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KAMELTRELHRAP MFCEKADELIRELHRATDAQIPPFNEDGVRQVLEEMKVLY
 MFGLKKAIELIKEAKRSQEGTLPPYNEEGIRKVLEEMRALF MFGEKALELIRELHRSTEGVLPPFNDEGIRQVLEEMRSLY MFGDKALELIRELKRTMDASLPPYNEDVVRQVLEEMKALF MAAERGLELVRELHRAAGGHLPPFRTEEMRQALEEMRALY MYGEKAIELIHELQRAVNGSLAPFNEEGVRQVLEEMKALY MFADKAFELVKELERSSQGTHPPFDDDGVRQVLEEIKKA1 F MFCERAVELVRELRRATDGSLPAAPEDGIRQVLEEMKALY MFGEKAFELIKELKRSTNGNLSMYNEDVIRQVLNEMRVLF MFCEKAVEIQELHRAPDGQLPAFNEDGVRQVEEEMKALF MFGEKALEVVKELQRAQGKSLPLYNNDLIKNVLDEMKILF MFGEKSFELIKSLSRTSEN PPFNDEGI RQVLEEMNALF MLAEKADDLIRELQRTLSGTLSPYNEDKIRQVLEEMQNLY MFGKEADKLITELDMYED, THPFNEQVMRQVFKEMQSLY MFGDKAFDLLKDLERSSQGTLPAFDDDGLRQVLEEVKADF MYGDLGNKLVQHAKRTQNLTLPPYQTELVRAVTREVRDLD MFGRKACKLITELDLSAD DPFNEIVVKEVIDEMHFLY MYGDLGNKLVQHAKRVQSSQLPPYQTEMVRSVAREVRELD MYCDKVIELLKELERSREDTIPPYNNDGINHVLSEMKTLD MFGEKVLDLVGELKRARPGTIPPYNEDLTRQVIEEMRVLF MWGDRALALIKNLERCQ DTMPPFEDDTIRLILEEMRELN MYGDLGLKLVQHAKRTQSPQLPPYQSDVVRSVTEVRDLD MYGEHGNKLVQHAKRTQALTLPPYQTELVRSVAREVRDLD MYGDLGNKLVQHAKRTQNL MFGEKVIELLKEADRNRE
 MYGDLGNKLVQHAKRTQNSHLPAYQAEIVRAVTREVRDLE
 MFCEKAHVLI KELLSRNRDA LPPYNTDLLNEINTEVKQLI MYGDLA QKLI QNAKRTQSPTLP MYGRKACQLVKELATGEKEQL MYGELGNKLVQHAKRTQAAHLPAFNDDGVRSVLEDISKIY MYGELGNKLVQHAKRTQSAHLPPYQTELVRSVAREVRELN MYGDLGNKLVQHAKRTQNAHLIPPYQTEMVRAATREVRDLIN MHGELGNKLVQHAKRAQSAHLPPYQTELVRAVTREVRDLD MFCEKAMELVRELHRAPEGQLP

## P $\mathrm{L} P \mathrm{P}$ P F

MYGELLGNKLVQHAKRTQS $\square$ HLP MYGRLEMVRAVTRELRDLD MYGSKASQLVKEFASGEKGQLTTYNNDLIGREVVAECTQHH MFGEKAGNLI KELSRCEN VLPPYNTDMVKEVCAETKQLD MYGELGGKLVQHAKRTQSAHLPPYQTELVRTVAREVRDLD MYGRRASQLLKEVDSCEAGQLVPFNSDVFDQVDRECNEHN MYGDLGNKLVLHAKRAQQAYLPPYQTELVRAVTREVRDLD MYGDVGNKLVQHAKRTQNLTLPPYQTELVRAATREVRDLN MYGDLGNKLVQHAKRTQKLHLPPYQTETVRAVTREVRDLD CAKGKELLRELQRS DWLPPYNDELVRQVVEEVGSLH MYGDLGNKLVLQAKRTQNAHLPPYQAEIVRAVTREVRDLD MFCEKAMELVRELHRAPEGQLPAFNEDGLRQVLEEMKALY





FGDKAATLVQDISQSEKGTIPPYNDELVRAVVDESNEHH MLA NTGLQLVKELKRSQFYKLPPYNDEKIRVCLEEMKTLY MYGELGNKLVQHAKRTQSAHLPPYQTEIVRALTREVRDLD MYGEQGNKLVVDAKRDQNPHLPPYATTTIRAVTKEVRELD MYGEAANKLVQNAKRLALPHLPPYASELTRSI DREVRDLD CAKAKELVKELGRSE WLPPYNEESMRQLADEIGVFH MFCEKAMELI RQLHRAPEGQLPAFNEDGLRQVLEEMKALY

