





## QUERY <br> UniRef90_E5S212 UniRef90_R4WPI7 UniRef90- L8HOJ1

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220
230
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P D T GL MT DL LWS


PREGAFMEMLWSDP
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SRGLMCDLLWADPSETYDYTPNIIRGCSFAFSYKASCEF ESGLLCDLLWSDPSVNTRGWGPNERGVSYTFGADRVSEF THGLMCDLL WADPRTSDFFDHNHVRGCSYFFSYPAACSFL
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GQEGUMCEMLWTDPQAQVGRGPSKRGVGLGFGPDVTRRWC GQEGDMCEMLWTDPQAQVGRGPSKRGVGLGFGPDVTRRWC DYGLLCDLL WSDPSSDTQGWGESDRGVACTFGADKLVEFL
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THGPMCDILWS DPRNNSHFSQNSVRGCSFFYSYAAVCAF L
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D T GLL I C D L L WS D P E E G L S G WG E N D R GVVS YTF GQ DIV A K F L


## QUERY <br> UniRef90_E5S212 UniRef90_R4WPI7 UniRef90-L8H0J1 UniRef90-A0A015K1X2 

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UniRef90 W5EJI6 UniRef90-W5EJI6
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280

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 EKNNLLSVDRAHEAQDAGYRMYRKTKTMT:|FSAPNYDDVY QKDDLDLICRAHQVVEDGYQFFADRQLVTVFSAPNYCGEF ARNNLLSI DRAHEAQDAGYRMYRRNNTMTIFSAPNYEDMY QKHDLDLICRAHQVVEDGYEFFANRQLVT FSAPNYCGEF ELNHTTAVLRSHEVRMGGYEEEHDGLCCTVFSAPNYCDST RTNGLRDI ARAHQLVMEGFNWSHDRNVVTVFSAPNYCYRC
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KKNNI EIIFRAHQLVMDGYKAITNDKIVTIWSAPNYCYRM KKNNIELIFRAHQLVMDGYKADFNDKLVTVWSAPNYCYRM ENNDFLRICRAHQLVMEGYKLHFRKRVVTVWSAPNYCYRC QKHDMDLI CRAHQVVEDGYEFFSKRQLVTLFSAPNYCGEF SRHDFDLIVRAHQVVEDGYQFFATRQLITIFSAPNYCNEF EVHDLDLLVRAHQVVEDGYEFFAGRRLVTLFSAPNYCGEF ERHDLDLVCRAHQVVEDGYEFFAGRRMVTVFSAPNYCGEF


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UniRef90 O28XP4 UniRef90 ${ }^{-}$W5PWZ7 UniRef90-C4LTI9 UniRef90_H2YPW1

P!DAAL QGDPLDVAUNNLIEAESKKDCVSNHDMKQLCAK D E WI
K P N P S F L K YYGPKFDDMITTKEFVEDMDHFKEGRLLEEQALITNR

 $\square$ FNEDKT $\square$ N

DYDAMVRTLLEHKFLPEDEVVALCDR LP K L Q Q H F FA E GRLN H D D V I E I V DVDNUI E KLLKQANITEQEI RGLCDK KPNVQFIGKNVEHYREGRI SEDHALDWI DRE D T WILE QLRQCKYLPEPDIKALCEM
 SSGEPTKFDLDEMIAYVLQCKPLNERQLLQVCEK GPANPPNWQELKSHLQREGRLSKEDCLELIKN SKERPGMPD KFLK KHFYREGRLTEEQALEGULER LNQ

FQDGKPNTDDLK $\qquad$ E R H L
LTVAQI NEITATLKNLKHLDEEVIQSLCRQ
 NLD RII E QLMK QVQL


HLIK

$\square P D Y K F \square R R H F R Q Q G$
DPDYKF DRRHFRQQGRLEEEI RYLVME D IDDII EKLIDESKPLSEEQVLLILEM



PMTE
DワDAVIDLLKQG
$\square \mathrm{PNG} \square \mathrm{PNC}$
F
NCLDGFD



## YKGPNTS $\square$ P L KK

 LS RPEEK L A A FE SMLDQSDPDKWI KPNPELLK I N E D QLIE
$R L N V D N V A K L C A$
 Y Y GPRLS FPLTVEHANALLHAFRNEQLLHARYVLQLLCE

LK D K L E T T N

D
Y D GPE L H WP $\square$ T $\square \mathrm{P}$
DL

FPKGEASPPDW CL LS LVLA

DLDAA A
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[^0]

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 LS GLP PN SNY $\begin{array}{ll}L \\ N G G F P S A S H A Y \\ M & G G L A P D T N\end{array}$ NDGGNPANTNYLFLGDYVDRGYFSMEVIIYLYACKINYPN



 V GGSDHDN S Y





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 RFTGLRGNHESRQI TQVYGFYDECQQKYGSTVWKACCSVF YVH NRGNHEDKSITEVFGFMKECHVKYDAEVYAMFCAVF RIYLLRGNHESRQITQVYGFFDEClRKYSSNVWRYFTEDF KIYLLRGNHECAPISRIYGFYDEVKRRFNVKLWKSFCEMF HVLLNRGNHEENSITQVFGFMKECEVKYDRYVYDLFCESF NFFMLRGNHESANVTKLYGFYDECKRRTSSKVWKTFVDVF RMTLLRGNHEARQTTQAYGFYDECVRKFGSNIWKACTNLF RTTLIRGNHESRQTTQVYGFYDECQRKYGSNVWRYCTDVF NFFMLRGNHESANITKTYGFYDECKRRGGHKVWKSFIDVF K TYLLRGNHESSSVNRIYGFYDECKRRYTDKLWRSFVDCY DLHLNRGNHEDFLMNLRYGFTKETMQKYGGKILK LEEVY NFLLLRGNHECRRLTDYFTFRLECRRKYSDMLYEAALESF DLHYNRGNHEDFMMNLRYGFTKELLQKYKLHGKKGLQELY RMTLIRGNHESRQITTVYGFYDECYRKYGSNVWRYCCDVF TDYMLRGNHECRQLTSFFNFMDECKYKYDQELYDVFMDSF HVTLLRGNHESRQ1TQVYGFFDECTRKYGNNAWRWCTDVF DLRLNRGNHEDULMNMRYGFTKEMMQKYGREALKVLEEVY
 NFFMLRGNHECSNVNRVYGFYEECNRRYSPRMWQAFQDTF QTTLLRGNHESRRISNVYGFYDECQNKYGHNVHKWFCKVF TVFFLRGNHECRQLTSFFNFKDECLYKYDQETYDLLMDSF SLWLLRGNHECRHLTDYFTFKLECKHKYSEAVYEACMESF RVTVVRGNHESRQTTQVYGFYEECFQKYGNSVWKACCQVF TLFLLRGNHECRHLTEYFTFKQECRDKYSEQVYDACMDTF RITAIRGNHETRQITTVYGFYDECLRKYGSVNWRYCCEVF SVSLLRGNHESRPVNMQYGFYDECRKRYSVHLYDAFQLAF D HLNRGNHEDFMMNMRYGFTKELLNKYKUYGKKILQTVY RVTLLRGNHESRQLTRVYGFYDEVLRKYGNSVWRACCEVF NLHLNRGNHEDFMMNLRYGFTREVLHKYKIHGKKILQMVY NFFFLRGNHECASINRIYGFYDECKRRYNIKKWKTFTDCF RVFLIRGNHESRTVTQNYGFYTEVLHKYSSDVWTYTTDVF RVFLVRGNHESRQITQNYGFYSECLRKYNPNTWYYFTDLF QLCLLRGNHECRQVSKQYGFYNECVQNYGHGUWNLCQETF DLHLNRGNHEDFMMNKRYGFTKEVLNKYKLHGKKILQDIY
 NFFLLRGNH
NFFLLEF NFFMLRGNH RTHLIRGNHESRQITKNYGFYDECKRRTNRKLWKNFIDVFF SFFMLRGNHECPAI NRVYGFYEECNRRHSSRLWNSFQDTF RIGLLRGNHETCQITKVYGFYDECLNKYGNANWKDCCRVF HFHLLRGNHETDNMNQIYGFEGEVKAKYTAQMFELFSEVF NVTLIRGNHEQSTINRVYGFYEEIVEKYGNPRWRMINEVF HVTLLRGNHEARQVNGTYGDYDECISKYGHGTFRALNEVF HLTLIRGNHESRQISETYGFYDECLKKYGDNVWKYCTDVF DLHLNRGNHEDFMMNLRYGFTKELHKYKLHGKRILQUFY RVQLIRGNHESRAVTQTYGFYSECVRKYNSHVWTYFTDMF RLTLLRGNHESRQI THVYGFYDECLNKYGNVNWKYCCRVF EMTLIRGNHESRQUTQVYGFYDECVRKYGSNVWRYCCEIF AVTLLRGNHESRQTTAVYGFQVECLKKYDPRPYKACMEMF YVF NRGNHEASMLNHVFGFEEEVMRKYSGABFQDFGQVF KFYLGRGNHECSS:NHFYGFYDECKRRYTVKLWRTFVDCY NFFMLRGNHE
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UniRef90 - $11 U \mathrm{M} 3$ UniRef90-UPIOOO2C4265E UniRef90-A0A058ZOT4
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UniRef90-Q3SWT6 UniRef90_S9TTA7 UniRet90_-8MJJC2 UniRef90_O3SDX0
UniRef90_K8F2P7 UniRef90_UPI0003F189AB UniRef90_S6EW00 UniRef90-A0A010QYJ4 UniRef90-F1L9X8 UniRef90_009496 UniRef90-Q3scX5 UniRef90-F2HH14 UniRef90_18TMAO UniRef90_G1SR75 UniRef90-W6MRO3 UniRef90-G3BFF3 UniRef90-H2W7G4 UniRef90-UPIO0038F184A UniRet90_U6PTU4 UniRef90-12GWZ9 UniRef90-G1T005 UniRef90-K7E905
UniRef90- AOAO59Jo UniRef90-A5DKG6 UniRef90-Q4DTPO UniRef90-KOKV29 UniRef90-E1BTX9 UniRef90-UPIOO04403344 UniRef90-HoZXS6 UniRef90-UPIIOOO333CFF4 UniRef90-W5M3M3 UniRef90-х6M6C7 UniRef90-G3AUN2 UniRef90_C4QXZ2
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PHEGSMCDLLWSDPDERMGFGSSPRGAGFTFGKDVTTRFN
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QDGPICDLLWSDPDGIIEGWKASPRGAGVVFSEERTNAFL
VDGLMCDLLLWSDPDKNTKSWGVNDRGVSVTFGSSVVDSFL
PAYGPMCDLLWSDPSQEHFTHNTVRGCSYFYRCSAVCDFL
PHEGPMCDLLWSDPDDRCGWGISPRGAGYTFGQDI SEQFN
PYKGAFCDLVWSDPDEDDTWSVSPRGAGWLFGFKVTNEFM
PHEGPMCDLMWSDPDDRYGWGISPRGAGYTFGQDITETFN
LMPPDPSDLWSDPRSKRGCYPNKSRGGGCYFGPDITSKML
$H E G A F C D L M W S D P D T S L E N W T M S P G A G W L F G S K V T S E F T$
PHTGMMCDLLWSDPSEEKGWAISQRGAGYVFGKDITDNFC
EYGLFSDDLWSDPDEKINGFEESQRGAGYLFGGDVTAEF
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SKDVOGWGMNDRGAGWLF
PHEGAFCDLMWSDPDDIESWAVSPRGAGWLFGGS KSMRIIKDILWSDPHTANGWKENSRGAGDNYGPDHVYKYM PHEGPMCDLLWSDPDDRCGWGDSPRGAGYTFGQDDSGQFN PHEGAMCDLLWSDPDETQGWGPSPRGAGYTFGPDITNKFT
EEGLVVCDLLLWSDPEPGISGWADNDRGVSFTFGGDVVQDFIL EEGLLTDLLWSDPDSQISNWSDNDRGVSFTFGKKNVLDFC PNQGAYCDLLWSDPDNUEGYSSSPRGAGYLFGGDVVRAFN
PHEGVFCDLLWSDPD GWGMSPRGAGFLFGGDVVETFC
DKGLLADLLWSDPQFSMKNWPKNDRGVSYCFGRKHVDYWC
EQGLLCDLL WSDPDEKTVGWGLNVRGVSYTFGPDVVSSFL
DMPPIQTDLWSDPRGKRGCFPNTSRGGGCYFGPDVTTKDL
TKGLMCDLCWSDPHDEDTFVENSQRGCSFQYGYKADRKFL
DTGLACDLLLWSDPEEHTRGWQPSERGVSFTFGEDIVERMC
PHEGAMCDLLWSDPDETDGWGLSPRGAGFLFGADIVKVFN
$K N G G F C D D L W A D P D C E G Q F R I N E V R G C S Y F Y G M E A V S R F D$
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 NKGPLCDUWSDPDDDVEDWVISQRGAGFVFGAKVTEEF M
 PHEGAFCDLVWSDPDDVETWAVSPRGAGWLFGDKVADEFC
AFGPVCDVLWSDPAEDYHYTHNTVRGCSYFFSYPAVCEELL
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 GATLEMDLLWADPVDGLNGFQANDRGASYGFGPDILAKYC MMEGAMDDLDSDDPERKRGWAVSPRGAGYLFGRSQVSAFJL DQGLLCDLL WSDPDKDVQGWGENDRGVSFTFGAEVVAKFL HDGПMADLVWSDPDPELLDFKLSPRGAGYLFGADVMNKFC
PHEGPMTDLLWSDPDDINGWALSPRGAGFIFGADVTKAFN
HEGAMADLVWSDPDDENPNFSLSPRGAGYTFGVDVVKKFL
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ERKQVLDVL WSDPNKQHGCTPNQRRGGGCYFGPDTTDQLL
EWEQVVD
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DQDLLCDLLWFDPSKDVLGWGENDREVSFTFGTEMVAKFL
DSGLLDLLWSDPDKDVPEWGENDRGVSYTFGARVVSKFL
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NPSMGDDLLWADPDQWVKGWQANTRGVSYVFGQDVVFETC
PHKGAFCDLLWSDPADVKMWSVSPRGAGWLFGCQVVELFM
GEGSEFADILWGDPYEGRGFQASPRGSGYLYGEDVVIRFL
TKGPLCDLCWSDPDDGCDDWKQNERGAGYLFGQQQTNEFM
EWEQIID WSDPRGKNGCFPNTCRGGGCYFGPDVTSKIL HEGPMADLVWSDPDPEKEDFATSPRGAGYTFGAGVVHKFL PHKGAFCDLVWSDPEDVKTWTVSPRGAGWLFGASITHLFM
PHEGAMCDLLWSDPEDISGWGLSPRGAGFLFGADVSEVFN PDGPFAD\|VWSDPDPKNTGFHLSPRGAGYIFGGDIVEKFL
 PRNGSLCDVLWSDPNDKNGWDKSPRGAGHLFGPDIVHKFC NPSMEIDLLWSDPDQWVKGWQANTRGASYTFGQDVVVDVC
 DSGLLCDLLWS DPDQKIIEGWADSDRGIDSCTFGADKVAEF L

