QUERY UniRef90_J7KF35
UniRef90_M1HDNO UniRef90-M1GW78 UniRet90_Q9ANR6 UniRef90-B4AHEO
UniRef90 M1GVT1 UniRef90- M1HBV5 UniRef90-D916H0 UniRef90-M11H93
UniRef90 E1UPF UniRef90-M1HVD1 UniRef90-M1HHQ5 UniRef90-AOAO24FSJ1 UniRef90_M1HCS2 UniRef90-A7ITB2 UniRef90-M112T9 UniRef90_E5EZO2 UniRef90 M11736 UniRef90-M1HXV3 UniRef90-M11KO8 UniRef90- M11BM2 UniRef90-M1HH99 UniRef90-M116T9 UniRet90_M1HNJ1 UniRef90-C2Q4YO
UniRef90 M1GY30 UniRef90-M1HFJ2 UniRef90-M1HGZ7 UniRef90-Q3ZJ55 UniRef90 M M HJI4 UniRef90-W5RVA1

UniRef90_F4EMVO UniRef90-Q20ET1 UniRef90-M1HNU0 UniRet90_M1HM08 | UniRef90 M1 HNK3 |
| :--- |
| UniRef90 M1GWK | UniRef90- M1H122 UniRef90-M1 H9X3 UniRef90-M1HV86 UniRef90-M1HTT6 UniRef90-M1HHC1 UniRef90-M1HHC1 UniRef90-A7J784 UniRef90_M11AL9

UniRef90-M112D8 UniRef90-A7K9P7 UniRef90-M11BD9 UniRef90-17J406 UniRef90-M1HN43 UniRef90 M11582 UniRef90-M1H1A9 UniRef90-M1HEC1 UniRef90_M1IMJ5 UniRef90-M1HSV1 UniRef90-M1H3Q4
UniRef90 M1 MCV UniRef90-A7IWR4 UniRef90-A7IWR4 UniRef90-M1HSG9 UniRef90-K4F7U0 UniRef90-M11692 UniRef90-M1HCX5
UniRet90 A
AK8Y8 UniRef90-C2TDT4 UniRet90-M1HSZ1 UniRef90-M11C37 UniRe90_M1136 UniRef90-M11 WE UniRef90-A7J795 UniRef90_M114W3 UniRef90_M1HP68
UniRef90 M11152 UniRef90-M115M4 UniRef90-M1HP67 UniRef90-M115Z4
UniRef90 A AlUAO UniRef90 ${ }^{-}$A7IUAO UniRef90-M1HVLO
UniRef90 M1 HT82 UniRef90-M1HHK2 UniRef90_A7ITJ1 UniRef90-M115L9 UniRef90-M15L59 UniRef90-M11A42 UniRef90-M11A42
UniRef90-M1HIT1

1 10

20
30
40
K F CKCGVRDQTSAYTCSKCRNRSGENNSFFNHKHSD■TKS MCHCGIRRLSNRDTYCKKCADWSGDKNSFYGKKHTAETKA KKHTEESKGKMSDAKSGEKNHFYGKEHTGETKQ K K H S E E SK T K L S EQRDGGEKNPFYGKTHSDEFKT RTHSEDVKRKLSVIDNSENNPWYGRKHTTETRR $R T$ L S EQTRTTRMSS A QF GEKNHMFGKT LSEETRRK R T H T G V T K E K M S V T A S GE KNP F Y G Q K H T E E T K K


E EVVRANMSIIAK T
K T H
 KEHTEEAKKKMREALT GEKHPMYGKEHTDETKK SEESKQKMSEARSGEKHPMYGKTDSEETKK
 KKHADESKQKMSEAKSGEKNHMYGKTLSDETKQ RTHTDDSRSK I S VANSGKNHPMFGRHHTEKTCQV K TRTEETKRKMSEAKTGEKNPMYGKTHTEETKQ