 MYGDVAMKLIADSKRTGDDHLPPYQSELVRAVTREDRALE MYGDLGNKLAQHAKRTQGANLPPYQTETVRAVTREARELH MFGERALELIRRVLRSEELLPGAFEEDAVRGILEEMKTLY AMDLIKSVKRSTSHRLAPYDDDKVRRCIEEMRQLY A DDQVQHAKRTQNAHLSPYQAETVRAVTREVRDLD MYGRSASQLLKEQASCESGQLTVFNNVAFDQVTKECDEHH MYGDSGNKLVQHAKMAKLDHVPPYQSDLVRSVVHEVHTLD MYGTKA IULVKE




## QUERY

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50
60
70
EQNQSDVNEAKSGGRSDLIPTTKFRHCSLLRNRRCTVAY ${ }^{80}$
EQNQTDVVNEVKSDGKNELIPTIVKFRHCCLLRNKRCLLAYAB
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E ENQRDASSAVA
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E QNQE D LTMMA GQKEYYPADQMRHAALERNKRCLLAYYL D N OVY ANSQEQPSFFPSI SLRHAVLERNKRCVLAYI


## E EN

$\qquad$ VA QAQSQ
R ${ }^{2}$ ar $P$ FQGS KDVASLLEPFQGSFDPSTACTLLVNHLSMRRNKRCLLAYH


## A


R DV T
 K M NMDDANA
EQNQSDVNEAKS




 NDVNE DTGALQGSFNPSAACALLVDHLAMRRNKRCLLAYH


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


 EQNQSDV





 LQ L E S L L R K LLMQT T R N G D H L G A Fi H H H S L L R N K R C L M A Y M QSVNRILSNVSGSFDPSANPT LLVNHLSLRRNKRCLLAYM




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| UniRef90-C3XR78 | LAAYMRSIGGGGGLDLTQD |
| UniRef90-H2LC03 | LASFMRSIGGGEGL |
| UniRef90-R7VH77 | LAKYMRSLGNQGGVD |
| UniRef90-UPIO001CB978C | LANYMRRLG DSGL |
| UniF | ANYMRTDGGEGGLD TQD |
| UniRef90- UP1000395869C | LATYMRSVGGEEGLDLQD |
| UniRef90-UPIO002653AE9 | LASYMRTLGQD GLDLTQD |
| UniRef90-A0A034WQ23 | LASYMRS GDGQGIDLTGD |
| UniRef90-H2ZE | LANYMRSLGNGGL |
| UniRef90-UPIO003C282C3 | Mrstugeegld |
| UniRef90-T2MD: | FTNYMMTVAGTG1 D TaN |
| UniRef90 E9GIC5 | LA AYMKS GEGSSLDLTQN |
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| UniF | LATYMKSIGD |
| Uni | LAAYMRAVGDSQGIDLT SN |
| UniRef90-Q4WQD4 | LAAYK GQWTDIDLTGS |
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| UniReef90-UP1000258 | LATYMRSLGED |
|  | A Y K |
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| UniR | LASYMMT-GDGHGL |
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| UniRef90_J5JY | G |
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| UniRet90_K2SAB5 | LAAYK GQWTDI Dictas |
| UniRef90-B6QRS3 | \|LAAYK GQWTDIDLTGS |
|  |  |
|  |  |
| UniF | LATYMRSLAGDQGLDTTQDMKPPK |
| UniRef90-Q17NG | LAKYMATUGDGTGLNLTND |
| UniRef90-AOAO17 | LAAYK GQWTDV |
| UniRef90 I3SFL3 | KKSYMSQLL VEVDTV |
|  |  |
| UniRef90-Q51 | LATYK GQwT Di |
|  | MS EMDI |
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| UniRef90-G4MSB0 UniRef90 K1 | LAAYK GQWTDVD G G |
| UniRef90 K3X6H6 |  |
| UniRef90-G2X249 | LAAYK GQWTD |
| UP1 | YMRSDGGDEGL |
| UniRef90-G4VD | LANFMQADGSERGLD |
| UniRef90-OQ4V3 | LAAYK GQWTD |
| UniRet90-G4YZC9 | LidyMad GQW ELD |
| UniRef90-T1IQM6 | L VAYMREASKDTFL |
| UniF | YMSSFG |
| UniRef90-C11 | VNRYQGRRGG VG\| |
| UniRet90-G7 | LANFMQERGGAGGL |
| UniRef90 F9X0 | AAYK GOWTD Digs EPPK |
| Uni | LAAYK GQWTDiditigs |
| UniRef90-A0A024U3P2 | L S N M SAFK |
| UniRef90-UPIO0045DBD66 | MRSLGG |
| UniRef90-D7F | NF TGG |
| UniRef90-S7PW | DFRSEFSDELDITAG |
| UniRef90 N1Q0 |  |
| UniRef90-F7AUC8 UniRet90 SoBE |  |
| UniRef90-L8G575 | SY TGQWTDIDLAGS |
| UniRef90 ${ }^{\text {C1BQH5 }}$ | AYMAGTGGGHGLDLNSD |
| UniRef90-U611 ${ }^{\text {a }}$ | FMREMGGS |
|  | LAAYN GQWTDIDLTGSLEPPR |
| UniRef90-MOU009 | ASYMS EMDIDLTVDMVPPK |
| UniRef90 NJJG12 |  |
| UniRef90M5X6L8 ${ }_{\text {Une }}$ | KSYMSRVVLELLGM ADMVPK |
| W9Y9P3 | LAQYK GQWTDI DLTGPLEP |
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| Q00 | R A |
| ef90_M2N | G |

