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 SRS R E Y QLL N DSA Q Y Y L D A L D R L V Q Q D Y I P S E Q DV L R S R V K N R S R E Y QL N D T A A Y Y L N A L D R I A R P G Y I P T Q Q D V L

 | $T$ | $R$ | $A$ | $R$ | $E$ | $Y$ | $Q$ | $N$ | $D$ | $S$ | $A$ | $A$ | $Y$ | $Y$ | $L$ | $K$ | $D$ | $L$ | $E$ | $R$ | $I$ | $S$ | $K$ | $P$ | $D$ | $Y$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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 NEENSKLLKQDDYEKVTTFEKPYVDAVKSLWNDSGIQECY QKHMAHLLVEHELSPHDRMPVDYLEPIKALWADSGVRSAV QANVDLI REVDAETVTQLEPDKVVAAHQLWADPGMKECY QSQADYI MTFERYVSTDVDPFQYVPHIKELWKDEGI HTAY QHYAYVLKFGQNMSLDTKLF LEYVNPVVQL WGDEGIKTAF AGHLSLFISYPDDAEDEPFPQTYLEPLKQLWKDEGVQSVY ATNSKLIMDLEEEEFLQFPDM FVAS:EELWDDAGVQQCF
K DAMETKCMECISDEAEQFAQYATTIKRLWQDRGIRRAY
 ADYCVFLVDYQVVTEPPTLNPEVGEAVQALWKDPSMVTDM EKKAQEVRLI DHETVTVFHEPYIGYVDCIWNDSGQQECY SELAKDLVMSIVDYETVTTFEDPEYLNAMKRLWGDAGVQDCF IIEHADLVRSVDYESVTTFEEP YVTAMNSLWQDTGI QHCY
 VEHLSLFVSYPDISEDEPFPSRYLVALKDLWLDAGVQSVY LSRGGMIGSLPSQMEKDYLEPHVVAALRQLWQDPGVRQCF ADDARQLFARSYTAEEQGMLPELSRIITRLWADHGVQVCF EEKAEVLNVITSDPTYDALPAEVIDAFQSLWADQGVKDCY RPNADRGDYRVESSPSFFSEEDAKADHELWQDPVIPKVM QQHGDRVMAFDTRSAEMLVFLQYAKALKALWADTGIQNAY VHHAQ VMGVDAYKVVRLSEPYASAI GEL WRDAGIRTCY RRHVDFLMEYQAEPPEAHIDPEVGVAVRAL WSDPAKDELM RQYADRILEYKDADPMALVSQEILGAMEAVWHDPVIPSVM KRNAELI KD\EAYKVNTLET RSYADRLEYRMDAGLDAVDPS KSYAKKLITVVEANRVSTLEAWQVDAIIRHVWSDRGVRSCM QQNGELVMSFDTKAMETRVFLNYLSAURALWADSGUQNAY KVAAQILREVEE DKTSMLSGQQVEKPKQLWEDPGDQGCS EEHSIGLDRNIDYETVTTMEKSHVEADSLLWSDPGDQECY QAHSALVNDDEVDKDMSLDETQ VKALSSLWSDSGUQECY KEYADFLMDYTVESGPQAHDPQUGLA QSI WGDPAKDQLM EVYATWFQDQDPHKITKLQ ERSYVEAIVRHLWADKG\|K S CY SNIAMALDDGERD ESRL LDDGQQLHFNSTASLDSRLF QSNAKVI QLNADDGELSSELTKALKSLWSDKGVNRAY EHCDFLLDYSQDNAPDGERISSDLCRMI RSLLWSDAGVLECY RAHCDTVMEYVDPDPQQSLDPKVGEAVQGVWDDPAREQLM EQHVSLI LNQKELSSGEKMPRDHLAPLKSLWNDAGVQQTV QMYAKLLQDVNTVQI TRLERRYVDAIRRLWGDPGIRICY EDHGKLVRVHASGCEFIDWGPELRSAVRELWADGGGRKAY KEHMEFLYTFQDPDPNVPLDLHVSKAVAALWDDPAVPSVL NQY $\square \mathrm{SLFNDPPCISKGEPFPDHYLDPLKKLWADTGVQKCY}$ EKNQALLLLDCEISPNDNLPEDHLDP:KALWADEGVQRAV LIADANLI MEYQAESGPQAHDPQVGTALQSLLWADPARERLM EKHAEFVMSFNTQAAEPPhFVQYVQPCVELWKDSGUQSAF RGYAAMLLNVNPGEMST, DKRYADADSSMWRDPSMQECY R D F M D Y L L D Y N D P DP N VA L E L K VGGD A I T Y L WN D P S IDPA V L EKHGDKI MSYESSDKNTVLIFADYVESVKALWADKGIVQDAF KEKADVLRVQENGEESEPLTDEVSKA: QSLWSDPGVKKAF $M D C D P L F S S Y T D L N P G Q P Y P T Q Y L E P L K R L W V D G G V R K A M$ EPHKVFDQNYPPELTRAEFPPDLYESLSLIYQDPGUKQCLD ENDANYAKLIECSNVEDDNFDQWSPYIRRLWQDRG|IRRAY E E DAR QFKSHFLHFNSADLPEEMVKVAKSLWNDEGVKKCF $R P Y$ VEF LQQ Y N ME GCP P GQ S $\square D V G T A D Q A L W N D P A K E Q L M$ AVTKHQQLQKGSTAQWGAKS SFVVR』TKKKFWGQTGSNSC ESDAKK MAF $\square R S G S E D$ LDA DIGQCIKKLWQDAGIITCF

## UniRef90 P38411

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## UniRef90 v912L8

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UniRef90 E5RKD UniRef90_G2QWDO UniRef90_UPI00035094C1 UniRef90-COSGF9 UniRef90-G2Y3B6 UniRef90-K9LM62 UniRef90-U4L5G0 UniRef90-D8Q5J1
UniRef90 Q4SIH3 UniRef90-Q4SQ89 UniRef90_UPIOO044085FE UniRef90-S9PTT3 UniRef90-АоАо34VWX0 UniRef90-G4TBC2 UniRef90-A0A016U4V3 UniRef90-W3XMJ6 UniRef90-V2XID6 UniRef90-S4RP14 4 UniRef90-A9UZQ1 UniRef90-B8P6Z7 UniRef90-X8JPB66 UniRef90 D2JWX1 UniRef90-RTUEA4 UniRef90_12FL99 UniRef90_-2TYP3 UniRef90_U5HJ77 UniRef90-D6WYF8 UniRef90-D3B1Jo UniRef90-H3CWM4 UniRee90-UPI0004417C06 UniRet90_H2LMC3 UniRef90-UPIOOO4447922 UniRef90-V9PCY2 UniRef90-U5HCK4 UniRef90-F2SC24 UniRef90-F6R110 UniRef90-A0A044RU97 UniRef90 W4ZHF6 UniRef90_-F6V2U UniRef90-UPIO00455DC75 UniRef90-K7J8K3 UniRef90-S7Q5W0
UniRef90 BODXH4 UniRef90-D8QKD4


