A E T E E V Q N I$ YPEPHKDWFFKLKCSNCLVLTE VTNLRPKDPFWYTF
$\square A L S \square S A E T E N V A R I R V P E D H T F F D R L R C T T C H E E T P$

$\square G \square Y \square K A E \square E N V D S V R A V P G \square R W E V D V K E P T G Y E F R K$
 MPQYSLLASAETEGVERTQPMRPRDWGMKVECDSCREVSP MPVFVMSVK ESERVERIAPVKNRAWGLRFQCASCNEEST MGKIALQQKATLENITNLRPGEDFRWYLK MPVFSI LLKAEWEGVAAVRPSDGRCWALKCRCDTCHEVTD

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

$M P D F M L Y L T A T L E N T K R L F P K D P A E Y T F R L V C T S C R E E H D$ MPLFLVLKATLENVTKVSDENTAEFAFDLQCTSCRELHD



MENVESVSLPPGAHFVMTVKNSVGEDVRE
LYY LVVDANLENIKRICPKDPAEYTFDLVCTSCREKHD
QFKAELENVTDLKPDENFNWFFEVKCTSCNEVHP
$\square Y \square A \square S A T \square E N \square K S V R V K D P A E Y T F Q D S C N N C R E V N P$ ERGDPRRSHLVVKQPAGEDVRE MPVFNTILKAEWECVAAVRPSEGRYWALKCRCLSCHEVTD L Y L FVVTAVLENIKCFYPTDPAEYTFQIVCTSCRETHD $M V L 1 G G L V T A E F E N V S E V R V P P D H T W F L D I R E S D G F E V R E$ MVYYKLLFSCETKNVEAISTGGNYEWHIDSVVCSSCHTVDN



 MPKQTLEVAMTLQGLEKVTIEDPFTWRVKVKCPNCQTEHK $M \nabla Y Y A L L V G A E L D G L T N L Q P D P S F P Y Y L K$

Y A LT L T A E LEGVT N LRPNDPFYYTFKVQCTSCREVHP LENI GRLKVTDPADYAFELVCTNCREKHD MYGTLENVRLYVKDPAEYAFDLVCTSCREAHS


$M P T Y Y L T G A T F E N T K K \prod F P K D T A E Y A F D D T C T N C R E A H S$ MVFF AL KAK $M \bar{V} F F A L L V G A E L D G L T N L Q P D P S Y P Y Y F K$ $M P K L A L Q L K A Q F N N V T H L D P D P D H T D M L K D K C T S C H E E H S$
LYLSMS GTLENIVRVYPRDTAEYSFDITCTHCREAHS
$M \square R Q S \prod S L K A E D E E D Q N \prod F P A T Y K \square F F D K \prod K C S N C G E \square P D$
 MPFFRVGLRAETEGVLASIRPARPREWGMKFECDSCRETSP $M V R L L L R M K A E Q E N V E S I E F P E D Y T W N D D V V Q S G G T E E R Q$ MPK LDMLVVSAELKNI A ILLQPDDT $\square$ N Y Y Y F KLECEYCGWIDS $M$ VK QS ITLLKAETEEIENUYPCTDKVFFVKIKCSNCGETPD

## UniRef90＿A4SOC6 UniRef90－G3VYF7 UniRef90－UPIooo386F930 UniRef90－A0A023F7P6 UniRef90 LTHSSLO

UniRef90－FOWHU4
UniRef90－C7YWF4 UniRef90－M7XHK5 UniRef90－UPIO0001240F0 UniRef90－E9ENR6 UniRef90－C5KNH1 UniRef90－AOAO22PZR6 UniRef90＿UP10002743B66 UniRef90－F4QAL1 UniRef90－W7AQUO UniRee90＿UP10002C2F7F3 UniRef90－A8Q3L2





























































#              <br> G｜VIFMSADDVVVIEMENSRGEANFIVMKFPDSKKQASVISFVVDVK CDSQDSVPLKGGRGSATMVQKCKLCSRDSIDUSGS <br> 30 <br>  <br>  <br>  <br> $\qquad$  <br>  <br>  <br> $\qquad$      <br>  <br>  <br>  <br>     <br>  <br>  <br> $\square$ <br>  

GVTLTATEALPDPNSRGTANLVMRFDGSKQAATVNVEQVK


[^0]ロスくかतのா
1




## UniRef90_A4S0C6 <br> UniRef90-G3VYF UniRef90_UPlooo386F930 UniRef90-A0A023F7P6

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GLTTKGVIDSGTWVPVMGFECRGLELLEKFYPTKGATVIKSE
$\qquad$ PYNAEDSEKFKTIVEFECRGLEPVDFQPQAGFAAEGA PYNAEDSEKFKTIVEFECRXXXXXFQPQAGFAAEGA LPLKANENDIIDNQLAVLFDCRGVEPIGFDPQGTWHAKSD VTRPIUMDDSGQYVPVGGECRGLEPIAWSPIGDFQIKAS A F K S AEDSEEQRFAT
$\qquad$