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UniRef90_K5UT72


F GKKACELVREDAESEAGTLPPYNQDLMRTDADQCADHG
 MFGDTANKLILDAKRSRADGVPMYQEHDVRDII RETRDLQ M Y A K K GYELV KEFS S GEK GQL QAFNED L FHQVIGQCGQHY


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




YGARAVELLKE FRRSSEANFLGPYNEDAVRRIVQEVVELVY

MYGDLLANKLVNEAKRSQNLSIPLYQDELVRNVVKETKDLE F G DLA T QLV T E S R R S T T D T L L K Y N D L L V R T I VVRE QR S L E


 MYGDLANKLILEAKRTQQNQLPMYHEDLVRKVLREVTQLK
 $M Y$ GE T G A R L L V Li H A K R M Q N S M L L P P Y MYGDLA N KLI LDDAKRTANDS I P L Y G A D L V K D I V K E V Q D L K
 GKRA A DLV K E L S T A G S D A L P P Y N D E QV R LV L E E I S E HS
 $G N R S N K L I R D S K R T Q L D Y L P P Y$ Q A D TVVNDVVNE DRAAAD
YGELAT QLVTESRRSTTVNLLKYNDP VRSIVREQRQLE
 F GLKG GRELLQDLKRS DWLPLYNEDAVSRCLQECQGHM MFGDQALSLIVEAKRGDTGNLPKYNDETVRNSIRELRNLN


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


Y GQSGRELLLDDLKRS DWLPAYSEDGVRT TLAE DNHHT
MYGKKACQLVKETATSEKGQLTPFSSELFDEVIEECKQHY FGEKSAALVRDLSQSERGTIPQFADETVRGVLDECQEHH
FGKKATELVKEVASSVESSASPYNDELVRSVLDEVVKHY M H G R R G A E L L E E L R K T $\quad$ K



 M Y G D L A N K L V L E A K R T Q Q H S LP M Y H E ELLVQK ILLKE VS Q L K

 MFGDQANKLI AEAKAAQLGSI RPYNDELTRLILLETARQL $M Y$ G D L A A N K


 M Y G DLA NKLI LEAKRTQQLQLPVYQDELVRGILKEVGSLK $M$ Y G D A A K K L V L



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 MYGNLANKLL LDAKRSSNLSETPYQTDLLVKSII KETTDDLN
 M Y G DLA N K LI LIEAKRSK QSKLSMYHEELIRNILKEIS QLK