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UniRef90-A0A059, UniRef90-A5DKG6 UniRef90-Q4DTPO UniRef90-KOKV29 UniRef90_A2EKR6
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UniRet90_S9XA89






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



PGMG $\square G A \square K S \square D \square D D M \square T R L L D A G Y \square K N A E!I A \square C T A$ KCQQLFTENELI ELCYR RRQFFLDCNEI ADLCDS


| $E$ | $L$ | $T$ | $L$ | $L$ | $C$ | $K$ |
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|  | $M$ |  |  |  |  |  |
| $V$ | $K$ | $Q$ | $L$ | $C$ | $D$ | $K$ |
| $Q$ | $V$ | $V$ | $R$ | $L$ | $L$ | $R$ |



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$N$ LD K L LQQ $\square R Q$ GENLEE GVFVS LLMK DL D K YVVE I S R HCKY L P E N DLLKR L CD Y
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 UniRef90-W2SVN3 UniRef90-E2R7D2UniRef90 D7MVZ1 UniRef90-Q6C264 UniRef90-12JWE7 UniRef90_H2W099 UniRef90-H2WML8 UniRef90 R7WFN5
UniRef90 A8PTS UniRef90-FOYHE4 UniRef90-D8LW26 UniRef90-GOP522 UniRef90 ${ }^{-}$F1S100 UniRef90-GOQW85 UniRef90-Q00ZY9 UniRef90_O2H153 UniRef90-R7UQZ4
UniRef90-W6LEW5 UniRef90-A2EQD4 UniRef90_UPI00027F7DD1 UniRef90-F6PYU8 UniRef90-C1MVY3 UniRef90-G7YGZ1 UniRef90-COSJI6 UniRef90-A0A044RMX9 UniRef90_M1B080 UniRef90-F4SAK7
UniRef90- AOAO23FX UniRef90-UPI0002C3CF2C UniRef90_L8GF93 UniRef90-J91AW4 UniRef90-D8UHM6 UniRef90-E3LV34 UniRef90--99HNN7 UniRe 90 UP10002A4B41A UniRef90-G0QL32 UniRef90-UP10003EC4D58 UniRet90_E2LVM5 UniRef90-M4BSB8 UniRef90-A2G2Q66 UniRef90-W6LAQ7 UniRef90-A2D8Z4 UniRef90-A2F275 UniRef90_S9VVD9 UniRef90-UPIOOO32AC298 UniRef90-E5SFZO
UniRef90 - $55 \mathrm{DPA9}$ UniRef90-V9FX69 UniRef90-S7W5E9 UniRef90_UPIOOO3593698 UniRef90-A2DF10 UniRef90_A8Y3N7 UniRef90-A8WKB7 UniRef90-BgG2K8 UniRef90-A2FZO3 UniRef90-A2EU29 UniRef90-G31FJ2 UniRef90-GOQY93 UniRef90-A2F7T9 UniRef90-UP10002C3E8C3 UniRef90-H3CO13 UniRef90-UPI0003832037 UniRef90-UPIo003BBE01A UniRef90-Q240X8 UniRef90-A2DX90 UniRef90-E3LWQ8 UniRef90_UPIOOO4434422
UniRef90-G7XQ24

GEGLLCDVVWSDVSDEHMGWCDNARGTSYTFGRDVVEEFM PDGPLADLVWSDPDPDRPDWHPSQRGAGYTFGEGVVKKFL LDGLFCDLLWSDPMNAKDYWDNEERECSYGFGKKPTKKVL
SKGAMCDLLWSDFWDPFLDNEQGCSYFNYHSVKHFL DGGPVLMDLLWSDPTTNQGVQPSPRGPGVTFGPDRVKEFC NYQPSHDQLWSDPSNTAKGWSPNQRGVSYTFSPDALKKIL $P L E G L D C D L V W A D P D D Y E F M E N P E R A C S F K Y G L N P A K K L L$
$D Q G L L C D L L W A D P D K V L G W G E N D R G V S T F G A D V V T K F L$ DQGLLCDLLWADPDKDVLGWGENDRGVSFTFGADVVTKFL PREGPYTDLMWSDPEKEYGFMISERGAGYGFGKDIVERFL AFGPMCDLLWSDPKTQEYFSHNTVRGCSYFYSYPAVCEFL
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PHKGAFCDLVWSDPEDVDTWATSPRGAGWLFGSKVTNEFV
TSGPMCDLLWADPFDQAHPETMDKRRVDAWLNTDFVDNFL NSGF CDVVWSDPNDDVNGWMKSERGMGCVYGQDVCDDFL EWKQLVDILWSDPMPQSGCTPNEVRGGGCYWGPDVTEKVL DQGDX SESWSDTNKDVLGWDENDRGVSFTFDAEMVAEFL HWSDPTESDQELGDHPNSIRDPVGSGNIVKFGPDRVNQFL
DEGLLANILWSDPNGLIDTWGPNERGTTVCWGPDAAKKFM DDCLEND LWSDPGKGSTGWQPNPRGASVVFGEDAVIECC
LMPPSPSENE
PHEGPMCDLLWSDPDDRYGWGTSPRGAGYTFGKDTSDAFN


KKNGDELLCRAHQMVDEGFSFCFDNKVLT LFSAPNYCNSF ESNGLNHIVRSHQLCMDGYQVLFNDQLSTVWSAPNYCYRC D N N KNNNLQMIVRAHECVMDGFERFAQGHLITLFSATNYCGTA NPLSLDLVVAHQVVQDGYEFFAQRRLVTVFSAPFYCGQF DDNDLTLLVRAHQVQVQGYKMHYWEKPQTIFSAPNYCDVY ALNHLRLI DRSHESHEEGFEVMHDGLVLSVFSASSYCGFQ FINDLTH1SRAHQLCTDGFEEVFDKKLSTVWSAPNYMMRF QSNNLLSI DRAHEAQDAGYRMYRKSQTITLFSAPNYDDVY VQNGMSLI RSHECRAEGFDVVHDGLLLTVFSASSYCGSQ HNNDIKMIVRTHQLAPEGYQWWFDNKLITVWSAPNYMYRF KRNGISLIIRSHECREEGFDIVHDGLLLTVFSASNYCGSQ ETNNLKLVVRSHEECVSGYQELHDKKLFTVFSASNYDGPD EANNLTKIIRAHQMAEEEYPFSPENSVTTVFSAPWYAGEF KENGLELTARGHQLVMSGLEYGHNNQIVTIFSAPDYCRRC NVNK LCIIRSHEVQDDGYKLYHPNNNYSVFSAPNYCDTF KKNKLQLI RAHECVMDGFERFAQGQLITLFSATNYCGTA DNMGIDLIV FDQGYQFFANRRCVTVSAPNYCNDF QRHRLSYVIRSHECKPNGHEFMHDNKVITIFSASNYYAIG TNNKLLSMLRAHEYEDEGFTFHFNSEEYTVFSAPNYCDSY ELNDLTKIIRAHQLIVEGYKIHYDKSCVTVFSAPNYMYRC HKHDLNLTCRAHEVVEDGSEFFGKRRLVTLCSTPNYRGES HLNKTQTMIRAHQLVKQGYDLQFDNQVLTVWSAPNYCYKP DRLGVQLVRAHQVVQDGYEFFCNKRLVTVFSAPHYCGEF KMLDIDLIVRGHQVVQDGYEFFANKKLVTVFSAPHYSGTF HTNNI DYI CRAHQLVMEGFKWMFNNKIVTVWSAPNYCYRC KTNNLWTVVRGHEVQENGYRDYNGENVITIFSAPNYCDAY DKNQFDLLVRSHEMCEDGVAWPYADKCITIFSNSDYCGR EENGLELTARGHQLVISGLEYNHNNQDVTVFSAPDYCGRC HNTVRGCSYFYRYRMYRKSQTTGFPSLITIFSAPNYLDVY ELNELDLVARAHQLVDAGYQYWFDKNLVTVWSAPNYCYRC HLNGLRFVTRSHQLVMQGYEWYFNNLLVNIWSAPNYMYRS HINNLKLICRAHQLVHEGYKFMFDEKLVTVWSAPNYCYRC NKNDLIClLVRAHQVMEEGFKGHYFMQCITVESAPNYCDAY MKNGFEVILRAHQ NVDGYKFSDNKKVVTVFSCPNYMETY EKYNLQFLIRSHECKQEGYEFCHNRKVLTIFSASNYYEIG HKDYLDC ERSHPMMEGGYXFFAKRQLVTLFSASSYCGKF QTSGMTTI RGHQLAMNGYDFPFDKSVITIFTASKYAGQC KMLDMDLIVRGHQCVQDGYEFFAGKKLVTVFSAPHYLGTF


UniRef90 R0GP05 UniRef90-E3MWE2 UniRef90_UPIO0042B29AA UniRef90_C4V921 UniRef90 A9SKN9 UniRef90-GOPEK3 UniRef90-W9RTJ8 UniRef90 Q27494 UniRef90-B0ECI7 UniRef90_MOTN62 UniRef90_B0EJ33 UniRef90 C1MQB3 UniRef90_V6LJI8 UniRef90-UPI0003F0F52E UniRef90 B0EG75 UniRef90-A2DT90 UniRef90-A2DEX3 UniRef90-KORWF8 UniRef90 UPI0002C3D370 UniRef90-C4M0X2 UniRef90-D8LKX8 UniRef90-A0CYJ7 UniRef90-F1KYM0 UniRef90-A2EJT7 UniRef90 UPI0003C0FF6C UniRef90- G3IJ56 UniRef90_C4LTG4 UniRef90-F1LB22 UniRef90-A2DU70 UniRef90-A4H7D2 UniRef90-G0NWZ1 UniRef90 F1KUP2 UniRef90-A8XG39 UniRef90_UPIO003C11773 UniRef90-E3M5G4 UniRef90-Q9XW33 UniRef90-FOWW70 UniRef90-R1E0G0 UniRef90-K7M3M0 UniRef90-K2MDZ3 UniRef90_K7H608 UniRef90_S9V8T8 UniRef90_R1DVE2 UniRef90-K4CV09 UniRef90-UPI0003EB0441 UniRef90-A8X6B4 UniRef90-F1L7Q2 UniRef90_J3LAW7 UniRef90-E1ZJ38 UniRef90 17M461 UniRef90-J9AYB1 UniRef90_GONWM5 UniRef90_Q4UGG2 UniRef90 A2DS79 UniRef90-A0A044UT76 UniRef90-UPI00042C19A6 UniRef90 F2CUW8 UniRef90 W6LB22 UniRef90-V4SMY6 UniRef90-W4H4C7 UniRef90 UPI00046B990A UniRef90-T0R1A9
UniRef90-L7JS87
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UniRef90 A2QAK2
UniRef90-L1IQ61 UniRef90_W4H6H2 UniRef90 A0A024UWP4 UniRef90_UPI0003891850 UniRef90-Q5DAY0 UniRef90 H3AD49 UniRef90-M0SR32 UniRef90-M7AXJ2 UniRef90_A2FFL0 UniRef90 K3YH57 UniRef90_K7IFV0 UniRef90-UPI0002C34BA1 UniRef90-F1L029 UniRef90 U6IAR0 UniRef90-A4HP65 UniRef90 UPI0002C3F04D UniRef90 E3MGF2 UniRef90-A2EI86 UniRef90-Q4N2C8 UniRef90-G3TWH0 UniRef90 O44507 UniRef90-U6KE89 UniRef90-V4AJL5 UniRef90 C4MA62 UniRef90_A2F3B4 UniRef90_H3FLD9
$\qquad$ GQHNSSHPLHKRVISKLLKPKDWEAPLSSLEVETLCNA $S D G K \square S \square E W \square Q H V M S A G D W S S R \square P V P V F D A L V L T$ QQKFIKKI LS LQQLLTINEIEQLCEK LDAQI AELIQCKPLSELEVRGLCEK
 DDLKKLHSWLESMIFRYFHQDMLKRYEI YELCLR