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SPEECALLYRPTYKNLEAKSILGAYRQFDVIEPASTKV FSEEEKKQKDEDIKKNI RDALLTITGAMSTLVPPVQLEKS
 YTKEELALYRПTVYKNLIDSAQAIIFAMKKFRKEPRRPEN FTDEQRRDY ILSSIKQNILNAMQTMVAAMRTLNDEYENKAN FSDEELASFKPAVLDNLLSSMKFJLQGMGILRI NLADPRN FNAKDCDEYKHLVFQNILRSTQALVGAMVDLRI AFENEDL
 YSHEELKNYRPTVFKNLLECAKSVASAMRQFDIEPVLDEN YDTDALSEFRPDIYSNILKGMKVLADARRKRRVEWGDPNN FSEQERKFYARLVHQNIVTCAQSLVGAMETLQVPYSПENN REDFRATI YSNVLKGVRVLVDAREKLHIPWGNPAN YSDSDRLEFRPLIYHNVLKGMKVLVEACRRLQUPFSEPDN FEPELVKEYQHVIYQNVVKGMQVLCDARDKLDICWENPTS FDQQDREEFRATVYSNVIKGVRVLVDAREKLHMLPWGSPDN YTPENCGKYLPVILSNMMSYMITI KAMEGLNLSFEKVSN FTADEVRAYRQQUYQNVISAMRVLLDARQKLGFAWQNPER

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 YSHQLLNMYCAVIYSTTKEMFKSYIKAVSKQQLNLAEPSQ YSVEELTLCRSTVYKNLLDCAKDLIGALHHFDLQPSSPKV YTIDELALYRLTIYKNLIDCAKALVGAMRQMEIEPENPAN YNDEERRYYDPII HDNTLNSACSIIGALGTDSPYDEDKDS YSMDELAMYRLTI YKNLVDCAKALVHALRQFNVEPEGATN FSGDDVKQYKPVVYSNTIQSLAALIRAMDSLGIEFGDKDR YSETDRKGFTSLVLQNLLTAVQALASAMETLHI HYSMEMC YTREELSAYRLTVYRNLLESAQAIVLAMRKLALIDPVLPAN
 YTDEERCDKDPEVYQN HESDYQLVQHMS GLGUQYQSDAS
 YDDEYYKDSKELI WSNVIQSTRVILDAMESLDLPLDNTRLL YSSQEVESYRQLVFDNLTRGMKYVLDAMEEMELKVLEENV YTVEELALLYRLTVYKNLLDCAKALLIGAYHYLQLEPSSPKV FNESDRLAYKPLVYRNI ITSMKRMLDALDDLSLQLADSSL YNKAELMTYRTTIYKNLLESAHNVIDAMRKLGVDPVNPEN FTPQEVESYRQLVFNNVRGAVMLVDALIPVMKLQLSPEN FTKEEKDEKVLQI RKNLRDSULSVLGAMNHLDRKLENYEN YSNEEKESYRELIFANALTSIGVVLDALDSLEIPSGPGDA SNAERHAYREII YSNAVQSMQVVVLADEDLGLPLSSSRN
 YSNEERKEFKPIIYRNILDNMRILLDGMTRIGMNQEAANM FSKQELISFKPAVLDNLLTSMKFVGQMGMLRDNLANRKN FSSQEDEYYRQLVFNNVGHGLYALLEAMDDMDLKVADEHQ FDHKALLEFRDTIFDNI LKGCRVLVDARDKLGTPWQHSEN FGPDERKQKDEDIKKNIRDALLSVVGAMASLNPPVLLENP
FTPSERSAFREVVYTNTIQSMEAVGHGFQQLSFPLELQES FPDDERRQTRAVI YSNMIVAFKLLIEDMEAENISFEHEAT YSHEELAGHDPLIYQNDNFSDKTLATAMLELGIPYELEAN
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QGFVGFLIWDYNDPDPQKPLLDPRVVGEAATYLWNDPCTSTVV ENQWRVDY DQDVASSPDFYPAEFYEHTEGLWKDKGVQAAF AEYRKLFQNVEPLKRGEPYPEEYMEPGKALWADSG|RAAK RAFADKDLDYYVESDPAFQSQETVEAIDSVWHDPIITEML KRNAEUIASYADFDTESCSLETYLLYIKELWQDGGIVQECF TTHAQTVLSCGRCFDEDETLDPFVGHALRCWADPAVRLAA KDSAKRDALLDAAQYKSFR EDAAFLKAFWAD\GVQRCF MKFVPMFNHYVDLEPRQPFP DEYLEPLSGFWVDGGMRKAM KRHLDFL DDYSLDTNPQTIDAKVSVAI QSLWNDPAKEQLM QVYDMILNFQSVQADDTHLFLSYAECVNHLWQDSGTQEVY QUNGRKISEDDAFRIQA VEEPYVKAIKNLWSDTGAQRCY

 VDYVDMIENAADTRDGEPFPTSFMGPLQSLWSDPMVQKAW GQVAEQFMSLAGMLTEGTVTRDDCHLMVKLWNDAGVAECY
 RRHIQLI DNEPPDNTGESFPKVYHEALRSLWEDEGVQTCY AKLAKDLDDTS FKEDSEYPPSFFDAVERLWNDQGVQRVF MAHVPIIKEEKDLLPYEAMPIGYMPAFKALWNDSGLQRALL EEKAVIDRADDYESVTTFEEP YVSYDRDLWNDKGULEVY QNQFRLDYDQDVSSSPDFYPEEFWEHTKRLWVDGGVQACY



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 D NQFRVDYMLNVASQPDFYPAEFYEHTEDLWSDKGVQACY

 D A D A R V V M D F Vik S G N E S E S TP A L TVVA L K NL WA D K GC K D A Y EN D A A Y L Y S S Y M N M T R D H E F T P E L V V QV I

 I NVARDFFTLASSTPEGELNSDLVI LMKSLWQDP R S N S D R I L D Y K IIE NS PA F V F S E V A Q A I H E L WK D P I I P R L M $P Y L D L V D G A R D \| R D G E P F P D S F Y D P L K S L W N D P N V Q K A W$ P HA EMVVEDARDLDRDGEAFPMDF LGGPLKSLLWSDPAVKA A W

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UniRef90 E5RKD1 UniRef90_G2QWD0 UniRef90-UPI00035094C1 UniRef90-C0SGF9 UniRef90-G2Y3B6 UniRef90-K9LM62 UniRef90_U4L5G0 UniRef90-D8Q5J1 UniRef90-Q4SQ89 UniRef90-UPIO0044085FE UniRef90_S9PTT3 UniRef90-A0A034VWX0 UniRef90-G4TBC2 UniRef90-A0A016U4V3 UniRef90-W3XMJ6 UniRef90-V2XID6 UniRef90-S4RPI4 4
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UniRef90-B6K1

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ERQNEFY|LIMDSAPYFFEEAKR\||ASADYDPNQDD\|L\|RARTK

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 RRSREFQQ TTDSTKYYFDSIDRI A E A D Y V P T I Q DVV R RVRVP DSGNEWALPENMNYFFPELDRLFEPSYVPTDLDILHCRGK SRGNEYQLPESANYFDDNVKRISQPDYKPTEQDILLSRGK RRRNEFQLGDSTKYFLDNLLRVGKPEYLPTKQDVLHSRKA
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 RRAREYQLNDSARYYLDEI ERLCDVNYKPTQQDVLYTRVK


 RRAN

 EHQSEFYMMDSAPYFFEEAKRIMASPDYIPNEADVLARARTK D R R R E Y QLT D S T A Y F L E HLLSRI EKT DYQAT DQDI LYARAP


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| UniRef90_T1ELM9 <br> UniRef90-B8C8C6 <br> UniRet90-MPIOOO2659BE8 <br> UniRef90_D6RL95 <br> UniRef90-V2XPY8 <br> UniRef90-K1PGX5 <br> UniRef90-M7BA66 <br> UniRef90-D2V115 UniRef90_A0A016TVZ2 <br> UniRef90-LOATY7 <br> UniRef90-B9HCQ8 |
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 SEDEK QQITPVVYNNTITSMKTLCAETTNMGNDQEVIAK