|  | VF GD |
| :---: | :---: |
| UniRef90-DoMST5 |  |
| UniP |  |
| UniRef90-U6ILI | D |
| UniRef90-A4SB44 | S |
| UniRef90-F1LCR0 | NFDDLTALRGGDEAQRTETVRARQSCIDFIKRCCCAYV |
| UniRet90-C4R6M9 | ESDIASQDTNAQDRVKQCQLFVTHLSMRRNKRCLLGYQ |
| UniRef90-B9RV31 | ELQALIRKMQEESRNADHY |
| UniRef90-C5FH11 | RILEQFNPADDPVT |
|  | $\checkmark$ YNESRDRQRQ |
| UniRet90-UPIIOO04449C82 | KLDPGYEG |
| UniRef90-HOYV90 | DV |
| UniRef90-C4JTF | VTaLL |
| UniRef90-W9WUQ2 | RDVSRILEPFNPTDHPATACALLVDHLSMRRDKRCLLAYH |
| UniRef90-V9D6Q4 | RDVTRLLSPFNTTEHPATACALLVDHLSMRRNK |
| UniRef90-D8P: | NEPMTAEGPPPAL |
| UniRef90-S3CS | DTDKATACAL |
| UniRef90-W1Q | LTEHASQDDRVNQAQL |
|  | CLLR SEAMKRTPEPALTSA |
|  |  |
| V5HWM | A ENRDVES SANTDVELHTT |
| OK |  |
|  | TLIJATAIJ A QAADAFTGDAPALLLYQTAULIRNKRCLLA Y H |
| UniRef90-AOAO24J6B6 | QECAHEYREMMNRQTACAM |
| UniRef90-L7M17 |  |
| UniRef90 M7NLJ2 |  |
| UniRef90-GOV7Z4 |  |
| T1L2Y3 |  |
| H2 | QKNAAVVEQLRA GEVVDSSMLQPRLAAMCHIRRCMMAYV |
| G3J2 | N |
|  |  |
|  | S |
|  | , |
| UniRef90-K9HBI2 | SLLAQUSKTPDDGTPP PAVVLLQTA |
| N | DNGDUVSPSMLIYQTA |
| UniRet90-Q9P7 | RELQNVTHEASQPFQPQDHPALLMFHSSSI YNKRCLMAYH |
| UniRef90_C7J2J4 |  |
| UP100044 |  |
| Q12 |  |
| UniRef90-L8X624 | NDLSSYTDAFPDTDETEMLCTSTFYHEGV |
| - |  |
|  | EDLILTITEHKEQKEPFYLQHAITFHNSINRDKRCILA |
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| UniRef90 W6MO34 | KEADYLLMTMEEDGNRVTQCQLFVVQLCM |
| UniRef90-K4CQP9 | LHLNSLVRKMNAKPKDDNYHGLLIHHQSL |
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| UniRef90 W4WMa | EANLMDSNADQNERNNALLPSVHFRHTALLRNKRCLLAYL |
| UniRef90 UPIOOO2C34 |  |
| C1M |  |
| UniRef90-K8E |  |
| UniRef90-M2F | GFIQAALNDPKNGGENPAMPTILLYQTAIMRNKRCLLAYH |
|  | KL |
|  |  |
| UniRef90 A0AO220524 | L K HLQPLMRKIQEHENESDQFGALVHHLSLVRNKRCLMAYV |
|  |  |
| N1QLZ6 |  |
| Ref9-W1 | - |
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| UniRef90-E4WVU7 | NKNREDISSQDSADLNDVTPNVCLRAAGLERNKRCLVAYH |
| eef90-659542 | KDAEYVVEQEQLQETQDQCQLFVTHSMRNKRCLIAYE |
|  | A |
| UniRef90-C5DPJ1 |  |
| UniRef90-M3J5F0 | RDVEYLVEESRIDE |
| UniF |  |
| UniRef90 Wol |  |
| 俍90-14Y |  |
| Ref90_Q6CW |  |
| ef90_A5D |  |
| ef90 |  |
| et9 |  |
|  |  |
|  | D |
| UniRef90_J4GVU2 | A |
| UniRef90-J917M7 | V |
|  |  |
| Re990-1A1W9 |  |
| iRet90-Gow4L2 |  |
| Uni | E |
| et90 |  |
|  |  |
| iRef90-G8ZTN0 | KNTEFLKEQQSTGSDDDRVSKCQYFLLCMERNKRCLLAYO |
| iRef90-K5UT72 | QGAMERLVPEDGDQVTPDVILYQTAIILRN |




UniRef90 UIGNH4 UniRef90_G3BFG6 UniRef90-G8JUV44 UniRef90-S2KL10 UniRef90-J7RPE7 UniRef90_G8Y0R4 UniRef90 UPI0003F49AA2 UniRef90 G3AV44 UniRef90-H8XBI3 UniRef90_J5R3H6 UniRef90 M8AGU6 UniRef90-X1XZG9 UniRef90_UPI000383492F UniRef90 LOPBR0 UniRef90-W4YPT9 UniRef90-R9ARP7 UniRef90_H2AV62 UniRef90 B7FZL5 UniRef90-F4PD90 UniRef90-FOXIE5 UniRef90_G7E945 UniRef90 UPI000162104B UniRef90-UPI00038719F6 UniRef90_V4AF66 UniRef90 F4PGA8 UniRef90-M2Y3U2 UniRef90-M7WPK6 UniRef90_G0U249 UniRef90 C4YBT5 UniRef90-17MK33 UniRef90_12H778 UniRef90 UPI00042B7D89 UniRef90 C5DED5 UniRef90-W6KW79 UniRef90_C9ZXP7 UniRef90 D8U5X3 UniRef90_A0A059LPG3 UniRef90-UPI0004411A57 UniRef90 Q2UU54 UniRef90 UPI0004414DC1 UniRef90-A5E788 UniRef90-M5FU1 UniRef90 R1E830 UniRef90_L8HLA2 UniRef90_C5LG07 UniRef90-A9V2G1 UniRef90-Q6FVY5 UniRef90-E7NGN2 UniRef90_E2L8Q8 UniRef9-A0A016RT5 UniRef90_AOADD UniRef90-D3BKQ3 UniRef90 S9UIV8 UniRef90-M9MA92 UniRef90_Q4P4N6 UniRef90 F6HXA7 UniRef90-S9WCG2 UniRef90_I2FT33 UniRef90_A0E614 UniRef90 M1VL57 UniRef90_U5HCT3 UniRef90-H0GSJ2 UniRef90 C5MFM0 UniRef90-B6A940 UniRef90-E6ZQ33 UniRef90_L7FJK6 UniRef90 L1J344 UniRef90-D8M032 UniRef90-A0A022R5S9 UniRef90 W4ZTJ7 UniRef90_UPI0002C35D49 UniRef90-MOSVQ0 UniRef90_A2DEZ6 UniRef90 M4B5B1 UniRef90_J3QAB6 UniRef90-A8QCZ9 Unirefo A0A058ZBT9 UniRef90 C6LVK2 UniRef90-F4S309 UniRef90_W2SHK5 UniRef90 E1F7R0 UniRef90-V6TF15 UniRef90-F2UQA8 UniRef90_J7G8U6 UniRef90_16TU80 UniRef90-G7DYF9 UniRef90 17APU3 UniRef90-A9BK55 MFGDQANKLVLDAHRTSNPEITLYQSDLVDDIVKETNDLG MYGDLANKLILEAKRTQQSELPMFQEEMVHLI LKEVSQLQ MYGDVANKLVLEAKRSATLQLPMFQDEMVRVI LKEVSQLQ
 MF GALGNKLTLEAKRILTKLSLPQYQSDLVRDIVKET MYGDLALQLVTASHRSTLSTLPKYALPLI LSI CLETRQLG MYGDIANKLI DEAKRSVNLSVPLYQTELVKDIIKETNDLN MYGDQANKLVADAKRSNLPSIPIVQADSVKDIVKEINDLN
 $M Y A R R A S Q L L K E L D A C E P G Q L V V F N S D V F D Q V I R E C G E H N$