## NK

NKI
GVTQNEDTEPNKGTCCGAFDCRGAEDVEFWPDDQFECQSL AKKMDLSNDRNO CVIVAFDCRGVDIMSWNPNGGYSVVCD G LLKERTCDSEEKMVVAHFDCRGVELEEFDPRDCWVVVAS APKSYEQTEPP SPAAPDVDHTGWHTLCTHDFRGMNPGDPSIDNSWTCSGA GVYTPDEAQRNDGAAVLTLDVRGGTPVELEVDDRW VVSS
 PTRAYTEDDSGQFAPFLKVECRGLEFIGFEPRAPWKATSP KEASDPESEDGRFVP RGFECRGVDTTGFSGSGGVTVTSK PVQPYTADSSGQFAPLVTLDCRGLEFVNFDPRGVWTCKGA YGAYYPESEDD TPLVVMEVRGATPVEDDVGSNWVVVS GTGYYSAEEENPANVIAAFEVRGGRPVELEDDNQWMUVTA PLGSYCPDQHPEGGVVVQLDMRGAEPVELRपDEQWVVEGM

APYTTSDSGAFQTVARDEARGVDVEAWRVRDDFVVVSE PGCTQVENDGDEFCDLLKI HTHGMRLLEFDPDDQYECVT T SAVNVED ENHSYKSWLVLECRNLEPIGFEARDNY(GCTSLC KKHGLSKIEEDSFIPRVNLDCRGCELIKFYPDNLSFQVSL EDLYNLDEESNEKAVLLELDCRGCEATKFEPADTTFVAEL DEYLTDQSD
KKHALSKVKENSFLPPLV
YGTYRPEEDNGKGNSILIDEVRGATPTEDEDDDKWVVEA
NG AFTSNDVGKYKSIVTFDCRGDEPVDFEPKSGWIAE
 DSLYNDAVEDNKKCFLLSLDCRGCEVTGFYPDNLTFLAEVLV NFKSYNDEENEKWQKIAIFDCRGMEPFDFD
TPYNAEDTDKFKTVVKFECRGLEPVDFQPQAGFAAKGA RTGTAKDSGOKAAVVGAFECRGVEPVKWYPADGYVVKSK PSSSYNPEQHSEGGAVVQLDMRGAEPVELRDDDQWVVEGM EDDYNVANESNNSAVWLALDCRGCDVLSYIADTKFSVELV SKFT
FPDTVNVQE
ПNDTENTGTSPEDVQFALFDCRGADPKSWNFQGGLITVITP EPSSYDDDDSGNWGARLAVECRGLEPTAFFPGDDFVIESK QS LT DQDSEHDTFVPVLDVHTHGCIIIDFSDEDQFQCKTM HVYYSEDKNEEFQQFASFDCRGLEPADWNPGTDFIVELN EAVSSEDUDNHRYRTWLVLECRNMEPVGFEARSYTCCSALL FK G E TTQSEKFFPLVQFDCRGVDIVKWEPEGSEGLVAF GPDT TEQSQKEEKTCLMVFDCRGYEPVEFSFGAGWKAESV VPTPYEQAEPAKAQK LLFDCRGLEFTEFDPEGEWLAEGE
 NV

## D A L

ant NATYTADDSGKLKTTVQFDCRGVEPSEFSPRSGWIVEST GP TQEDSESGKYAPLMLFDCRGYEPVDFVFGDGWKVESL DAPY
GPDTAEQSQKGEMTCLMVFECRGYEPDEFAFGNGWKAESV TKRPIDADEAGTWQTLCVLDFRGILEPC
RKKHGIKNVSGNAGLLLQLDCRGCDDSKFNPQNTFVVEDQ NGK


QSSSRTDESEKDFEARFDCRGVEVEEFDPRDNWIVVSS YGRFTPDGDNG
GTRPYTAEDSGKFVPD SFECRG
NTSELEANDKGNQSVLLEFDCRGCEVTKFHDSVPYKVNNN GPDSQNHSTE K K V VDL

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S GVVFK DVDLS D D WY DYDEAAGSTVS TGGVSVSF S GTKFTGGDLSDGEWFDYDEKAGEEVSVKDIVWED


SDTKFEDVTL DGEWSDYDEKSGESVA IEGYKFRF



EAELFDDVKFEDNQWADYDEKGKQAVGПYDLEFCF GGQTFEA DLSEGEWADFDEKLGESVSIMGVESSF SSGKTMEFQLEDGELYYDDDDSGEEVTVTEFKSEV EGNPFRD $\square$ LLSEKEWVDFDDKAMEAVEISEFSAQF


