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 NHWLFKSEPFKFSLDDLKTKGEKGEEWDGVRNYAARNNM Y WL F K S EPATWSWA DQKAKGDAGEEWDGVRNYQARNFM Y WLL F K S EPNTWSWDQQVAAK GEAGEEWDGVRNYQARNNM YWL FKSEPDVFGWDDLIAKGDAGEEWDGVRNYQARNMM R Y WL FK S E P SVWS WD MQVAKGDAGEEWDGVRNYQARNFM Y WL LK SEP DAFSWDDLTEKGKA GEPWTGGVRNYTARNHM RYWL FKSEPEAWSWNDQVAKGDSGEEWDGVRNYQARNFM RYWLFKSEPSTWSWQDQLAKGDAGEEWDGVRNYQARNFM FWLFKSEPSVWSWDDQVAKGBAGEEWDGVRNYQARNFM
 Y WL F K SEPFKWSWDMQKAKGSEGEQWDGIRNYQARNNM WL F K S E P DVW GWDA QVAK GEA GEEWD GVVRNYQARNNM RYWLFKSEPDTWSWDQQQVAKGDAGEEWHGVRNYQARNNM RYWLFKSEPFKWSFDHQKKAGDKGQEWDGVRNYQARNFM QYWL FKSEPNKWSWDQQKAKGEEGEEWDGVRNYQARNFM RYWLMKSEPDEF GWDHQQA L G P A GGA WS GV R NYQARNNM KWL F S E P SAWSWEDQVAKGDAGEEWTGVRNYQARNFM Y WL F K SEPSTWGWDDQVAKGRTGEEWDGVRNYQARNFM RYWLMKSEPSEFS $\square$ DD L EKKRPHQTEHWDGVRNYQARNMM R H WL F K S E P S V W W W S D QVAAK G D A GEE E WN GV R NY Q A R N F M

 Q Y WL MK SEPDTFS $\square$ D D L CRRRPGGTEHWDGVRNYQARNMM FWLFKSEPFKWSFDQQKACGPAGTEWTGVRNYQARNFM Y WLLFKS E P D S A W W S W W Q Q Y WL F K S E P DVV S WED L RKK GK S GEEWD GVVRNY QARNNN
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 S S Y WL MK SEPVKF S IEDLK AEPKQTACWDGVRNYQARNF L NYWLMKSEPEAFGIDDLQQMPEQTEHWDGVRNYQARNMM Y WL VK S E P S A WS WD D QVK A GK K G E P WT GVVRNHAAAK L L N Y WL FKSEPETWSWEDQVAKGDVGEEWDGVRNYQARNFM Y WLVK SEPDAFSWDEQVAKG VVE WTGVRNHTAKQNL Y W L F K S EPETWGWD DQVVKKNGPEEWGGVRNYQARNNM Y WL F K S EP T S WS WEMQKKK GAQGQEWDGVRNYQARNNM HWLYKSEPASWSWEQQKAAGEKGTEWTGVRNYLARNNM RYWLMKSEPECFSLEDLVNAPEQTTPWDGVRNYQARNFM
 Y WLVK S E P F VWS WD QQVKK G DE GWNGVRNY QAAN NL NYWL FKSEPSTFSFEMLKEKGKAGTQWDGVRNYQARNNM Y WL F K S E P D A WS WD K QVAK G D $\square$ GE E WD G V N Y WL M K S E P G N F S LD D L QRRR A Q DE P WD GV R NY Q A R N F M Y WL MK S EPD T F S L D DL R K R P K GTE HWDGVRNYQARNMM A N Y WLVK SEPGCYSI DTLENEPEQDTSWDGVRNYQARNFM $\begin{array}{lllllllllllllllllllll}Y & W & M & K & S & E & D & D & V & G & I & D & D & L & A & A & P & D & Q & D & H\end{array}$ S NYWLMKTEPEKFSDE DLKAEPEQTACWDGVRNYQARNF L Y WL LK SEPS QWS WEMQQSRGDTGEEWSGVRNYQARNNM Q Y WL MK SEPDTF G IDDDLAARPKATEHWDGVRNYQARNMM QYWLMKSEPEAFSI DDLA GRPKQTEHWDGVRNYQARNMM
SR Y W W L
Y $W$ F K S S
F K S NYWL FKS E


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 $\begin{array}{ll}R D M A V G D L G F F Y H S Q K E K S V V G U V E V V C A A A H P D S T T & D D E \\ R E M R V G D R G F F Y H S Q K E K A V V G T V E V D A E S H P D S T A ~ D D A ~\end{array}$ RAMKLGEKGFFYHSNEGLEVVGIVEVSALIHPDTTT RAMKLGEKGFFYHSRTGLEVVGIVVVCAEAHPDSTTDDD RAMQI GDQGFFYHSNDGKAVVGIVEVCRDSAPDSTT DDP REMKVGDRGFFYHSNEGKAVVGIVEVDAEAHPDSTAKDG RDMKI GDRGFFYHSNDGKEVVGIVEVCADAHPDSTT DDP RAMSVGDLVFFYHSNIGKEIVGIMRVDAPAAQDPTT DDP REMALGDRGFFYHSLKEKAVVGAVEVSAESHPDSSTDDD RDMKVGDLAFFYHSNCDPGIVGIMRIAREAYPDFTAPDDP
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90
100
110
120
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 R WE C V D I RWE CVVDLRA I R DLLPK P Y S L E T A K A E P R L E G M ALLV G N S R L S

$R$ WDCVDVRAVRPLARPVPLAEIRADPALAQMVLVRHSRLS



K WE C V
RWDCVVI RALTPLVRHVTLDEDKSDPALGEMVLVRNARLS




R WE CVVDI R A V C D M P K P V T L K DVVKA N P K L A E M S L V T S M R L S


## \section*{R} <br> R

R WE C V $V$ D $I \quad K A$

R

$V$ VAL





R W E C V D D $\quad$ K A V
K WE CVVDI RAVVEMPRPVTGAEVKDTPELKEMSLVTSMRLS
R WE CVVNIK K V R A F E V P P V S L D Q I K P D P R L A E MVVLVK N S R L S

K WS MV DVGFVRGMKRYITLTELKANHQLKNMALETHPRLS
RWF MV DI R Y V R HLLKR P I A L K E L K E Y P QL D G M QI L R G N R L S

R W D C V V D I K A L



R WF MV DVVK Y I R T F S S P L P L A Y L K T V P E L Q D M A L L R G N R L S


R WE CVDVRAVKDVPNPPTLDEIKANEKLSKMVLVNNSRLS
R WE CVV DI K A V K A V P K P V T L Q MV K D D P R L A E M F L V R N S R L S

R WY MVV DVRFERKFKRLI P L A ELLKAEPALGEMTLVKGSRLS







R W






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



R W I R V D V K Y V R T L A R T I T L Q

P WE CVV T I A A RE T L D A P V T L A Q I K D T P D L A E MVLLVMK N S R L S
R WMLLV EVVK F VK K L K R T I S L K E L Q A D P A L M D MPLLV R G N R L S
RWECVVDI R A L Y KL GREVVSLDEIVKSEPRLLSQMVLVNNSRLS
K WE CVVDVA A V A PV P K P V T L D All K A N P KLLA E MVLVVN S R L S
R W Y M V D V Q L E E R K F S S H P V T L P E M K V V H P E L A A E F R L L K G N R L S

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Y WL MKSEPDVYG DDHLAAEPDGTEHWDGI RNYQVRNLF HWLFKSEPKTWSWDQQVAA GAKGTFWNGVRNHQAKKQL S Y WLFKSEPTNFSFDDLRTCPNSTEHWDGVRNYQARNYL NYWLLKSEPTSYS DDDQFREKNKDTRWDGVRNYQARNFM QYWLVKSEPDAFSWDEQVA NDVEPWTGVRNHQAKKNL YWLVKSEPDAWSWDQQVKEGAKGTPWTGVRNHSAKLNL K Y WLVK S EPDVVS DDDLAK S K NQTTYWDGVRNYQARNYM
 Y WL FK SEPSTWW WD DQKKK GAKGEPWNGVRNYQANNNM RYWLIK S EPDVFSYDDLTTRAPKQTTCWDSVRNSSARNFM



HWLYKSEPSVWSWDRQVAEGGKGTHWNGVRNHVAKQNL
Y WL MK S E P DVF S F T DLTTNKP IIE EWHSVRNYTARNNM NYWLVKSEPDKY GWHHFTEQGRAV WDGVRNYQARNNLL
H WLVKKSEPDAFSWQQQQVENG V E P WTGGVRNAQAAANHL
 Y WL I K S E P D AF S WA E QVVENGGKIAAPWE GV R N Y Q A R N Y
FWLIVKSEPES FS WER QVA HG T E P WT GVVRNYARNNL
YWL FKSEPGAWSWDDQVAKGDVGEGWNGVRNYQAANNM
HWLMKSEPFKYSWDQLVKDGR THWDGVRNYQAANNLD
 Y WLI K T EP GSWSWQDQVEK GN E HWNGVRNYQASNYM
 S Y WVMK S E P S V Y G D DLAAA QP S Q TADHWE GV R N Y Q A R N M L H WL Y K S E P F K WS WD QQVKAGAK GTG
 NYWL FKSEPGCYSWQDLEAAPGQTTSWDGVRNYQARNFM QYWLMKSEPDTFS IDDDLFNRKGKKEHWDGVRNYQARNFM N Y WL V K S E P D K Y G W S HFTAAQ GRADV WD GV R N Y Q A R N N L

H WL LK SEPSSSWSWDQQVKA GAKGTFWNGVRNHSAALDNL
HWLIKKSEPNKWSWDDQVKAAREGTEWNGVRNHLAK QHLL

S H WL MK S E P
Y WL F K T N Y WL MK S E WL F K S E Q Y WL FK T E QTARWDE R R Y RARNSL
$Y$ WL MK S E P E VF G DIE HLVVARPE QTE P WD GVVRNYQARNMM RYWLFKSEPGCFSFQDLQARPNATEQWDGVRNFQARNFL NYWLVKSEPFKYSWDQFVKDGRTF WDGVRNYGARNNL
 QY WL $V$ SEPEA Y S ARLLVE GR Q Y W VK S QYWL LKS E NYWLI KSE K Y WL MK T
N Y WL L K S E
HWLLKSE RYWL MKS E Q Y WL MK T E
 NYWL FKTEPDAFS DDDLKTAPQQTTGWEGVRNYQARNFM $\begin{array}{ll}W & W \\ N\end{array}$
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UniRef9o-j2wwde