 $\square F S G K N H L P N L P L L R Q H L D R Q G K L T Q E A G 1 A A D K Q$ VNLIQNPNAARCMQNYVVSETEUQFILCNE
H LD D ПGPDDVETWLATLRSGECLSERSMRKLCQA



##  YTGPKMEDGKVTLQFMKSLMQWFKDQKKLHRKCAYQI LVQ   

LDF $\backslash$ KRHLLHAKYREQTYEK WE LVH L A EM V DLLKA HLTKEGRVE EAVALDR VNE EDQKKVRGFVQRIVGKLIVKWNHHTAELAELCMR

VED DALLLQT KGKTDPMNFVLDVVSK
 FTTEVVDQLCDE

```
                                    LT E E EVMH\T QA
                                    NWKAPVNRKFFLLDSYEVGELLCYA
SAPK \(\square\) TDSKKVRGFVNR \(\square G K \square M F K W K H T T S E L A E L C D R\) LHETFLKKHLQ FRDGED \(\square K A K E L F G V I R E\)
\(K \square R P K H L Q D Q E Q L L S Q Q R L N E R E L K R L C G A\) M \(\square K N D L D Q U I S A \| T N N R K L P K K A L L Y L C E C\)
YNGPK LGK VVT LKFAHELLDMYKSG \(\quad\) QQ \(L P \square D Y A Q K \square L M W\) KLKADDLTNLLVA DRMDHR \(\square\) MTDQFLDGFSDFQLIAI
```

EDGVLT RDWVASFTAALDWCSRLSADFVRRLVVA TSPNEAGGYLDPEHLHNLAKRITRREVLS R RVRSVVKA EDGMLLTVEWIQDLTLTFDWSSRFPVDVFDTLVLT

 $N G S L T L E W V V Q M M K I L E L S S R M P V S V V D A L L D V$
 D WPLKAS Q IE E MIR D FELH IPRLPRESYHKLLVQ PPSTTQVEEMMRDFRHHIPLPRDIYHKFLVH YRGPRLS FPLTVADTNSLLHAFKDQQHLHARYVLQLLHE
$E G G A \square T R D W V A G L A A T \square D W C S R L D P$
$E G N \square S L E W V Q N L M S V F D W Q E V L P V K V F D T \quad L V L T$
$L K L L T K M Q A H G P R Q Y S F H L D E L T D V L K K$
 LGQCVMQLIVCKLVNEKRVRTLYEK

YTGPHLT FP $\square$ THAQVKTLDQAFKAKRRDHVRYLLELLNE PRLN SKYDLNVLRDHFMKGG乌I EQNCLISLI KE


UniRef90 ROGPO5 UniRef90 E3MWE2
UniRef90 UPIOOO42B29AA UniRet90_C4V921 UniRet90_A9SKN9 UniRef90-GOPEK3
UniRef90-W9RTJ8 UniRef90-Q27494 UniRef90-BOEC17 UniRef90-MOTN62
UniRef90 B0EJ33 UniRef90 ${ }^{-}$C1MQB3 UniRef90-V6LJI8 UniRef90-UPIOOO3F0F52E UniRef90_BoEG75 UniRef90-A2DT90 UniRef90-A2DEX3 UniRef90-KORWF8 UniRef90-UPI0002C3D370 UniRef90-C4MOX2 UniRef90-D8LKK8 UniRef90-A0CYJ7 UniRef90-F1KYMO UniRef90-A2EJT7 UniRef90-UPIOOO3C0FF6C UniRef90-G3IJ56
UniRef90 C4LTG4 UniRef90-F1LB22 UniRef90-A2DU70 UniRef90-A4H7D2 UniRef90_GONWZ1 UniRef90-F1KUP2 UniRef90-A8XG39
UniRef90- UPIOOO3C11773 UniRef90-E3M5G4 UniRef90-Q9XW33 UniRef90_Foww70 UniRe90-R1EOGO UniRef90-K7M3M0 UniRef90-K2MDZ3
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UniRef90-GONWM UniRef90-Q4UGG2 UniRef90-A2DS79 UniRef90-A0A044UT76 UniRef90-UP100042C19A6 UniRef90 F2CUW8 UniRef90 W6LB22 UniRef90 V4SMY6 UniRef90- W4H4C7
UniRef90
YPIOOO46B990A UniRef90-TOR1A9 UniRef90-L7JS87


VRETFRDESTLETMSPPCTVVGDHGQYVDLVRLLN


AMNSMTAEPNVIEMQ ASCVVVGDLHGQYQDLLSTFH VQPLLEAEPTLVERGLSAPVKVFGDLHGQYSDLMRLFE VRAVLEMERTLVNLQLKEQETLVVVGDIHGDGNVLLSHIL
 AEQDFMHEPTV GQQKAPVKVFGDLHGQFGDLMRLFD ARELTWAEP DCLKLETP TC/VMGDLHGQFDDLLGMWD MKD甘ASESSLE

VRAPCVIVGDUGGQYEDLHRMFI
AKEVLLKDPSLVE GRTDAQVVVVGDGHQYQDLQREF ALE QLQNQDKLI

NLKSPVTVVGDLNGQFQDLQEIFQ

$\square \mathrm{CQ}$ CHMKVGAVNHDEVPPKGK VVFGDTHGQLADFLVVQQ AAEHYATQPNVIKLQUPPGCTLTVVGDLHGQLHDLLHIFD TKKLLKQMPNIIHLSTSYSKEITICGDLHGKLDDLLLIFY

TRRHLMQLPNTNHVSTCYSEETTVCGDLHGRDDDLELEY VRK LLKQPSL AAALHREPNLVRVDPRPGQAVVVVGDVHGQLHDVIFLGR ASKDLHKEPNCVMDDDCPDSTVVVIGDVHGQLHDVLFLLK GTEVFLHEPSLLEVPVP CVVYGDIHGQYSDLHRWFN ATAVLQVAPNVQRVSTALVHQUTVCGDLHGQVEDLSLIFE

TMTVLQNKPTLVRD

VTPALLKEDNSGAQD
$\qquad$ GDVLIFGDFHGQFFDFLTEIE LELQAPVNCGDTHGQYNDLLRIFN

 SPPVT IVGD【HGQFHDLIR!LN

TQKDFKQMKNTNYASTS DSKQTTVCGDपHGKDEDQYMDFH VSELTRAEPNLDEDENAASDGVVFGDFHGQYFDFLSEGS


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UniRef90_Q27494
UniRef90_B0ECI7
UniRef90_MOTN62
UniRef90 B0EJ33
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UniRef90_V6LJI8
UniRef90_UPI0003F0F52E UniRef90_B0EG75 UniRef90_A2DT90 UniRef90_A2DEX3
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UniRef90_C4LTG4
UniRef90_F1LB22 UniRef90_A2DU70 UniRef90-A4H7D2
UniRef90-G0NWZ1
UniRef90_F1KUP2
UniRef90_A8XG39 UniRef90_UPIO003C11773 UniRef90_E3M5G4 UniRef90_Q9XW33 UniRef90_F0WW70
UniRef90-R1E0G0
UniRef90_K7M3M0 UniRef90-K2MDZ3 UniRef90_K7H608 UniRef90-S9V8T8
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UniRef90_Q4N2C8 UniRef90_G3TWH0 UniRef90_O44507 UniRef90_U6KE89 UniRef90_V4AJL5 UniRef90_C4MA62 UniRef90_A2F3B4
UniRef90_H3FLD9
 $N$ N VLL RGNHEDARVNKKYGFYEECDPKYGEEDVAMFQRCF
 N I F L V R G N H E Q K N N I S K T Y G L Y H H E T L K K Y N V N I WR L L C E V


 QFFFLLRGNRHEDAKDN $R \square S L L R G N H E C S$ L Q T R D Y GF Y DECMK K Y G NVNWKHCVA LV NV HLL R GNHE EA D $\square$ N A LLF GFRDECDERDGEI AWNRFNTMF

 HVYMLRGNHE V VMSSYYGFKDEDESKYNDKMFHEFHKVF
 $H$ VTLLRGNHES RQIT QVYGFFDE DNRYGNASVVRFCVVSC QYFLI RGNHESVEI NRVFGFYDECVRVYDESIWKLFNETF
 KI YLL RGNHEFELLINSYYGFKQQVLSEYDEEI YNMFNEVF


 $7 \pi$
$\square \rightarrow \pi$ R F L L R G N HEFASVNREYGFYDELAQRFSMQLWKEFNDLF LVVY L L R G N HE T R KV S M N Y G F F Y E IV Q S S Y S L T L F G N F V R L F
 NFFML R GNHETSAI NRVYGFYEECNRRHS $\square R$ LLWKQFQDTF NYILLRGNHETRAI NFAYGFKEELTDKLGEEVWEKLNETF
 RI Y LL R GNHESRSVNTSYGFYREVNYRYDAQLYECFQNMF

 R $R$ R H L R G N H TV HLL R G N H E S R QI T QVYYGFY D E CVVRKY GSNV WKLLF T D L F $N V H L I \quad R G N H E A A D I N A L F G F R D E C D E R M G E W A W T R F N Q L F$ $R$ R TL L R GNHESRQQITQVYGFYDECQT KYGNANWRYCTKVVF

 QVFML R GNHECSEITVLFGFCGECQRRSTLAVWEAVMQVV RI T L L L R G S HE T T S T S KI Y GFY DE CNNKY GIIDI WKA F L S V F



 CVF L L R G NHESKYCTSVYGFEQEVMVKYGAQVYRKFLRCF Y V F L N R G N H E D Y R $\quad$ D N S E Y G F L
 F V H L L R G N H E CR S V S T H Y G F R D E C C L R K Y G L L V Y N R MV A C F V Y L L K G NHEMANQNETYGFKSECL LKKYDI SFYRKVNEVF $R V Y L L R G N H E T R D C T S S Y G F E K E V R T K Y G E Q G E K V Y H R C F$

 AI HI NRGNHEDEFMNSVVSFRREVLVKYDADMCEAFNAVF HLHLNRGNHEDH $\square$ MNLRYGFTKEVMKKYRSHSKK LQQDVY







 EVLML R GNHETRKMTVKWGFHNECIWKYNNEIVNEIMTVF KV HLLRGNHELKAINKNYGFFGELKARFRTGVQQHFNQVF DVVLL R GNHEFADVNSVVGFFDEMSQENGQYLYDLMNKAF QI HL I R GNHEDPAI NAVYGFQNECARRLNEDCWNAFNKDF
 $N Y I L L R G N H E T R A I N Y A Y G F R E E L V N R D G K E V W E K F N E V F$

EVFVNRGNHEDHVMNMRYGFMKE』I RKYSTQVTKSFTEVF GVILLRGNHESRSMTEKFGFKTETIWKYNTEIIYDLFCEFF



 H D GPMCDLL WS DP E VCCVAFWGVSPRGAGYLFGSDVVAQFN PHEGPMCDLLWSDPDDRCGWG\|SPRGAGYTFGQD\|SEQFN
 P WE GQN D VL W WS D P S L E M G L S P N K E R G I G L L W G P D I T Q Q F L





 UniRef90-A2FFL0 UniRef90 K3YH57 UniRef90_K7IFV0 UniRef90_UPI0002C34BA1 UniRef90 F1L029 UniRef90_U6IAR0 UniRef90_A4HP65 UniRef90_UPI0002C3F04D UniRef90_E3MGF2 UniRef90_A2EI86 UniRef90-Q4N2C8 UniRef90_G3TWH0 UniRef90_O44507 UniRef90_U6KE89 UniRef90-V4AJL5 UniRef90_C4MA62 UniRef90_A2F3B4
UniRef90_H3FLD9