 Y S E E E C K Q Y K A DVV Y S N TIIQQ S I I A Il l R A M G R L


 FTDDELD QQKSVVYSNTINSMVLLIMKMNTVKVGYSNDQC F NPEEKKQK LIDI RKNVKDAIVTIVVAMSTIIPPVPGAN P
 F K A S E R E G F R I VV F F N I F F T I Q T L L E A L E V V L D L E L T D P D S Y S Q TEELLAFRPLI WK NLLESSSHDVI NGLSKVGMECSNQDN F NMRERTEKDCDI RKNI KES IVVLLLDAMHQLQQPLDECEES FTSEEVESYVPLVRGNVILDCLDLI DGTSRFQIKFDNEEN FSKADLKNVAGTVYSNII QGVATLLKAKDHFYYELSTPELD Y T K D E L M N WRVTVVYRNLI Q S A Q A I V NA L N QF E Y QL Q S EK V FSYDELLLSFKPAVLDNL LGSMKYVLTGMGLLRDNLENPKN
 F D E D E L K S Y D S Vi H A N I Y Q T DK I L Y D G S K E FA Q N D A D S S K


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 YS DAD RADFRTLVFRNI FTAVNALTEAMTSLKIPFERASN F DEAELLRSYTSVVIHANVYQTIK ILYDGAKELAAENEPNSDN
 YS RDEMLLFRMTVYKNVDDSAQTLVLALRRFKLEPTESEN
 Y S D Q E R Y E K V K Di K S N V R DVI L Y 3EDD7DC F UniRef90-G1N315 UniRef90_B0ESC6 UniRef90-M9UWA1 UniRef90_UPI0003AF69EE UniRef90_P34043 UniRef90_A2E157 UniRef90_L9L7T2 UniRef90_G4T8V4 UniRef90_A8Y158 UniRef90_O76747 UniRef90_UPI0003F0887E UniRef90 R7U936 UniRef90_K5XK28
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UniRef90_D2VAE3

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 KDDGKK L SEI GGRLDHPRDTKELAQEI ETGWRDAAVQETY QDYARFI QVI AKKEELGPMTKEIYTAI KHLWADKSVVQVAF QEDGQKLQNLADSDEEGTMPAELSDDIVKLWKDSGVQAAF DNQFRSDY K K SIA A P LS DFYSQEFFDHVKKK WDDEGVVACF
 KNYAS LFI DIPS LDE ENQPFPGIYHEPLKHLWNNESI QIIAF KNNVGVIQAYELQPTDPAFTFDIAKAIKDLWGDAVIPKAMM
 DADAQH L L L A DSSKDAMPFDPLFNABMRRWHDPVVQKTF


 MERAERLAKLP A GGDSFTSQVAQDIAALWADAGIRAAY GNQWRVDWLHQHATQDDFYPQEFYDHVK L WSDKGVQECF EDRAEQVQLWEGENGNP ENRKLRDY L LETASKPDFYPPEFFTYCAKLWKDGGIQETF S NMEHVRYMLEVASAPDFYPDDFFDRVKNLWRDQGVQASY HAEVLEDVDADVDALHAFRDQRLKEAMLGLWKDDGVQQAV EPDAKMVFDDQRMEDTEPFSEELLAAMNRLWAD EADHQHI $\square A L A E S S K D K \square P F V P L Y N A L K R L W H D E T D Q K T F$ QNALDRRLMHYNDNNDGSKFDPEIAFIIIQI WNDPVVTKMM

 ANQFRLDYI KS DAP LSDFYTEDFFEHTQKLWEDDGVKACF
 PESQPSFDYCVNKKHEQEYDDVFFSHVSRLWKDPGVQECY KADAKMVCDVVSRMEDTPFSAELLSAMMRLWGDSGI QECF P F R S VI L N L P P G LR G DE F P Q GVVV H A L L S L WR DP GVVK A A RALADKLLDYETQNNQAYFAPEMAEAI HQLVKDPADPKLI QRAANVL

 EHVALVESAVDLRDGEPFMPEFLEPLRALWADPAVQRAW

 ADDARQLFALSCTAEEG LLPDDLAGVILRLWADNGVQACF





 KVWGSPPNDLETVGANDSFSKEFADAMEGMWADA GVVQKAV A EMVNPH LVPPF SNKE KFVI HQKLVE DVGSDEAFSDLKVRDALREMWDDTGVQKAV HYIDEVVIHARDIRDGEPF PRSYYKPLKSLWLDPNVQKAW

 YNTEEFYAHTRRLWNDKGI QECY ESK D NET R FEKK SK $\square$ S P G GNS WTLLEIA E D I K QL WS D D S I Q N $\square Y$ Q DLA YEDSQMDAFSCE FTEEIAE QLKELWWQ GSI QEAF ENQFRVDY I L S VMNVPDFFPPEFYEHAKA L WEDEGVVAACY


UniRef90-B8C8C6 UniRef90 UPI0002659BE8 UniRef90_D6RL95 UniRef90 K1PGX5 UniRef90_M7BA66 UniRef90_D2V115 UniRef90_A0A016TVZ2 UniRef90_LOATY7 UniRef90_B9HCQ8
UniRef90_U1MFF9 UniRef90_Q4RVS6 UniRef90_Q968S6 UniRef90_UPI000252BAA0 UniRef90-H9H0J8 UniRef90_S2JGM7 UniRef90-R7RW53 UniRef90_K1Q9N8 UniRef90-P91907 UniRef90-S2JTF4 UniRef90-K1QGZ0 UniRef90_M9UW32 UniRef90_T1KZ62
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UniRef90 F8NV18 UniRef90_Q1LW07 UniRef90_B0DR93 UniRef90-P34042
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UniRef90-C5DUW8
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UniRef90_L9L7T2
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UniRef90-G6CRY1
UniRef90-I1BIX4
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UniRef90_G3B5X7
UniRef90_D2VAE3



UniRef90 D6WRY5 UniRef90_UPIO003EBBE64 UniRef90-C4Y2A2 UniRef90_Q8WSU7 UniRef90-FOYL23 UniRef90-FOZDH3 UniRef90-UPI0003871342 UniRef90_Q4VT35 UniRef90-D3BRR4 UniRef90_Q4RT60 UniRef90 UPl0001D55675 UniRef90_I1GJ44
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1
 YSNTIQSIMAIVKAMGNLQDDFADPSR
 F T Q Q E V E L Y R QLVVFN N I I R G A V M L G D A L


 FS DDEIKKSFRD【MQSNVLQCVQLLIVRNLENYDMEVAAELR

 F PEDERME YRRSITANVIDSSIQTLI DMAEVYAEDMPF QKK



 FTEEEVNEKRGIVFNNTVTSMCSILRAMDAVLHIQNSEDE YTEDELET QAKLVFTNDAVEMERLIVKAMPMVNAHFSDPRR

FS P QEFEF YRQQLAFSNTVHGMKQ LLEALEDMELKLSEEM
 Y TP E E CLLQ Y K A VVF S NTLQ S I I A I I R A M G N L R I EF S D M S R
FTEEDKSLLYRQSVLRNIVDLMAKILRACETYRIVHESADQ