RDMKVGDGVLT ${ }^{50}$ YHSNCDPG|VVGII AEI AREAYPDFTAFDP ${ }^{80}$ REMKLGDRVFFYHSNTGLEVVGVCEVCELSKPDPTTDDA RDMRLGDQVLFYHSNCKPGIVGIAGVLELGYPDFTAFDPP RAMRLGDGLLFYHSVTDPGVVGLAEVAREAYPDATAPDKP KSMKLGDQCFFYHSVKEKQVVGIVEVDKEYYPDHTDP KE RAMKVGERGFFYHSVNEKAVVGIVEVSAEAHADSTDKTG
 KGMEKGDLVLFYHSNEGLAVVGI AKVAKAHYQDPTTPDP RDMKVGDKGFFYHSNKGLEVVGIVEVSAESAQDQTT DDE REMKKGDLLLFYHSNEGKEVVGI AKIVKEAYQDPTT DDA RDMKVGDQVFDYHSSCEPGVAGI AEVCREAYPDPSSFDNP RAMRVGDGGFFYHSGQQPAIVGLVEVVRAAYPDATTPEKP
RTMKLGEKAFFYHSNCEPGIVGLVKIVKEAYPDHTQFDNP
 RDMQVGDVILFYHSNCVPGUAGLATVASSAYPDHTQFDNP KAMKLGDRCFFYHSVNEKRAVGIVEVVREAYPDPTADDP
 RQMKKGDEVFFYHSNCEPG VGLMTIAKEGYPDKSDPDNP MKMKKGDRAFFYHSNEGKEVVGIVEIAKEHYPDPSDKTG RDMKVGDRAFFYHSNEGLEVVGIVEVSAESAPDSTD DDE KAMKTGDRAFFYHSNEGKEIVGGVEIVREYYPDPSDE KG KAMKDGDQAFFYHSNEGLEIVGIVEVVREYYPDPSDE SG RTMKKGDLVVFYHSNEGTEIVGI AKVIKEAYQDPTTTEEA RRFQPGDQAFFYHSNTKPGIVGIMEVVSEAYPDHTAFDPP MAMQTGERGFFYHSNEDKAVVGVVEVIKTYYPDHTDESG RDVQVGDQVLFYHSNAVPAIVGI AEVVRAGYPDWTARDPP KAMKVGDLAFFYHSVNEKRIVGIVRVVKEYYPDHTDESG RDMKKGDLAFFYHSNCEPGVGVVEVVRESYPDKSTPDNP AAMKKGDLAFFYHSNEGREIVGVVEIVARAYPDPSAEAGP MKMKKGDQAFFYHSNDGKEIVGIVEVVREHYPDPTDKTE RDMKKGDKVIFYHSNTKPAAVGI CEVVKEGYPDFTAFDNP RDVKVGDLVLFYHSNPQPADVGLATVVREGYPDTTALDNP RDMQRGDLIFYYHSNADPAVVGIVEIVREGYPDHTAPDTP QAMQVGERGFFYHSNEGKAVVGUVEVIKPYYPDHTDESSG RDMRPGDRVFFYHSNCVPGIVGGAEVATDAYPDPSQFDPP
RDMKVGDQVLFYHNNGNGVGVAEVASSAYPDPSAFDNP RDMKVGDQULFYHSNTNPGVVGVAEVASSAYPDPSAFDNP
RDMQVGDKVFIYHSSCKPAUVGIGEVTRGPYADPTQFDSP
 KAMKKGEKAFFYHSNDGKEIVGIMTIVNEAHPDSTAEENG QAMR GDQVLFYHSVTGMAVVGLAQVVREAYPDPTVPDDP RSMAVGDRAFFYHSNVGKEIVGVVEVARTAYPDPTDETG RQVKKKDLVLFYHSSTKPAIVGLAEIVKDGYPDHFAFDPP AAMQVGDRAFFHSNDGRE AAMRPGDRAFFYHSVSEKR KAMVVGDRGFFYHSVDEKRMV KAMKVGDLAFFYHSNEGVE GG VEVIETHPDPTDE SG RQMRLGDRVFFYHSNVKPQ AGI AQVVREAYPDSFAFDSP AAMKKGDRAFFYHSNVGREIVGVVEIVKEAYPDPSAESGS KAMKVGDRAFFYHSVKEKSI VGIVEI SREYYPDHTDE SG
 QAMKLGDQGFFYHSNEGKEIVGUVEVIREFYPDPSDATG RDVQEGDGVLFYHSACKPAIVGTASVARGAYPDPAQFDPP
RQMKVGHRCFFYHSNCKPA VGGVVVKGGYD KAMKKGDRCFFYHSNCKPAAVGVVEVVKEGYPDHTQFDNP RDMKKGDQVLFYHSSCKPGVAGI ATVCKEAYPDHTTPDNP VAMQVGDQVLFYHSVTNPGVVGLATVVREAYPDPTAPDDP MAMKVGEQVFFYHSNDGKAVVGI AEVIKPYYPDPSDATG REMKVGDKGFFYHSNCKPGIVGIVEVVRESYPDDTQFDPP RDMKVGDGVFFYHSNCEPGAVGLATMASTAYPDPTQPEEP RDVQVGDQVFIYHSSCKPAVVGI ATVTKGAETDPHQFDNP RDMKVGDRVFFYHSSCKPAIVGVAEI ASDVYPDSSAPDSP RQMRIGDRILFYHSNCEPGVGIAEVASAPRPDPTAFDPP $R D V R V G D Q V F \square Y H S S C K Q G$
$R E M A L G D Q A F Y H S N G K E$ RQMQPGDQAFFYHSNCEPG G
RDIKPGDRLFYHSPEPAV RAMKKGDHVFFYHSNEGLAI KAMKEGDLVFFYHSNEGLE QQMQPGDLVLFYHSVSEKA
MKMKKGDLAFYYHSNEKE RQMQVGDQDFFYHSNCDPG|
$K A M Q U G D L A F Y H S N E K Q$ QSMKNGDLTFFYHSNVGKEIVGIVEICALYHPDPTDA SG RDMSVGDLILFYHSVKNPGVVGIARVARESYPDPTTPDGP RSMKKGDRAFFYHSGKNPCIVGIVEIAKEAYPDPTATEGD RDMKLGQEAFFYHSNCKPGAVGIVKIVKEFYPDHTQFDKP KDMKVGDLVMDYHSSCVPGA AGYAEVCREAYPDPTAFDPP RDMQVGDGVFFYHSNCKPG VGDAKVASAAYPDDTQFDDP RAMKI GDKAFFYHSVNEKRIVGIVEVVREYYPDPTDEKG RDDKLGD LVFGYHSSCKQGVVGUATVTKEAYPDPTQPDKP
UniRef90_Q60Bwo UniRef90_OOC4X5 UniRef90-UPIO00381300B UniRef90_C4X197 UniRef90_UPIOOO470E320 UniRef90-UP100047B4F6C UniRet90-U4THM3 UniRef90_C7R991 UniRef90-C7PUX1 UniRef90-UPIO0039E8563 UniRef90-Q11YZO UniRef90-Q2SNU3 UniRef90-UPIO003A46810 UniRef90_F7D0S8 UniRef90-A0A059FJP0 UniRef90-TORI55 UniRef90-V6F6J2 UniRef90-A1VBM0 UniRef90-A3D5T9 UniRef90 UPIOOO37F5275 UniRef90-F7QHG6 UniRef90-EOMSL9 UniRef90-A5G734 UniRef90-13TGP4 UniRef90-UPI00040F1FC1 UniRef90-UPIO003F84869 UniRet90_U5T5P3 UniRef90_UPIo003732594 UniRef90-B9M3N2 UniRef90-UP10003B3ED63 UniRef90-A9KFC4 UniRef90_UPIOOO4791344 UniRef90-W3RL87 UniRef90-17A439 UniReffo-A1ATY5 UniRef90-UPIo00478EC6B UniRef90 A9WON5 UniRet90-l4VRM1 UniRef90-D5ENK8 UniRef90 UPIIOOO3487BFO UniRef90-C6XGLO UniRef90_-14YMT6 UniRe990 A0AO24KIN5 UniRef90_12GHP2
UniRef90_HOABM3 UniRef90-K2CD86 UniRef90-TOF8M6
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 RWDCVTIRALAPMPKPVTLKAAKENPKLAEMSLVSSFRLS RWFMVDVQLVRKMKRLVSLKEARLHEQLEGMLLQRGNRLS RFGMVDVKALKSTPVPVTLADI KANEKLADLALIRQSRLS KWECVDVKAVKPLKKPVTLADIKADGRLDDMVLVKNSRLS RWIVMVDVTFAEKFSHTVSLATLKHAPELSEMAVVRGNRES
NWVVVDLQPVKPFKTPVTLAQMKAEKRLENDSLIGQGRLS RWDCVDLKAVCDMPKPVTLKAVKANEKLEDMALVTSFRLS RWWCVSVRFVRKLNKVVPLAEMKLNPALLQDALVKRSRLS TWEMVDVRLCRALPQPLSRKNAAWPELAGMELMRGSRLS KWSMVDVQFlRMTKRFIPRAELGYGPLQNMALETRQRLS RWDCVHI RALADMPKPVTLKDVKANPKLAEMSLVKSFRLS
 RWDMVDVRLVQRFVTPLPRAALKGVAGLEGMELLKGSRLS RWLRVDIRFVEKFNDILPGSLLKNLPQLADMYLVKGSRLS RWYRVDVRFKRKFRRVIPLAELKACPELANMPLVRGNRLS KFVCVDIKADKPLKRPVTLETIKTEPKLADMELVKLSRLS RWDCVHIRALADVPKPVTLKDVKAMEVLADMSLVTSMRLS DWYMVDVRYVAAMPRPVPLEQIKGNPLLAAMPLVKRSRLS RFGMVDVAPVTAVKRPVTLAEIKADPALEGDALVRQSRLS RFGMVDVQASRPLKTPVTLKQMKTDPALSGLALIRQGRLS WVAVDFKPQKKLKKPVTLVQMKADKRLANMALVRLGRLS RWLMVDVRYIRHLDRLITLAELKADPALADMRLVRGNRLS K G GMVDIKAVAPFARPVTLAELKSDPRLAEMVLVNNSRLS ПWYMVDVRFVNPFPRPVKLAELKNNPALSGMVLLSRSRLS RFGMVDVEAVKPVETPVYLQQMKEDPRGDGLALLRQSRLS WVCVDVKTVGPMPRAVTLAEMKADEALSDLALIRQSRLS KFVVVDFKAVKPLKTPVTLEQTKADKALGNMALIKLSRLS A WYMVDIKLIKKFPKAVTLDEI KQNPKLKNMKLVRGNRLS DWYMVDVRYLKEMTRQVSLEQUKANPLLEAMPLVNRSRLS TWFMVDVKAVQPFVTPVPLQQVKDDPQLANMALIKVGRLS RFGMVDVRAVAPMPRPVTLDALKAATALKDMALVTNSRLS
 RWILVDVKYRADLPRMVSLEEMKAIPELAEMRVLRGNRLS
 KWECVDVA ADKPLPKPVTLAQ:KADPFLANMALIKLSRLS
 RWFMVDVRFVKKFKRIIITLQELKNHPLLQEMQVTRGNRLS TWFMVDLKFKEKFSRALSLEELKSHGKLKDMVLLKGGRLS Q WVCVDVRADGPMPHPVTLATVKADPALADLALVVRSRLS RFGMVTIKAIKPVNKPVTLADVKAEPRLEGFALVRQSRLS
 WVCVDVKAVGPMPRPVTLAETKASPELAELALVRQSRLS
 RWYMVDVRFKRRLARTIPLTELKANPALAETPLIRGNRLS KFGMVDLKAVRALKKPVTLATIKAEPRLENMALIKFSRLS RWYCVDIRWQSAFAQPVPLKDIKQNPALEEMVLVKQGRLS KWFMVDVRFVRKLDRQUTLAELKKLHELANMALLTRPRLS RWFMVDIKFSKKFKRVIPRKKLKEHDELSEMKLMKGCRLS RWRVVELEPVMPLTRPVSLAQLKAEPMLGNALIKQSRLS KFGMVDVKAVKALKKPVTLAELKAEPSLKDMVLVNNSRLS KWDMVDIKFIRKLSRKISLDELKADKELSSMGLFTTARLS RWLLVDVKYQRKLKRTVSLAELKAKE ADMPLMKGNRLS RWVGVTLCYQQHLPRPVTLKAIKADDAATELALKKAGRLS RWLQLDTRFVKEFTKPVTLTAHKSHPGLTDMLLVKGSRLS RWYLVDVRYTRHLKRTI PLAELKAQGALDGMPLVRGNRLS
 RWFLVDVRYVRHLTRTITLAELKSEPALGGDPLIRGNRLS DWYMVDVRADQALPSEVPLAVIREHPLLTGMPLVNRSRLS KWVVVDLVPVKKLNKPVSLAQIMADPVLQQMAVVRLLSRLS KWVVVDLVPFRDFKEPVTLEQLKQDERLQNDALLRQSRLS KFVCVDIKADKPLKKAVTLEALKADKKLAEMDLVKYSRLS RWYRVDVKFVRELNRTISLQELREHPELENMPLVRGNRLS RFGMVTVKAVKNVSKPVTLAS:KADERLQDMALVRQARLS KWSCVDVQTVCSVPTPVTLKQLKADPELQEVSLIKQSRLS LWFMVDVQFVEKFPHPVPLASLRGVKGLEMMELLKGSRLS WSVVDVVPVAPLLRP:SLKE:KATEALSGMSLVTSFRLSS
 RWFCVDVKWQKSLDDVI PLSRLKSDPALAEMVVVKRGRLS RWMLVDVAFERKLARTISLDELKADALGEGFALIRGNRLS KFVQVDFETVKPLKTPVTLSDIKADPRFSDLALLKQSRLS RWCVVDVTKSHLNKRVSLKDIKANDADTELALKKAGRLS


|  | $130 \quad 140$ |
| :---: | :---: |
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| UniRef90-Q0C4X5 | VQPVTAAEWKEVCRMGGMDP |
| UniRe990-C4X197 | VTPVTDREFAVI |
| UniRef90-UP1000470E320 | VVPVDKQSWDI I CKMG |
| UniRef90 UPIO0047B4F6C | VOPVSWNEFQI CALGGLD |
| UniRef90 U4THM3 | TPVTTHQWE |
| UniRet90_C7R9911 | 1 MPVTKEEWDF LS M EKK |
| iRe990_C7PUX1 | VCAVTEEEFDTILEMGETKK |
| UniRef90_UP100039E8563 | QPVKADEWM |
| UniRef90-Q11YZ0 | VMPVRKEEFDEV |
| UniRet90-Q2SNU3 |  |
| UniRef90-F7DOS8 ${ }^{\text {a }}$ | Qpvager |
| UniRef90-A0A059FJP0 | VQPVLASEWK |
| UniRet90-TORI55 | MPVNKEE |
| UniRef90-V6F6J2 | DE S WV |
| UniRet90 A1VBM0 | QPVTPEEFA |
| UniRef90-A3D5T9 | QPVTAEQWQAVLML |
| UniRef90-UPIOOO37F5275 | VMPVSPEEWRFIMSL |
| UniRef90-EOMSL9 | VQPVKRAEWEVVCRMGG |
| UniRef90-A5G734 | IQPVTPEEWRTI LAM |
| UniRef90-13TGP4 | VMPVSDEHWDHI CR |
| UniRef90-UPI00040F1FC1 | VSPVSDAEWKHICKL |
| UniRef90-U5T5P3 | VMPVSEVE WQHILDDM |
| UniRet90-UPIO003732594 | VQPVSEEEWK I L S L |
| UniRef90 B9M3N2 | VQPVREEEWRQI LRMGGVE |
| UniRef90_UPIO003B3ED63 | $\checkmark$ VPVSEEAWKVI CGL |
| UniRef90-UPIOOO4791344 | $\checkmark$ VPVSHEHWTHICAL |
| UniRet90-W3RL87 | VQPVTAEEWKHVIKLG |
| UniRef90-17A439 | K EY ${ }^{\text {d }}$ |
| UniRet90 A1ATY5 | GE |
| UniRef90 ATHSS8 | QPVRDEEWK |
| UniRef90 UPIO00478EC6B | PVTAE EWA |
| UniRef90 A9W0 | QPVTEAEWAT |
| UniRef90_IURM1 | VMP VEAADWKY |
| UniRer90-D5ENK8 | VMPVSEQEWQY V |
| UniRef90_C6XGL0 | VQPVTTDEYLEVCRMGKLSNPP |
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| UniRef90_A0A024KIN5 | VSPVTEEEWNYI CK |
| UniRef90_12G- | MPVRPDEFE |
| UniRet90-H0A8M3 | VMP SDEHWRLLCKMGGWKKP |
| UniRef90 K2CD86 | TPVTRTEWD L L SMI |
| UniRet90-G215W0 | VVPVSDGHWA |
| UniRei90-A0A023D2V8 | VVPVTAAQWARLCA |
| UniRet90-A0AO23D2V8 | VVPVAAQWARLCA |
| UniRef90-A8U3F3 | VVPVTDDQWEL CGM |
| UniRef90-K2JN1 UniRef90 B8HVH8 | VQPVSDE WNVLL |
| UniRef90 UPIOOO226080C | $\checkmark$ VPVSEEHWNILCGMGDWT |
| UniRef90-UP100037B0FC7 | $V M P V T K A E W Q T I C K T G Q T S P$ |
| UniRef90-B7P2E2 | VQPVTEEEWNFILSLEGANG |
| UniRef90 A4BS86 | M M V S A E WQA |
| nir | VQPVTD E E WDLVLS |
| UniRef90-G3MQG4 | VQPVAKEEWDF LSL E |
| UniRet90-B6WWC2 | VQPVSAEAFEY MHLANEKK |
| UniRef90-Toryh4 | MPVSKEEYDF NSL |
| UniRef90-IOKAlO | $\checkmark$ MP MRP EFELVKLG |
| UniRet90_J 7 QVh7 | QPVSEEEWRVV |
| UniRef90 B2ID13 | QPVTDE EWT |
|  |  |
| UniRet90-C3XST2 | $V$ QPVTKEEFDFVVSLEG PP旨K |
| UniRef90-U1LUJ1 | MPVTDAEWA HI CQLGGTE |
| UniRef90-A1S5X4 UniRef90 IVYBD4 | QP |
| UniRee90-3YBD4 | VPEQWEF |
| UniRef90-UPIO0035FB456 | QPVSAA WQAVQDM |
| UniRef90 UPIO003077DF3 | VMPVGAEHWALLCDMAGWKD |
| UniRef90-H8Z8A8 | MP GAQWQL |
| UniRef90-UPI00046F4E85 | $V \mathrm{GTVKEKEYKKVLAMAGUKK}$ |
| UniRef90-E4RZ53 | VSPVTPTEFDRVMD |
| UniRef90 UPIO00472158E | VMPLKPEEFDIL |
| UniRef90-K8P552 | QSVKPDEWKL |
| UniRef90-138F UniRef90-D5B | VMPVTEQEWQYI |
| UniRef90_W7E116 | VMPITPEHWKLLCNLGGTTQA |
| UniRet90-C7LXP2 | VTPVTDEEFKIVTR |
| UniRef90-H2CKT8 |  |
| UniRee90-UP10003C29410 | QPLVKMEEFEF S SMEEEKP |
| UniRef90-UP10004776A3B | VMPVAKVE WNH |
| UniRef90-Q3BPQ5 | - A WK |
| UniRef90-K2LJF1 | VMPI DDAS WAAI CEMGGVDP |
| UniRef90_W1z610 | VMPVTQNDWEQI |
| UniRef90_K2HPA6 UniRef90- J2wwd9 | VSPLTQQQFDHIIVGMS |