 ODNNLEYIRGHEVVKEGEIV EGBCVIVESACOYAGDF




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



 H N N GLK S A R A H QLV MMDGYSWTHQEKLVTIFSAPNYCYRC
 K R N K L Q L I I R A HE CVVMDGFERFAQGQLI T L F SAATNYCGTA



 HKNNLKLI L R A HEYQKNGYNFMHDKKLCSIIFSAPNQSASS


 R A N N L K R I I R S H Q $\quad$ C V
 A S NDI DMM CRA A QL V M E GYKWHFNETVLTVWSAPNYCYRC



TTNDLDITCRAHQLVMEGYKWHFDETVLTVWSAPNYCYRC QRNKLLSI TRAHEMEETGFYEHYFPPVVTVFSAPEYCNVY


 $A$ D N S L S L CIIR S H E V P I S GF E E R H E GR L L T V F S A S N Y C G Q A


 A A NDIIDMI CRAHQLVMEGYKWHFNETVLTVWSAPNYCYRC HTNNLKLIARAHQLVMEGYNWGHDGVVTIFSAPNYCYR

Q K F GF S L I VRA H E VAP Q GYNFP F Q N D K S $\quad$ L T $\square Y S S S S S S$ RTNNLKLI I RSHEGMDKGYT\|DHDGKLIDTAFSAPDYPYFY












UniRef90_R0GP05 UniRef90-E3MWE2 UniRef90_UPI00042B29AA UniRef90_C4V921 UniRef90_A9SKN9 UniRef90-GOPEK3
UniRef90 W9RTJ8 UniRef90-Q27494 UniRef90-B0ECI7 UniRef90-M0TN62 UniRef90 C1MQB3 UniRef90_V6LJI8 UniRef90_UPI0003F0F52E UniRef90-B0EG75 UniRef90-A2DT90 UniRef90-A2DEX3 UniRef90-KORWF8 UniRef90 UPI0002C3D370 UniRef90-C4M0X2 UniRef90-D8LKX8 UniRef90-A0CYJ7 UniRef90-F1KYM0 UniRef90_A2EJT7 UniRef90 UPI0003C0FF6C UniRef90_G3IJ56
UniRef90_C4LTG4 UniRef90 F1LB22 UniRef90-A2DU70 UniRef90-A4H7D2 UniRef90-GONWZ1 UniRef90-F1KUP2 UniRef90-A8XG39 UniRef90_UPI0003C11773 UniRef90-E3M5G4 UniRef90_Q9XW33 UniRef90-FOWW70 UniRef90-R1E0G0 UniRef90-K7M3M0 UniRef90-K2MDZ3 UniRef90-K7H608 UniRef90-R1DVE2 UniRef90-K4CV09 UniRef90_UPI0003EB0441 UniRef90_A8X6B4 UniRef90-F1L7Q2 UniRef90-J3LAW7 UniRef90_E1ZJ38 UniRef90_17M461 UniRef90-J9AYB1 UniRef90_GONWM5 UniRef90_Q4UGG2 UniRef90 A2DS79 UniRef90-A0A044UT76 UniRef90_UPI00042C19A6 UniRef90 F2CUW8 UniRef90 ${ }^{-}$W6LB22 UniRef90-V4SMY6 UniRef90_W4H4C7 UniRef90 UPI00046B990A UniRef90-T0R1A9 UniRef90_L7JS87
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KNAGAlıLI
KNAGCVLKIDE
位
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GNPGSFMKVE EDDE $\square$ S
GNMAS LLEVDD NMGHTF $\square$ Q
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DNAGALLS:ID DESCCSFEDLKP



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G N Q A
GNEAA LQQ H S T
HEGAALLEVIS P TE $\square$ Q $\square$ T

| DNKGATVCID SDLTISFKVISP <br> NNKGAVMRI S SDMVI SYAI L NPV |
| :---: |
|  |  |

DNTAA ILCTD KK LK T S VGGYRAQRDKK
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N NKGA YAVLKSPDFSPSFHSFKAAERPMVDP
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DNAGA IMQV SPTMMVCSFKVIICS
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GNLGAGMI I KRNGTQVR
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DNRCG LLFLNQTLEMQFFSLPPRPQ
KNAGALLFI
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DNHGATLKVETNG
GNKGAFIRLKGSEMEPKFHQFTAVSHPPGPAMQYA
NKGAGMLISDTGDNVR
KNHAAVAFLS KDKEIEFKKFK


UniRef90_MORVD6 UniRef90-A2F7X8 UniRef90-AODIJ3 UniRef90-G0RZ82
UniRef90 A9V2C9 UniRef90-A2G1B3 UniRef90_U6LPN7 UniRef90-L8GK49 UniRef90-F1L398 UniRef90-A2GC28 UniRef90_UPI0003C1232C UniRef90 W7TA67 UniRef90-A2ECQ2 UniRef90-A2DIG4 UniRef90-A9SP25 UniRef90-E3MNV0 UniRef90-A2G263 UniRef90 B0EQK1 UniRef90-H3F522 UniRef90-D8M534 UniRef90_G3S7A3 UniRef90_U6NUC9 UniRef90-E3MP04
UniRef90 B8PBR4 UniRef90-A2DIY7 UniRef90-W9RTW1 UniRef90-A1DYF3 UniRef90- H2Y8E0 UniRef90_D4D819 UniRef90-E3MNE2 UniRef90 Q6J119 UniRef90_UPI000457324B UniRef90-A8PTC5 UniRef90_E3LWV2 UniRef90_UPIOO034FB7AF UniRef90_UPIO0033186C5 UniRef90 L8HEH2 UniRef90-A0A059BVV3 UniRef90-FOXWE7 UniRef90_UPI0002C3F03E UniRef90 A0A058ZBV5 UniRef90_UPI0003C1A6FC UniRef90-B7PLG4 UniRef90-|2JW57 UniRef90_UPI0002C3F9E8 UniRef90-M0SBI6 UniRef90-M0UMB2 UniRef90 UPI0002C3F8E7 UniRef90-U1MDV2 UniRef90-U5GUJ3 UniRef90_UPI0002C366A3 UniRef90-W4YLI7 UniRef90-F1R3B1 UniRef90_F6Y940 UniRef90-H2WGB8 UniRef90-C5M910 UniRef90-W5IBE1 UniRef90-E7KL34 UniRef90_UPIO002C3F06B UniRef90_A0A024X0J4 UniRef90-M0UBL4 UniRef90-A2FEYO UniRef90 FOXZT0 UniRef90-J9DJX4 UniRef90-Q9FSV4 UniRef90 N6UVB8 UniRef90_UPIO00223ED45 UniRef90_UPI0002B484EC UniRef90-G6DRK6 UniRef90 A4F2L8 UniRef90_A0A016WJN2 UniRef90_C9ZN04 UniRef90-H3DUH4 UniRef90_G0QRA2 UniRef90-GOPLK8 UniRef90-L7JW33 UniRef90_UPI0000079A95 UniRef90-R7YGE3 UniRef90_UPI0002C3E98C UniRef90 H2UGT2 UniRef90_UPI00046BFFED UniRef90-A2FGA9 UniRef90 E4XPD3 UniRef90-A0A023B582 UniRef90_W4Y8C4

IIVNLKNDQTLVEMN AKD LLNNEDNTVKQ $\square$ T

60
70
80


AETALKQDSTV LDNVAPVKVFGDDHGQLADLLTFFD




 MI E FRDEPSLIR LD GLFNVI GDI HGNLRDLLRVFA
 TRD I FMRQGAMLEVEVDASVKICGDVHGQYGDVLRLED
 VTLLLNEEPNLIQDDSDS LVFGDI HGNYFNFIKILDN AKE!LEKESNVQEVRCP
VCD LLE E S NVQPVSTP AAK FI E E S TLLEVPGP VIDLIFRREQTLIAEI VTVCGDVHGQFHDLMELFK
M P



FMNELEDEGTVVEGGDTGYIVVGDLHGNFTDLVY】!K ASSTLSKEPNCVEVDCHEASRVVLVGDIHGQFHDLLNLFD
VKE\|LLSEPSLVEF
$G \ P\|V I V G D \square H C Q \square R D L L R\| L D$
VK E Y M M EAG D AAASFASLDTLMRVD ESC[DPI HVVGDLHGHFNDLRNDFT



TKKF LK Q LP N $\square V H \square S T S Y S K E \square T \square C G D \square H G K \square D D L L L I F Y$
AVRVVKTERNV DHDKGPIVVVGNDMAQYVDLLQDLV ANNILSQEPNVIINCTGKDSTVLVIGDIEGQFHDLLSLMD GRETMAAEPNV GKM RAAPLVLVGDLHGQYADLMTAFY VSKVLREEPNL LRIKEDTLVFGDYHGQYFDFIEQRD

 TAELFRNEKALVELSLCGDKKDTVCGDTHGQFYDVLNDEG
 T T R【LD $\square \mathrm{EHNLID} \square$

SGDTVVWGDFHGQYFDLLNQLD
MTAPLTIFGDVHGQFGDLHRLLT ASY LCCQEPNCVK DQCDNNTEVVVVGDLRGQYLDLLNIWE



VYELDKKEQTMTEDTLNHSK LLTVVGDTHGQFYDLLNDFS ASRILHKEPNCVRDDCFEEDSVVIVGDICGKLHDLI FLDQ VKELLMEESNDQPVQTP VMVCGDI HGQFHDLLELER AK MLL LIKEPNMVEVE
 YMDMVRKLPSVVHVSTALAGKITVVGDMHGQFNDLINMELER GYKAFSPLDNVIHVNDDKNEHAYVFGDTHGQF DDTFSLES

ATVVLSKEPNL $\quad$ LRLDEDPDTVVGDDHGQYYDLLTVFE

 $Q P M L V R L Q A P \square N V C G D \prod H G Q \prod G D L V E \prod F R$ ARDVFMKEKQLVECGLP LLKDLLKNEQNVLPVKVPVVV CGBDIHGQFYDLLELFK AQELVRSESSLASIMESPPCTVVGDIHGQYQDLVRLLN
 AESTLKPLPAM LQVEHPDTIVGD $\square H G Q L D A L I R Y F D$ ATQVFEKEPSLIE $\quad \square D A P V N V V G D V H G S Y F D M V K L L T$
 TKKI LAQEKTI I S

VT S $\square$ LS A E P NL

UniRef90_MORVD6 UniRef90-A2F7X8
UniRef90 A0DIJ3 UniRef90-GORZ82 UniRef90 A9V2C9 UniRef90-A2G1B3
UniRef90 U6LPN7 UniRef90-L8GK49 UniRef90-F1L398 UniRef90-A2GC28 UniRef90-UPIO003C1232C UniRet90_W7TA67 UniRef90-A2ECQ2 UniRet90-A2DIG4 UniRef90-A2DD24 UniRef90-A9SP25
UniRef90_E3MNVO UniRef90-A2G263 UniRef90-B0EQK1 UniRef90-H3F522 UniRef90-D8M534 UniRef90-G3S7A3 UniRef90-U6NUC9 UniRef90-EЗМР04 UniRef90-B8PBR4 UniRef90-A2DIY7 UniRef90 W9RTW1 UniRefefo-A1DYF3 UniRef90-H3F866
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UniRef90-Q6J119 UniRef90 UPIOOO457324B UniRef90-A8PTC5 UniRef90-E3LWV2 UniRef90-UPIOOO34FB7AF UniRef90_UPIooo33186C5 UniRef90_L8HEH2 UniRef90-A0A059BVV3 UniRef90-FOXWE7 UniRef90-UPIO002C3F03E UniRef90-A0A058ZBV5 UniRef90-UP10003C1A6FC UniRef90-B7PLG4 UniRef90-12JW57 UniRef90-UP10002C3F9E8 UniRef90-MOSBIG UniRef90-MOUMB2 UniRef90-UPIO002C3F8E7 UniRef90-U1MDV2 UniRef90-U5GUJ3 UniRef90-B6AEM6 UniRef90-UPI0002C366A3 UniRef90-W4YLI7
UniRef90 F1R3B1 UniRef90-F6Y940 UniRef90_H2WGB8 UniRef90-C5M910 UniRef90_W51BE1 UniRef90-A5C6C9 UniRef90-E7KL34 UniRef90-UPIO002C3F06B UniRef90-A0A024X0J4 UniRef90-MOUBL4 UniRef90-A2FEYO UniRef90-W2T225 UniRet90_FOXZTO UniRef90-J9DJX4 UniRef90-Q9FSV4 UniRef90-N6UVB8 UniRef90-UPIO00223ED45 UniRef90-UP10002B484EC UniRef90-G6DRK6 UniRef90-A4F2L8 UniRef90-A0A016WJN2 UniRef90-C9ZNO4 UniRef90-H3DUH4 UniRef90-GOQRA2 UniRef90-GOPLK8 UniRef90-H3EMP5 UniRef90_L7JW33
UniRef90_UPIOOOOO79A95 UniRef90_R7YGE3 UniRef90-H2UGT2 UniRef90-UPIOOO46BFFED UniRef90-A2FGA9 UniRef90-E4XPD3 UniRef90-A0Aо23B582 UniRe90_W4Y8C4
 AGQLNPTSKFVFLGDYVDRGQNSLEVIVLLYALKILYPN VGGDVPETNYLFLGDFVDRGYNSVETFLLLLALKVRYPD TYGSPNHHTSYLFIGDFVDRGKFSLEVMTLLLCLKLRYPE
 LYKMPDWFRVYLFLGDYVDRGSHSLETVCLLFALKVKYPR FQSCGLPFKRYLF GDYVDRGRHPLEVIVLLLACKDQFPK