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F D HELLEFRNS Y IN I S QLAVLAS AASELNDALLPEHT FDQRAREEFRPTI YSNVIGKGMRVLVDAREKLHIPWGDNSN



S E D D R V S LTT P V V Y A N TI S T DV M V I K K A G
YSEEECKQYKVVVYSNTIQSIIAII RAMGRLKDD GIEK Q Y S EEE RKGFRPLVYQN I FVGSMRAMI EAMERLQI PFSRPES


F DEQERRRGKIADTKKNDRDA\|ITDTGAMSTLTPPDPDADH
 F TSEDFK QYRPVVYSNTIQS LVAILRAMPNLS DAFGNNER FK
 F D E G E L R S Y T S PLI L Y N A l D S L T T R
FTNSDRHHFKNVISDADISDFKLLIDDLR K S S Y S Y Y P YTKTELHERKVLI IQNL CQFSEMLLEYREY ILEMTEDDDK

 Y SETEFMHRKAFTYNNILISTRKLIQRMKDTDTAYENPDT NDKDRRSEIVTI RGNMI DAIIKDLI KFVQSEGLESELPDD
 FSKNEKLEWRPKKNMVQMM
 REEFRATI Y SNVIVKGVRVLVDAREKLHVPWGVPAN

FS QEE $\square$ MS F $\square$ P V I R R N L LD S A K ML I K F VGNE D VP LD P L N $\square$ F D K K A L L D F R D T $\square$ Y E N $\square \mathrm{L}$ K G M R V L V D A R D K L G $\square$ S WQ S G E N FTNFELETFKSVVIDNDYKGVLYMLQARERRLIEBHFRRTRA


FKAEDCLASR
L IE GMRVLVDAREK LH $\square$ P WGDNSN
SAAERKMFKEVIVRTPFXVSALVLAAERGFDLQFLPE

F T HQEVLRYQS T IVGNLIHT TDS L


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| :--- | :---: |
| UniRef90_D6WRY5 | R |
| UniRef90_UPI0003EBBE64 | A |
| UniRef90_C4Y2A2 | S |
| UniRef90_L8X2X5 | E |
| UniRef90_Q8WSU7 | D |
| UniRef90_F0YL23 | G |
| UniRef90_F0ZDH3 | K |
| UniRef90_UPI0003871342 | E |
| UniRef90_Q4VT35 | E |
| UniRef90_D3BRR4 | D |

RHETMAKWVLDNATKQDFYPSQFYEFTKTLWKDTGVQAT A D DARQQLFALDCTAEE GVLPEDLSGVIRRRLWADHXXXXXL S D M N D L L D Y D F A V N T E E I VF S S D 1 D N E D Y IL L S V SVN F K E E E D F NE GFFFD KV LDN W W DD E GVVQQC F GAFDSMI K D D A NERA L L S L E V A E H I K A L WQ E P GI LE T W

 D R S E Y Y A N A N P Y E LiP L A P H M C $\quad$ D



 K GPGKQREAGCKAGPQDS $K E D E Y$ F K D $\square N P$ Y E LDPLE DH $\quad$ MVKSVVATIWKDA GIQQLY





K H H A S L VMSQDPYKVT T F EKRYSVAMQWLWRDAGDRACY F L QF A SEASSQPQF ESMTQYPLKYSKTLDRVWK LTSTQNLI $\begin{array}{rl}Q N D & A R S F F \\ E & D \\ \text { E R Q L }\end{array}$

 K S L D A K A S L M R L L A A DD D P L T E R I CEAEDR T L WN D K S I K E T Y
 A Y D A VQLFALT GPAEK GE $\square T L E L Q G V M K R L W A D S G V Q E C F$ DDSRMLLHLADTDE EGTMPKEMSDI DDRLWKDTGUQACF



 EE EFI QNLLDVDAFDADFSELAAGLHKIWNCDVIQKAY N E A H F QKVVME A

I E CLLN Q I R IF TK K T EN
$\qquad$
acocasec UniRef90_UPIO003C
UniRef90-F4NT28 UniRef90-F4NT28 UniRef90_S4RNY1 UniRef90_S9R3U9
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UniRef90_C6H5T5

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| :---: | :---: |
|  |  |
| UniRef90 ${ }^{\text {C4Y }}$ ( ${ }^{\text {a }}$ | KVQQNFYLTDSTNYFLNNTSRIAQPDY\|PTQEDI |
| UniRef90-L8X | SRANEVALPEN FFGDLPRVFQRDYIPTTQDIIRCRAQ |
| UniRef90-084 | QRSNEYQLTDCAKYFLDKVHDIRNSNYSPSNQDL |
| UniR |  |
| UniRef90-FOZDH3 | NRQREYOSD |
| UniRef90_UPIO00387 | NRQREYQLSDSAKYNLILDL |
|  | RDNTEYFFEN |
|  |  |
|  | DRRREYQLSDSTKYY |
| UniRef90-11G | RRSNEYQLIDCAPYFMENL |
|  |  |
| UniReef90 E5KW | EHRSNYY T D SAA |
| UniRef90-UP1000394 | DRRREYQLSDS |
| UniRet90- UPIO0027 | SYUSHCERITEEGYVPTAQDVLR |
| UniRet90-F4 | E |
|  | QALDSAEYLYNNIDRIAKPDYSPTVDDVL |
| UniRef90- H3E | NVQRIAEPGFRPTEQDILFSRVA |
| UniRef90-H2W3 | LDRIGKEDYVPNS |
| UniRef90-L5KVV3 | GRSREYQ |
| UP10004 | HRGNEAALPDNLLSYFFLHLERVFAKDYYPTEQDIVRCKAR |
|  | Y |
|  | DRRREYQLSDSTKYYLTDTDRTAMPSFVPTQQDVLRVRVP |
| UniRef90-E1FVQ2 | T |
| UniRef90_E3LPG8 | (tal |
| UniRef90-R7UTQ7 | Q ${ }^{\text {N }}$ |
|  |  |
|  | DQRRQYNI RDNTKHFFDSLPRTR\PDYAPNDDDILLLRTK |
| UniRet90_F2QVC | SDRHKFYLMDSAQYF\\|DNSPR |
| (1)-K10TU5 | 1 |
| UniRet90-Q6388 |  |
| E3L |  |
| UniRef90-A0AO16V | RQSSELS EESSKYFLRELPRIRENDYLPSLEDLLKSRVS |
| UniRet90_UP10003C13E1A | NRRSEFQLNMTIUCFYDSLDRIGQLHYVPNKQDPLLARKA |
| Uni | E |
| UniRef90-F7GNJ8 | DRRREFQLGESVKYFLDNLDKLGEPVTRVTQRD |
| UniRef90-U6DP |  |
| ef90 - H2K | MRGNEFQLIDCAQHFLDKI DETRDPSYKPTDEDVLQSRTK |
| W6 | EHRNEFYLLDSASYFFDS DR TSPKYVCSVTDVLRTRKQ |
| UniRet90-B0DUT | L |
| 3F079A5 | GEAARARSRELFLSYLNDLDR\SQNNYIPTQQDVLRTRV |
|  |  |
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ERASEYQLNDSAAYYLNDLDRDTASGYVPNEQDVLHSRVK ERSNEYQLIDCAQYFLDRVHVVKQPDYEPTDQ DRSNEYQLIDCAKYFLDQUKTIRLLKDYSPTDQDLLRCRVL CRSNEYQLNDSAKYSYVHK CQCRYRGTDAD K L R S SYY L GDSAKYF DERAGYTWKKDYCPTDQDLFRSRVR QNRNDVHVFDGAEYFFERLDIIRKNDYDPSEEDLLYCRQK SRGSDLQVPDCARYFMSNLDRLAEVDYVMSKEAMLYARVQ QRSNEYHLEDNTAYYLNDLDRISALEFIPTVEDILRSRDM DRASEFQLNDSAGYYLNDVARLVTPGYVPTEQDVLRSRVK