MFGDFAAK LIADTSRARDDTWPPYETERVQAVLREDCALD YTDTAHRLIHQSKRSLTSSLYNYDDASI REITTRECRYLN MYGDLANKLVDEAKRTQQLNLPMYNDEUVRNIITEVNQLK Y GQHGRDLLMELKRSEGNSLPAYNDKSVQSALQEVQALN YGETADKLVKEAVRSRDSTLAVYKDEDVRDVLLETKHLQQ
 LGDDAKLA AKRAQTDLLRYNSELVRIQREARQLGG

MRA $\square Y$
MFAEKALELIRELKRSVDG
MYTEKAI EI LRELRRSE S LTPLYNEAADKKTDDEDRALE MYGDHATALVHHLYKSS SLPPYSEHLVRQVTEEINELY $M L G D S A Q Q L V V E A H R S Q T R S L L P Y N T S G V R T V I R E S H S L S$
 MYGDAANK MLEAKKGSNKFLPYYNEDL K K K K M


MYGDLGSKLVLEAKRAQQDQLPLYQDDLVRNDLREDAHLK $D E S T E L I S E L K A A S G G Q V G P L D E R R V R A V V D S G K E S Y$ ADPSSELINELRAVSGSGLVPLDERKVHTVVENMTDAF


Y G D LTA T QLLTESRRSTTNTLLKYNDVLVRSTIREQRDLE MYGDQANKLVLDAKRSNLPSIPMYQSDLVRDIVKETNDLN MSTDPAQALLLECRRSQTDTLVPYNAAVVTTII RQDHTIH

YTKEVVELLQDVEKA AFVPPSQPEKVEAVVSKMTALY
AVSLVRSARESE WLPNYDAQKI RSVVKEMGDLFF SVELVRELVRAAEHTLPFYNEDRIKEIVGEMRKL MYGDLANKLILEAKRTQQSRLP $\square Y H D E L V R N I L N E V D Q L R$
 DASAELLSELRAVSGGSMGTLDEQKVRSVVEKDNESY ADQALLLLTQMKRNP DVMPPYNEEAMRACI AKMNELY HEKLVEAUKELDRS GNTLPPPNKELIEQUKEELDGFK

DGSTELISEMKAASGNTLNALDEKKVRDVVAELTDSF MLGGDAALKLVTESKACLNDTVKPYNDELVRMLVLETKQLH MFGDQAFKLATEAKACLNDSVKPYNDELIRALILETKQLH MYGRRACQLDKEFSSAEKGQLTGFNSDMFDQVVKECSTHY DPPAELMSELRAASGGTI NQLDERKVRNVVDGMRDAF MFGDQALKLVTEAKACLNDTVKPYNDELI RALILETKQLH