 KNGLPPKKN YLFLGDLVDRGSYSLEVVTLLLSLLNVYPD UAGPPSANRLEVFNGDYVDRGAWGFETYFYLLSWKLLLPH
SE
 TGGQVPDTNYI $L N G W P H E T R C V F G G D F V D R G S H G V E L F T L L T C L K V C F P D$ CRTSMNTEDDWVFLGDYVDRGFNSLECLLLVFSLKVRFPR

## 

 पAGLPSENQFYVFNGDYVDRGAWGLEVFLVLLAWKVLMPGRFSHGCLCMRFVF LGDYVDRGFHS LEVVMTLFADK \LFPN EDKSASPTGNFTFLGDYVDRGYFSWETLTCLWCSRKARYN KHGAPG LSHYVFLGDYVDRGRQGVETVMLLMAYHCLYPE YGGFPPES NYLFLGDYVDRGKQSLETICLLLAYK历KYPE KNGLPSPEKVYVFNGDYVDRGKHSIETLLILLTFLLVYPK RGGFPPFVNYLFLGDYVDRGRQNLETVSLLCYKVKYSE
 KNGLPSTENHY■FNGDLVDRGKNSUE\|LVLLFTFLLMYPN SNGEPPETR YLFLGDYVNRGEHSILTLSLLLALKVRYPA HVGVPSEELFFVFNGNYVGKEPWGLEVLLVLLAWKVVMPS GGGRAGDGAGLLFLGDYVDRGARGCEVLLYLLALKVAHPG YGGFPPEAN YLFLGDYVDRGRQSMETICLLLAFKIRYPE KNGLPSPAQTYVNGDYVDRGKHSMETLLILFAFLLVYPK RMGPVLTPANFLFLGDYVDRGEHGVEVIAHLFAQKLAAPD


## KCF【MERDHTYVFLGDYVDRGEYSCEVLITLIAMKCNNPN

 IVGTPPKTK LLFLGDYVDRCKKGLEVVMLLFCYKLKFPQ SVGLPSDKQLFVFGNYIDRGKSSLELFLVLLAWKAFLPH KFSWPHYHMNYIFLGDYVDRGKFSLEVFFLLESFKILFPN HAGLPSDNQLYVFNGNYVDRGTRGLDVFLVLLAWKVLMPSKNGMPSMEKPYVFNGDYVDRGKDSMEVLLILFTFLLVYPG VGGNPATTKNYLF LGDYVDRGYYS GECVLYLWALKILYPN KFGFVSNDHDYMFNGDFVDRGSWSCEVALYLYVLKILYPF YGGFPPEANYLFLGDYVDRGKQSIETICLLLAYKIKYPE DTGFPSQNRDFVFNGDYGGQGGWGLETFLLLLAWKVLLPH
 RFGUPSSTNIYIFNGDIADRGENATEDFILLEIFKLSCND SHGYTSQNVEVRHFNESPLGRSLVPSCRTPWTVRQTGKQN
KNGLPPKTK YVFLGDYVDRGESIEVVSLLESLKILHPN LIGRPPEKR Y GFLGDYVDRGMMSUECMMLLLAYKVCYPA HNGLPSFDNPYLFNGDLVDRGDYSAEVTLLLEGFAVADPG NTIS IPANVKLIFNGDFVDRGKQSVENFLFLGLLKLYFPN

 DGGQVESTQYIFMGDYVDRGYYSLETLTLLMALKARYPD EYGSPDTYYDYLFMGDYVDRGQHSLETVTLLMALKAEYPN AGGMP PATNYLFLGDYVDRGKHGTEVIVVLLGLKVGYPD MAGNCPETN YLFMGDYVDRGYHSVEC TLELLKLRYKD MRCPKVETNRFVFLGDYVDRGSHSIECISLVFALKMVYPQ GNFSDSFRDHLLFNGDFVDRGPGGLEVITLLFCYKLLHPS AVGYPPKVQ FLLFGDYVDRGAKSFEVSLLLFCYK URYPH
 KNGFPASEKPYVFNGDFVDRGKSSLEILLVLFGFLLVFPN KVGPALCPCNLLFLGDYVDRGYFSFEVISYLFGYKIVAPK FQGYPNEQK YVFLGDYVDRGTHSDHVVLLLFALKCLYPE PVGDPSTNTRYLFLGDYVDRGYYSIECVLYLWALKICQPN TGGDPNDGVQYLFLGDYVDRGSFSUEVLLVLYALKLCHPR
UniRef90_M0RVD6 UniRef90_A2F7X8 UniRef90_A0DIJ3 UniRef90_G0RZ82 UniRef90_A9V2C9 UniRef90_A2G1B3
UniRef90_U6LPN7 UniRef90_U6LPN7
UniRef90_L8GK49 UniRef90-F1L398
UniRef90-A2GC28 UniRef90_A2GC28 UniRef90_UPIO003C1232C UniRef90_W7TA67 UniRef90_A2ECQ2 UniRef90_A2DIG4 UniRef90_A2DD24 UniRef90_A9SP25 UniRef90_E3MNV0 UniRef90_B0EQK1 UniRef90_H3F522 UniRef90_D8M534 UniRef90_G3S7A3 UniRef90_U6NUC9 UniRef90_E3MP04
UniRef90 B8PBRR4 UniRef90_A2DIY7 UniRef90_W9RTW1 UniRef90_A1DYF3 UniRef90-H3F866
UniRef90 H2Y8E0 UniRef90_D4D8I9 UniRef90_E3MNE2
UniRef90_Q6J1I9 UniRef90_UPI000457324B UniRef90_A8PTC5 UniRef90_E3LWV2 UniRef90_M7NQT9
UniRef90_UPI00034FB7AF UniRef90_UPI00033186C5 UniRef90_L8HEH2 UniRef90_A0A059BVV3 UniRef90_F0XWE7 UniRef90_UPI0002C3F03E UniRef90_A0A058ZBV5 UniRef90_UPI0003C1A6FC UniRef90_B7PLG4 UniRef90_I2JW57 UniRef90_UPIO002C3F9E8 UniRef90_MOSBI6 UniRef90_MOUMB2 UniRef90_UPI0002C3F8E7 UniRef90-U1MDV2
UniRef90-U5GUJ3
UniRef90_B6AEM6
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UniRef90-H3EMP5 UniRef90_L7JW33 UniRef90_UPI0000079A95 UniRef90_R7YGE3 UniRef90_UPI0002C3E98C UniRef90_H2UGT2 UniRef90_UPI00046BFFED UniRef90-A2FGA9 UniRef90_E4XPD3 UniRef90_A0A023B582
UniRef90_W4Y8C4

130
140
150
160
NVVHILIRGNHEAADIINALFGFRDECDERMGEWAWTRFNQLIF NI CLLRGNHEAQLQSEPDGFYCECCKKANTSIYEEFDKSF
 RVFLVRGNHEDGDVNAYFGFKDECLGRNGHTI WERMNKVF NIYLI RGNHEFRNI NDMYGFKSQVLDDYGEPLWERFNKVF QVHLI RGNHEDPGI NS LYGFQDECRRRLQENCWNAFNAAF RV HLLRGKHETRPI TQVYGLYODCARKYGANVWTALMHVF FVFLLRGNHEDFHINKTYGFAAE $\operatorname{li} R T R Y R \square Q Q Y N H F N E V F$ KVFMI RGNHEFDNMNNEYGFKKQVFEVYDDDVYEAFHDCF TLUYLLRGNHECRHLTEYFTFKQECKDKYSERVYDACMEAF NFF L R GNHECASINRDYGFYDECKRRYNDKLWKTFTDCF

 $R \bigvee F L L R G N H E T K F C T S A Y G F E Q E I M S K F G D H L Y R K L L G C F$

 $R V T I L R G N H E S R Q Q T Q V Y G F Y D E C L R K Y G N N V W K Y F T D L D$ $R 1$ FLL R GNHESRFLSHSFGFYQQCMRYYNESVWNDFMATC NIFVIRGNHEEESLNQLYSFASEVHAKYKEPMYDYEKNYB QYILLRRGNHETRVINFRYGFRHELLDRRQRSQQWEKFNDAF
 $R V Y L L R G N H E T A F C T T V Y G F E Q E V K T K Y G E T V Y K K C D E C F$ CYGLLRGNHETRSLNRIYGF


 NFFLLRGNHECAS DNRDYGFFDECRRRYGT KLWKT FTDCF
 QYVLLRGNHETRAI NFAYGFREELQDKDGHEVWEAFNETF RI TLI R G N H E S R Q I T QVV G F Y D E C I R K Y G N NV WR Y C T E V F
 HV H L L R G N HE S K GMA Y Q Y S L LH E E C C P G T Y G T G V A E L L F E V F $R V Y L L R G N H E T K S F S S S C G F K E E V L T K H G D Y V Y K K F L G C F$


 $K F Y$ L LR GNHE VRNVQKMFTFYNECVN KF GD RVVWEQDNACF
 $N$ I F L L R G DHECA Q $\square N R Y Y G F Q N E C L L K Y$ G D L LVWNAF V S T F

 MI NLL R GNHECTKMNRTYGFYEECKR LIRSTRIIWKAF QRVVF



K Y T E G VV Y N A C M I A F
 TL HLL R GNHECRHLTEYFTFKQECII KYSDKVYDACMNGF NFFMLRGNHEMRNVNMYYGFREE』HSRRPEDVYDGFDTMM
 NFFLLRGNHECASDNR DYGFFDECKRRFNVRLWKVFTDCF RVYLLRGNHETK LCTS ECGFEEEVMTKYGDHVYRRCDDCF
 GVILLRGNHESAAMTHIFGFERECTWKYDS GVYNKE DELG
 D I H L I R G N H E F L D I N T I Y GF K N Q V L E E Y S E A L Y E V F N D C F
 Ni F L N R GNHEFS S CNDSFGFHSELLKQKYYYDY LDDSFN DI F $N V H L D R G N H E A A D D N A L F G F R D E C D E R M G E W A W T R F N Q L G B$ IVVLNRGNHEDHDMNQRYGF DREKYRKNHERDLKDFESVVY
 RIV VLL R GNHE T C QDT K V Y GF Y DECCL N K Y G N N A WK D C C R V F NVULI RGNHEAADI NALFGFRDECIERMGEWAWQRDNS LIF QVFLLLRGNHEDKSVNKGYGFYGDLRLDRYSEENEEAVGRVY
 RII I L R GNHESRRI TQSYGFYDECMRKYTYNDWNYFTDAF
 $N V H M N R G N H E F A G T N R Q F D \square Y D Q \square A K R H G T F V Y E T \square N L F F$
$Q \square F \square R$ GNHESYDVNTKNSFDRQCADYYDKS DVLTDFKSF DVMLNRGNHEDH VVNLRYGFTKEKYRVHGKKILVLLQK LIF K V F L L R G N HE DR RV Q Q Q WT FEKE CRMKF GEFIVFNSI N DAM
 S I FLLR GNHECRHLTEYFTFKQECKVKYNEDVYESCMSAF K I WL L R G N HECRRMTSFFNFRDECEYKYNLSVYEASMQSF


UniRef90_MORVD6 UniRef90-A2F7X8 UniRef90-AODIJ3 UniRef90-GORZ82 UniRe99_A9V2C9 UniRef90-A2G1B3
UniRef90 U6LPN7 UniRef90-L8GK49 UniRef90_F1L398 UniRef90-A2GC28 UniRef90-UPIO003C1232C UniRef90 W7TA67 UniRef90-A2ECQ2 UniRef90-A2DIG4 UniRef90-A2DD24 UniRet90-A9SP25 UniRef90 - E3MNVO
UniRef90 A2G263 UniRef90 BoEQK1 UniRef90 H3F522 UniReffol-D8M534 UniRef90-G3S7A3 UniRet90-U6NUC9 UniRef90-E3MP04
UniRef90
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UniRef90 Q6J119 UniRef90_UPIOOO457324B UniRef90-A8PTC5 UniRef90_E3LWV2 UniRef90-UPIOOO34FB7AF UniRef90_UPIooo33186C5 UniRef90_L8HEH2 UniRef90-A0A059BVV3 UniRef90-FOXWE7 UniRef90-UPI0002C3F03E UniRef90 A0A058ZBV5 UniRef90-UP10003C1A6FC UniRef90-B7PLG4 UniRef90-12JW57 UniRef90-MOSBI6 UniRef90-MOUMB2 UniRef90-UPIO002C3F8E7 UniRef90-U1MDV2 UniReffo-U5GUJ3 UniRef90-B6AEM6 UniRef90-UPI0002C366A3 UniRef90-W4YLI7 UniRef90-F1R3B1 UniRef90 F6Y940 UniRef90-H2WGB8 UniRef90-C5M910 UniRef90-W5IBE1 UniRef90-A5C6C9 UniRef90-E7KL34 UniRet90-UPI0002C3F06B UniRef90-A0A024XOJ4 UniRef90-MOUBL4 UniRef90-A2FEYO UniRef90_W2T225 UniRef90-FOXZTO UniRef90-J9DJX4 UniRef90-Q9FSV4 UniRef90-N6UVB8 UniRef90-UPIO00223ED45 UniRef90-UP10002B484EC UniRef90-G6DRK6 UniRef90-A4F2L8 UniRef90-AOA016WJN2 UniRef90-C9ZN04 UniRef90-H3DUH4 UniRef90-GOQRA2 UniRef90-GOPLK8
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UniRef90-UPIO000079A95 UniRef90-_R7YGE3 UniRef90-UPIO002СЗЕ98C UniRef90-H2UGT2 UniRef90-UPIOOO46BFFED UniRef90-A2FGA9 UniRef90-E4XPD3 UniRef90-A0A023B582 UniRef90_W4Y8C4