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UniRef90-W6LYI5 UniRet90_UPIO0035F54A8 UniRef90-UPIO003825744 UniRef90-G2IIS9
UniRef90-G3P910
UniRef90-G7QL02 UniRef90-F8EJL9
UniRef90-H2LKL1 1 UniRef90_UPI0003A5945B UniRef90-LOH1X8
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UniRef90-S7Q6N5
UniRef90-F7F1T1 UniRef90_UPIO00441A572 UniRef90 ${ }^{-}$WORI78 UniRef90-UP100037B3CB7 UniRef90-UPI00047E9F73 UniRef90_13CH04 UniRef90-H5SAl3 UniRef90-D2QEJ2 2 UniRef90-W6KCL5 UniRef90-F4L2C7 UniRef90-S5Y8.J7 UniRef90_UPIo00470C90B UniRef90_13IC86 UniRef90-R8B3G2 UniRef90_UPIOO047C5268 UniRef90-B8J4T3 UniRef90-C5BNO6 UniRet90-A1U5E7 UniRef90-D7CSF5 UniRef90 ${ }^{-}$A4B9S6 UniRef90_M5RUN8 UniRef90-E1SS66 UniRef90-Q8DKV8 UniRef90-UPIO0047583CC UniRef90 W5MCEO UniRef90-E4PNA6 UniRef90_G6A1K6 UniRef90-17ADT4
UniRef90_UPI000383D082 UniRef90 R7YL39 UniRet90_S9UZV2 UniRef90-QoBVI1 UniRef90-UPIIO002F1C4FB UniRef90 B6IPP1
UniRef90 E1X3K9 UniRef90-B2RZE6 UniRef90-UPIOOO4798F01 UniRef90-H8KUJ1 UniRef90-LOABKO UniRet90_Q3A4Z6 UniRef9O-UPIIO003768EFA UniRef90-UPI0003796CE8 UniRef90-H6SMJ1 UniRef90-K5YNQ4 UniRef90-W9WJL2 2 UniRee90_UPI00037790B3 UniRef90-A4G318 UniRef90_UP10002F567D1 UniRef90-G4E3P5
UniRef90 WOEYR UniRef90-WOEYR7 UniRe990-TOHLG5 UniRef90-O5BCPO UniRef90_UPI000225A8F3 UniRef90-G1WY92
UniRef90_UPI000378C43E

YWLVKSEPDTFSI QDLAGMPDQTEHWDGVRNYQARNFM YWLFKSEPDAFSI DDLAARAAAGEPWDGVRNYQARNML NYWLVKSEPNVWSIDQQKKSGSKGTDWDGVRNYQAANNL
Y WLYKSEPKTWSWDQQVEAGEHGTPWNGVRNHVAKMNM SHWLMKSEPEKFGWEDLKAQPNQTACWDGVRNYQARNFL RYWLMKSEPDAFSIDDLERVG SYWLMKSEPDVFG| DDLER VRVEPWEGVRNYQARNMM RYWLMKSEPDEASADCHAAHAPKKTLPWTGVRNYQARNFM NYWGMKSEPDAFSIDDLAKM QVSPWDGVRNYQARNFM
YWLFKSEPGNWSWDNQCARGKKGEHWDGVRNFQANKQM
YWLFKSEPDCYSDDDLAREPKQTARWDGIRNYQARNLL RYWLMKSEPDAYSWDDLVAEGEGT WDGVRNHRAANNL MK SEPNEFGTDDLFNRPHQTEPWDGVRNYQARNMM

HWLIKSEPNKWSWEMQVEAGAKGTFWNGVRNHTAKQYL RYWLMKSEPDVFSWDDLVEKGR AEWDGVRNHAAQLNM
HWLMKSEPEKFGMEELKALPDQTG
NYWL FKT NHWLVKSEPFVYSWEDFEKAGR SVWDGVRNYQARNNL SHWLMKSEPEKFGTEDLKAQPEQTACWDGVRNYQARNFM YWL FKSEPDAFS DDLANRTNQTEHWDGIRNYQARNFL
HWLMKSEPDVFGLDHLAARPGHTEPWDGVRNYQARNMM NYWLVKSEPFKYSWDDFVKQGVGT WDGVRNYQARNNL SSYWLMKSE ARHWLMKSE HWLMKS RYWLMKSE NYWL VKS YWL MK S E NYWLFKSELSVFSI DDLAECPNQATR NYWLVKSEPDTYGWHHFIEQGRAT NYWLIKSEPGAWSWADHVEAG NFWLVKSEPDAYSYDKLEAEGRG QYWLFKSEPNVFSFDDLTAKGDKGE NYWLTKSEPFKYSWDHFTVEGGK KYWLFKAEP WL VK T KHWLMKSE
TKYWLLKS
SYWLFKSEPGCYS DDLAAEPDQVT
WKSENYGIDHLAKDKK ARWDGIRNYQARNIL RCWL QYWLEKS WL LK T NYWL MK S E WL LK S NYWLVKSEP
$H W L M K S E P$ WLVK EPEKFGWEDLKALPKQTGC Y WLFKSEPGTGWODODDKA YWLMKSE
SSYWLMK S SYWMKSEAEKFSI DDLMAAAAP EEWDGVRNTVARNNM ARYWLMKSEPSKYGWDDLVAEGEGV

KVSPWDGVRNAAARNHM YWLVKSEPDAFSWDQQVAHG YFVKSEPFKYSWDQFIKDGKTF
HWLVKSEPFKYSWDRFVADGR KYWLMKTEP WL MKS RYWLMKSE NHWLVKSEPHKYSWQKFNEDGRTF RYWLLKSEPDVFSFEMLCARG RYWL MK SEP MK S
VQYWLMKS WLMKSPDEYSIDDDQRD
保
QYWLVKSEPDAFSWAQQVENG
YWLFKSEPDEYSLQDLAAENTGSGRWDGVRNFQARNFLD Y WL MK SEPFKYSWDDLVAEGEGT WDGVRNY LARNNL YWLMKSEPGEFSDDDLAA ROVEAWNGVRNYQARNLL WLFKTEPDAFSLDDLQDAPDGTSGWDGVRNYQARNRL SYWLMKAEPEKFSDDDLRAAKEP EPWDGVRNPVARKNM Y WL DKTEPSTWSWHDQK TKKVTHWDGVRNYQASNNM


UniRef90_M4C6W5 UniRef90_K1ZZA5
UniRef90_B8DSG5 UniRef90_H9UJV8 UniRef90_UPI00035D5D77 UniRef90-D0RQS4 UniRef90_E5Y3Q0 UniRef90_UPI00036A12F7 UniRef90_H9G4E2 UniRef90-E6WWJ6 UniRef90_E1ZT58 UniRef90_H1G156 UniRef90-R4WFH3 UniRef90_G3IVV8 UniRef90_F6CV93
UniRef90_U2WSF8 UniRef90_UPI000371A073 UniRef90_G6EEZ7 UniRef90_G4T4F5 UniRef90_W6LYI5 UniRef90_UPI00035F54A8 UniRef90_UPI0003825744 UniRef90_G2IIS9 UniRef90_G3P910 UniRef90_G7QL02 UniRef90_F8EJL9 UniRef90-H2LKL1 UniRef90_K6YB88 UniRef90-UPI0003A5945B UniRef90_LOH1X8
UniRef90-12FZN8 UniRef90_I2EZN8
UniRef90_S7Q6N5 UniRef90_F7F1T1 UniRef90_A6VZD9 UniRef90_UPI000441A572 UniRef90_W0RI78 UniRef90_UPI00037B3CB7 UniRef90_UPI00047E9F73
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UniRef90_S5Y8J7 UniRef90_UPI000470C90B UniRef90_I3IC86 UniRef90_R8B3G2 UniRef90_UPIO0047C5268 UniRef90_B8J4T3 UniRef90_C5BN06 UniRef90_A1U5E7
UniRef90_D7CSF5 UniRef90_T0DHD6 UniRef90-A4B9S6 UniRef90_M5RUN8
UniRef90-E1SS66 UniRef90-E1SS66 UniRef90_UPIO0047583CC UniRef90-W5MCE0 UniRef90_E4PNA6 UniRef90_G6A1K6 UniRef90_I7ADT4 UniRef90_UPI000383D082 UniRef90_R7YL39 UniRef90-Q2NBR4
UniRef90 S9UZV2 UniRef90_Q0BVI1 UniRef90_UPI0002F1C4FB UniRef90_B6IPP1
UniRef90 E1X3K9 UniRef90_E1X3K9
UniRef90_B2RZE6 UniRef90-UPI0004798F01 UniRef90_H8KUJ1 UniRef90_LOA3KO UniRef90_Q3A4Z6 UniRef90_UPI0003768EFA UniRef90_UPIO003796CE8 UniRef90_H6SMJ1 UniRef90-K5YNQ4 UniRef90-W9WJL2 UniRef90_UPIO0037790B3 UniRef90_A4G318 UniRef90_UPIO002F567D1
UniRef90_G4E3P5 UniRef90 W0EYR7 UniRef90-U7HV52 UniRef90-TOHLG5 UniRef90_Q5BCP0 UniRef90_UPI000225A8F3 UniRef90_G1WY92
UniRef90_UPI000378C43E


 RWFMV DI QL QEVLDPQYV S L D AMK QNPA L E GMRLL K G N R L S R WY L V E I R Y L R HL T R TI A L S E L K A D G P L A DMP L V R G N R L S R F V
 R F G M V D L R A I E P L K K P V T LIEAI KA EP R L K A MVVLAN N S R L S K WF MV DVVQFVRMTKRFI P L A EL K V V Q H QL K A M S L F T R QR L S R WF L V D V S F ER K L G R T I P L D E I K Q H A DEEE GFP L V R G N R L S
 R WVVMV D I
 R WMLLV DVVK F V K K K T P L I P L A T L R E H Q E L A D M QV L R G N R L S



 K WA A V K V K P V R K L K N P V TLL K E I K K A DP E L A E DE L V K L L S R L S R WF MVVDV Q Y V K K L S R T I P L
 K F GM CDDFA A V K P LLK R P V T
 K W S M V D V D Q Y Q R M L T WF MV D I K F K K K K F S D DP V T T E E E M K K H K P L K K N M I L L L K G S R L S K W S M V R WF M V D V K F V A K K F K Q I L S L K N I K S M P E I T E L G L V K G H R L S



 R WY M V D V E F V F E K WP S L L T L A E L K Q N P E L T E ML L L K K G S RLLS
KWSMV DVVFVRMTQRFI PLAELKAHHQLKEMALFKRQRMS TWLMVDVRAVEKLP QFVTLDALRAEPGLAEMALRRGNRLS





 R WE CVV D I K A I A P V DR P I S L D E A K A E P R L S Q MV L V N N S R L S






R WF L V D I



K WY M V
RWQAV D MK Y VR T L P K LI P L D E L K S MA G L E D L P L






$R$ F G M V
R WF M V S V K F K K K K F K N F L P L N E L M K E Q K K L L K D MLL L L K G S R L S
K W S M V



$\square W Y M V D V Q Y V A H L V R P L T R D D L R R Q H P R L M D M A V L R G N R L S$

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

R H G L V $V$ E $V$ V




K WA A V $\operatorname{K}$ K L K A K E K L
 R W Y Q V
 R WVVVV H V E F R R K F D KLLI T L N E L K A N A P L E N L Q ML K Q G R L S



| UniRef90 M4C6W5 |  |
| :---: | :---: |
| UniRef90-K1ZZA5 | 1 TPVTQEEWNVLKi A |
| UniRef90-B8DSG5 | VQPVSPQEYATVLR |
| UniRef90-H9UJV8 | $\checkmark \mathrm{LP} \mathrm{VQEREFRELLRMGGDH}$ |
| UniReef90 UPIO0035D5D77 | VMPVTAQQWSFILGL |
| UniRef90 Doros |  |
| UniRef90_E5Y3Q0 | VQPVEAEAYAAIVRL |
| UniRef90-UPIO0036A12F7 | VQPVTEEEWR |
| UniRef90-H9G4E2 | VQPLTDEEFEFVLSL |
| UniRef90-E6WWJ6 | VFPVTAAQWKLLLSL |
| UniRef90-E1ZT58 | $V Q P V T P A Q W D F V L A L$ |
| UniRef90-D4H1U3 | 1 MPVGKNEFET VSMSKE |
| UniRef90-H1G156 | MPVTEAQWEF L L SMA |
| UniRe990-R4WFH3 |  |
| UniRef90 G3IVV8 | 1 MPVSKGEWEF |
| UniRef90 U2WSF8 | VQPVTAAEWKFVCKMAGLDPSGKT |
| UniRef90-UPIO00371 A073 | 1 QPVTQEQWQTI |
| UniRet90-G6EEZ7 | $V A V I T P E E W D Y L I A K S G$ |
| UniRefolo-G444F5 | 1 MPVSKTQWDF:L |
| UniRef90-W6LYI5 | $\checkmark \square P V T A A Q W A F I L$ |
| UniRef90-UPIO0035F54A8 | $\checkmark$ APVTEAEFAYLTR ${ }^{\text {a }}$ |
| UniRef90-UPIO003825744 | VQPVTDEEWALI CQLG |
| UniRef90-G2IIIS9 | VSPVADAEYDC |
| UniRef90-G3P910 | E F |
| UniRef90 G70L02 | QPVSATEFQ |
| UniRef90-F8EJL9 | VMPIKREEFDLILSFSNDEN |
| UniRef90-H2LKL1 | VQPLTAEEFDFLLS |
| UniRef90-K6YB | 1 MPV TKAEFEHLLA |
| UniRef90-UP10003A5945B | MPVSAEQWQ |
| UniRet90_LOH1 X8 | MPVTLIAQWDFI |
| UniRef90_12EZN8 | VQQLKKDEFDIILSKA |
| UniRef90 STO6N5 |  |
| UniRef90-F7F1T1 | VQPVTPEEFEF VSLEDKKP |
| UniRef90-UPI000441A572 | VQPVTDEEFEFI LS |
| UniRef90-W0R178 | 1 TPVTAAEWKLVRKL |
| UniRef90-UPI00037B3CB7 | VMPVTGPEWDVVCRM |
| UniRef90-UPIO0047E9F73 | VTPVRPEEFDIIG |
| UniRef90_13CH04 | 1 TPVTAEEWAFILA |
| UniRef90-H5SAI3 | VMPVNSEHWRLILSL |
| UniRef90-D2QEJ22 | VMPVRADEFELI L KMG |
| UniRet90-W6KCL5 | VMP D A D S Wal cemgave |
| UniRef90-F4L2C7 | VMPLTAEEFEK |
| UniRet90_S5Y8.J7 | VQPVSAEEFAT |
| UniRef90_UPIO00470C90B | VCPLKMEEFDHIVA |
| UniRef90 - 131 C 86 | TQPVTADEWKFI HT |
| UniRee90-R8B3G2 UniRef90-UPIO0047C5268 | $V M P V{ }^{\text {V }}$ |
| UniRef90-B8J4T3 | $V \mathrm{MPVSKEEFAV}$ |
| UniRet90-C5BN06 | Q QPVTKAEFEFL |
| UniRef90-A1U5E7 | VMPVSDAEWQQI |
| UniRet90-D7CSF5 | VMPVGAAELEVILKLAGVTD |
| UniRef90-TODHD6 | 1 MPP |
| UniRef90-A4B9S6 | $V$ PVTEAEYQTLCSLHVDAMGNALD |
| UniRef90-M5RUN8 UniRef90 E1SS66 | VQPVKKKEFETM EKLJA |
| UniRef90 Q8DKV8 | VQPVTESEWQIILSL |
| UniRef90-UPIo0047583CC | VMPLKPEEFDII GMGEE |
| UniRef90-W5MCE0 | VQPLSKEEFDFIVLS |
| UniRef90-E4PNA6 | VMPVSEEEWQLI L GQAG |
| UniRef90 G6A1K6 | $\checkmark V P V S E Q D W Q L E A M G E T S$ |
| UniRef90-UPI000383D082 | VQRLTDQEFDFiLSLEEKEP |
| UniRef90-R7YL39 | VTKVSKAEWNFIMSL |
| UniRef90-Q2NBR4 | VAEVRPEEWDIV |
| UniRet90_S9UZV2 | VQPVAPEEYDHI |
| UniReef90 Q0BVI1 | VSSVSPQHWALLCRMGG |
| UniRef90_UPIO002F1C4FB |  |
| UniRef90-E1 $\times 3$ K9 | I QPVTKKEYDFI CALI |
| UniRef90-B2RZE6 | VQPLTQEEFDFILKL |
| UniRef90-UPI0004798F01 | VMPVTAAQWKLLVGL |
| UniRef90-H8KUJ1 | $\checkmark \mathrm{MPLKAAEFDRLLEIA}$ |
| UniRef90-LOA3K0 | VLPVTTAEWEAVLQAGGLDP A |
| UniRef90_O3A4Z6 UniRef90 UPIOOO3768EFA | 俍 |
| UniRef90-UPIOOO3796CE8 | VQPVEPEHFERVKQ |
| UniRef90-H6SMJ1 | VVPI DPEAWERLRRMGGLPPAP |
| UniRef90-K5YNQ4 | VAPVGAEHWAMLCEMGGVK |
| UniRef90-W9WJL2 | VSAVSPEAWRFI LD |
| UniReef90-UPIOOO37790B3 | 1 QPVKASEWDTILE |
| UniRef90 A4G318 | TPVTAQEWQF CK |
| UniRef90-UPIO002F567D1 | VCAVSPEEWAVIRE |
| UniRet90-G4E3P5 | VMPVVKPEEWELVLKMA |
| UniRef90-U7HV52 | IQQITDRQYQQII A LlCGADEP |
| UniRef90- TOHLG5 | VSPLTKAEFDQ VAMSKT |
| UniRef90-Q5BCP0 | AvSPQEWD |
| UniRef90-UP1000225A8F3 | VMPI DQDSWKDICQLG |
| UniRef90_G1WY92 | VSPVSPAEFQFILDL ENKPEGKD |
| UniRef90 UPIO00378C43E | VMPPLTEDQWEFICA HAPRS |