 YHTSQVVVPDNMDYFFEKYLEI AKEDYVPTDGDLLRVRVR DRRSDYQUVESLKYYFKNILRI SEPGYMNKDQDALLARVR
 RNKTVYNIEDSTDHFIENLARVIGKEYLPTGEDILKTRVP DRRRE P $\square P S N \square M \square Q D T A A Y F \square S N V K E F S K E E Y L P T D Q D I L N L R D P$ HKQGQFYLIDDTEYFMTNLKRTAQPDYIPSTTDVLRTRKK NRAREYQLNDSAKYYLDSLDRI GAESYQPTEQDILRTRVK


 DQRNRFGFSENTRYYLNRLHQIAVPNYIPTKEDIVWSRRP DRASEYQLNDS
DRRREYQLSDSAKYYLTDTDRTAMPSFVPTQQDVLRVRVP DRRREFQLGESVKYFLDNLDKLGEPDYI PSQQDILLARRP GRSNEYHLEDNAAYYLNDLERIAAPDYI PTVEDI LRSRDM KRSNEFQLNDSAAYFLSQUERLASADYIPTEPDILHARRT GRSNEYQLNDS
$\square K G N Q Y A L H D N \square N Y F F Q D \square D R \square F Q K D F \square P T D Q D \square L R T R \square R$ NMRYEAHVFEGATYFFKDLERLRPPDYKPNDTDILYCRQK


| Uni | D6WRY5 |
| :---: | :---: |
| UniRef9 | UPI0003EBBE64 |
| UniRef9 | C4Y2A2 |
| UniRef9 | L8X2X5 |
| UniRef9 | Q8WSU7 |
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| UniRef9 | FOZDH3 |
| UniRef9 | UPIOO03871342 |
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| UniRef9 | D3BRR4 |
| UniRef9 | Q4RT60 |
| UniRef9 | UPI0001D55675 |
| UniRef9 | I1GJ44 |
| UniRef9 | A5DBL4 |
| UniRef9 | E5KWK3 |
| UniRef9 | UPI0003944C55 |
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| UniRef9 | UPI00027F6078 |
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| UniRef9 | V5FUG5 |
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| UniRef9 | H3EWJO |
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| UniRef9 | L5KVV3 |
| UniRef9 | UPI0004407293 |
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| UniRef9 | U1MCB4 |
| UniRef9 | F4QAN7 |
| UniRef9 | F7GNJ8 |
| UniRef9 | U6DR03 |
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| UniRef9 | W6MX30 |
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| UniRef9 | H2NWZO |
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| UniRef9 | H3F0D9 |
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| UniRef9 | C3YEG6 |
| UniRef9 | F6RFS0 |
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| UniRef9 | K4AIF8 |
| UniRef9 | G3PYT9 |
| UniRef9 | V8P279 |
| UniRef9 | A2FOY0 |
| UniRef9 | Q9BIG4 |
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| UniRef9 | W4WFP7 |
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| UniRef9 | T1KVV3 |
| UniRef9 | U6HL77 |
| UniRef9 | U3IQJ3 |
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| UniRef9 | O76748 |
| UniRef9 | G6DC79 |
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UniRef90 D3BRC7 UniRef90 ${ }^{-} \times 2 \mathrm{NHH} 6$ UniRef90-UPIO00455F7FB UniRef90_UPI0003C10E04 UniRef90 A8P489 UniRef90-D3PJW5 UniRef90-M9UW37 UniRef90 M5BZ69 UniRef90_Q45UA7 UniRef90-F4NT27 UniRef90-M2QCX0 UniRef90-C5MA92 UniRef90_UPIo002C64895 UniRef90 S9X9V7 UniRef90 ${ }^{-}$A0A058Z7P0 UniRef90 UPIOO021A5DA7 UniRef90-H3EJE1 UniRef90-F4Q629 UniRef90-G8BY22 UniRef90-H3DXD2 UniRef90 ${ }^{-A 0 A 010 R Q H 5}$ UniRef90 G8YU10 UniRef90-C3UTD8 UniRef90-A2FUR2 UniRef90-T2MC71 UniRef90-B8P2R3 UniRef90-O6CHF1 UniRef90 C4P6P5 UniRef90_UPI00046B9B6B UniRef90-M3HS66 UniRef90-H2APQ5 UniRef90-J9B2F5 UniRef90-V5II25 UniRef90-K9HBD4 UniRet90_H2YUK0 UniRef90-T5ALV6 UniRef90-V9D7F1 UniRergo stouza UniRef90-G4TDW5 UniRefigo-B9FNY5 UniRef90-F1LFF6 UniRef90-G3WK67 UniRef90-Q3ZE61 UniRef90_UPIO00333CEA3 UniRef90 ${ }^{-}$W3WU22 UniRef90- B 5 Y 3 H 7 UniRef90-A0A022USB3 UniRef90 H3E5A9 UniRef90 ${ }^{-1} 6$ PCX2 UniRef90-K7Н3J6 UniRef90 В8РЗТЗ UniRef90-M3X432 UniRef90-×6РСМ0 UniRef90-W6UJ28 UniRef90-X6N3G7 UniRef90-M9UZS5 UniRef90-F4NZN6 UniRef90_UPIO0021A4400 UniRef90 V4SIQ3 UniRef90-F1C770 UniRef90-A5DB45 UniRei90 UPI00046CDBDF UniRef90 BoCz72 UniRef90-K4СМҮ3 UniRef90_H3AON8 UniRef90 A3LQM3 UniRef90-11LJJ8 UniRef90-H3FQ36
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UniRef9O_M5СТА4
 FSDENKTEATKPLYDSVLAQVKALITECRALHYDVSGYSR $\square \mathrm{V}$ A A M S T L A P P VQ LA N P FSKEER $\square R Y K K N D A D N D K D S \| I A L D N K V G E F D T K E E E D S$ $T V L E N V V G S M K Y V L N G M G L L R \square N D E N P K N$

YFEDERKSFRP I LDENTRDA IVTLDTAASENNFEDKSDET
$F V T V V R A N L F G N T H A V A A G M Q K \square G \square D F Q T D E G$
 FDQKALLEFRDTIFDNILKGSRVLVDARDKLGDPWQHSEN YSEEECLQYRTVVYSNTIQFMMVIVKATGNLQIDFADSSR S DLKLYRTCLKRNCAQSMQVLVEQATLWGYDFGED



Y TEQELYEYKPFVYKNTLECTKNVINA! DDLEPDLIDHKD FSERDKREKIPHI RQNDHESIFDIVNAMNTVNPPEKFEQE

EERTLWHA乌TQLNLLRSVHII LDAL YTDSE LYLEKSTI YKNLLDCGRALLEAMEANDFDFVEDKV FDQDAREEFRATIYSNVIKGMRVLVDAREKLHDAWGDQDN FTRDELESYRPII YKNVLDSAQAIVLAMRKIGVEPERYSN
 YSSEELDEYRPFVYKNVLDCVKNVINA I IDLDEPKHULDY
 FSEEEKKQK $\square E D \square K K N \square R D A \square L$ MFHLQQIEYEDPER AVNAAAQWKECFRSLAGS FNEEEKKNK\VD $\quad$ KKNMRDAMVAITTAMGDLEPPVEVDKD MAELDCTFDSYEN FS DAE $\square E D Y R K S \square T S \square A \square K A L V A V L D Y V T D L G N G F V R Q A S$