$\square \square S F \square P A T A F F \square D S S R R S F W N P S R G \square S Q T Y G Q D V S E Q F L$ PHKGAFCDLVWSDPEDVDTWATSPRGAGWLFGAKVTNEFV MKGTLACDLVWSDPDTLNNVVEFEPGTGQLFSQSAVKAAC NPDRLAQDLLWADPHVGEFIHNKNRGLSVCFNAPAVHEAC GQEGLMCELLWTDPQDTPGRGPSKRGVGIAFGPDVTKRWC FDSNQIVWGDPRNDDDGELTAPSPRGVGEVFSAEKTQKFL VPS LLDVLWSDPSKEDGLVENEGRGMGLSWGPDCTENF TNCALLADMLWSDPAANHFCPNTTRSQSVYYGQEAVDNVI PHEGPMCDLLWSDPDDRGGWGTSPRGAGYTFGQDISETFN PHEGAFCDLVWSDPDETEDWAVSPRGAGKFCPKERADEFC
SFGLACDLVWSDPETTMNGWSLSARGDSFSFDDVTIDKFC

NPS $\square$ D DLLWSDPDPSVKGWQANNRGLSYTFGPDVVMETC TNALAQDLLWADPTPDQQWGKNLVRGLSCTFNPAAVTETV PHEGPMCDLLWSDPDDTSGWAFSPRGAGFLFGADVVKSFC
ENKLLRDLLWSDPVVSTNGWQKSKRGAGDTFGSGVVDEFC ETEG| MVDLVWSHPNPDEGWGDNPAGAGYEWGPDITATWC GSLILNDVLVSDPSPVEGGREKRVRQAGLWWGPDCTETF SSGLLCDLLWSDPYKDTQFANNKFRGVSYIYGDEAMKDFL

KQEG



WSGLLCDLVWDYSPKVNGFELNTKRGTSVVFGKKALMGFL SNLIPGDVLWSDPSLGLGLSPNEERGIGLLWGPDCTEEFL PHEGPMCDLLWSDPDDRGGWGDSPRGAGYTFGQDTAQQFN

 PNVLLTDVLWSDPSKEDGLVEKTFRERGLLWWGPDCTIRSH
AFGPMCDLLWSDP
SNCLES DILWSDPSYLSGWTSNPRGSSVCYGADVVKAMC
DHGLLCDLLWSDPDKDVDGWGENDRGVSYTFGADKVAEFL EESNHCDALWSDPSMECGLKPNLQRGCGLLWGPDCTETFL PHEGGFSDLLWSDPDNVEAWQVSPRGAGWLFWQ
EDGVFSDMLWSDPWFDVTYMHNDSRDCSYFYGYEAIVTFL YEDIVIGDLLWSDPQKKEGLGGNARGNNCTFGPDVTEMFL
 QHQFVVDMLWSDPDDSDDLYLKNLRGFGFDFGAAAALNF KDGHTHEDWSVMMDCLWSCKPNDERGGGDMFSKEFSKKWL STNDTYNGLMWSDPADIIDFACSKRGMGVLFGKNDTSSFF AGSDILMDLDWSDPTENDGMRPNARGPGVTFGPDRVTDFC HVGLFCDLLWADPF
LNLIPGDVLWSDPSMNPGLSPNRERGDGLLWGPDCTEEFL HKGAFCDLLWSDPADVKTW
AGSVVLMDLLWSDPTENDGDRPNARGPGVTFGPDRVMEFC SGLLEDLLWSDPSPTCTGFKANVERGCSFVFGSDVVAERC DTGLACDLLWADPEETGSGWMESERGVSYTFGEDIVKETC NVSLLAQDLLWADPINSGTKPNDGRGISUHFGEDALDEKM PSEGPMCDLLWSDPDERSGWGVSPRGAGYTFGQDISEQFN ATVRLAQDLLWADPTSDQMMDAVHRGLSCTFNESAVRDTC DLGLCADLTWGDPDAKVDKYESNPRGASRVFGYNALQEFC



QEQSSLA WELMWNDPNEGFAVNAKRGTAHTFSVEALEKFD EFSDIQNSLLWSDPSNDDYDFNRNRRAGELFGRNALDSFF AFGPMCDLLWSDPQEEFRFVHNSVRGCSYFYSFAAVCEFG

UniRef90_MORVD6 UniRef90-A2F7X8 UniRef90-AODIJ UniRef90_GORZ82 UniRef90-A2G1B3 UniRef90-U6LPN7 UniRef90 L8GK49 UniRef90-F1L398 UniRef90-A2GC28 UniRee90-UPI0003C1232C UniRef90 W7TA67 UniRef90-A2ECQ2 UniRef90_ARDIG4 UniRef90 A9SP25 UniRef90-E3MNVO UniRef90-A2G263 UniRef90 BoEQK1 UniRef90-H3F522 UniReffol-D8M534 UniRef90-G3S7A3 UniRef90-U6NUC9 UniRef90-E3MP04 UniRef90-A2DIY7 UniRef90_W9RTW1 UniReffo-A1DYF3 UniRef90-H3F8666 UniRe90-DPDD819 UniRef90-E3MNE2 UniRef90 Q6J119 UniRef90-UPIO00457324B UniRef90-A8PTC5 UniRef90_E3LWV2 UniRet90-UPIOo034FB7AF UniRef90_UPIooo33186C5 UniRef90 L8HEH2 UniRef90-A0A059BVV3 UniRef90-FOXWE7 UniRef90-UPI0002C3F03E UniRef90 A0A058zBV5 UniRef90-UP10003C1A6FC UniRef90-B7PLG4 UniRef90_12JW57 UniRef90 UPIo002C3F9E8 UniRef90-MOSBI6 UniRef90-MOUMB2 UniRef90 UPIO002C3F8E7 UniRef90-U1MDV2 UniReffo-U5GUJ3 UniRef90-B6AEM6 UniRef90-UP10002C366A3 UniRef90-W4YLI7
UniRef90 F1R3B1 UniRef90-F1R3B1
UniRef90 F6Y940 UniRef90-H2WGB8 UniRef90-C5M910 UniRef90-W5IBE1 UniRef90_A5C6C9 UniRef90-E7KL34 UniRef90_UPIO002C3F06B UniRef90-A0A024X0J4 UniRef90-MOUBL4 UniRef90-A2FEYO UniRef90_W2T225 UniRef90_FOXZT0 UniRef90-J9DJX4 UniRef90-Q9FSV4 4 UniRef90-UPI000223ED45 UniRef90-UPIO002B484EC UniRef90-G6DRK6 UniRef90 A4F2L8 UniRef90-A0A016WJN2 UniRef90-C9ZNO4 UniRef90-H3DUH4 UniRef90-GOQRA2 UniRef90-GOPLK8 UniRef90-H3ЕMP5 UniRef90-L7JW33
UniRef90-UPIO000079A95 UniRe990-R7YGE3 UniRef90-UPI0002C3E98C UniRef90 H2UGT2 UniRef90-UPIO0046BFFED UniRef90-A2FGA9 UniRef90-E4XPD3 UniRef90-A0Ао23В582 UniRef90_W4Y8C4

250
260
270
280
KRNKLQLI। RAHECVIMDGFERFAQGQLITLIFSATNYCGTA $\square R N H L K M I R G H Q V A D D G Y K Y P T D R S V V T L F T A S D P S F M A$ RRNGIYLICRAYQLAMEGFKLMFDKAVAEKFSTS HVNGLT TI ARAHQLVNEGYKVFPEKSVVTVWSAPNYCYRC QENNLQMIVRAHQCVTAGYEFFAKQQLITVFSATNYCGRY KRFNFTKLLRAHQCVKLGDERLFGDKGLTHSSSAYDADV QANNLALIGRAHECVMDGFERFAGGKLITLFSATNYCNHH
 ETWNITIKCN

SKNNLKFMIRGHQCTTTGVHAFAGTLGMTVFSCSDYCRLL DSNKLTYYI RAHE CVDGLKEHFNGCVLTIFSSSHYYMNS KKVNCDTI RGHQSVASGIKKDHNGKVITVFSTSNY GDLD
 AHNNLKMLI RGHSYCETGYKYDFDGGCLLTVFSSCNYAGKS ESNEIRAIIRAHECVDGVQQHDFEHEDFTVFTSPGYDGA
LDNQLKCVRGHELVMEGYKQLHKNKVVTVFSAPNYCYYV HI NNLKLI CRAHQLVHEGYKFMFDEKLVTVWSAPNYCYRC K RLNVKMI IRGHQAPLHGYARWANGLLITLFSAPAYKGYT RRLNVCMIVRAHQMMPAGFKFFADRKLCTVFSAPRYMNED EANGVTGVI RSHEVRQDGYADEHDGLCTTVFSAPNYVDQA QDSNLKSI RGHESCSNGFLHSLSNSCFTVFSASNYCDGG KQSKLKLI IRSHQDMLNGYSLDHSGKLYTLFSAPNYP TRHDLDLDCAHQVVEDGYEFFAKRQLVTLFSAPNSPQEF QK LGGLSCIVRAHQFVSCGTAFYNDRKVISIFSANSYNAD I HHNHLTLI SRAHQLVMEGYNWCHDRNVVTIVSAPNYCYRC


QK $\$ D DLTARAHQVVQFH GRLELKLI DRAHQMI PDGFKFAANHQLLTDFSAPRYMNET $R \square N Q\|E M\| A R A H Q L V M E G Y K \square M F D G S I V T I W S A P N Y C Y R C$
$K K \square D \square D L L V C G H Q V V N S D Y A F S A N K K C D T \prod F S A L N Y C G V F$ A Q NRLEKIVRADEQLPRGYEWHHDKTVLTLCSSPNYVRRC SQSNLKFI I RSHEGPKKRYSEDHSGKLFTLFSAPEYTQMG


SRNEDSHVRAHNRKLTMFSASNYYEVG SRNELSHVVRAHEVQQAGFQVQQKGKLLTVFSSSHYCGGS

EKNGFEMLVRGHCFVD GFTVKMPCVSVFSASFYQGKF KKNQFKLI I RSHTGMDTGYTDDHDGKLI TLFSAPDYPQFY HTNGLSLI SRAHQLVMEGFNWCQDQNVVTVFSAPNYCYRC KKNGFI GMLRGHQCFHNGFESHDFGNCFTIFSAPMYSK RNLDVDLIVRAHEVVKDGHLLDCGNRICTVFSAPNYCGTD
 NNTGIKLIVRAHECIPNGYEYFANGKVLTLFSTTNYCNNY EGPDVRENQDDFGDMLNGYSVDHSGKLYTLFSAPDYPQCY QQNNLLS IIRAHEAQDTGYRMYRKPSLITIFSAPNYLDVY

EK $\square D \square D M \square R G H Q V V Q D G Y D F F A D K R L V T \square F S A P Y Y T G T F$ EKHDLDLVCRAHQVCLHC KKSNLKLI $\quad$ RSHERMDEGYS $\square$ DHEGKLVTGFSAPDFPPSQ
ENNDLRALIRAHECVDGVQQYDFEP DMFTVFSSAGYNG KNNNLDILI RSHQVPKKGIESHHEGKCDTLFSASNYCNKD HNNGLTLIARAHQLVMEGFNWCQDRNVVTVFSAPNYCYRC RANNLQKI IRSHQ CVNA $\square$ QEHCGSAVITVFSSSNYSSKS ERFGLELIVRAHQMCLDGFWVTPNRRLLTLFSAP DDHKLGVLVRSHECQDRGFSVTHDGRVMTLFSASNYYGDD LNNDI KLLVRSHEYVPSGFKTNHDGAVITVFSAPNYCGLL KKNKLQLVVRAHECVMDGFERFAQGQLI TVAFSATNYCGTA