NKLLLDLKTS
ATALVSELRDAQ HLPLYRRDLLQRVVDE LLEEY MLGDHANLLVLDSHRSQTRTLQRYAEPTLRALIRECHHLA



SQLLKELDACEPGQLVVFNSDVFDQVIMEECEDEP MYGRKACQLVKEIASAEKGQLTPFSSDLCDEVI EECKQHY MYGKRASQLLKDQACCENGQFTPFNSDGFDQVISECNEHS

FGAQNALLTASVRERTTDT $\square$ KPFEETLVRTLQRETREHF

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

CQSALELLVDL RSQEG LDPPYDSAKVAAAIKSLADIY
 YG $\square$ K S MFLLK KFSAALS LPP Y E H N A V Q T A I Y E M N E


PHQEDLVDS LLEQ
$\square$ FGEAGSCLLEDLKSSA $\quad$ KKPYRHTEVKAI QGENEY LDD MFGSKASFLLKNLVEAGFHS

UniRef90 U1GNH4 UniRef90＿G3BFG6
UniRef90＿G8JUV4 UniRef90－Q75E92 UniRef90＿S2KL10 UniRef90－J7RPE7
UniRef90－G8YOR4 UniRef90 ${ }^{-}$UPI0003F49AA2 UniRef90＿G3AV44 UniRef90－H8XBI3 UniRef90－M8AGU6 UniRef90－X1XZG9 UniRef90＿UPI000383492F UniRef90－LOPBR0 UniRef90＿W4YPT9 UniRef90－R9ARP7 UniRef90－H2AV62 UniRef90－B7FZL5 UniRef90＿F4PD90 UniRef90－FOXIE5 UniRef90＿G7E945 UniRef90＿UPI000162104B UniRef90－UPI00038719F6 UniRef90－V4AF66 UniRef90－F4PGA8 UniRef90－M2Y3U2 UniRef90－M7WPK6 UniRef90＿G0U249 UniRef90＿C4YBT3
UniRef90－17MK33 UniRef90－12H778 UniRef90＿UPI00042B7D89 UniRef90－C5DED5 UniRef90－W6KW79 UniRef90＿C9ZXP7 UniRef90＿D8U5X9 UniRef90＿UPIO004411A57 UniRef90 Q2UU54 UniRef90－UPI0004414DC1 UniRef90－A5E788 UniRef90－M5FU11 UniRef90－R1E830 UniRef90－L8HLA2
UniRef90 C5LG07 UniRef90 A9V2G1 UniRef90－Q6FVY5 UniRef90－E7NGN2 UniRef90＿E2L8Q8 UniRef90－A4HWP0 UniRef90－B0EDP4 UniRef90－D3BKQ3 UniRef90 S9UIV8 UniRef90＿M9MA92 UniRef90－Q4P4N6 UniRef90－F6HXA7 UniRef90－S9WCG2 UniRef90－I2FT33 UniRef90－A0E614 UniRef90＿M1VL57 UniRef90＿U5HCT3 UniRef90－HOGSJ2 UniRef90－C5MFM0 UniRef90＿B6A940 UniRef90－E6ZQ33 UniRef90＿L7FJK6 UniRet90－L1J344 UniRef90＿A0A022R5S9 UniRef90 ${ }^{-}$W4ZTJ7 UniRef90＿UPI0002C35D49 UniRef90－MOSVQ0 UniRef90－M4B5B1 UniRef90－J3QAB6 UniRef90＿A8QCZ9 UniRef90－A0A058ZBT9 UniRef90＿C6LVK2 UniRef90－F4S309
UniRef90－W2SHK5 UniRef90－E1F7R0 UniRef90＿V6TF15 UniRef90－F2UQA8 UniRef90－J7G8U6 UniRef90－I6TU80 UniRef90－G7DYF9 UniRef90＿17APU3 UniRef90＿A9BK55 UniRef90＿D2VZQ7


TMPPYNi P
REFNEYNDDDGDDDDKSKSPYNIVLKTSVDRNKRCILAYL TRLVRLLERVNNDLTDPK $\quad$ GTAIFFHRII DRNKRCVLAYL QSITNTAAPFVGTQGAQPTPGLTDSALALNRNKRALYVYH RFLESDSNPYADPDQPFYAGTMKYYRAKYLRDKRCLVAY L RDVEYLDEQQK DQDEEVEQCQLFVTHLSMRRNKRCLLAYQ
 KNAEILKSQQELEARAANHYGALYHHLSLIERNKRCLMAYV EHVCSI TNPYADVA QA YYASSMSYYKAKYLRDKRCLLAYL RHLESI SNPFADPSQPYYS GAMRFYKAKCLRDKRCVVAYL A QTEAIVSELRRKQEDEVTATTMCLHYCDKRNKRMLLDYM

AADEAALAHSAAPAPDNYMPTVLLYQTA乌LRNKRCLLAYH KDSEYLLNTMERLQNEEEQCQTFVTHLSMRRNKRCLLAYE AHLVHSLRSAAPPGDPTPPPAVMFHHLQDRRLKRVLLVYH


RNAEF RNNGN ERSARAMVEY $K N T E Y L K E Q Q Q L G M L D D K V A K C Q Y F L L C M E R N K R C L L A Y Q$ KQ RIF LPYQPGTVNLTCSTH HQNADSKNKRCLFAYH ACDQS I AN PYADMTQPYYVSSVNYYRSKCLRDKRCLLTYY E S