QGKMEC I I E EGEDEWYDYDDNQGEEVSITEDKFD D EGKVFDNI NLTEKEWVEYDEKSQQSVGVYEFESMF SGKEYKDVDLEEGEWSEFEERTSTSLTVLS DESSMK S S G S TMECTHEDGEWFDYDDNAGEEVSLIEEVSFQU EGSSFDGVDLSE DWMEYDE

K K T L E F E FEE G D N E WY DY D D D S A E E V S
SGREDH VDLTMREYTDVDD G VIE V S I S K L K A K
S GKK YN DV DLTE

|  | UniRef90_A0A024GIB2 |
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$1020 \quad$ WH L N N V M D P $\square$ TRD $\quad 10$ R E
MT DF DLLFNSETSNVKSVHRAPHTLIFLAFVCTKCGEKTK
$M$ M $L T$ A NTET TQK TS LQDPTEFPFELICTHCRESHD

 KYLLK K A DMSHVKKMTPSENMPYFFKLRCEHCDELSK

MT DFDLLFSSEASNVKSVRRAPHS IIFDAF DCTKCGEKTK MTQFNFYLEFEAENVTTLSRTPQHKYUANADCTKCGHAYA
$\underset{F}{F V D D E P Q S T D T H L}$ MSRVVLLSSAH $\square$ HXVXX V QPDEEMNYFFRLKCEQCGWDS

MPTLYLVINATLENTKRTFPRDAAEYTFDLLCTSCREKHE MPTFVLWVKAELEGVKSLSPFPSTTWTFDVQQAAGSETRE K I GL QLKATLENI TNLRPGEDFRWYLKMK $M$ VRLLLRMRAELENVELIEFPEDYTWNVDVVQAGGTEERK MSRVVLKSSAQLEKVARMEPDTEFPYWLKFKCTACRLEHS
 CGSCREVHS


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



KYELYVKGEFENTKGLSC DQTYPAIVTCTACDYTHP RFNINDTGEFDNIKGLRVAQ RYYADIRCGACNTLHP RYKI YiDGDFTNVKNVFIDQTVR VKIKCSDCDQEHP





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 E $\square$ G $\square$ CPEDRVE $\square$ PNSKGDTNMHYKCKGCSSRCNVDIL S S T
 PVT T N SFEKHDMSGSRGEASFTLKCKFCQNECSINLSPFE NI QFRKTD ILEDPNN $K V F V D P N E E I A G D G G G M R N C \| V K C P S C K N T \square S V S \square I K S A$ $R Q C V Y M S E A V N Y G R D V V N H V L K C K G C K E T G A V Y G I S G Y$ QKTHSAS A GP FAQRESSATIKAA D $\square$ G $\square$ CPEDKVEDPHSRGDTNMHYTCKGCGNAGSAGITAGBP $S V Q F S P D D T S E \| P N S R G T A N L C \square S C P F C Q A R S S L N F L K E G$ KFHVNMTDEE FEKFK RTHSAS I PNGP NVCVNMXVXEHAPGSSRRVNLSLKCEGCERQGTDTLVLGN

TANFLVKWTEYPKYSTINFVNTK
 GVVMDPEEARRTTAGDGVANFALKFPGDKRQSYVKFLAEK CGNCG
$G \square T \square S A A E T V D \square P N S R G G O K A T D N V E D K$ $K W$ P $\mathrm{L} F \mathrm{~V}$ GSKVS $\quad$ QQCNDCSRRGTLGLASGC NXCVNMAVQERAPGSNNRVNLSLKCEGCERQGTITLVPEH NQKLSK ETKENKE DNEFVNFYLKCEKC QHNLRGEVLR KVTINRFEQHEMDRSKGEANFG
KVSLNQKKEH SANFLDSAPPPSKSKST
NVCVNMAVQEXAPGSNNRVNLSLKCEGCERQGTDTLVPGH $N V C V N M A V Q E X A P G S N N R V N L S L K C E G C E R Q G T I T L V P G H$
$S T Y V T L S E Q V D L P R G H G A A H L V Q K S H L C G R T D S G S L C S T V$

## CNSCG

KVIINTFXEYAMPASKGTASFDMKCKFCSKEDSVNDCAFE KVTWN FDSVE EGVRALQNLTMSFGG KAKATLSIEKPN NITFSKTDQLA DPN KYPKYSTINFVNTK $H V P T S S S T S R K T N S S K S P V H F D G Q C K S C A Q K D W A Q M I P G C$
$N W S F N R F$ NWS F NRF


[^1]

[^2]| UniRef90 A0A024GIB2 UniRef90-UPI000328BD59 |  |  |
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GGTVWTGRDPVD FCEYCEKSGNVVT $\square$ ESFETKV

NGDQ HEDHFSEDGFEGYGDN

QK VLYEH $\square$ TVEDGS WMGVDQKG $\operatorname{VDS}$


DKNLYRNIQLDGGFWSEDD KSGKSYEDSDLQMEL
QKVLYEN QQ EDGSWMGVDQK GLNS
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[^0]:    <br>\section*{}

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