UniRef90_G8TFH5 UniRef90_D5STA5
UniRef90_Q15ZW9 UniRef90_J3K1R8 UniRef90_UPI00041416BB UniRef90_K2BCV9
UniRef90 Q82TJ8 UniRef90-Q82TJ8 UniRef90-K1YYG2 UniRef90_W5YRF8 UniRef90_U2EJ38 UniRef90_I9WBM0 UniRef90_B1Y864 UniRef90_A8PMA5 UniRef90_K9U5R1 UniRef90_W9X768
UniRef90_K6YMC4 UniRef90_U6B5N0 UniRef90_UPI00036AF202 UniRef90_U7G177 UniRef90_I2CQW9 UniRef90_UPI000225DF7A UniRef90_X7E4T7 UniRef90_B5JHZ0 UniRef90_UPI0004170E99 UniRef90_UPI00046AA522 UniRef90_R7ZLW4 UniRef90_A0A017SXN6 UniRef90-N9W654 UniRef90-UPI000317ED7D UniRef90_UPI000467C272 UniRef90-A1WW93
UniRef90_T1B346 UniRef90_W9TLT0 UniRef90_G7FQD1 UniRef90_Q7NK15 UniRef90_-UPIO0037C5474 UniRef90_K2KPP6 UniRef90_U5QKG3 UniRef90_M2T6T2 UniRef90_G7FJW9 UniRef90_I4JQ93 UniRef90_UPI00040B3171 UniRef90_U1KCB3 UniRef90_UPI000375059D UniRef90_S8B7A9 UniRef90_D0LUK0 UniRef90-F2K1L4 UniRef90_IOXTX9 UniRef90_D5CNY8 UniRef90_A7NLQ4
UniRef90_V4A2C3 UniRef90_-V5UIY3 UniRef90_Q21FZ3 UniRef90_C6W5A6 UniRef90_B4RCB8 UniRef90_UPI0004740EB4 UniRef90-UPI0004776823 UniRef90_K9RSW1 UniRef90_U9UA35 UniRef90_S6I7T8 UniRef90_K4KJ69 UniRef90_U1HQE3 UniRef90_L8JJ04 UniRef90_UPI00036C24D5 UniRef90_R1IWF5 UniRef90_M1Z1M0 UniRef90_A1K347 UniRef90_A0A038G8B5 UniRef90_E4U4E5 UniRef90_UPI00037DD135 UniRef90_G2TER9 UniRef90_UPI0004129945 UniRef90-UPI00029A2E47 UniRef90_D0KYM5 UniRef90-B4SI17 UniRef90_A3ZLP5 UniRef90_H7EVJ5 UniRef90-W2RQ74 UniRef90-Q478H8
UniRef90_Q2G8P8 UniRef90_UPI000479802E UniRef90-M1GD04 UniRef90_F2GB41 UniRef90_UPI0002626B7E UniRef90_E6SIG9 UniRef90_A6D6V8 UniRef90_A6AUL9 UniRef90_C1E3G8 RTMKK GEE ${ }^{50}$ Y Y Y H S NE GLLE $\|^{60}$ V

70


 QAMQ A G DLVVLF Y H S D D E K A V VGGLAKV A K E A Y P D K T T S D D P
 RDMKLGDLVFFYHSNCEPGIVGIVEVAREGYPDKSDPDKP RDMKVGDGVLFYHSNADPGIAGMAKIVKAGYPDHTQFDNP
 RAMEVGDEAFFYHSNDGKEIVGIVTVSASGLTDPSDPE G
 K A MKKG D LAFFYHSSCQPGGVVGIDK VKTAYPDKTAATKP R Q M QVG DLA A F F Y H S N A T P GIV
 K K M M DG D K G F F Y H S N Y G R E I VGGIFEV I A S S Y P D P T S D L S S SAMRSGDLAFFYHSVSEKRIMGLVRVIDRAYPDPTAEPGA REMAE GDEVF $\square Y$ HS S CKHGI A GIVRVVTRSAYPDPSTPDNP RHMHVGDQAFFYHSSCKPGIVGI MEVSRAAYPDHF QWDKP LAMEVGBQAFFYHSN■GREIVGGVEIVEAGMADPTDE S G KTMEEGDLVFFYHSSCSPGIVGTAKVCKKAYADYTTPENP RDMQK G DI A IF Y H S NA GPGAVGLASVASEKYPDHTMFDNP QAMKVGDLVMYYHSNDGKEVVGYAKVVKEAYQDPTTDDN R N MQAGDLLFFYHSSCQPGI AG GARVARTAYPDPAALDPN EKMKPGDLVFVYHS GKQKALVGTAKVVSAPYPDPKAADGE REMKDGDLALEFYHSNDGKSVAGVARI KREAYPDPSAPDED MAMKVGDEALFYHSN $\square G K E C V G I M R I T E E S A P D P T A E E G S$ RDMRVGDGVLEYHSS CEPGIAGLAEVASTPYPDPT QFDNP

 REMHEGDLFFFYHSSCEPGI AGI GRITRAAYPDPSAAEKN R DVK E G DLV VM $\quad$ Y H S S C K VGGVA Gla A K T S A A YP DP T Q F D S P R A MKK G DLAF FYHSNCEPGGVVGTMEIVVQE HSPDSSSDPANP
 $R$ A MQL G D QVVF $\quad$ Y H S S C R Q Gll A Gl V E V S R TAA A D P S Q F D A T $\begin{array}{ll}L \\ R E M Q L G B & G G F\end{array}$ R DVQK G D LV M $\quad$ VY H S S CK Q GV A G L A VV T K T A Y P D P T Q F D N P RAMAAGDLEFFYHSSCDPAIAGI GRIARQAYADPTAADKN R D MQVGDRI LFYHSNTKPGIAGIAATVASEAYPDETAFEAP R DVKVGGDSVFIVHSSCKPAVVGIAKVVKAAEPDPHEFDNP
 R DMRK GD GVLLLYHSNAKPGVVAGIARM TRTSYPDP TA FDNP K EMKMGGDVVFFYHSSCKPAIVGGASVVNEAYPDNTTPDNP R D DK K K D L I LLFYHS S C K P H V A G L A E V VK E GY P D H F A F D K P RQMVGDGVLYHSNCEPGIAGIAEVSSTAYPDTTQFDKP
 $R D M R V G D G V L F Y H S S C V P G I A G L A T V A S T P Y P D P T Q P D P P$ RDVAV GDEVLIFYHSSCKPAVAGLAKVVRGAYPDPS Q F DP P MAMKVGGDPVLFYHSNE GKEVVGGLA KVVSKEHYPDPTTDDEP KAMKAGDEVLFYHSQEGLAVVGGARVSREAFPDATDP S G RDMR $\square$ GDGVL FYHSSCEPG\|AGVAEVVASAAYPDDTQFDPP KAMRTGDLALFYHSRTGLEAVGIMEISAEAFPDPNDE S G $\begin{array}{lllllllllllllllllllllllll}R & D & M & K & Q & D & D & V & F & F & Y & H & S & N & A & N & P & A & M & G & I & A & K & V & V \\ R & E & A & Y & A & D & H & S & T & P & E & K & P \\ R & D & M & K & V & K & D & K & V & L & F & Y & H & S & N & C & K & P & G & L & A & G & L & A & E \\ I & V & K & E & A & Y & P & D & Y & T & A & F & D & N & P\end{array}$ R A M AVG D E F F F Y H S S C E P G A G I GR I S Q A GYP D P T A LD K N
 KAMKEGDLLALFYHSVNEKAVVGGVAKVVKEYYQDPSTDDDE RQFEIGDEAFFYHSNAKPGIVGVMKVASKAYPDPTQFDPP



 K A MRLGGDQAFFYHSVNEKRIVGIVEVVKEYYPDPTDPAH

 RNMKVGDLGFFYHSSCEPGVAGVIKI ASEARPDPTQPENP R D M KI G DLVFF Y H S NKVPGGVVGI MEVDSAPYPPPTAPDNP
 RDMKVGGEVFFYHSNAKPAIVGGAKIVKESYPDHTYPDAP RQMQEGDQFFFYHSSCEPGI AGGGRIXRNAYPDPSADDPN



 RDMKVGDRAFFYHSQAEPAIVGTVRVVREAYPDHTSWDNP K A M QPGDLVLVYHTGSEKQAVGVAEVVRGAYPDPTDPTG
 $R Q V K L G D L V L I V Y H S S C K V G V A G I A K V T R E A Y P D H S D P E N P$ $R Q M R\|G D G V L F Y H S S C E P G\| A G L A E V C S Q P Y P D S T Q F D N P$
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UniRef90_D5STA5
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UniRef90_K1YYG2
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UniRef90_U2EJ38
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UniRef90_A8PMA5
UniRef90_K9U5R1
UniRef90_W9X768
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100

120

 K WEVVV H V E F R S K F K NLLV T L A E L K S L A A L E N L Q M L K Q S R L S R WVV T I $\quad \mathrm{D}$ L



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

 R WVVMV D V $\operatorname{T}$ F I

 R WW M V K WA A V K V K R WF MV DIVE F DIE K W S E I L T L A E L K N M P E L E N M L L K K G S R L S




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

 $P$ WS A V D V G F V E A F A T P L Q L A A R L K A A P A A L R WVVVVDV T Y H Q H L N K M V S L K S I K A N D S I T E L A L K K A G R L S K WSSVV H V K F R R S K F S ViP I G L K E L R D D L G K L E H M Q L L R Q G R L S
 $R \quad$ R K S G LV V D L K T E R P LIP R PVV T L K R

 R WY L V V D V A F E R K L K R R VI P L E E I K Q H A D Q E E FA L I R G N R L S




 R WM N V
 $R W L L V D V K L D R K T R L V L T E M R Q T P E L D G M L V L R G N R L S$ RWVCVVDIAFKAAFKHPVTLDRDKATPALSEMLLVVKQGRLS



 R WF MV D I K F V V R K F K R F I T L K E L Q A H K K L M D MVV L L N R G R L S

 R WVVV DVVA P Y Q Q L K S S V T L D DI K N D K R L E Q MV LVVR N S R L S
 NWVVVDLKPAKAFNKSVTLEEI KANSKLKDIALI KQSRLS $R W L V V D V Q F V R K T P \quad L V P L A E L R S H T E L A N M R V L R A N R L S$ P WS A I DI G F V D DF K NV L GL G Y L K Q Q S QL E Q L P L V K G S R L S
 RWWTV EVVGVVRRFGRMVSLETLRQSFTPDELWVVRGNRLS


 A WL L V DV A WEA DLKGFV S LDAL REEPRLA DLLLRRGNRLS $R W V Q V D V Q Y V R H T K R N I T L Q E L K E D E T L E D L D R V R G N R L S$ RWMLV DVAF DRKLK QVI ALDEEI KLDHAEAE GFPLVK GNRLS $R W F M V D I Q L T E D G D E A L G R D Q L S G V A A L A E M E L M R G S R L S$
 K WEVLVVKVDFVVK K F E N E I G L K E L R T F A A L E N M Q M L K Q S R L S
 K WA AVKVKPVEKLP HTVTLIKQVKATPELAEMDLIRGLSRLS



 R WL M V D D E F G E K F K R V L P L S V L K T M P E L L M E M P L V R G N R L S R WI MVVDIE F VRRKTVRLI PLSVVMAMPELENMPLVRGNRLS