DVMRSDENPFADTTQPYYASSVHFYRSKCLRDKRSVMAYL THMQSLLSLLEASSPAGLQSQLLMLHLVVQTNKRALLIYH
 DLMKS I ENPYAD DT LP YYASSAEYYKAKYLRDKRCLLTYL THLTTLLHQLSPADVSGLQSQLLMLHLIVQYNKRSLEIYH A QLEKGIEAWRSGSDRALQGSLLVRRARLLRNKRCVLAYL DPVERAVRMYDPSQPQDVFAEMRLLSLALQRNRRALEVYA ES LQQYLISNTSNGSQYDVQCQLFVTHLSMRRNKRCLLAYE A HLTTLLSTLETQSLSGLQSQLLMLHLIVSYNKRALLIYH ES

EEDRSREEELIGYSA ILNLNHGALYYSKRCMLAYL
 HELECLI RRMEEQGKNEDHYGALI HHLSGVVNKRCLMAYM
 RKQQEALDEED $\square E M D P G T \square C A \square K M S A S T A R H N K R \square L L A Y A$ NAALAARLVTHHLQAYRNKRCLLVYH PHLSHYLDMLSHDS SGVDTTAVLRHTIYNESDHLLTVYH RHNKRVLILAYA MPNDNENDEGVADQALLLLTQMKRNPDVMPPY
PHLSYYLDLLSDSSKIDDTADLRPFYTIYNESDHLLVVYH PHLSYYLDLLSSQDSSKDDTTAVHFYPFYMDYNI HLLVVYH
 QリEH』EDQTGNLDPRANFQLI I IQTELE
EQQTDAVNLLKDGDSEELHFQLMLVQTDMERVKWLLSY AKMEGVRRLAGEGDSEELSVNYVMMKYFKERNERILRSYK