YTHNELLSFRPTIFRNLVDAMRKLVDALGLAQPAVGALL FDEAELRSYTSVIHANVYQTIK LYEGAKELSQVES

E E RVGH WRAVVQLDNL $\square R S V H T I L A A B$
A G G G MGNDAPPDEDANP
Y S LEECDEFTA LIYGNTDQS LDA VRAMTTLNDQYGDSAH ERAAEVQKVRNSLKEAI ESILVAMSRLQPPLKDAHP SEQDLLDYRIVIMSNMAKCIHALVEQMRDAEVRKDSRYL TEDDLRMYGVVVRSNGVTAMRKL

MHDD $\square$ S PSPVPFP
 M $\mathbb{1}$ A $N L Y T F T K \square L S E A T E K L G E E F T K E D R$

YS D LD K QRARP LIHAFIIEQMQD IDAAEGDNYTFDESV FPEAYRSKFLTEI QRNII QALANI CTFMDAED DPDENSHS FQQRDRKSFRDQI YEQLI DTMKLMITKCEYFEEDTTANQK F E EDQVQEYKTTIYSNIVKGMKVLVDARTKLNDSWQKTSN
 FSEDERRNDKFTILRNLYRYUGILLEGRERFEEEPRLKAF

ARDK $\square G \square S W Q S C E N$

FTSEE $\square \mathrm{QD} \square \mathrm{K} \square \mathrm{M} \square \mathrm{Q}$ S $\mathrm{N} \square \mathrm{Y}$ KY $\square \mathrm{S} \square \mathrm{L}$ LDGRERFECNTESPED

SENERQN SKLVIQSNLYRYGGLILEAREDFEESDCEKTN STGLKQVR LLHDNEWKHEDKTHEK
$\square Q Q \square L Q D \square D E D S S N D N M F L K$
FSAEE $\square$ Q N $\square$ K $\square M \square$ QS NMYKY $\square S \square L L E G R E Q F E \square N Q R F K H F$

FSPEEILNDKLMDQSNVYKYLSTLLEWRECFENQRDMHFA YCDQERQSYNEKI CDNI VDSMLALLALLH DKNDSVKNDTT FSDEEREHDKLLI QSNVVGYIGVLLEGRERFEEESLHELQQ


FNPEEKKQK LLDDRKNVKDA VVT ISAMSTUIPPVPDANP YTEQGRASSTSH ILRTISYSMRT VVAADPDHDVVLPSK LDD ME HLLKI PLGSSEL

UniRef90＿D3BRC7 UniRe990－X6NHH6
UniRet90＿UPIOOO455F7FB UniRef90－UPIO003C10E04 UniRet90＿A8P489 UniRef90－D3PJW5 UniRef90－M9UW37 UniRef90＿M5BZ69 UniRef90＿Q45UA7 UniRef90－F4NT27 UniRef90－M2QCX0 UniRet90＿C5MA92 UniRef90＿UPI0002C64895 UniRef90＿S9X9V7 UniRef90－A0A058Z7P0 UniRef90－UP100021A5DA7 UniRef90－H3EJE1
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UniRef90－V5II25 UniRef90－K9HBD4 UniRef90－H2YUKO UniRef90－T5ALV6
UniRef90 V9D7F1 UniRef90－S7QJZ0 UniRef90－G4TDW5 UniRef90－B9FNY5
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UniRef90＿WOTF76 UniRet90＿G4TJ27 UniRef90 G8YAW7 UniRef90－S7PJHO UniRef90－UPI0004449A4A UniRef90－U1GHN9 UniRef90＿M2QX57
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EA ПCDKTSDMYLLGRKYQHDDKQIIWEDLEALLSKDEAIIKTAIL CQSKTAIRFFDDLPRDVEI NEE\AKYLKIVWADSAIKEAF EHQFR】NY $\square$ SN $\square P K D F D F A A E F Y E H T K T L W Q D E G V K A C Y$ MEDTEPFSDDLLSAMKRLWADSGVLDCF A RCRY円DDMNDV KIHAQTVLSCQRCYDEQTMLPFIANAIKSLWTDRGVQLAA VMALPGQMETDSLPPDVADSLFNLWQDPGVREAV KARDKT TFEHYRDGKDALSDFKLTETIHAVWQDPDIQNVY RMASDLLLKDPADGNDEMDAMYPAAFDAMWADPGVQAAI DDSNEDLDYEYSLDTDEPFNSETADKTKEVYNDPEVRNFI EKHGMFLMAFENRPMEPATFQLYVPALSALWRDSGIVEAF EKHAEIVANFDLLSNETAFDRTMVTAIQSLWDNPAIKKAF MLEEVTARNQDTDPFTPQLQAAMKRLWDDPGVQYCF EDVRTVLDVVKNGKE KDVDYYKNINP KEYSYELRCHNKMAELEQFPEHLVNILTKLSQDPSTKDLY EDHGEKMRTMDDHPDPHEVFQETSKAIERVYASAPTQFVT MAHTLVEHEINAQDPLPRDYLQPVKELWVDGGVKQA GAPARQLDYDLSLSSEESFSPDIAQKIKYIYKQPEVQSFM DTATSADYYLKGPKEPDVYTDEYFDHVDTAWRDEGVKNTF NEVDLLQNI EIS S DTELTPDVAQAIAKVWSEPSAKIIY ANQWRI DWLHDNATVDDNYPEEFYNHVEVLWKDKGVQECF GCGPGVGGGRELDEEEAQLLVACRADLMALWRDNTARTVLL NEAEHPVYTGGRGGVEQFQSPELVDALDALWKTAVVQEKL RPLFAWTVFQLSPQP
DS पNETLDYEYSMDQT TNFDPSTAAKTKETYNTPEVKDFM NKEEIDNFMKLEGFDPQQFPEIYLNLLTNLWKSQNTQKFL MRDSQLVFATVHTKKEELVE ELSAAMQRLWADGGVRECY
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GGGEEAGAGAGAADEPQSADWACRKDLMALWGSQRVREVL EPFTDEVANAIVSLWNDKGVRKAY ENQFRTDYDLDANQDDFFPPEFYEHTKTLWQDEGVKACY QDDARKLMHMADTDEEGTMPKEMSDПIDRLWKDSGI ENQFRVDYILGASDKLSFFPPEFFEHAEVLWEDEGVRSCY WA YVELDEEYLIPDHGUNTWPERFYEALQTIVSDSLVSDLI【AHF TQSSEADVECDEAFTD TKVREAVKTMWEDAGVQKAV PDFDYPQIFYDHVLQCWTDKGVIACF DCQVNTNDQNDDANMPPTRLEALGNSVSSLWLLPALQQTY EKAEILLQDLEVLNKSEFLNQDVAERLKLFWNDNGVQKAY NWDDPQDPGRIDYACGEDMIRLWNDET：K ALL
WPLDDEDFADPQKSEDTTETAK ILKTLWSNETIKKAF EEMVDLQRARYTVDADSETTDKFFGMCASLWSDRAVRATQ FELGQSSQTSADTRNNSPMTSELAKHLDALWKDPAI QQAF EAQGQLIYAYDNNVRLDEQFQKF｜PALENLWQDMG｜VKAY EEKAEVLNVITSLPTYDALPAEVIDAFQSL WADQGVKDCY SDRLLKVMASNLEAMFPYGTSEYAPFTEELWRDPSFQSTY EKQGMLVMSWEGRVVEPSEFQLYVMALSALWADAGMREAY
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MNWEDADDPGRILHACSEDMIDRLWEDPMTKK F SKC【YT $\square N Q R D \square D A F F P A A T R E Y A P L V E E V W K D P A D Q E T Y$ PNSTYSREQDADAПHKLWTDPGI HNCY GQHFDESTSSAFSEWFPAAAREYAPLVEELWRDAAIIQATY RNYE円LKGIIKQGRAMDSPANETDRAIKDLWEDEVIKKAY ER DQQQWQEQQLRQQQHISNQDUAHAMDQLWNDRGIKORL SDWLLDTMAWNDPDDPGRIIHACREDMIML WNDPVIHDVL