|  | 140 |
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| UniRef90-D5STA5 | 1 QPVTRSEWLHV HQLA GV |
| UniRef90-Q15ZW9 | 1 MPV NEHEFSA |
| UniRef90-J3K1R8 | V S PVRPEEWRFIMSLAEEQD |
| UniRef90-UPIO0041416BB | $V \mathrm{MPLKAEEFEVILGLGN}$ |
| UniRef90-K2BCV9 | 1 T SVSKKEWDVI |
| UniRef90-Q82TJ8 | 1 T PVVPSEWKFI |
| UniRef90-V5C081 | 1 MPV SKQQWDFILAL |
| UniRef90-K1YYG2 | VQPVTTREFEI SKLGG |
| UniRef90-W5YRF8 | VMPVTEEQWRII L A |
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| UniRef90-19WBM0 | $V$ A AVTPEEWAYILKL |
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| UniRef90-K6YMC4 | 1 MPV NEQEFSALLAASR |
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| UniRef90-UPI00036AF202 | V QPVKPEEWRII CEALLGLDP |
| UniRef90-U7G177 | VMPV S EVEWQLI IQLA |
| UniRef90-\2CQW9 | V Q P V R E E E WK F |
| UniRef90-UPI000225DF7A | V CEVMPDEWSKI LAMA GV |
| UniRef90-X7E4T7 | V M PVTK S W W Fil |
| UniRef90-B5JHZ0 | I QPVEKRHFTYVCKMGGLT |
| UniRef90-UPI0004170E99 | VMPLKQEEFDAI LEDS N |
| UniRef90-UPI00046AA522 | $V \mathrm{MPV}$ S A E E WAAVLA |
| UniRef90_R7ZLW4 | VMSLSKQEAD L L T M A |
| UniRef90_A0A017SXN6 | V VPVSKEHFDRILK L G K K K |
| UniRef90-N9W654 | V GRVTPDEWKHILE |
| UniRef90_UPI000317ED7D | 1 T PVVTPGEWRCI |
| UniRef90-UP1000467C272 | 1 QPVTAKEWKY LKMA |
| UniRef90-A1WW93 | I VPVTEAQWAVI |
| UniRef90-T1B346 | VLPVSAAQWRVI LSHEKNP |
| UniRef90-W9TLT0 | $\checkmark \mathrm{MPV}$ S E GEWA AI LA L |
| UniRef90-G7FQD1 | VMPVTEHDWNEI M M M |
| UniRef90-G0S386 | $V$ SKVSKAEWDFLMNLAEEKAKADAK |
| UniRef90-Q7NK15 | V $\square P V$ S P GE WE II LKVARLP S NDQS |
| UniRef90-UPI00037C5474 | 1 TEVTPAQWQFI |
| UniRef90-K2KPP6 | $V \mathrm{MPF}$ T DAE WQAVLAL |
| UniRef90_U5QKG3 | V MPVSAAEWRII L NLA |
| UniRef90-M2T6T2 | VMPVTDEHWDAL MTMAETNE |
| UniRef90-G7FJW9 | VMPVTDNDWHEI L N MA |
| UniRef90-14JQ93 | VMPVSPAEWTAILAM |
| UniRef90-UPI00040B3171 | VFPVSAAQYDYLLS |
| UniRef90-U1KCB3 | I MP I DEDEXQVI L E M S GQS |
| UniRef90-UPI000375059D | $V \mathrm{MPVTCAEWRTISAL}$ |
| UniRef90-S8B7A9 | $V$ S SVTPAQWKYILELA GVD |
| UniRef90-D0LUK0 | VQPVSAAEWK V CL RLGR |
| UniRef90_F2K1L4 | $1 \mathrm{D} P \mathrm{~L}$ S DEHAQYL |
| UniRef90-I0XTX9 | 1 QPVSEEHFHYI CK $\square$ A GAKS LP |
| UniRef90-D5CNY8 | 1 TPPLDPAEWRFI |
| UniRef90-A7NLQ4 | V VPV T E A Q WQRLLAMA GVA S |
| UniRef90-V4A2C3 | $V$ QPVSEEEWDFI I K L S |
| UniRef90-V5UIY3 | 1 T PVVSP C ( WKFI |
| UniRef90-Q21FZ3 | 1 QPVTEDQSK QVQSLA |
| UniRef90-C6W5A6 | VVPVKREEFDHI VALAAHDKK |
| UniRef90-B4RCB8 | V SPVRPEEWRAI LGMAG |
| UniRef90-UPI0004740EB4 | I TPVTPEQWRF |
| UniRef90-UPI0004776823 | VAALSAEEWAEI LAMAG |
| UniRef90-K9RSW1 | $V Q P V T P Q A W E I$ QQL |
| UniRef90-U9UA35 | VQPVKKEHYDFI LEL |
| UniRef90_S617T8 | VMPVTAEQWAAVLAL |
| UniRef90-K4KJ69 | V Q PVTDAEWRYLLS |
| UniRef90-U1HQE3 | V S AVTPKEWKFILDDA GED |
| UniRef90-L8JJ04 | VQPVKKEEFDIILGM |
| UniRef90-UPI00036C24D5 | V VPPVRPTHWRYI L G Lie G |
| UniRef90-R1IWF5 | I MPVTEAQWDEI I A M S E |
| UniRef90-M1Z1M0 | $V \mathrm{MP}$ L K E VEFKTLLKM |
| UniRef90-A1K347 | I T PVVPAEWRFI RELMGLD |
| UniRef90-A0A038G8B5 | $V \mathrm{MPV}$ T AEQWA |
| UniRef90-E4U4E5 | VMPVDAA VAENLLELA |
| UniRef90-UPI00037DD135 | $V \mathrm{MPV}$ GEEAARRIL L L A GEA |
| UniRef90-G2TER9 | V S SVDEASWGLI RGLGGL |
| UniRef90-UPI0004129945 | V LPVTAAQWK HL |
| UniRef90-UPI00029A2E47 | 1 QPVTAEEWQAVHRLA GVKD |
| UniRef90-UPI0001745A9F | VTEVSKKDFDLI CKMGG |
| UniRef90-DOKYM5 | I MPI S A Q S WT RIL LA RENLT |
| UniRef90-B4SI17 | VFPVTA A Q WKLLL S L |
| UniRef90-A3ZLP5 | V QPVKKSEWDAIL KL A |
| UniRef90-H7EVJ5 | VMPVSEREWQAI LAL |
| UniRef90-W2RQ74 | V S SV S P A E WRFILEQ |
| UniRef90-Q478H8 | I T P V S A E E W A |
| UniRef90-Q2G8P8 | $V \mathrm{GAV}$ R P E E WALI LKMAGVN |
| UniRef90_UPI000479802E | L M PVTPA Q W A Al L |
| UniRef90-M1GD04 | 1 QPVSQEHFNNI 1 R La |
| UniRef90-F2GB41 | I MPVQEGEWQQLYAAA |
| UniRef90_UPI0002626B7E | 1 QPVTEEEFE |
| UniRef90-E6SIG9 | V MPVPEPLDWERI MRMAGL |
| UniRef90-A6D6V8 | VMPVTESEWQA |
| UniRef90_A6AUL9 | I MPV S EEEWQAI $\square$ GKEK LP S Q |
| UniRef90-C1E3G8 |  |
| UniRef90_Q1LJL1 | I TPVVTPAEWRY |

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${ }^{0}$ TFS TNYWLMKSEPNVYS:TDEKKEGKT

20
30
40 N C WL MK CEPSAYSI
A QF WL MK S E P N K F S I
HW MK S EPDECSI DDALAAAPGA
VE P WN GVIRNY QARNYM
S S SWD G GVV R N Y Q A R R N F



V E P WD G V | R |
| :--- |
| R N Y Q A R |

Y WL MKAEPEKFS
Q

HWLMKSEPDEFSIQDLRKLGR
Y WILRSEPDVVGWDDLVRDG
RYWLMKSEPNKFSTDDLKKCGR SPWDGVRNYAARNNM

Y WL MK S EPDEFS I QDLEK $\quad$ GG VGRWDGVRNYQARNF L
ARYWL MKSEPSDVS
RYWLFKSEADCFSI DDLKAAPKKT T
YWLMKTEPDAFSLQDLQRRGQ
 WL MK
RHWLMKSEPEKGUDR NYWLMKSEPDDFS I DNLQMSE
 QYWL MK S E
NYWLFKTEPEECSI DDFAKAPDKA
Y WL MK
NY WM MK
Y W L M K
N Y WL M K S
SFWLMKAEPEKFS I DDDLAAADSP
Y WL MK S EPDELSI RDLQRLG
R Y WL MK S E
WL F K SEPT
QYWLVKSEP DVWSDDLSDE

$S Q$
Q YWL MKS NYWLVKSEPSEYGWEDLVAKQE DI W NYWL MK SEEPEECSSVDDALAAAPKATVPWVGVRNYQARNFM NYWLFKSEPDE』SIDDLQQKD I EAWTGI RNYQARNF I R F WL MKA

Y WL MK S
Y W L L K S E
Y WL MKT
VQ
Y WL MK S
YWL F K T WL F K T

Q Y WL
Y WLV NYWLVMKS E
K Y WL MKSEP DVYS I D D A RVG WL LKTE NFWLVKQE SF WL MK S E
TNYWLMKS
SYWLMKAE
Y WL MK S E
NYWL LK A
HYWLMKS WL VK S RYWLMKSE
YWLFKTE HYWLFKTE NYWLLKSE N Y WL MK S NYWLIKS
YWL MK SE RYWLFKSE RYWLMKAEPETFSI
FWLMKSEPVTYGI HHLKARTEP H HLLK
 KYWLFKS HYWL LK SEP ES YWL MK SE SYWLFKTEP


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UniRef90
K6ZW14 UniRef90-E1VGF5 UniRef90_L8D9k9
 RWQTVIVEFVKVFPEMI SLTTLKQMFHQEELLLTRGNRLS VWYMVDVAFVAKFACDLPLQQLKAEPRLNGMVAQQGSRLS RWLLLDVQAVRKT RLISLAELRAHPALADMRVLKGSRLS RWYLVDVRYRRHLARPI TAAELKTHAELAGLPLVRGNRLS DWYMVDVQFVEKFTDVITLKELKENPKFENLTLTRGNRLS
 WSAVDVEFVEAFASSLRLARMKAEPALEDLALVKGSRLS PWEMVDVQFEEKFPSDVSLEELKKEKALMAMQLFTHSRLS KWDIVHVEFRQKFPAMITLNDLKAQSALENMQTLKQTRLS RWF MVDVKYVRHLKRF PLTELKHYHPLAKDA FTSARLS PWSAVDVGFVERFDSTLTLPRLKAEPALEQMPLVKGSRLS RWFMVDVKFRSKYDEAVTRDMLKDHPEVTSGMRLVKGNRLS RWDLVEVAYRRTFAQGI ALDTLRTDPEFSDSPLIRGNRLS RWSAVDVDFVECLRSVIALPRLKAEPALVQIDPLVRGSRLS KWFMVDVKYVRPLKRFI SLAELKKDHQLSKMAMFTRARLS RWYMVDVQFVRKTKRFIPLSELKDDGPLSNVALFTRARLS RWFNVDVSFERKLSRTIPLDEIRSHAEEEEFELIRGSRLS
 RFVAVQVKFKKRLK IPITLEKIKKNKALSRLPLIRQSRLS PWVAVDLQFVEKFPQLLSLDKLKQSTKLEQLALVKGNRLS PWSALDVEFVEAFPRVLPLARLRDNPALLAELALVRGSRLS RWHTVLVQFVEVFPHFLELSTLKQEFSDQELWVTRGNRLS KWEAVKLKVNSQLKNPVTLHEIKAEDALADMLMLRQSRLS RWTRVDLGFVEAWPAVLSLARLKADPALAEMALVKGSRLS RWWTVKVEFDRLFPQLLPLGLLKQNFTADELLLVRGNRLS KWVVVHVEYRRKLGKQVTLQDLKSHGQLENLQMIKQSRLS KWSARDVSFJEAFAEVVPLARLKAQDALANLALVKGSRLS DWYMVDIVACGKFRNPVTLEDIKSNPGLSDMLLVRGMRLS
 RWHTVEIVLKVKIFPKMVSLKQLLAEPKLADCELVRLSSRLS DWFCVEVKFVSEFPHFVSLEEIRKDAKLSEMMVIKGSRLS GWVAVSLKASKALSKPVSLEVIKADDRGGSLPLLRQSRLS RWYAVDIKFTQKFVKPLTLAKIKTDPKLSTMYLVKGSRLS KWYLVHVKFVEKFNRTVGLHELKKYAELADMPLLKQGRLS RWWLRDVCFVSK SRYIPALAELRAYELANMRLLRGNRLS DWYCVDVQWLSTFKDVI AL RTLRQDPELKTMQLLKGNRLS TWMVVDVAYVAHLNPPVTLDTLKNTPGLEKMMVIRGSRLS RWDLVDVAYRRSFRQCLSLLDSLRNMPEFADSSLVRGNRLS
PWEMVDVEFEEKFPTLVALEKMKKKKLQAMQLFSHGRLS RWVAVDLTFVEKLPAIITLDKMKSSAKLYGLPLVRGNRLS RWYCVDIKFSQKFDQVLPLKQKLMPEITELGLVKGHRLS

RWYMVDLRLKEKFAQPIPLPQLREDPQLDGMELLRGSRLS KFCLVDLKAKGPVPKPVSLADIKADERLLHDLALVRQSRLS
 RWHTVTVRYIETFQHYISLDELKGNFEPDELQVVRGNRLS RWYQADL QFACHYPQPLTLKQLKHHPEFADMELVVRPRLS KWSMVDVQFVRMLKRFI PLAEMKKYHQLKNVALFTKARLS
 QWQVVHVEFRRKFNKMITLNDLKSYAALENMQVLKQSRLS PWSAIDVSHVQTFPKVLSLGYLKQQTALAEMPLVKGSRLS
RWYTVRVQFLAAFERVIPLAKLRATFTPEELEVVRRGRLS
RWYLVDIAFERKLARTITLENIKQYAKTEGFPLIRGNRLS RFPAVLVGPKAPMPRPITLAEMKAEPRLAGMAMFRQFRLS
 RWISVTLEFVEKLSRTIPLTKLKADQQLADMHLVKGSRLS KWDWVHVQFRSKFKNLVTLADLKSHAALENLQMVKQSRLS RWOTV RWYTVKVEFLEQFSATISLESLKQTFNSEEFGVVRGNRLS PWSAVDVAHVRTFRQVLGLGLLKQQSAJEEDPLVKGTRLS KWSALDVEFVEAFPRVIPLAQLREQAVLSGMPLVKGSRLS TWSMVDI KGERSLPNPVTLDDVKANPKLKDMLLIRKGRLS KWSVVHVVFRSKFAGSITLKELREMKPLQNMQMLKQTRLS RWLNVDVAFVRAFDEVLPLTLLREQPALA AMPLLRGQRLS KWQMVDVKFVEKWNAVVTLQAMKSRRELQKMALFTQSRLS KWSALQVGHVETFAKVLSLSYLKQQAALEQMPLVKGSRLS RWIMMVDI EFVRKLDRLIPRLAKLKSLPDLSELPLVRGNRLS RWSLVHVSFREKFTNPLTLHGLKAMAEISNMQLLKQSRLS
WASVQMGPFVALQKPVTLATVKATPALGDFPLITRSRLS
 RWVGVTVQYQRHESMMTLQTVKADAACEHDALKKAGRLS