KKFD $\square$ K LI IRSHEGMDQGYT $\square$ DHSGK LIT $\square$ FSAPDYPQFQ
KNNDLQLIVRAH
QKMGILMUVRGHQAVDEGFEDSPDRKVIT LIFSAPGYQDHY ERLDID
TELLEL $\square$ A V $\square R G H Q \square P G N G Y A W F G K G H \square C T V F S A S D A G K K$ HR
KRLNTQLIVRAHQMDPEGFKFFADKRLIT\FSAPRYMNET TKLQI GLI I RAHQMRHFMHDFEKPGMDISI FSAPRYCGTY SDNNLKLVVRSHEFFEECYRTNHNGKTVTVFSSVNYVNSA KKDGLSLIVRAHEVSQEGFNFDFNKKCVTVFSAPYYCGND HKNDISSLARAHQLVMEGFKEMFDSTVVTVWSAPNYCYRC KANGLKVLCRGHQ CVVDGKFSPEKKCLTVFS CSGGM
ASNGFTHLVRAHEVVEAGFY LQQKGHLLTVFSSSKYCGGV $S L N G L D T L I R G H Q V A E D G Y A F S L G E N C L T V F S S A D H E E K$ HQNNLLSMLRAHEAQDQGYKMYRRNS

UniRef90_M0RVD6 UniRef90-A2F7X8 UniRef90-A0DIJ3 UniRef90_G0RZ82 UniRef90 A9V2C9 UniRef90-A2G1B3
UniRef90 U6LPN UniRef90-L8GK49 UniRef90-F1L398 UniRef90_A2GC28 UniRef90-UPI0003C1232C UniRef90 W7TA67 UniRef90-A2ECQ2 UniRef90-A2DIG4 UniRef90-A2DD24 UniRef90-A9SP25 UniRef90-E3MNV0 UniRef90-A2G263 UniRef90 B0EQK1 UniRef90-H3F522 UniRef90-D8M534 UniRef90_G3S7A3 UniRef90 U6NUC9 UniRef90-E3MP04 UniRef90-B8PBR4 UniRef90 A2DIY7 UniRef90-W9RTW1 UniRef90-A1DYF3 UniRef90_H3F866 UniRef90 H2Y8EO UniRef90-D4D819 UniRef90-E3MNE2 UniRef90 Q6J119 UniRef90-UPI000457324B UniRef90_A8PTC5 UniRef90_E3LWV2 UniRef90 M7NQT9 UniRef90-UPI00034FB7AF UniRef90-UPI00033186C5 UniRef90 L8HEH2
UniRef90 A0A059BVV3 UniRef90-FOXWE7 UniRef90_UPI0002C3F03E UniRef90 A0A058ZBV5 UniRef90_UPI0003C1A6FC UniRef90_B7PLG4 UniRef90-I2JW57 UniRef90-UPI0002C3F9E8 UniRef90_MOSBI6 UniRef90-M0UMB2 UniRef90 UPI0002C3F8E7 UniRef90-U1MDV2 UniRef90_U5GUJ3 UniRef90_B6AEM6 UniRef90 UPI0002C366A3
UniRef90-W4YLI7
UniRef90-F1R3B1
UniRef90 F6Y940 UniRef90-H2WGB8 UniRef90-C5M910 UniRef90_W5IBE1 UniRef90 A5C6C9 UniRef90-E7KL34 UniRef90_UPI0002C3F06B UniRef90 A0A024X0J4 UniRef90-M0UBL4 UniRef90-A2FEYO UniRef90-W2T225 UniRef90 FOXZTO UniRef90-J9DJX4 UniRef90_-Q9FSV4 UniRef90 N6UVB8 UniRef90 UPI000223ED45 UniRef90_UPI0002B484EC UniRef90_G6DRK6 UniRef90 A4F2L8 UniRef90-A0A016WJN2 UniRef90_C9ZNO4 UniRef90-H3DUH4 UniRef90 G0QRA2 UniRef90-G0PLK8 UniRef90-H3EMP5 UniRef90 L7JW33 UniRef90-UPI0000079A95 UniRef90-R7YGE3 UniRef90_UPI0002C3E98O UniRef90 H2UGT2 UniRef90_UPIO0046BFFED UniRef90_A2FGA9 UniRef90 E4XPD3 UniRef90-A0AO23B582
UniRef90_W4Y8C4
 SGKSCVMKVFFTENSYKFIELN
GNVAS $\square \mathrm{MT}$ VDR DHRTKFS $\prod F S A D P$


ED GNHYIT QYGPAPR
CNFAAVVLDIR NE
HILDAAVKYENNVM N $\square$ RQFNCSPHPYWLP
ANRSGCVHFRGNGEDTFFSL
NNSCGFI QL

YNKGAY IVLEPPDFDPHFFQFEAVPRPKVNP

NRGGVLFVGNDGMKVK
GNKGAYAEADE
GNTAS DMVFKDVNTR EPK【FRAVP
ENLGACIEI
DNRGAVLKVAANGKVS $\square$ MVMKKSKQPGNKP $\square$ S GNKGAFIRI DAAGSQ EYTQFDAKPHPPMKPMAY NNEGA $\square$ A $\square$ LAEDGK $\square$ TFDQYS

DNAGAMMSVLET $\square M C S F Q V L K P$ RNHGACLYVDDKGRDTDKSF
GNQAALMELDDT LRYSFLQFDPAPR
ANMASVCEVR EDLKMVFKLEAAVP
GNDTCVLRIDEQK TVQFSLLRPVKKSRK

DNRGATVRTQENG
GNVAA LIELDENLEKSYK DFEAAKHPTKKP $\square$
SNSAGVLHIDME MKYR $\square$ TQLQP
GNKGAVLLISDSGEDTFH■FR
KNEGAYAILKPPNFKPMFCSFRAVDRPK
ANLGAAL
NSKAGSIMDEEKAVNDR
SNRGAYVK G GPD $\square$ S PHFVQYQA
NEAACIL
LNTGAVLK\S G\DNC LLS T LDF

GNMAADLEI GENMDRNF LQFDPAPR
SNRGASVEI SEGGMNV
GNCGSVMRVTAE LK K S F VT DK P
KSKGAYAILKPPNFTPEFVSFEARKRHEV
KNDAAMCVFMKNTQNDNLIHFN
NNKGVYAVLKPPDFEPSFHSFKDVER
NNKAAVLKYENNVMND $\square R$ QFNCSPHPYWLP

S NSAAVCK】T A GLEVSFEVLKPV

NNKGAY V VLGPPTFDPVFHTFKAV
TNRGGS 1 FMGDDGMKVK
KNLGAAI IGNQDLTFEVQEYMS
GNMAALLEI GENMDQNFLQFDPAPR
NNTSGVLEVNGS
MNAGTVLLDV ENLRCQLISMVP
ENDGAVLVLS
G GA A
N NAGA
SNNGAYVK LMGPN LE P H F VQ Y M A
$C \square K N G \quad L N F F N N G D N D A F E E D D$

VN K G A VM V V A D R TVT F K Q F
ENYAAA $\square R \square D E Q G V K K M \square \square M Y K$
D
QNYAGVVS $\quad$ S K DDVTY LI Q $\square$
NSAVYLVFDGD
TNCGAI MHVSDS YELDS TVLRP
GNVAAILELGEDGSNRRYRVFEAAPQPAKKPVA
KNRAGLLVVPQNLKCQF
NTAACULDQGK
GNKGATITVDNS $\square$ MARQFE

GN $\square$ A S $\square L A F N D A T T R \quad E A K \square F R N V P$

UniRef90_G0P1B5 UniRef90_UPIO003838E4D UniRef90_E5SZR0 UniRef90_S9U906 UniRef90_Q9LEV0 UniRef90_UPIO002656F10 UniRef90-L1IXZ2 UniRef90-B0EC45 UniRef90-17MCF2 UniRef90-A2E930 UniRef90-UPI00046B8BAD UniRef90_U6MJ12 UniRef90_A0A016WFE3 UniRef90 W2SG23 UniRef90 ${ }^{-}$A0A044SZT8
UniRef90_U1M8L2 UniRef90_K8FDT4 UniRef90-Q5CTT5 UniRef90_U6MZB0 UniRef90-Q466W2 UniRef90-GONVH9 UniRef90 U6D230 UniRef90_GOUJ48 UniRef90-J9EEL1 UniRef90 K7V5K3 UniRef90-I1G9C6 UniRef90-M4EGL6 UniRef90-A4RSM4 UniRef90 W5IA10 UniRef90-R7VX63 UniRef90-E5R360 UniRef90 Q4T9N7 UniRef90-I1BTA4 UniRef90-F1KY49 UniRef90-H3FA51 UniRef90 UPI000393DE4E UniRef90-K4DLP7 UniRef90_A0A016SD58 UniRef90 L1IQ80 UniRef90-R1DNQ1 UniRef90-F6Z9LO UniRef90_Q5QHU2 UniRef90 U6PV32 UniRef90-A0A034WBT5 UniRef90-E3NAF1 UniRef90 S9X2L4 UniRef90-B0EPA3 UniRef90-W9DV19 UniRef90-H3FZl1 UniRef90 U6IAY6 UniRef90-E9B9T9 UniRef90-U6LKX4 UniRef90-H2YPV5 UniRef90 F4G1Z3 UniRef90-W7UBM2
UniRef90-K4DX03 UniRef90 D8LDZ8 UniRef90-UPI0001E4494C UniRef90-X1VRM5 UniRef90-A8X1P0 UniRef90 A8Y3K6 UniRef90_Q19646 UniRef90_D8T6U9 UniRef90_Q7RLG9 UniRef90-H1VD57 UniRef90-W6KIW6 UniRef90_L8YA19 UniRef90_B8C8F5 UniRef90_G4V7T7 UniRef90_A0A044QZN9 UniRef90-H2UGT3 UniRef90-J9EAS1 UniRef90-H3F8N2 UniRef90-T1K9T8 UniRef90-U6MU09 UniRef90-S9VYQ0 UniRef90_A0A044RQM0 UniRef90-E3N8T3 UniRef90 Q8ZW26 UniRef90-E3M403 UniRef90_G0NM19 UniRef90 H2WE70 UniRef90-A0A024WR22 UniRef90-W418M1 UniRef90_F0Y1H6 UniRef90-D9Q1L2 UniRef90_V6LL87 UniRef90-J9AKR4 UniRef90 K7GU03 UniRef90-EOVHR5 UniRef90_A3DNZ4

ID Q Wl E QLNECKQLSEGQVKTLCEK DEWLEKVKRCEYLPEQDVKRLCEM
 FEDGKPRLDVLK SHLVKEGRLEEDAALKIIND VI S VCSQ $E L L I Q L I D N G P R E F H F D R A Q L Q E V L R L$
 KMVEHGPYEFEFDPTEVGDLFDS

T $\square \mathrm{E}$ E $\square \mathrm{S}$ T $\square \mathrm{T}$ D D
LLT PMLVRRLLDA
$K Q E L H R L L Q N$
NELEDSFNRPGKLVEFDVVRVCDV RTLMNLCEE GPENPPDWKELRSHLQREGRVFKEDCLQU I K K
 K S HILELVFK
 KDLMRLCKG
 $R L N D D Q K V V N C A S L I E N H F$ QKDI A WYEVDQLCNE
 VPVAVADSLIAR
KKKREDYKNYFD $\quad$ FRVCNY NDVLLLCDE DF $\square \mathrm{K}$ R LLD A GYAGKC LKNAE IVAICQR MKEGRDEESVALRBDE
 VLRELI KKHLLAGSTRMEYELPDLHQLLTM NA $\square$ I K $\square$ CA D

$D \square L Y R M D E H G P Y R Y P F T A D E L L S V F V Y$ LLDDEEPNKNLSLIPREDYLAIVKE

PR LK D K $\square$ DRTFATEMFHFFEKFQ

## E EADKVVDD $\square \mathrm{PYQQLLDLVEL}$

DLLYRMDEHGPYQYPFTAMELLTLFEE
$K \square N \square D N \square I T Q L L Q V R G A R P G K N V Q L T E N E \backsim R G L C L K$

UniRef90_U6D3L3
UniRef90_GOP1B5 UniRef90_UPIO003838E4D UniRef90_E5SZR0
UniRef90_S9U906 UniRef90_Q9LEV0 UniRef90_UPI0002656F10 UniRef90-L1IXZ2 UniRef90_B0EC45 UniRef90_17MCF2 UniRef90_A2E930 UniRef90-UPI00046B8BAD UniRef90-U6MJ12 UniRef90-A0A016WFE3 UniRef90-W2SG23 UniRef90-A0A044SZT8 UniRef90-U1M8L2 UniRef90-K8FDT4 UniRef90-Q5CTT5 UniRef90-U6MZB0 UniRef90_Q466W2 UniRef90-GONVH9 UniRef90_U6D230 UniRef90_G0UJ48 UniRef90-J9EEL1
UniRef90 K7V5K3 UniRef90-I1G9C6 UniRef90-M4EGL6 UniRef90-A4RSM4 UniRef90-W5IA10 UniRef90-R7VX63 UniRef90-E5R360 UniRef90-Q4T9N7 UniRef90_11BTA4
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UniRef90-E3NAF1 UniRef90_S9X2L4 UniRef90-B0EPA3 UniRef90_W9DV19 UniRef90-H3FZI1 UniRef90 U6IAY6 UniRef90-E9B9T9 UniRef90_U6LKX4 UniRef90 F4G1Z3 UniRef90-W7UBM2 UniRef90-K4DX03 UniRef90-D8LDZ8 UniRef90-UPI0001E4494C UniRef90-X1VRM5 UniRef90-A8Y3K6 UniRef90_Q19646 UniRef90-D8T6U9 UniRef90-Q7RLG9 UniRef90_H1VD57 UniRef90-W6KIW6 UniRef90_L8YA19 UniRef90-B8C8F5
UniRef90-G4V7T7 UniRef90-A0A044QZN9 UniRef90-H2UGT3 UniRef90-J9EAS1 UniRef90-H3F8N2 UniRef90-T1K9T8 UniRef90_U6MU09 UniRef90_S9VYQ0
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UniRef90 J9AKR4 UniRef90-K7GU03 UniRef90-EOVHR5 UniRef90_A3DNZ4