HTKESRMKMSESKKGENHYNFGKTLPESTRQV
HTKESRMKMSESKKGENHYNFGKTLPESTRV
 K H H TK E S R $\square$ KM S $\square$ S K TGEKKNYWF GK T H T E E T R V K NHTEEYKRLLK S EMMKGEKNPFYGKTHSEETRR KTHTEESKQKMSEAMTGEKNPMYGKTQSDEHKK K E HAKESKQK $\square$ REAMS GEKHPMYGKTLSEETKQ KKHAEDTKQKMSKARAGEKHPMYGKIHANKSKQ G $\square$ S K P GE K N P F WG K L Q T P E T K K K ILTKETKQKDSEARTGENNPNYGKTHTEESKR E E T LK LK S K $\square F S$ GK G N P MY GRK K S MEKMRSK $\square$ K K R F D GRK H TEETKQ QNRSGERNAFFGRFQTEEAKR K THTDESKKKMSEAK $\square$ KENNPFYGKTHKDDTKN K EHTEKSKQKMSGAKSGEKCYMFGKEHTEETKK
 KNHTEESKQKMKEAKTGEKCYMFGKEHTEETKQ K T H T K E T R A K $\square$ S EKNK GENHPNFGKTLPEETCA RTHTEEAKQKMSDVKTGDKNHMFGRTHTDESKQ KTHTNETKQKMSKARDGEKHHFYGKTDSDENKQ

P SEESSKQKMSEANFGEKNHMFGKEHTEESKQ
$P S E E S K Q K M S E A N F G E K N H M F G K E H T E E S K Q$ K T CTEETKQKMSKAKSGKKHYMYGKEHTEETKK

K A H

S DEQK QKMS $\square$ SRKSEKNPMFGKNHTADAKQ K THTKEARSQMSAKLSGENHPMFCKHHKEETRV MSNR DSESNDNRNMVAERNPFYGKTHSDEVRK K T P S D ETKKKK S K A L S GENAYWYGKTHTEEAK Q PSEESKKKMSEAQTGEKNPNYGRTHTEETKK H LGM THTLEARQRMSES QTGEKNPMYGKTHTEEVKQ
 $K \square L P E E V K Q K D S E A Q T G D K N H M Y G K T H T P E A K Q$ ETK QKMKEAQTGEKNHMFGEEHTEETK Q $K P K S D K T K Q K M S A A K S G E N H P M F G Q T H T D E A K Q$ SEETKKKLSEANTGEKNPFYGKQHSEETKK
 PS QETKKKISEALSGEKNPWYGKEHDEETKK K E HTEETKEK LREANLGEKNPMFGKEHTEETKQ KTHTNNAKRKMSDAKKGEKHPMFGRTHTDDAKE K THTVAAKQK $\square$ SEAQTGEKNHCYGKTRTADTKK
H $\square$ G K T L S D D T K K K L C D LR K GEK H H L Y GK T H T K E A VK KAHTNEHKQNLSNAVYGENNPFYGHTHTYDTRQ

PCEE $\square$ RKKMSEA QT GPKHPLYGKAHTNDTRR K HHTEETKKK LTSVANSGENNPMFGKHLTDETKR K TKSDDHKRKMSESTKGEKNHMYGKTMSDCHKQ KEHTEETKQKMSEAKTGEKAYWYGKTLSDETKQ K S HAVVETRAKDSAA $\square$ S GENNPNFGKTHSEETRS T DNHKQKLSDANSGENHPFYGKTHTDEHKQ

 | $E$ | $E T R Q K$ | $R$ | $E A N S$ |  |
| :--- | :--- | :--- | :--- | :--- |
| $E$ | E M R A K | I | S D | S L Y G G |

K Q H EESRNKMSEAQK GEKNHDFGKHDSEETKK S D D RK QK DG DA QK GEKHHYYHGK T L S D E HK R SEETKQKMMSEAKTGEKHPMYGKMLTTETKK SEETKQKMSEAKTGEKHPMYGKMLTEETKK SEETKKKLSEAKTGEKNGMFGKSRSDETKK RTHTDEAKQNMSTAKTDNKNPMFGRAHTDEAKQ K S H TEETRKKMSEKQSGENHPMFGKR $\square$ TEKTRA GYRLLS KY TRMKMSVVAHLGEKNHWWYGRKHSEETRS GYRLS KYTRMKMSVAHLGEKNHWYGRKHSEETRS