| UniRef90 A0A021W6A3 | $\mathrm{V} \overline{\mathrm{~L}} \mathrm{P}\|\mathrm{~V}\| \mathrm{S} \text { A A Q WK } \begin{gathered} 130 \\ \mathrm{M} \mid \mathrm{L} \\ \mathrm{LA} A \mathrm{M} \end{gathered}$ |
| :---: | :---: |
| UniRef90－E0UF22 |  |
| UniRef90－K2CQ79 | $V Q P L$ SEEHFQVI CEMA |
| UniRef90－S9VNJ7 | V QPVTVAEYNHIVELS E A K K N K K A K |
| UniRef90－K01188 | I T PVEEASEWDY |
| UniRef90－WODZI2 | $V \mathrm{MPL}$ S P A Q F D Fi La L |
| UniRef90－T0RH13 | 1 MPI SKKEFEELSK |
| UniRef90－R1FY52 | V SNVRPDEWHSILGGIAGE |
| UniRef90－N6X5D1 | $V \mathrm{MPV}$ TES Q WN HIL S MVG |
| UniRef90－L9PGH8 | 1 T PVT A A Q W A |
| UniRef90－UPI0002917E41 | VMPVSDSEWAAILAM |
| UniRef90＿UPI00026306CB | VTPVRPEEWAVLLEMSGTAP |
| UniRef90＿G0UX12 | VQCVERREYEHIVFL |
| UniRef90－A0A017SRY7 | V S SVTRAQWKFIMRLAKEKE |
| UniRef90－R7VJA7 | $V$ QPL S S E E WDFIVGL |
| UniRef90－U3HVJ5 | V MPV S D S WRal La M |
| UniRef90－UPI00037959E3 | 1 T PVDPKEWAVITTLLG |
| UniRef90－FOSQG2 | 1 TPVTAEEFA AVEEL ${ }^{\text {a }}$ G |
| UniRef90－B5EKY8 | 1 LPPIT S S QWQYıLQYA G |
| UniRef90－UPI00030CF1E2 | VMPVNEDEWHAILAM |
| UniRef90－UPI000359BDA5 | VQPI ANDEWDY｜LTLL |
| UniRef90＿UPI0003F05B21 | VQPLT S EEFDFILS |
| UniRef90－UPI000478C066 | V LPV S A AQWKLLLSL |
| UniRef90－Q080Z6 | VQPVTPLQYQHIMQL |
| UniRef90－H1XWT8 | 1 QPVTEEEWQA |
| UniRef90－UPI0003B55A43 | VMPI D Y K S WK I DKMSR $\square$ K S |
| UniRef90－F7NTF1 | VMPVSSAEWQHILTMS |
| UniRef90－U3ATF0 | $V \mathrm{MPV}$ NEAEWQAVLAM |
| UniRef90－F4XYD2 | VMPVSQAVAQKILEDS Q A T NPSQ |
| UniRef90－A3HZ69 | $V M S M E K T E F D L I L K M G$ |
| UniRef90－K2JX74 | $V M P V S S G Q W Q H L L G L$ |
| UniRef90－14HIR1 | VMPVNPA口ATKILAL |
| UniRef90－B6HCZ8 | V S SVTPA Q WK Y i L ELA GEEP |
| UniRef90＿G2L336 | $V \mathrm{MP} V$ S A E E WQA L L PLA |
| UniRef90＿Q2YBF0 | I T PI D P A E WDFIM |
| UniRef90－UPI000374599F | V QPVTSEEFQTI CEMGR |
| UniRef90－UPI0003C7E543 | VMPI DSKS WKI L NKMSK】 |
| UniRef90－A3W9K5 | VAKIKPDEWKLI CKMSE |
| UniRef90－UPI00036907E6 | VMPVADS $\square$ A Q Fib Las SVRVDDRS |
| UniRef90－M4V9E0 | I QPVKAKDF Q H Q Q ${ }^{\text {L }}$ G |
| UniRef90－M7XJC8 | V MPVEKNVFDLI IKMG |
| UniRef90－Q129F1 | I T PVVEPKHWRVI CKLLG口 |
| UniRef90＿UPI00046FBC11 | VQPVTTDEWQYI SQL |
| UniRef90－U4LET5 | V SEVPEGCWDFV $\square \mathrm{GL}$ L |
| UniRef90－K2F5S3 | I TPVSAAEWAF |
| UniRef90－G2JB44 | VTPVTAQE WKRI EAL |
| UniRef90－W4LCJ1 | 1 QPVTPEEWEIVLSL |
| UniRef90－UPI000464E3BE | 1 LP I T Q S WWQ HV |
| UniRef90－G0U798 | VQRVEKTEFEHIVELGR |
| UniRef90－11DZM2 | VMPVTEPQWQSILQLG |
| UniRef90－W7QTL9 | I MPVVPTEWHSLLQ |
| UniRef90－LOWD19 | I QKI S R R Y Q Q I L Q LCTPQPAP |
| UniRef90－UPI000348DDC5 | 1 TPVTPA QWDLI VA |
| UniRef90－E6VBG8 | I T PVVEPAHWKVI EK |
| UniRef90－D2R4S7 | $V$ QSVSSAHFAHILRDAGAK |
| UniRef90＿UPI00037D3E99 | $V \mathrm{MPI}$ DAAS WQLI CAKGGL |
| UniRef90－K9VBJ9 | $V \mathrm{MPV}$ S E S A A QKI |
| UniRef90－G7UTB2 | $\checkmark \mathrm{L} P \mathrm{~V}$ S A A Q WKLL L S L |
| UniRef90－K9FJK6 | VMPVTDDVAKRILALLA |
| UniRef90－B4X213 | VQKVSERQLQLI RQM |
| UniRef90＿UPI00047805DB | VMQLTK Y F K FI LKMGNTK |
| UniRef90－V9KSA2 | VQPLTKGEFDFI STLEDKKP |
| UniRef90－M1V9L8 | VQPVRPEHFRFILGL |
| UniRef90－UPI000474B812 | I T PVKEESAKLLLD |
| UniRef90－G7X7M8 | VTPVSVTEWAF MGVAEENEAKANAE |
| UniRef90－E2Y0K2 | VMPVTAEQWA AVLA |
| UniRef90－Q2JN10 | V $\square$ PV A A EVAERLL L L A NLS S |
| UniRef90－B2AEL3 | V SKVSASEWKFLMAVAE |
| UniRef90－B2IAK0 | VFPVTTS Q WKLL L S |
| UniRef90－UPI0003B4CA6D | VVPI S D D E WDVVMEMAG |
| UniRef90－Q3SFI3 | 1 T PV DPAEYRFI VK |
| UniRef90＿V4HTF2 | 1 MPV T EQE W $\square$ HI V EMS |
| UniRef90－U1KUL8 | 1 QPVRESEWQYI L D |
| UniRef90－F2Q1A8 | $V \mathrm{SPVTAEQWEFLMSLLEEEEPVR}$ |
| UniRef90－M5E9Q3 | VQPVRADEWHYLLN |
| UniRef90－UPI00034DDC76 |  |
| UniRef90－UPI0003F7BE1E | V MPVLPSIAERILRL |
| UniRef90－B1JFC3 | $V \mathrm{MPV}$ VEEQWAAII A L S |
| UniRef90－S6APU9 | $V \mathrm{MPV}$ T D E E WA GVLAL |
| UniRef90－UPIO00368DC0C | 1 QPVTKEAFDEVLLMGG |
| UniRef90－M4FWM4 | V SSVSKEEWDHLMAVAAEK |
| UniRef90－H0P617 | $\checkmark$ LPV SPA $\square$ A N RIL LELA |
| UniRef90－E6PF02 | $V$ QPVRANEWRALLKLVRT |
| UniRef90－A4HQK8 | VQPVGAAEYAYVLRM |
| UniRef90－UPI0002DCD07A | $V \mathrm{MPV}$ TPEQWAAILAL |
| UniRef90－U4KFS7 | 1 MPV S EQEWQTILD |
| UniRef90－L8FTF7 | $V T \mathrm{GVTKGEWEFLMS}$ |
| UniRef90－S9QZR6 | VAPVTAEHFQDVLELGGTKKPPKAP |
| UniRef90－K6ZW14 |  |
| UniRef90－E1VGF5 |  |
| UniRef90＿L8D9K9 | $V M P V D A N E W Q Y I V$ |
| UniRef90＿E8R656 | $V \mathrm{QP}$ VSPEHFEVIMNLAGDD |

UniRef90 UPI0003F7595D UniRef90-H5WKJO UniRef90-A7RXH3 UniRef90-F6AHK6 UniRef90-UPIO00379A12B UniRef90_UPIo0046E8FC9 UniRef90-A1W7P3 UniRef90-F9ZKJ8 UniRef90-F2NLE9 UniRef90-LODTO2 UniRef90_UPIOOO3665215
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UniRef90-E8UC30 UniRee90-UPI0003F557A8 UniRef90_UPIOO046F649F UniRef90-UP100026CA0AB UniRet90 U3HDO9 UniRef90_W5XAK1 UniRef90-Q098E5 UniRef90-UPIOOO3808F51
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UniRef90-M1W8×8 UniRef90-19BSLO UniRef90 W6MC11 UniRef90-UPIO003B5FFF4 UniRef90 UP10001BF66DC UniReffo-L1K16 UniRef90-A0А031MIW7 UniRef90_UP1000371F698 UniRef90-UPIO004779C22 UniRef90_UPIO0046552EA UniRef90_Q4E145
UniRef90-D5AEC1
Uinet90-F3X3E2
UniRef90-19BXP4
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UniRef90_F2QMS3

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 TRFWLMKSEPDECSIDDALGGAPGATVPWTGVRNYQARNFM RYWLMKSDPDEFSIDDEAALPKQTIAWEGVRNYQSRNFM
 YWL MK SEPEVYSG|DDLAREGRAV
FWLVKSEPDVFG DDERVG MPDRSWDGVRNYQARNNM RYWLMKSEPTDFS| DDDEKAPNQSIDWYG| RNYQARNFM NYWL MKSEPNVYSIEKMQQ EKSCDWDGVRNYQARNFL RYWL LK K
YWLFKTE RHWLLKS E RYWLMKSE NHWILKTE K Y WL MK SE NYWMVKTE HFF KY WL FK S Y WM MK S NYWLMKS NYWLLKTEP QYWLLKSEPDVFGYADLERVG VEP R Y WLMK HWLLKSEPEDYSWDDLASFPNQS QY WL
TQYWLMKSEP
RYWLIMKSE
YWLMKSEPQEVSVDDALAAPRSTVAWTGVRGYQARNFM NFWLLKTE QFWLMKSEPAEYGWDDLVRHG
Y WLL LK S S QYWLVKSEPKVYSDEDLQR QYWLMKSEPNEGWDDLQKKGEDI T T TADWEGVRNHOAANNM WLMKSEPDEVGOLDVRYQARNYL aw Givnyoarnfm
HWLLKTEPEAFSLDDLKARGQ KYWLIKTE
YWLFKTE QYWL LK A E
NYWLVKQE
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HWLVKSEPGCFSDDDLAASEHGATCWSGVRNYQARNFM
THYWLIKSEPTDYSIDDLQQDE TADWDGVRNYQARNFL NYWLVK K Y WL YWL MKA

Y W MK S

Y WVMK
YWLLKSE
Y WLVKT
 RYWLMKSEPAECSI DDALAAKDATVPWTGVRNYQARNFM QYWLMKSDFHTFSIDDLKKSG CSPWDGVRNYAARNNM
$K F W L L K T E P E E W S W E H Q A T N ~ N G V S Q W D G V R N A Q A Q N N M ~$ Y WL
Y WL MK SPD
Y WLLMKSEPEAYSUVDLQQQSQTI
YWLMKSE
RHWLMKAE
NYWLMKSEPESYAWETFVRDGRT
NYWLMKS
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KYWL FKTEPDVFS:DDLDR
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QYWLFKTEP


UniRef90 UPIo003F7595D UniRef90_H5WKJ0 UniRef90_A7RXH3 UniRef90-F6AHK6 UniRef90_UPI000379A12B UniRef90_UPI00046E8FC9 UniRef90_A1W7P3 UniRef90_F9ZKJ8 UniRef90-F2NLE9 UniRef90-LODT02 UniRef90_UPI0003665215 UniRef90-A0P4Q2 UniRef90_U7PV38 UniRef90-A0YIC7
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UniRef90_K6Z461
UniRef90

Q WA S $V \operatorname{V}|\mathrm{R}| \mathrm{E}$ P REK|L|GSP|V|T|L|AA|I|KADKA|L|EKMEM|L|RQSR|L|S







 R WY R V DV A F E E K F S EVVI PL S WL K QQP E LLS DSPRLVR GN R L S





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

 $R W Y T V V K V G V A T E E R D I T L D Q L R E S F E P D E L D W V V R G N R L S$ KWSLVHVKIEHKFSRIVPLSLLKALGPLRDMELLRLDRLS N WV MV DV K A L K P L K K P V D L T T I K L V P E L Q Q

 WV A V K LLK A K Q T L K R P V S L A E I K S E D R L S E MLL MLLK Q S R L S R W Y S I D L K F G R K K F P K V VI R L K M L K A A D P A L A E M V L V K K G A R L S GFGMVRLRGLAPFPTPVTLADVKAEEALGEMVLVNNTRLS RWF QLD D GF ER QFARTV S L K EVVKA DS QL E HMYLVK GAR L S

 $R L I V V D V V P L R A L P H P V S L N D I K A D P F F A D F A L V R Q G R L S$ R WS M V D V $\operatorname{D}$ A P V Q A F P R V L RWF A M R M






 S WP AVVRVEPVRPLARPVVLRAMKGEGGLSDMAII RQSRLS RWHRVDVRLVRRMRRPITLTELKHHQALGDFALLRGNRLS
 G WVA V K L K P K A S L S HP I N L E QI K A N D L L N T MP L V K Q S R L S


 PWMMVDI E YQQHL RLVSLARRMKKTEELAEMPLVRGNRLS

 WVAV D L V P V K T L G K P V T L E VI K A D K I L K D MLL L V R Q S R L S GWLAVVKI KPVKALSKPMGLEEI KADDNLSDEPMLKQSRLS
 RWQLVDVKFVQKFDNPVTRDAMKEEAALDDMELGRGGRYS G WV A V R L A A




 R W Y G V D L



 P WE MV DVV Q F E E K F P S L V T L
 RWQTVVVEF DETESNPI LLS SLKEKFSDEDLLMLVRQNRRS
 K W Y M V D G WV $V$ A V

 K R TVVDVK L G R T L P K PV T L Q Q I K Q D R DFA D F DLVR D S R L S


K WMMV DI H F K R K F VK T L L L K El K TMM E I S E I GL V K G HR L T





| UniRef90_H8N092 | $\text { VITPTPVEHFE } \frac{130}{L V} \text { VLKMGKTK } 140 \text { PATS }$ |
| :---: | :---: |
| UniRef90-D7BHR6 |  |
| UniRef90-A0A031GY82 | I T PVAPNEWGLI EKLLG |
| UniRef90-H8FNQ4 | V SPVDDEAARLI L A MA |
| UniRef90-U1KSY6 | I MPV NELEWELLMALG |
| UniRef90-B1XLZ0 | V MPVPETVAERLLAM |
| UniRef90-UPI0003957036 | I T PVVEAHWRF |
| UniRef90_C9Y680 | 1 T PVEPA HWQQIVSVLG |
| UniRef90-F7NHQ0 | VMPVSENHWRLVQKLSE |
| UniRef90-Q8YY67 | V MPV S D SVA Q Kl La MK T |
| UniRef90-A0A024JC08 | VIGVTQQEWD Y |
| UniRef90-A4CF59 | V MPVTPEQWHYITNM |
| UniRef90-B7K6D0 | V $\square$ P V A P E $\square$ A S Q |
| UniRef90_L7UAS7 | V APVT A EHFKLI LKMGKTSLP |
| UniRef90-J4KNQ0 | V SKVSA GEWRALCELLADEK |
| UniRef90-A0A014Q6T9 | I T PVVTPEEWD Y I |
| UniRef90-S6JE78 | VMPVTAEQWAAVLAL |
| UniRef90-T1AN06 | V LPV TPGEWQHLIALMTLTP |
| UniRef90-W5WWX4 | VQPVDKKHFELVEKLG |
| UniRef90_UPI000371AE58 | VMPVCEKEWNALVVSAR |
| UniRef90-UPI0003069B64 | V M P VPEK $\square$ A EKIL QWGE |
| UniRef90-M4S4P3 | V SPVSDAEWAAI L D La G |
| UniRef90_Q7V057 | 1 IP I K K E I A K L L |
| UniRef90-J1Y9K4 | V MPVT ${ }^{\text {P }}$ Q Q WR DL L A L |
| UniRef90-E8PMZ2 | V MPVPPEVAERLIARKG |
| UniRef90-B7KAI8 | VMPI EEKI A QKIL S L |
| UniRef90-K9Z005 | V MPV $\mathrm{T}^{\text {P }}$ EVAQRILQ |
| UniRef90-UPI000367FD59 | 1 TPVTPEQWAYL Q |
| UniRef90-H8H033 | V $\mathrm{L} P \mathrm{~V}$ TPEQFRAAVAAGG |
| UniRef90-A6G9B9 | VQAVEAA HFAHVLK |
| UniRef90-F8L052 | 1 DP I EYEHFDAI RALG HSPHETP |
| UniRef90-A9BWS6 | 1 TPVVPKEWAFIEGL |
| UniRef90-E3RH97 | VCKVRKEEWDFILGLAEGKK |
| UniRef90-U7FQL8 | VQKLT DRQYQLV |
| UniRef90-Q9RWU9 | VFPVTPEQWRAALAAVGVELPP |
| UniRef90_UPI00035F8EB8 | VCPI T DEEWNIILELGEMK |
| UniRef90-A9BCB5 | 1 D P VKENIAK RLYNL C G |
| UniRef90-K9UB45 | VMPI LD RVAEEILELS |
| UniRef90-COGCV9 | VMPVSAKHWQQVIEELSKE |
| UniRef90-D9PJ52 | V QPVTREAFEI MTLSE |
| UniRef90-LOPCP5 | $V$ QPVTVDEWNFIMG |
| UniRef90-K7W1C0 | I NPVIESVGREILEMGR |
| UniRef90-UPI0002001C59 | 1 LPPVPD - S A R R L A L L G |
| UniRef90-A7H6D5 | V VPL S PAEWRDLTALIAD $\square$ |
| UniRef90-D6YWF6 | 1 TPLKKREFDYı |
| UniRef90-D8TNY3 | $V$ Q PVTS E Q WQRILEL |
| UniRef90-W0SND4 | 1 TPVDPAEWKFI |
| UniRef90-N2JA07 | V MPVTDEEWQAILA |
| UniRef90-UPI00034B700F | VVPVSEAHWQRILTLTA G |
| UniRef90-LODKC2 | VQPVSDAEWDAVI AL |
| UniRef90-B5IMJ9 | 1 LPV P D A T A Q |
| UniRef90_K9YK44 | VMPVNNAVAKALIDL |
| UniRef90-UPI0000E0E427 | VMPLTFTEFTLMQKLGGLTH |
| UniRef90-Q1IWR4 | V LPPVTEEQF |
| UniRef90-S3DHE6 | V SKVSAAEWEFL |
| UniRef90-A3Z6A9 | 1 L PVPEA |
| UniRef90-A0RTQ4 | V MPVPKGI WD RI MTLSRDSPPGRA |
| UniRef90_A4CR97 | 1 LPVDEP LA HDL LKR |
| UniRef90-W0A7N4 | V SPVTDAEWAVLTGLA |
| UniRef90-G4QNX9 | 1 MPV N A SEFDVL |
| UniRef90-M2S871 | V CRVRKE E WEFIL GLLA E |
| UniRef90-10HPD6 | 1 TEVDDAEWAAVLA |
| UniRef90-B1ZMX0 | V LP L S A E A Y QR I V K L G |
| UniRef90_R7KJP8 | 1 TPPVT K E Y LFIVK |
| UniRef90-W9UZA4 | VIPLS S R MFDAII A |
| UniRef90-K9WCL4 |  |
| UniRef90-K1VRV3 | VMPIRVD ${ }^{\text {M G D R I L Q }}$ |
| UniRef90_UPI0003662CE8 | V VPV S EFHWQRLLQLA |
| UniRef90-A8G6S7 | 1 L PVR R D $\square$ A K 1 |
| UniRef90-T0JPS6 | V MPVTQEHWELI HSMA |
| UniRef90-UPI0002EF140A | $1 \mathrm{~L} P \mathrm{~V}$ P Q K S A NLLIS |
| UniRef90-UPI0003AFBD44 | V QRLTREEFDFILSL E EKEP |
| UniRef90-K0KI03 | VTPVRLEEYYEVLAMEKEKP |
| UniRef90-K9XXP0 | $\checkmark \mathrm{MPI}$ EKK】AEKIL |
| UniRef90-K1KG87 | 1 T PVEKEEFAFIV |
| UniRef90-A0A024F774 | I QPVEKKHFDTLTK $\mathrm{T}^{\text {G G }}$ |
| UniRef90_R5Q8W5 | I T PVEKKDFLFIVE |
| UniRef90-D9SJ77 | 1 TPLLDPLEWNY |
| UniRef90-K9PBU6 | $1 \mathrm{~L} P \mathrm{~V}$ S D A S A A R L F R L L GVE P |
| UniRef90-B3CLB9 | VSPVLETEWNEI I RMSE |
| UniRef90-U5DRD9 | V MPVAEEVAVKI L Q L G R |
| UniRef90-A2C4H4 | I MPI NKDI ALLELL |
| UniRef90-K9S703 | VMPVPEAVA AKLLA ${ }^{\text {P }}$ |
| UniRef90-K9YDX9 | V $\square \mathrm{P}$ VPS DTA QRLLK QL S VNNPP |
| UniRef90-UPI00041F79F9 | $\checkmark \mathrm{MPV}$ A S S $\square$ AEQL $\mathrm{L}^{\text {a M }}$ |
| UniRef90-N4U3F2 | V SKVSGEEWRFLCELADEK |
| UniRef90-TOZWL2 | 1 T PVTL QEWKTLQDL |
| UniRef90-Q10WF5 | VMPI HENVAKKILDMKN |
| UniRef90-UPI0004778D83 | VLIPVEKEISSRII FNLI |
| UniRef90-C1D0E2 | $V L P V T S E Q F W D V L D A A G L S$ |
| UniRef90-K9Q079 | VMPVADD $\square$ A T QLLEMGGV |
| UniRef90_M7P667 |  |