TWT LLR DMPNTSTVSTGTHTEDT\CGDLHGHDEDLLLIFY ALEI FKNEKSLIDVQ PPLIICGDiHGQFQDLVRLFN VREI FMSQPMLLEI RPPVRVCGDTHGQYYDLLRIYE


 SIKHF LADPDMDQ




$V Q N L Y A V E P D M \square Q F D \square P K K G L V V V G D L H G D \square Y C L L N D L L$ VRAVFMSQPPLVEDE PRVVICGDIHGQYSDLLRIFD


AMGYLNTMPNVVNGRVNQGSKVVVVGDLHGQLADLLHDLK PITIICADTHGQFRDVRCILS

## 



AKEVLTKESNVQE VSCPVTVCGDVHGQFHDDMELFK AKELLEESN





VS QLLAREPS L $\quad L Q L A S D V W \square Y G N L D G N Y S T V Y R W \square H$

$T V D L L R E C G T L E Y \Pi H D P N G \quad V A \prod F G D L H G S L Y D L F R G \prod K$ TWRLLRDLPNDNQVSACHNKEI TVCGDLHGHLEDLDELCLD AKASFQKVPTLVEVPCP VNICGDIHGQYDDLMRIFA
MENDFKREA MD FFKEED V

$\square S E \| L R T E D S L L E D P$
ADVVVIGELRGRYSDLLRWFQ GKAHCHSQNALLKLN RKKTRLVGDIHGNFDDLIRHVS


 TKKMLEEVINNDMSKKSKDTKLIILGDVHGQLHDVLWDFN


TAFKMAEESSL
SREDFLSQP ILLE

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UniRef90_GOP1B5 UniRef90_UPIO003838E4D UniRet90_E5SZRO UniRet90_S9U906 UniRef90-Q9LEVO UniRef90_UPIo002656F10 UniRef90-L1IXZ2 UniRef90-B0EC45 UniRef90-17MCF2 UniRef90-A2E930 UniRef90-UPI00046B8BAD UniRef90_U6MJ12 UniRef90-A0A016 WFE3 UniRef90-W2SG23 UniRef90-A0A044SZT8 UniRef90-U1M8L2 UniRef90-K8FDT4 UniRef90-05CTT5 UniRef90-U6MZB0 UniRef90-Q466W2 UniRef90-GONVH9 UniRef90_U6D230 UniRef90-GOUJ48 UniRef90-J9EEL1
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UniRet90 E5R360 UniRef90-E5R360
UniRef90-Q4T9N7 UniRef90-l1BTA4
UniRef90-F1KY49 UniRef90-F1KY49
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UniRef90-A0A034WBT5
UniRef90-E3NAF1 UniRef90-S9X2L4 UniRef90-BOEPA3 UniRef90-W9DV19 UniRef90-H3FZ11 UniRef90-E9B9T9 UniRef90-U6LKX4 UniRef90-H2YPV5 UniRef90-F4G1Z3 UniRef90 W7UBM2 UniRef90-K4DX03 UniRet90_D8LDZ8 UniRef90-UPIO001E4494C UniRef90-X1VRM5 UniRef90-A8X1P0 UniRef90_A8Y3K6
UniRef90 Q19646 UniRef90-D8T6U9 UniRef90-Q7RLG9 UniRee90-H1VD57
UniRef90-W6KIW6 UniRef90-L8YA19 UniRet90-B8C8F5 UniRef90-G4V7T7
UniRef90-A0A044QZN9 UniRef90-H2UGT3 UniRef90-J9EAS1 UniRef90-H3F8N2 UniRef90-T1K9T8
UniRef9O_U6MU09 UniRef90_S9VYQ0 UniRef90-A0A044RQM0 UniRef90-E3N8T3 UniRef90-Q8ZW26 UniRef90-E3M403 UniRef90-GONM19
UniRef90-H2WE70 UniRef90-A0AO24WR22 UniRef90-W418M1 UniRef90-FOY1 H6 UniRef90-D9Q1L2 UniRef90-V6LL87
UniRet90 J9AKR4 UniRef90_K7GU03 UniRef90-EOVHR5
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 KNSLPTGKNPYVFNGDFLDRGKNFLEDLMTLAVSFLVYPG


KNGFP PNTNY LF LGDYVDRGLYQVQLILFDF LMKLRWPN KNGFPPDANYLFLGDYVDRGLQSI ETVCLMFCYRLKHPE

$K R Q E$ I NCKN LLFLGDYVDRGPQGVEVLTRVFRLKLEEPE ECGKSYLNRKMIFLGDYVDRGMQSLRCAVFVALLAIVGPN
 $R M G P \| L T P A S F M F L G D Y V D R G D F G F E V I S Y L F A Q K L L M P S$
VGGDCPDTN Y LFMGDFVDRGFYSVETFLLLLA LKVRYPD DAGFPSEER $\square F V F N G D Y V D R G A W G L E T L L L L L A W K V F L P N$


THETKKEKRKFMFLGDYVDRGLYSLECTALLLNLMLHYPR


 Q IG H T D D R F I F L G D Y V D R G T Q S L EVV MYL F VLKA L Y P N F Q D L R Y T P H R F V F L G D Y V D R G E F S V E V V A Y L F SMK V L A P H

 NF SDF DSIVF L GDYVDREPYGLENLEIILDDKFLENPD




CKNEGNTAS IDDRKPSYAFSTKKDPNFQNFVFQULFPK

 $M C G F P P S S N Y$ L CP GVVY

 $N L G M Q L T A G N F V F L G D Y V D R G M S C L E C V A Y L L A M K L M L P Q$
D A GWP TERT LI F LGGD Y I D R GKY S LITTL L F L F L L K L RYP K
 SFGLPFKVRHLF LGGDVDRGRHPLEVIVRLLACKIQFPK

## RK A P N CVV A S Y LF LG D F VD R G E Y G L E C L L Y L S C K L L S P E L Y K M P ID S T D Y L F L G D Y V DR G S H S L E I I CLLEAALKVVK P Q $P N A Q Y R F L F L G D Y V D R G P R S V E V I L L L L A A L K V E Y P N$  

$\square \mathrm{L}$ N WP M H N N K Y VF LG N L I N R G N Y S L E V ICL L F S L K L L F P K RFGlPSSTN
$H D G V S L T A G S L V F L G D Y V D R G L S S L E V V A Y L F A L K C L E P A$ QLVDEFS IDDKAVMLGDYVDRGPNSSQTIVKVLSLASSEPN




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 $N F F I L R G N H E C A P I N R V Y G F F E E C N R R Y N S T R W L G F Q E A F$ Y $\square$ T T LKGNHEDYQCGKEYEFYDECMFKRGRRWYTLINHVF NFFMLRGNHECAATNRVYGFFEEVIRRYSFRLWAVFQDTF N

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 R T T L R GNHESRQI T QVYGFYDECLRKY GNNVWKYFTDDV
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WF DFQSVF
KFWLIRGNHE $\square$ RS $\square$ QAVFTFQRECADKFGKN $\square W D A \square N R A F$ QVHLLRGNHEDPAINALYGFQAECRRRLREDCWQSFNAAF HIFLLRGNHEEAQTSRMYGFFQECKAKLFSVNCDPFNTVF $M K F V T T P Q H \square Y M L R G A T E F F P F Y \square Q K R F N D V L S A F \square T R \| C$ Q YLLRGNHELPSINI DNGFLTECIKEYGERVWKAANEFF AVNLRGNHESP IMN EGGFLDELCEKLGRKCYKEFEKTF
 (
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K C
DKGGLIDLLWSEPTNKGDEWYHT $\square R R \square S Y M F G K Q \square V A Q F C$ DVW
Q
QDED D G LLWSDPTEQFEGCFVNDRGCGYSFGKD DSENFL NYKILCDLILGDPSFDVETFQKIKGNRGHDFGAKAVDEFI LWSDPDGSLPMSRDYKLLFPVNKNRTKDADRYTSFLDEVL」


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 A D DVLFQMLWNDPNGDAEYFEPNPRGPGIYYYGRAWSSF
K S $\square Y S H R F V V V R S R P L L K R C Q A N N R G L S Y T F G P D V V M E T C$
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UniRef90 A3DNZ4

QNNNLLDS\| $\overbrace{\text { RA }}^{250}$
260

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Y T NNLK LI IR SHEGMDSGYT IDHHGKLITLFSAPDYPDRY RKDERNRQPGGHEVKAEGYEVTHGGKCVTVFSAPNYCDQM AVNDLNLIARAHQLVNEGYKYHFDSQMVTVWSAPNYCYRC

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KNSGCRYI I RAHQSEEMG $\square$ G $\square R$ QKARVVTVFSSSHYCGDK DKNDLS LMM RGHTALFTGHAWCFDRKMLSIFSCPEYTGKS A D L G $\ddagger \mathrm{K} L \mathrm{~L} V \mathrm{R}$ GHQ

DHFHFEY DFRAHQEKSDG $\square K \square S K S A R V F T \square F S T S A Y V G H Q$ DRNGLLSVLRAHEAQLEGYKMHQTN
KNNSLKG\| I R GHE VADGFRLEMNERIITVFSS RYH AVNEFSYVVRAHEAHAEGVGLSKGARVFTVFSTSKDHGQG LNNNFEY FRAHQEKSDGLKGSKSARVFTVFSTSAYVGHE AQGDLSYVVRAHEAHSEGVSLSKGAKVFTVFSTSKDHGQG KK L G I D MLIRGHQ
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K S MDMSMMTNSNNVVREGYRFTLKNQLIT $\square$ TSGTK LQKNY DKHKLKLIVRSH
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EKTGVDLI IRAHQVPEPEYP】RFAGGAGRVFSS NYCNQF

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AK K DE CKMLIRGSS ITPYGYRRFANDKVISTFSSSGFWKN KNNQLKLI I RGHECVQEGYKYSYKRKLLTLFSAKNYCNKY KNNNLDULIRSHQVPKKGDESHHEGKCITLESASNYCNKD KETGCSFIMRAHEAHAYGVNLSKGATVFTVIS

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NEACCILACEG K $\square R F \prod R \square E H S L L P Q L$
NNRAGMLVID KGFKCQFV


 EPYSGTLKL

NNAGA LLVL GRDLT LYPK L I HP $\square \mathrm{P}$
CNDAAVLVI
GNYGGVII FEA NLSFE DQEYMA
GNAAAFALFEKEEIKK
NTGAVMMDD SNLSYYF $\quad$ FF F R

```
    NEAACVLVDNKK\R
GNVASGLIVFDENNMERDVKYFNET
NNSGAY|VLSPPDFTPDFHTFQAVPRPKAHP
GNKGSYIHLRGSDLRPDFHQFTAVVEP
ANMAS VCEVR EDLLKPVFKLLFAAGVP
CYEAA LLLLDFN
ENDAAFVVR|S EDLKKYE|IVLK
NGAGC|LVANGK
D N A A
    A G S AllHVN CS K
SNKGAYLKFFGPQLDT QFVQY\SA
NCAAGLLI
NNASSFALLKKEDELSS\square
NGAGVVLV\AEGK
KMRAG|LIQQENGEFKQVF
NGAAGClL VD
NGAGVVLVADGK
GAMCGClLVNHDKLQQV
R NHGS\VM K
NNRGVVMMMDRHN K\NFKS\Q
KNNASSA|LI ITKKNKN|T|F
NGAGVVLVADNK
S NEGAYACVT G
Y VAA \LLLDFND
SNAAAVVC\D KELGKVSFQQ MAVP\P
NNKGA \(\square\) A \(\\) LE G K
\(N V K \square A T S L Y Y D P K \square H \square S V H C M T P V\)
KNNNAAQTIVYDDSRVEFIRFK
S NYGAVLY \(\square\) S K E
Q N S G A VLK V A E D G
NNNASNAFIVRKNKNUIIF
KNLGAA \(\square \square F N Q D \square T F E V Q E Y M S\)
GGRAGALIVDSDGL
NNKGAY
```



lupas_2
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm
lupas_14
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


lupas_14
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm




```
lupas_21
lupas_14
lupas_28
jnet
conf
l
sols
jhmm
pssm
```



```
lupas_21
lupas_14
lupas_28
jnet
conf
sols
sol0
jhmm
jpssm
```


[^0]:    SESNLDRMIE