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 REYDDLGNSDNCVHFFNSIDKIAEQNYDPSDQDL
 ERRREFQLVCLHFDN
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NRRNELDSDPRVASYFLEVVVISQPDYEPSDMDLLYA ARRSEFQLSESVKYFLDNLDRIGQLNFDPSKQDILFARKA DRSNEFQLETSVVYYFNNIYNFADPNYQCNDQDVLNGRVK E
 ERSNEFQFEASAEYYFENVYKFADPDYYCTDTDILKGRUK KRIUETKYPRSASYFLERAVETSRTDYEPLDMDILYA EYRNKLQWSDNVSYYLNDLDRUTSANYQPTDMDFVLSRKP ARSNEFQLEGSAPYYEDSUMKFADPQYVCTDEDALRGRVK NRAHELGLEASTRYYFENTQKFADPDY CSSDTDGKGRTK L RSQGTRLEDMPGFF DSLERVTHPKYVPSDEDILRARLK KEAGLLMEDTSGFFLNDLERIASPGYTPTDDDILRSRVK K KKNELHFLPDVASYFLDVVEISSNEYEPTETDILYA Y STTTHQDTAPYFLLADPVKFTSLSYKPTDTDHLNTRDP KRRSELEMLHDMSCYFLEAVD LKTDYEPSDVDILYA EHRNMICVPDSSSYFFDETDKI ALLSDYGPDASDILLVRYR REKRLRLEESSGFYLNETPRLTALRYFPTDQDVLKARLK LQAQGURLEDQPGFFLDSLERVTSPRYVPSDDDILRARLK HRSSEFQLEGSASYYFDNIEKFARVDYVCDDMDULKGRIK DRSNEFQLESSATYYFQNULKFADPNYLCTDLDULNGRIJ ERSNEYQLDCAQYFM
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| UniRe | D3BRC7 |  |
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 FTDDERRDRDPEI YQNIHDS@HQLVLQMGLLGLDDGSCTS E QRMHGLA I R R N TI Q S MQA L LA TMVLLGI P LE GEAA S T ILK QVR IL H D
 F S E DERQS DK LMM QSNLYGYF GDLLE GQERFESQQD GQT K FPPNERRLFHDQILQNVAMGLVHLIEHMERMGLQFETPEV



Y T K DE LS $\square Y$ K P Y MR L N LT Q $\square$ A K D M $\square$ T F T Q T REKE $\square Y$ T S T $\square$ VA Q NVFE CSRAVGCHNDED FNGDEKATKVQDIKNNLKEA IETIVAAMSNLVPPVELANP

FSENE LQQN $\quad$ K S VI Q S N L FT Y L G I L L E G R A HFEEE S L L E N R F D K K A L LD FRDTI YEN L LK GMRVLVDARDKLGDT WQSCEN


## WRDS LGEHSRGRLG

F T VDEVQN $\square$ K LT $\square$ QR N $\square$ Y R Y L S VLLE GRE H FEN QR VK H F S
F T S S QKEHYR QQVFMN $\square$ CEGMR LCLEEVMSKEE $\square E L E N A D L$


Y S E E E G WLCRADVIY SHTLQA IMAMVK ATGNDQTDFANPF H

 FS P E E MQN MKLMMIQS SLLYRYLS TLLE GREHFEDQKHNECV
 $F T D D E \square L Q Q K R V V Y N N T V T A M H Q L I K A M Q Q Y Q \square K Y S S P E R$
 Y T T E QL RLLFRP I LGTVLESVQGLLAKKLLVSEATRGDA】Q

F T A E D LQ D $\square$ K LM $\square$ Q S N MYKY LS $\square L L D G R E R F E E E A S W M C \square$ F T P Q E L Q S $\square$ K L M $\square$ Q S N M Y K Y L S L L L E G R E R F E E D Q S K P C $\square$ F T P K E L Q D $\square$ K L M I Q S N M Y R Y L S ILL E GRERFEEE P GENC DEQTRKEYTPNITGNDVTAMNTFIKVAPSYE DEFSEEEN

$N V I E A M R T L A D N S E V L A N K G E D T R V$ F S E E ERQNDKMMDQSHLYGY LG ILLEGGREQFEEQSLIRRK YSHAE LLMFRPTI YRNL LESAEAAVLAMRKDDDQPAMEAN F S REEILNLLKLMIQSNVYRYLSTLLVERECFEDEALEEGR

F S E VE K R Q K $\square E D \square K$ K N $\square$ R D A $\square \mathrm{L}$ T $\square \mathrm{T}$ S A M N T LTP P P VT LE D P



$G \square K R \square H E A L E N G \square H A L S S R G S$
Y T L S QKRYVAS LIRTFVIHQMDDJLEQHPTEYYTYQFDED F S Q E E L E NIM LMM Q S NMY K Y L S I L L E GRERF E N GRELK Q F S




YKETERKACRFQULKNIRESVMA IIAFLNFDGSMDDFSHLL F SEDERER IKFII QTNLYAYLAMVLEAHERFEVEMNNNHF



F SAEELQQNIKLMI QSSMYKYLSILLEGREGEETGHETAAD FS GDERQNLKFMLQSRLYSYLGILLEGREWFEEQLDSKTT ERSADY L S L L P G GHYAYI RTI DAVKKHSA


 QDLS REFRKKHPRSSFDVYN PEVVDDMHTVWADPAMQDCF

D $\square$ D DETTVVLA
DMLNEILDYDYPLNLNQQFDPDIADKIKKVYETPEVKEF E Y HV Q TI F M QPA Q I E G DVLDP P E V G N A I E A L WS D A GVVQS C F ENKLRVDY ILGGRDEPSFFPPEFFEHAKALWKDEGLRSCY
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 YSLNPRLKHFSDWAFFPAATREYAPLVEFVWKDPA I RETY Y Y Q V R Q S K Q S Y T R K E I A E A I H N L WK D S Gl R R C F
 A HTGEIEGGWWEDPD DPVHALHACAPAMLELWRDP RVRRR
 MRFVPMFNHYVDLEPR WWEDPGDP
A HES GK $\square E$ MMQEVDE L
Y D P D D P V H I L H