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MKSEPYEFNDDDFAARPNQTVAWEGVHNYQSRNFM MKTEPTVYSYDDLERAGRDL WDGVRNAAAARNM WLCKQEPDCYGLADLERDGSTT, WDGVANPVARKNL QYWLLKTEPGEWSWEDQAANGGTVTKWDGVKNKQAQKHLL SRFWLLKAEPDKFSVDDFEA VKTSPWEGVRNYEARNLM WLFKTEPDTFSIDDDLARANDVTLWEGVRNYQARNFL FILKSEPDAFSIDDLMAKPGRTTLWDGVRNYTARNNL $R Y W L M$
$K W W L M K S E P D Y G D D H L K A P N Q T L P W T G V R N Y Q A R N F M$
K KWWLMKSEPDVYGID HLKKA EQTTLWDGIVNYQARNFM QYWLMKAEQEKFTVDDLRAKTKPE GWDGVRNVVAAKNM RYWLVKSEPVKFSVADLANVESSEPWDGVRNWEARNYL QYWLLKAEPEKFSDDDLAAKTEPBPWD KNALARNNL RHWLVKTEPDTFSLEDLRR SESPALWDGVRNYQARNFL
YWLMKTEPNEYSYDNLVNEG DTVWDGIVSNALALKYL
 MKSEPEAYG: DDLRREG STGWDGIRNYQARNFM
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 R D M R V G D QV I F Y H S S A K P G A A GI M S V V R A G Y P D P S Q F E Q P


 RAMKLGEEAFFYHSNCEPGI AGGLMKIVKEAYPDHTQFDNP Q Q MQ V G D DAFFYHSNCKPS VGGLMMMI EANDPDPTAPFDPP
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 R S MLI G DKAFFYHSNCKPGVVGLMEVDETGLVDPTPFDPP RAMRVGDRCLFYHS GAGRRVVGVVEVAREWYEGEGEAAS G R Q M QVGDLAFFYHSNANPGIVGLMRVVNTDDADPTQPESP RTMKK G DLAFFYHSNCKPGGAGVMEVVKEHSVDESAFENP R Q M QPA DLVLF Y H SVVSDKQVVVGIAEV AAPAAPDATAPAGT RAMRRGDRCLFYHS GAGRRVVGVVEVAREWYEGE EGEAA RDMTVGDGVLFYHSSCEPGIAAGIAEIXASETYPDSLQFDPP RKMKVGDQAFFYHSNCKPGIVGLMEVTETGLVDPTQFDSP

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 K S M KV G D QVLE YHSNCKPG A AGFAEVCKEAYPDY TA WD NP

 K SMNDGDLCFFYHSGSKRRIVGVVSVTREWY TDDDD D RCMKVGHLGFFYHSNCKPGIAGIVVK
K S M T L G DL CFFYHS GTKRCIVGVVVEVSREWYTNEDDDE G R D L K IG D P VLF Y H S S C Q P GIVGI GEI A S EPYPDP T Q F D K P
 R D MQVGDKVFFYHSSAKPGVTGIMTV SKAGYPDPATEDEP RSMKKGDQI LYY Y T G DERQAVGI MTVVTSEPYPNP KEDNE
 RLMK S N DLLAF F Y H S G I E K S I I GI V S I YK EFYCFN I K N D A AMRVGDRAFFYHSNVGREVVGVVEVVRAAYPDPTAAAG R Q M A N D QVFF Y H S C CK P GI M GI AVV SKPAYPDATARNNP


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 R N M R V G D MAFFYASGRKPGITGGMEVVSKAEPDATEADRK K EMKVG DKVLF YHSNCK PGIA GFAEVVSKEAYPDYTA WDNP RNMNA GDKAF F Y H S N C E P G I A GVVMEVVK EF S ED K S A K D N $\square$
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90
100
110
120
K WS VVV|H|V|EFRSKFSVP|I|T|KE|L|REEKP|L|QNMQM|L|KQSR|L|S RYVVVDVKYKKRLNRPVTLDEIKGNRMFADWELVRDSRLS



 G M V E V K E V A P L K R PI S L A E MK G E E CLL G E F AL FRRQPR L S

 RWFTVVRVQYQEKFS QVI SLTTGLKTKFSGDELLIVRGNRLS
 K HVVVVEIEPVVGLAQPVSLA QIKAEPSLADWALVRQSRLS PWSLVVHVVREKFERELGLKELREWAALENMQLI RQSRLS

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SSYWVMK SEPEKFGDEDLKAQPKQTTCWDGVGN
WVM K S E P E K F G D E D

K Y F L L K T E P S S Y S Y DMLDEKEGKTV WD GV K NP LA QK F D




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R Y WL LKKTEPSEWSWSDQDANGG IISKWDGVVKNK QAQKNG


T S H W WLVKA E P P


QYWLLKTEPAEWSWADQAANDGRTT WDGVKNKQAQKHLL






$R V S$ P WD G V R R N H E A K K K $\quad \square M$

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 K K M R T GDDVL FYHSNTKPGVAGLARI CSQSYPDPSAFDSP K SMSLG DLCFFYHS GARRRVVGVVEVTREWYS EGG RAMKLE EEAFFYHSNCEPGIVALVMKIVKEAYPDHTQFEKN R K M K L G D K V L F Y H S N C K P G V RDMKVGDKVLIFHSNCKPGVAALAEVAKEAYPDHTAWDNA K A MKI NDYVLFYHS Q Q G N EVVKGIMMKVKEEAHQDKT TAD P

 K E M E DG D K V L F Y H S N C K P Gi A GFA E V SARA Y T DP T K Q E NP R Q M K G G D K VL F Y H S N C K P G I A A LAA EVVSKEA FP D Y T A N D E P RNMNAGDKAFFYHSNCEPG』VGIMEVVKEFYYDPSTKDKP K SMNLDDLCFFYHSGGKARRVVGVVKVVREWYLEGEDGDG

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 K EMK LM DEEVL DY HSFDKY IAGGLAVVEKEFY LDDGQ ARMP I GEMLVVYHTS GEKRATGGAAKCVAVNNAENP RELEK GTKWI FYHTGDERSAVGTGTVTSV DASDP RQMQVGGDGVLFYHSSCEPG\AGIAEVSSTAYPDPTQFDRP $R$ QMKE GQLAAFFYHSNCEPGUA GLDMKVVKEA YVDHTQPDDP REMKPGD KLIVVYHTGNERRAVGTASVVVKV DASNP RQMKKGDKAFFYHSNCEPGVVGLMTIVKEHSPDWNAHDGS
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 PWVAVDVEFVEAFGDVI ELMBLRSTPDLAQLPLLKGNRLS TWYMVDLTEVKRAPHFVPLALLRTTAALSGMALVNRGRLS TWWMVELQFKSRLKHFVSLAMLRSLKALGDMPLLNRGRLS RWSLVHVEFRKKFAVPITLKELREMGKLENMQMLKQSRLS AVDVKADGEMRRPIDLKEMKGEEGLKGFVLFRQPRLS NWVAVHLKPQQALTKPVSLAATKRDERLSQDGLGRQSRLS KWYMVDLTFNARAKHFVPLSLLKGMKAIKEMALINRGRLS PWYMVDVQFIQMMKRFISLVDLKTYHQLKDMALFDRQRFS AVDVKEVGMMRRAVDLKEMKRDQELKGWALFRQPRLS EDGAVDVRSLGEMRKPVELREDKAEAEMKGFALDKQPRLS RWSMVDVEPLVAFPGVVPLDVLRTLPEWADSALTRGTRLS
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 RYVVVDVKFKKKLKNPYYDSQKNKMFANWELLRISRLS NNPYYDASSKEDNPKWSMA VRORLS KSAVVDVAFAVKFEHQLTMTEKQTGEFDDWALVRQGRLS RWY SVGVQSEYKLDRPVTLRELKMHKELKSMELLNRSRLS RWNCVDVEAVGPFPEPVTLGE
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KWYMVDVRFISRAKHMVSLPLLKHLATLKNMALLTRGRLS RWVCVDVKTVKSFTTPVTLAQLKAAPDLSQDSLLRQSRLS KWSMVDVQFVRMTKCFIPLAE
KSPMVRIAPGKRLKQPKTLAEMREAPVFRGSLLFRQFRLS KWFMIDARFVARARHFVPLALLRRDAAVKGMALVTRGRLS FVFDIVPVRRLKRKISLSEIKSIDAFKDFYLVKMPRLS K WF MVEVTFVARAKHLVPLALLKHDAALKNMALVNRGRLS KSWVVDVEFVRRFATPVTLREIKETHLFDDWSLIRQSRLS KKPLVKIKAGKA TANPKTLEVVKADRRFTESPLVRQSRLS KWDVVHVEFRRKFNRLVSLNELKEHGKLENLQMLKQSRLS KWSMVDVQFVRMTKRFIPPLSELKAHYQLKDMTLFTRQRLS KWYMVNVTFVARTAHFVSLALLRRDAALKQMALVTRGRLS NLYVVD\KPLKRLKLLTLKETKSDTDFKDFYLVRMPRLS KLF FEKVETLSSPIDYAVLKECPELENMEYFRNPQGS QWYMVDLIQFEGRLTHPVPLGVLKHLTAVANMLLLNRSRLS K WF M
KWFMPNVTFVSRATHLVPLSLLRTDEATKGMALDTRGRLS AGGAVDVRCVGEMRRAVDLGEMKKESGLKGFGLFRQPRLS VDV PWVSVA RAGDTLPRPVMLAAMKQNTALLAG\|VMLRQSRLS A WYMVDIKFKKNFQHQLQRM
TWYMVDIKFKKSFPNLLRRK
$V V V D L R A V R E F P S K V S L H Q \square K Q D P S D S T \square F L V R Q S R L S$ KVPEVRIRFVKKLKTPRTLAGMKEMKLFAESPLVRQGRLG KVPIVKVKAGKRLKSPKTLDEMKSASIFHDSPLVKIGRLS RWVLVDVVFRKKIP LIPLAALREHDELKDMRVLKGNRLS K WSM
REPQVRTRSGKA DSEPRTLAETKESALFRDSPLVRQGRLS KWSLVHVKIEHKFPA IVPLRLIKELPVAAE
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Y WLFKSEPFKWSWEMQKARGEKGEQWDGVRNYQARNNM
NYWLMKAEPEKFSUDDLLRAKTEP EPWDGURSYVARNNL
YWW $\square$ NANPK $\square W R F S D \square E T Q R Y T \square Y N E N G N K R R \square F Q N F \square$ NYWLLKTEAGEWSWDDQAANGG LSKWDGVKNKQAQKYM

H H WLLKAEPDKFSVDDFEKC KKVTAWEGVRNHQAKRYL
 SGFWLMKSEPDAFSFGDLCKHDGPAAGWDGVRNHVAKNHGL

NYWW $L$ NANPK $\square$ WS YND $\square E \square G G T \square S Y T S R N E R G N K R R K N F$
RYWFLNANPKMWSMVSMEVQDYT LYNDNGNKRRDFQNFL Y WLMKAEPEKFS IDDGKAKTEP E GWDG $\square R A Y$
NYWWLNANPK $\square W S I S K H N V G E K Q T Y H N E K G N N R R \square Y K H F$
VQYWWLNASPKVWRFSD DSVGEVQTYS $\quad$ YYNENHHKRRQNF YF L K RQVDVLAVSDFDQAPNNTLPVTGGHHYGAKKVI