 | $H$ |  |
| ---: | :--- |
| $I$ | $G M S$ |
| $K$ | $H$ |
| $H$ | $T$ |

## QUERY

 UniRef90_J7KF35 UniRef90-M1HDNO UniRef90-Q9ANR6 UniRef90-B4AHEO UniRefefo-M M GVT1 UniRef90-D916HO UniRef9-M1H93 UniRef90-E1UPF66 UniRef90-M1 HHQ5 UniRef90-A0A024FSJ1 UniRef90_M1HCS2 UniRef90-A7ITB2 UniRef90-M112T9 UniRef90-E5EZO2 UniRef90-M11736 UniRef90-M1HXV3 UniRef90-M11BM2 UniRef90-M1HH99 UniRef90-M116T9 UniRef90M1HNJ1
UniRef9O-C2Q4YO UniRef90-M1GY30 UniRef90-M1HFJ2 UniRef90-M1HGZ7 UniRef90-Q3ZJ55 UniRef90-M1HJI4 UniRef90-W5RVA1 UniRef90-4EMVO UniRef90-M1 HNUO UniRef90-M1HM08 UniRef90 M1 HNK3
UniRef90 ${ }^{\text {M1 GWKK }}$ UniRef90-M1 $\mathrm{HIL22}$ UniRef90-M1H9X3 UniReffo-M1HV86 UniRef90-M11442
UniRef90 M1HT6 UniRef90-M1HHC1 UniRef90-M1HHC1 UniRef90-A7J784 UniRef90_M1AL9
UniRef90-M112D8 UniRef90-A7K9P7 UniRef90-M1IBD9 UniRef90-17J406 UniRef90-M1 HN43 UniRef90-M1 H3U9 UniRef90-M11582
UniRef9O-M1H1A9 UniRef90-M1 HEC1 UniRef90-M11MJ5 UniRef90-M1HSV1 UniRef90 ${ }^{-M 1 H 3 Q 4} 4$
UniRef90- M1HCV2 UniRef90-A7IWR4 UniRef90-A7IWR4 UniRef90-M1HSG9 UniRef90-K4F7U0 UniRef90-M11692 UniRef90-M1HCX5 UniRef90-C2TDT4 UniRef90-M1HSZ1
UniRef90 M1IC37 UniRef90-M11136 UniRef90-M111W6 UniRef90-M11683 UniRef90-A7J795
UniRef90_M114W3 UniRef90-M1HP68 UniRef 90 -M11152 UniRef90-M115M4
UniRef90-M1HP67 UniRef90_M11574 UniRef90-A7IUA0 UniRef90-A7IUAO UniRe990-M1HVL0
UniRef90_M1 1 P88 UniRef90-M1HHK2 UniRef90-A71TJ1 UniRef90-M115L9 UniRef90-M115L9
UniRef90-M11A42 UniRef90-M11A42
UniRef90_M1HIT1

KTSEKMKGKKPSNTKKTSCDGVTFDCAADAARHFKTSSG[ KIAASRAGKAPSNKKNVIIDGVNAGTVAEVISRFGLSASL KMKEAKTGEKNHNSKRVYLDGTSYDSGGEAARALGKTDGS YMSKKFKGRKPKNSRPVIIDGTEYESATEASRQLNVVPAT KMSEAHKGRNNGNNARI CVNGVFYRSMAEASRQLGISRTT KMSTSKKGRNNQNAKPLCAFGKLYDSASTASDMLRDVCNT KMSEARKGEKNPNSKKVYQYSTSFASTGEAARSLGKSDGS K $\square G N A N L G N N P V R \square Q Y S \square S G K D Y N G \square D S A E R G T G K R S T$ KMKTAQLGDKHPKSKKVYQYTLSFSCSEEAARYLNIKSGT KMSEAHKGRKKSNKAGIYDDGVFYYSMSEASRQLGISRTT KMSAAKKGGKHHNAKPI CVFGKLYGSASTASATLCEVCNT ILSKSLTGEKNHNSKRVYTDGTYFASSGEAARSLNKSDGS KMSKAHKGRNNGNNSGIVIDNVFYRSMSEASRQLNTSRTT KMMGNRP HPKKVFQYELDGTFFSSGRDAARALNKTSGS KMREATSGEKNHNSKRVYLDGTEYGSSGEAARALGDSSCA K LSDATSGEKHHASKRVYLDGTEFGSGGEAAQALGKTDKT KMAESRKGKPAANAMRVVVDGDEYQNRHVAETATGDKAST KMSEAMSGVKNHASKKVYIDGTEFGSFGEAARSLNKSYG KMSESKKGEKNYKAKPICVFGKDYDSASTASDILCDVCDT KMSEAKTGEKHHASKKVYLDGTSYGSFGEAARADGKTDGS KLSEANKGEKNGMYGRTGDLNPFFG KLSEANKGEKNGMYGRTGDLNPFFG KMSKALSGENNYKSRRVYOYTDSFA
 KMSDAKSGEKHRASKRVYLDGTSYGSSGEAARALGKTSGV IISNKKGFKHPKKPVCDDGVQYOSSTASDVLRTSCGT KMSDATSGEKHYASKKVYQYTISYGSCGEAAQALGKTDGS KMSESKTGEKHHNSKKVYLDGTYFASGGEATRALGKSNGS KMSESKTGKKNHASKRVYLDGKSFDSSGEAARALGKSDGS K QKMLDSVKEANSKKVSINGVVFSSVTEAAKTYNDRVNT KMSLSRKGRKNGNRVGIVVDGVYYHSMSEAGRRLNIIRNT R DGDAMRG DPNDRRKVLIKGTTYPS SSEASRQTKMARKT KMSESDRYGKHPKSKKVYLDGTFFPSTGEAARSMNKKSGS KQSEANSGEKNSTSKKVYLDGTSYASGGEAARALGKTYGT KMSEAQSGKKNHASKKVYLDGTSFESSGEAARAIDKKDGN KMSVAHSGKNNPLSKKVYLDGTFFASCGEAARSLNKNDGT KMKKAQSGDKNHNSKKVYLDGMYFASSGEAAQALGKTDGS KDSESMKGEKNHNSKPICAFGKDYGSASDASDTLRDVCNT
 KLSEANTGEKNPMSKKVYLDGAYFASSGEAARALGRKDGT KI SDALSGEKHP