| UniRef90_U1GNH4 |  |
| :---: | :---: |
| UniRef90_G3BFG6 | L VDMKS K Y VV I DL S G DLE P P |
| UniRef90-G8JUV4 | $V$ SDMK T G D L DV DLS G SLTP P |
| UniRef90-Q75E92 | I SDL TAGELMDI DLA GSLTPP |
| UniRef90_S2KL10 | $V N S Y$ K Q F P S G G GL D P P V DL |
| UniRef90-J7RPE7 | LTQ MKSAPAFADI DLA GSLTPP |
| UniRef90-G8Y0R4 | LVNYKSHFA DLDLS GSLEPP |
| UniRef90_UPI0003F49AA2 | M L D Y K T D F LDVV L DL T A Gl E P P |
| UniRef90- G3AV44 |  |
| UniRef90-H8XBI3 | 1 TN YKSKFGEY L D L T G DLQPP |
| UniRef90-J5R3H6 | $V \mathrm{~L}$ D Y K S D F L DVLDI A A S I D K P P |
| UniRef90-M8AGU6 | I K S Y $\square$ S |
| UniRef90-X1XZG9 | LAEYMASDHEGHGLNLMNDIKPPK |
| UniRef90_UPI000383492F | LA T Y M K SVGG E E GL DL T Q DIIKPPK |
| UniRef90_LOPBR0 | CSYYMQ Q WPGIDFGGALEPP |
| UniRef90-W4YPT9 |  |
| UniRef90-R9ARP7 | TT QFK S P F LDVVVD\S S T S LEP P K |
| UniRef90_H2AV62 |  |
| UniRef90_B7FZL5 | VQSFQASTG V W WDL R S Q TVPP Q |
| UniRef90_F4PD90 | ASEFR G Y F L D L D G M GLIP P |
| UniRef90-F0XIE5 | LA A Y K G Q T DID LT G SLEPPPR |
| UniRef90_G7E945 |  |
| UniRef90_UPI000162104B | L S S Y M T K L D I D L A VDIT P P K |
| UniRef90_UPI00038719F6 | L A T Y M R SVGGEEGLDLTQDI K P P K |
| UniRef90_V4AF66 | L A N Y M R SI G D G G G L DL T Q DI K P P K |
| UniRef90_F4PGA8 | LAEYHQNIGG MDLTVDIQPPK |
| UniRef90-M2Y3U2 | VAT Y S D N M Q $\square$ D V |
| UniRef90-M7WPK6 | CLA F K T S T Y G G |
| UniRef90-G0U249 |  |
| UniRef90_C4YBT5 | VLD F K S |
| UniRef90-17MK33 | I V N Y M T Q N P P DVNFDLT K DLEPP |
| UniRef90-12H778 |  |
| UniRef90_UPI00042B7D89 | \|L K L Y M S Q L S L DVNVD MVP P K |
| UniRef90-C5DED5 | 1 TDMKS GDYTDI DL S G S LTP P |
| UniRef90_W6KW79 | MVEYMTS A V V L DLR A F $\downarrow$ R P P |
| UniRef90_C9ZXP7 | MVEYMTS F A V P L DL R SFTRP P |
| UniRef90_D8U5X3 | LSTFMSR A E GVGMDLTLDTRPPK |
| UniRef90-A0A059LPG3 | L NQYFRS GS R GVGLLDLT A D P M P P |
| UniRef90_UPI0004411A57 | \|VVVARAEYEF G D L D M T A Gle P P K |
| UniRef90-Q2UU54 | L A A YK GQWT DVDLTGALE P P K |
| UniRef90_UPI0004414DC1 | L LT LR T E A GLT E DV DL LAPISSPPK |
| UniRef90-A5E788 |  |
| UniRef90-M5FU11 |  |
| UniRef90_R1E830 | LAEFQMAY DLDLT R DYQPPE |
| UniRef90_L8HLA2 | $V A E Y M, ~ G G E G L D I T G D L Q P P$ |
| UniRef90-C5LG07 | LEEYMDGF T R E S VL DL T S DLQPP |
| UniRef90_A9V2G1 | LGSYTNAY E DL DL T T TLLKP P K |
| UniRef90-Q6FVY5 |  |
| UniRef90_E7NGN2 |  |
| UniRef90-E2L8Q8 | VMEFRSEFSHE LDVTASDTPPK |
| UniRef90-A4HWP0 | MVEYMTS $\quad$ D V P L D L R A Y L R P P |
| UniRef90_A0A016RT54 |  |
| UniRef90-B0EDP4 | IGE Y GVNS GVDVVS D L Y P P |
| UniRef90-D3BKQ3 | LTEY HQELGLDLTMDLQPPK |
| UniRef90_S9UIV8 | MVE Y M T S F A I PV DL R A FLLRPP |
| UniRef90-M9MA92 | IVD Y M H A A P L Q L I M D ERPP |
| UniRef90- Q4P4N6 | 1 |
| UniRef90_F6HXA7 |  |
| UniRef90-S9WCG2 | MVE Y M T H F A VPVD L R A F L R P P |
| UniRef90-I2FT33 |  |
| UniRef90-A0E614 | $V \mathrm{~K}$ K Y E N D I E TKVS Q N L P P |
| UniRef90_M1VL57 | LAAY G S AVGLDDLSALLVPP K |
| UniRef90-U5HCT3 | CLLKFK T G L Y N D |
| UniRef90-H0GSJ2 | ITDLKK S G D L A D I D L S G S L VP P |
| UniRef90_C5MFM0 | I M N K S DF EDI DLS G DLNPP |
| UniRef90_B6A940 | $\square$ N E Y N Q S $\square$ S VK L D I |
| UniRef90_E6ZQ33 |  |
| UniRef90_L7FJK6 | IG D F S E F $\square$ E VDVT T D T N H P |
| UniRef90-L1J344 | IL T S Y M T S L G H NLTLDLEP P |
| UniRef90-D8M032 | L S S Y M Q |
| UniRef90-A0A022R5S9 | L Q S |
| UniRef90_W4ZTJ7 |  |
| UniRef90-UPI0002C35D49 |  |
| UniRef90-M0SVQ0 |  |
| UniRef90-A2DEZ6 |  |
| UniRef90_M4B5B1 | $V T$ NYMTDF ELDLPVDLKPPK |
| UniRef90_J3QAB6 | $V$ H DLA K P Y Q A Y T V NLLGNL |
| UniRef90-A8QCZ9 | VALYK D A F LDVLDV |
| UniRef90_A0A058ZBT9 | $L A D M R T G G L V \vee L D E D L$ |
| UniRef90 C6LVK2 |  |
| UniRef90-F4S309 | VN DLS R P Y Q A Y T I L L G NLS P P K |
| UniRef90-W2SHK5 | LAEFQAG】G ENGVNLLLS THPPK |
| UniRef90_E1F7R0 | $\mathrm{R} \backslash \mathrm{N}$ F |
| UniRef90-V6TF15 |  |
| UniRef90-F2UQA8 | L |
| UniRef90-J7G8U6 | L K S F T K T L |
| UniRef90-S8AMC3 | L NEYLSSF |
| UniRef90-16TU80 | V Q D L A K P Y S Y T VNLLGNLS P P K |
| UniRef90_G7DYF9 | V D K L M |
| UniRef90_17APU3 | L G E Y LE P F S H F D F T $\square$ S T P P |
| UniRef90_A9BK55 | L N D Y |
| UniRef90_D2VZQ7 | D S Y G E E $\square$ G F D L Y K H A N P P K |

UniRef90_E0S9N0 UniRef90_J417Y9
 lupas 21 lupas_14 lupas_28 jnet conf sol25 sol5 sol0 jhmm
jpssm
c c c c c c c c c c c c


c c



UniRef90_EOS9NO UniRef90_J417Y9
lupas_21 lupas_14
lupas 28 lupas_2 jnet conf
sol25 sol25
sol5 solo solo jhmm
ppssm




[^0]:    R E $V \mid \mathrm{S}$