NY WWLVANPKDWSAQE $\square A$ VGGYT $\square Y S D S G K K R K V F Q N F L$ SNYWWLCANPKI WSMTGWMVGEEQDYT LYGNKRRVFQHFL NYWWLNCNPKIWNDMDSKIGDRKTYT SVNEKGNKRRKYF H WL A EPEKFSIDDDER VKGVSSWEGVRNHQANSYY
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YWLFQGNPKYYRITDADREDEK MPW GVTRYG QYWWLVASPDVWKFSD DNVGEYTLLNENGNKRRVYQNFG NYFWITANPDIWK TDKTKKNENRFYPAYNSNNNKHRKFF YWLFQGNPKYYRI DDADRDFVQ MPW ASYFWVTADPSDWEVSELESGDKKFYPGYGNKARIFSNFE WVLKACPHRFSUDDCGNEPLAVE G GURSYPSQS LM QYWWLTANRK DWSFSE TTA GEEQSYT

YWLF QGNPKYYRVLDG口RDF QEMPW LVTRYR
NYWLFQANPNYYRLLDATKELKEMPW LVTRYA
Y WLFQGNPKYYRVLDA QQDLEQ





RWYMVDVEFVSK $\square P$ HPVPLSLLQHLSTPESMSYLKRGRDS KWS LVVVK EHKFPK IVPLSLLKEVGPLQNMQLLKGGRLS $\frac{1}{R}$ R
R RWDsVVIV自K GVK KTA
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$R$『w $\square$ HVE A RWLMVDFEKLEGLSSP
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VIFRKIETLASPVDLSEIKSMPELANMEFLVNPNGS RWYMVDVEFVSKLKFHISFIELKSNPLLKNSEPIVNOGS
YFY
TПEFVKT



DEFKTESLTYPIDYSILKNC
K $\square$
 FKKTE
VILF
 YWPCSRIRFNQKLA


Y W $\square$ NPK $\square S F V R K \square G Q P L R K H E D K Y D A \square L K Q L L V I R A P N S T$ RKTEQL LTP D YS II K GYEELQGMEMVGGGRGT Y WP Q A R D K L PVEGVTLEYNREUEGDI SWS QLKEDPDLEGSPII NTSQGS YFICIHVTLERKFNSPVRLGRIRHEHIFDSMQVLKQPQMV RLY FKKURDLDAPI ALSDIKADPVLSQCEFCKNPNGS YWP CAQ KKFTTKLDNPLLRSDCKQDPILQTLLVITRAPNST K WFMVEVTFVARAKHLVPLA LLKHDAALKNMALVNRGRDS
 Y WPQAMLKFTQKLQKPLLRDELKKDPDLKDLLVI RAPSAT PVEGMEFEKVEQVANPADLHELQKNPALQSCEPILSNQGS G GAVDVRAVGELRRPVSLEEIKKAAALKDFALIDRARGS TWFMVDVKFVSRLPNFVPLKLL RWFCVDVKLI EKWFTPI SLVDLKKQSKLANMTLLKGNRLSS R V KL RILRKLGQPLRRNEIKHDRULKELLVI RAPNST Y W DHVK R CLRRLGQPLRRSELDYDRVLSNLPVIRAP G D
 GAVDVRTVGEMRRRVELAELKGDGALKGFALLRQPRLS Y WF QCKI RFTRKDEKPLLKETLKDDSVLQDDAVIRQPNAT NSTACEIGFYEKDIKPI SLGHHLNKHPKLKNLYFLQQNKQS NSTAI ELLY GKNINPI SLGHLNKHQKLKNLYFLQENKQA NKIRVEFKFNEELK PLTTDYLKRSEVLDNMRLINQ NKI RVEFKFNEELK PLTTDYLKRSEVLDNMRLI NQ NSTAI EVRYDEDUNPVNLATLNKHPRLKNLYYLQENKQA NSTAI EVRYD KNITPVTLSQLNKHPKLKNLYFLQENKQA E ELDVELGPMT LLKPPLLESELKQDRELFSLSIMRQHNGT K
 NSSAI EVYFERTINPVTLTTLNKHPKLKNLYFLQENKQA NSTAI EVIYEQD E P PI SLFALNKHPKLKNLYFLQENKQA


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SEPDTWSVNQ
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QYFWVNAAATDW WLLKCNPKVWGLQAFLD G
 V HYWDFQATPGRYDLHSEDHEGAEV NYWI FQGNPKRFEVDDVKNMDDYILNNENDDNDKQKHFI WL DK CNPHTTAVDPMVTAGRAKAHWCVADNY RSHL WI FQANPKYYDIVEALKHLDDH CW SVNQHKN NYWUF QSVVDRYDLDDEIVE IGGSDTWYATR


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 I A R HK QUYNFE
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UniRef90_W5WK71

50
60
70
80
LV QPGDLVVGQSTPDKRVMALARVSRGMSKSESGESS TQLEGDQLVFYNKKREQSVIGVGEVSKHIHEKPPIPGRT RQLEVGDQLVFYNKHREQSVIGVGEVSQHLHEKSPIPGRT KEMNI GEGVLVWVSGKEAGIYATAEIVSLAEKLIEDIPDRN QRDKQGDEIYFWKTQPNAGUYVGRVMSDPF TVHEYN NKIQVGDGVLIWMAGEAAGIYADAED DKDTODDDYWTDP RRMAPNDPVVVWVSTPEPGIIWGVGRVTDYLDGEASTPDNG TQLEQGDKLVFYNKKMDQSVVGLGEVTQHDHEKAPDAGRT
 I RPGHRALFWVSHPRRG| WGAGRITGR PADAGG
 VSKEAYPDYTAWDKP TG IGDKVILWATGANAGVYALATITSPVYEDPEEEDQP DKI KKGDKVI WWTGDESGCYALAEVISEVGEDEEQDYEK DKIKERDKVILWITGKNAGCYALAQISNSPRETKSSPDDH QTIKPGDKI L WVVGKQSGCYALAQVASEDYTDESGEQYY GEVAAGDEFVLWVSGPNAGVVAYGHAAEYGQPDYWAEDPG NQIKKGDRAYIWVSGQNGGII GIIETRQDEDPDPY IISDG RELADGDRFVMWITGPKGGLI GRGRITGPPHPDEYWQEDP KRVKPGDKLVFYVKQEEPMIVGDFEVVSEPYSDSTTPGET LMQPGQHVLLWVSTHKRGFWGAGTLTGAVISD AGR KELAAGDQFVMWVTGPRGGLVGRGRITGVPTQQPSAPDGT DVRADDRAI WKAGQQRGVADAEVLEQHWVDQ QKASE NDIKVGDKVFIWRSGEEKGIALTEVVNEPNVVGDNYPSV DD K DGDKVFDWRADGGKGVIAEGEVTEGLHEEEAEGYDD EEISDGD IVFVYVGGKVGRIYAVG TYEEKD AKVKPGDRLVFYVKQEEPRIVGIFEVVSEPYTDPSKDFKS AKIKPGDKVIDWQTGDQAGCYALAEVVSERHYFTPQEGNE LMRPGQRVLFWVSHRLRGFWGAGRITGS PSTVDGR EMI RDGQRAILWASGPERGIWGLGPSVEETQGYWTDEDRR
 RDAEPGDLVFLYQASPVREVLGLGKLASEPVGDETRFEVE QRIKKGDKVIMWMTGSEAGCYALATVQSEFHVDDSPEAQD DNVRKDDKVFIWDCGKFAGGSATGRVSVDSCVEPTSSKPN NEIAPGDRFILWRSGKGGGVMAYGRITGNLRYMVTQAG LDMQRGDVCVMYVTSPVKVVHSLFRVMEDAYVDPFFHYK RETSKGDKVLI YRTSPYKHVKYLVEVLENAKEESTKRGNK DNDRKNDKVFIWSCGKNAGITATGRVMIENCSEPTDYQSS RRMTPGQPCLLWVSGAHPGVHALGEVTAA Q $\square K K G D W V C I Y M T S P D Q A V R Y A C Q V L E S Q D P N E V Y Q D R P$ QSGDTVYI WRSDGGKGlVAKTTVVSEPYTVEQTDNRS KATKEGDLVLLWRTSPKKD: RYYIQAESDAYSIADDNDKG ELMRAGQPVLFWASGSRRG|VGRGELAGTPERDGGADAG ADIAAGDDFAlWTTGLNAGVTGTAR GTTSDADYWATDPG


PTTEYDS

[^1]UniRef90_D2QXZ2 UniRef90_UPIO002D3146B UniRef90-A0A033UYN8 UniRef90_A0YI60 UniRef90_UPI0003B52E22 UniRef90-Q9WWK9 UniRef90-UPI0003B615B8 UniRef90_U1ER55 UniRef90_UPIO00363047C UniRef90_U1SYS6 UniRef90_KOUIL3
UniRef90_A6BZ09 UniRef90-UPIO0034ACBAC UniRef90_E2LU02 UniRef90_UPIO00371B747 UniRef90-A6EMU5 UniRet90_A1UP42 UniRef90_UPIO0036DB304 UniRef90-UPI000360C5EF
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100
110
120

NSTAESGY NSTAI EVYFEKEI E P VSLSTLNKHPKLKNLYYLQENKQA
 DSTCUEVKYEKED NPVNIGELNRHQTLKKLYFLQSSKQS RFGGVKV RFDYVLNQPVLRKHLSQDPEFANLSILRNPKGT KRLRADI RF DRKL GQPLRKDELRFDGULRDLDDVI HTPSST TVEGITLRWDESLDGVQWGDVESDPELDSSRLVESNSFVV Y WLDEDAYAQARFETPI PRDLVLSTPGLAGMEVFRAPQGN NSTA IEVLYEHHV TPLTLSTLNKHPKLKNLYFLQENKQA R R $\square$ SVVQI KLSERKITKLPIVQLRDIPETKDLLILKAPQST

 K WF MV DLTFSSRAAHFI PLSLLRLIAAAIKNMDLVTRGRLS

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




 QVDRVQVRYYA SSVLPDWDNRTDPLLKELSVARATGGS ELMVLDCRLSEE EGMLLRHKLKEDPETSQLLI IRAPQMT
 GKPHVKVQKIFDGPS WKDLKEDSVLGNSIPVRGARGT PPHLNETYPLRVKDKPVKDGELEFKPLIPKLKFITN $T V D R V Q L E H Y N A D D P L L S K D L E H V D E V K N$ L




FLTDV QHHTLRVRVEKTLPALLDKKYLVDKPELSNMTVTRAPLAT YWDYVPLVVDEWVDPVI PRDELKKDPRVSSTSLI QQPRL RPWNCAAEVVRRLEPPIPDADLRADPVVAGWSALRASRTT

 KHHTCK $P \vee V G V R L$ DVKEDMTLKRVKTRAD $\qquad$
 A H WTVDTVRDEDLAPRIKR DDLLENEPLANLLILRNPVNT WDYGCDYEVLYKFEQSLHAKDLRQNPYFDEWGPLRCSQGS
 WTAPLDLTI LDEPDR VRREVLRADPRLAGAEVLRQPQAA VRDYVPLEVTEWLDRLAPKSQLAGDPRMAGASIFTQPRDA KYFKIEUQPEY L NKPIEPRQTKLHPKFAQ

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

[^2]

| UniRef90_D2QXZ2 |  |
| :---: | :---: |
| UniRef90_Q49Z89 | I A SMSQTQFESILEMSGLKP |
| UniRef90-UPI0002D3146B | I A SMSRTQFDAlILEMSE |
| UniRef90-A0A033UYN8 | IA NLTKAQYDAMLDMSN |
| UniRef90-A0Y160 | NFKVTPQQWQRVHQ |
| UniRef90-UPI0003B52E22 | NFPVSAAE |
| UniRef90_Q9WWK9 | NFKI T P E Q WLRV HQLK |
| UniRef90-M0HV82 | $\square \mathrm{T}$ ELT QEEYERI LELGELSH |
| UniRef90-UPI0003B615B8 | PNWLTADEWSII SNLLGEQ |
| UniRef90_U1ER55 | ■A SLS ST Q Y E A LK ELS GVK P |
| UniRef90-UPI000363047C | NFRVTDDE |
| UniRef90-U1SYS6 | NYKLTKKEFD!L |
| UniRef90-KOUIL3 | NS WVS K A E |
| UniRef90-A6BZ09 | NYPLTPEEAAAL |
| UniRef90-UPI00034ACBAC | NFLI EEGQAEEI ERLIKV |
| UniRef90-E2LU02 | VQRVDQKAFDTI VTMAG |
| UniRef90-UPI000371B747 | A TEDQYNA L L K I E |
| UniRef90-A6EMU5 | NFSATKDEFEKMKQLI |
| UniRef90_A1UP42 | N S WVVSVAELALLI |
| UniRef90-K2PZ22 | NFSATRQEYRI I EADA ENAMQSK |
| UniRef90-UPI00036DB304 | NFTATRYQYELI LKMAQAQPESTHP |
| UniRef90-UPI000360C5EF | NWELTPPEQNA RQLAGLPE |
| UniRef90_H1Q680 | P HRLT DEEWQAVREA】EVSE |
| UniRef90_G0V4V6 | NFKLTNEQANI |
| UniRef90-A0A014N2L1 | D DQWEA |
| UniRef90_Q9V0B5 | E DP E E D Y K L I E S L |
| UniRef90-UPI000466A2A3 | NSWVSAAEWRVLERL |
| UniRef90_F2RJI5 | L F RVTE E Q W |
| UniRef90-D6TX24 | $\square \mathrm{I} H \mathrm{H}$ TPDQWDTLMEDGGW PGSTPE |
| UniRef90-UPI0001E89C40 | NYKLTDEEFGY |
| UniRef90_H0AF02 | IF KLEREEFETILSLETPRNEKRTPD |
| UniRef90_UPIO002889090 | NFKLSEHEFNTLL |
| UniRef90-N0BLB7 | LFP PLDPDEGLR!LELSNLN |
| UniRef90-W8NU76 |  |
| UniRef90-A2TPW1 | NFTATQEEY |
| UniRef90-E6TPG9 | N S WVS T DE WAVL |
| UniRef90-W1SN80 | N Y RLS S DEEYNRIDNL WNAPMEVKE |
| UniRef90_M2VLL4 | N S WI S K Q L A RLIHDL |
| UniRef90-UPI00041CB6EB | NYLI TEQQASRLRAL |
| UniRef90-Q08S72 | VLPIIRADEDPPLARLDRDRNP |
| UniRef90_UPI0003B3142E | N F QATL A Q Y Q Q L R L A |
| UniRef90-F1A246 | NFWVNDNEADTL |
| UniRef90_UPIO003616321 | T D D TWTAVME |
| UniRef90-UPI00035D5259 | GAP\PDDVWERLMAM |
| UniRef90-UPI000365DB0C | GQLI SRAEYDAVLVL |
| UniRef90-UPI00036370A8 | 1 F TLSPGRWHEAFAAAGGDPA |
| UniRef90-K6U6N6 |  |
| UniRef90-Q55A92 | NFWLNDNESLVLCEL |
| UniRef90-UPI00047D1645 | N S WL T A A Q Y AVV $\square \mathrm{GLLG}$ G PVRSP |
| UniRef90_U2KKL3 |  |
| UniRef90_UPI000289EF96 | N Y LIS KEHAT ILQK L WDGPTVEDD |
| UniRef90-F4BX49 | NFKI SLE Y W |
| UniRef90_U5W4D8 | NPSVTVA Q Y AVI R CLLS G |
| UniRef90-W7VHD4 | NS YLTVA Q F D Alc C A |
| UniRef90-UPIO004760855 | DA QWEALQA |
| UniRef90-H9UHH4 |  |
| UniRef90-I3ZU92 |  |
| UniRef90_W5WK71 | V I P L Q P E E WQA $\square$ CA L A E |

[^3]
[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

[^1]:    lupas_21
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    lupas_28
    jnet
    conf
    sol 25
    sol5
    jhmm
    jpssm

[^2]:    lupas_21
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    lupas_28
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    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

[^3]:    lupas 21
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    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