 E K V L V K L F A Y E S G K DE LM Q E VD E L NV I N A V S G Y E C I K Q F F Y SIINQRLKHFSDWAFFPAATREYAPVVIEAWKHPAI QETY CMD WDSRD DPGRDFA A CVEDLDA LVEDEVVQTASL Y D $\square G Y Q \square L K F$ E N EA DA M M KVVNQFPREYYVT LYKI WHLPETK QLI Y S I G $\operatorname{P}$ R R L K A F T F L E DVL DCGK QD LDLDNGFEP WVVQLLRTIDEHAATKA L NRNGRILLGDTPDTCDVVTEIIASCKDDMKALWQDDAVQTAL

YS I N P R $\square$ K HFSDWAFFP ERAVEKMEDADDEDAAEVIDA

IDLTE DPNDPG
YS $\square$ NQRFKHFSDWAFF PAILNACADDMILLWNHP

 DGTND
 RHVIDQQCSSSDNETDFPASTREYAPGDVEELWNDAAFQATY RTNDR】EVWCSRMRSEGWWGGERGARGALMWMD
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ET QDEP QEVVNMCRRRDMIA L WN D E G GV R E V L
S N Q S R VD Y VLE VS S S P DFYPP EFYE IVESLWKDRGVQQS F D R D DP TA VLAA A CK DDI VA L WE DP V VR A V
EK S L L E Q F S R H S HE DE DMEEK S E L Q L L N D F L K L E C V Q C F L







 EKVLLLKLFA F E S Q K DE M M Q E V D E L R L I N S I R V L E C I S V F F


N WWE DP D DPVHT $\square$ N RYA PY Y A K L WRD E RVKRR MWQK F DS QT NE NL WVD E GCK D A Y K K S IQQVVS E H LIKQQEPPDNDS A NCAVVEDEMLWWDPK LQE Y L S D WLL L KEKEE GNLK IFPASSRENAQTIADLWRVPAI HATY S EMADLLVMS DD YETVT T F E D P Y L N A I K T L W D D A GI H
 Y S $\square$ NGKLKQFS DWAFFPAATREYAP LVDEMWKDPAI QETY
 ENK $\square$ S Y S $\square$ NQRFKHFS D WT R Y A $\square G P$ R L K S F A D WA $\square F P$ A A T

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KKHNTPFKVHS FLNDAARTATLTYEPTDDDIVRARपR RRRKLRTLYACVRSFLNDTERVTSLKYTPTEDDVLKARLK KRRNELHYLPDI AEYFSKAIEVSSNEYEPSEKDILYA
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KRREELHNDPDVAKYFLDADEISSNEYEPSDKDILYA


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| UniRef90 | K5VLV0 |  |

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[^1]
 ПKNUF LNILTATSTFVRVAPSYNUEFSEEEN
YTVSQLCDFRP\|ILGAVFESVQY【AKKLLVDEATREDPGR FQEREKDRSKQLTRQTMVSMMTALLQTSVTLHNDDPSEVA FDEAELKSY DSUVHANVYQT $\mathbb{K V L Y D G S K E L A Q N E T D S M K ~}$

VRQNLVEFMAKLLLKSQTFYEMDKERYA
SNVKRGFME!IENMSQLQPPVANSEN FEQKELERYKEMTQTYTYKYYLVLLVNACADFGIDH ADDTVQ Y S LEECLEFIACIYGNTLQSILAIDDARK
FPPEERRKYHDQUMQNVATGLVQLMEHMERMGLKFDSPDT FSEDEREN $\square \mathrm{K} \square \mathrm{T} \square \mathrm{QTNVYAY} \mathrm{\square G} \mathrm{\square LFEG} \mathrm{\square GN} \mathrm{\square KKSHSDKT} \mathrm{\square}$

FDNYELENपKNVRDNLLTAANSLRKVRETDEEHMRSSR YNENDGKGFVQVIRENVLHNMRWVIEGSEDLAUDFDFADK FPEVERQDTK VMDQTSMYNY GGMLEGREDEEEESGAERK FPEDERER IKVVI QTNLYGYLAMVLEAHEEEMNNTGGDHF

UniRef90 K3XV97 UniRef90-UPI000440801D UniRef90-F8NGF3 UniRef90_X6N404 UniRef90 Q54VG1 UniRef90-D2VU62 UniRef90-F9FZL9 UniRef90 X6N5X8 UniRef90-X6NUN9 UniRef90-V4UUE2 UniRef90- X6M4P5
UniRef90 X6LZ2s
UniRef90-E6ZSGG0
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UniRef90_M4D4W9


SNS CUY S DNAKKFS D WLLLDII A RVACKDDIVSLWANESI QATLL EFDQSCQYLLEDHGSRSALTEQLVTHVKSLWNEPAIQAMF
 ASLKDVLLGDKDELDLDNGFEPWVVQL FRTIMEHPATKAL FHQDDFEREDDEEEVDNTSLENLGTAMESLWKMSLVKTTF
 CNYQKYA DNEGQQKNSEDLAR GEAVTYLWKDPPDKA QDHMIYVQNHAANASDFSYSOEF EDVNRFEDFKKKLRDPEVIPVVIGRCMDRVWHSSSLQECY Y S MDTRLKNLADWFYFPAAT REYAASVEELWRDPAI QATF LVHMADTIEEGTMPKEMSDIIQRLWQDSGIQACF LSETSTWTPFKEA

K E L WK S KE TQYQF YS $\square$ GTR $\square K$ AFSDWA $\square F P A A T R E Y A P L I E E L W D D A A I K A A Y$ SATPANVVSKNI KILWKDPVVQNAL CS Q DY E A E V D DY D $\quad$ S N Q I E DE Y GA Y I I E E L VSEMDGVESLYTVSGNCKVSKEFCEFFVKKMNDEGIQESF



MGDLYAFFPAATREYAPVADEVVSNEYEPSEKDVI|YA DDR RKLRLQESAEHFLS GLDRVSAADYTPSTDDILRVRLQ KTRS AALEEQSGAFFLPDAGRVAAHDYMPTTNDILRARLP EHRNKIGIPDSSAFFFND\ERIGRSDYTPDHKDIVLARYR NNTNRFQLNDSTEYLMSNIDRYSKP FKPTQNDFLRVRVK MNATDFNFHENVVYFMKNI NRDFKEDYKPTEDDYFKMRVQ MTDETFVVPENVDYQLNQUERUVQDDYQPTDSDADSCTTP HHNTKHFSSSNHMSLQSKLNE: SQPDYLPSEKDVLMLRQP TQKSKWYFQDNLDYFFSKAKTIMHCDYVPDNDDILR\|R E YRA LY Q LPD DVAYF LDK DRE

 RENRRLRLEEWAEYFLSNIDRVSSQDYMPTMDDULIARLQ RVSSSEFGCIDCAKYFLLDRVEVVKQVDYVPTVQDFMRC
 ERASDERP
DDEAE E DCPE DSVCFDQH VGRDCSADYVAS DQD MMY CWP W W NTRKYFHLHDSTPYFLNNIDYYLNEDFLPTEQDVLRIRTK ERRNEDELLPSVASYFLEAVEILRTDYEPSDLDILYA
 EMRARFATPDSCKHFFDDIDRI GRENYDPTIQQVFLK
 KRRNEFRVYDN AKAQQYHFHESTTYY LNEVKR GGKAGYSPSSLDWLKSRSQ A K A Q Q Y H F H E S T T Y Y L
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm




[^0]:    
    

[^1]:    lupas 21
    lupas_14
    lupas_28
    jnet conf sol25 sol5
    sol0

    ## solo

    jhmm
    jpssm