MYGKTGEKTSMFGKK
K\|SDALSGEKHP
KMKEAHTGEKNHNSKKYTLDGTSYGSCGDAARALGKSSGP KMSESKKRGKHPNSKQTCVFGKLYDSASTASDTLREVCAT KMSEVKSGEKHPRSKRVYINGTFFASAADAARSLNKSRSR KMSNSSKGESNPRSKKVYLDGTFFTSSGEAARCLNKSDGT
 RISESQKGKKKPKVKVSCLGIIYNSMADAIDRGTGLSRKV QMSKAKDGEKNRASKRVTDDGTSFASSGEAARADEKTDGS KISEAHSGEKNHNSKKVYIDGTSYGSSGEAARALEKTDGT KMSESKKGANHHASKRVYQDGTYFGSSGEAARSLGKNTTA KQSEAQSGEKHPASKRVYRDGMSFASSEEVAQALGKNSGT NMRNSHDGDKNPDSKKVYLDGTFFASTGDAARDLNKSDGS KMSETRKGRNHHASKKVYLDGTYFGSSGEAARSLGKNTTA K $\mathrm{S}_{\mathrm{S}} \mathrm{ESMTGEKNHASKRVYLDGMSFGSDEKAAQSLGKTNTS}$ KMSDAHAGKKNHASKKVYIDGDEFASSGEAARALGKTYGS KПGGAHKGDKNHNSKKVYIDGTFFASTGEAARSLNKSDGS KNSEATRGEKNP MFGKTGEKSPNYGKSRTD KNSEALRGEKNP K TKEANSGEKNTMSKKVYQYTLEFASSGEAAQALEKTDGT KLSTIAKGKHASNRRMVSGDGVVYGSVKEAAETLGLSQGT KMSEAHSGEKNHNSKKVYDDGTEYASCGEAARALEKSSGS KMSDSHKGDKNHRSKNVYQDGTFFTSSGEAARSLNKKSGS K ISEAMRGAKNYKSKKVYQYDTSFDSTGEAARSLGKTDGG KMSRSRKGKKHKQKKPIVINDIYYESDAEAGRAFNVPANT KMSEAHKGANNPASKKVYIDGTYFDSTGEATRSLGKNSNI KMSENHPASK KVYQYTI NGTFFVSSGEAARSLNKKRGN KMSANQPGSK KVFQYELDGTFFASTGEAARSLGKKDGT KISDAHMGENNPKSKKVYQYDSSFGSCREAGRFLGKSHKY KIREALSGDKNPTSKNIYQYGLSFASDGEAARSLNKSDGD KMSEARTGEKNPNSKKVYLDGTSYGSGGEAARALGKTDGS KTSKSMTGKKNPKSKPปCAFGKDYDTASNASNTLREVCDT NISKGLTGEKNHMSKQYDLDGTFFASGGEAVRSLNKTDGT KIREANTGKDASDETKYDLDGTFFASSGEAARRLHKTSGS KMSETRKRGKHPNSKPTCVFGKLYDSASTASDILREVCMT KLSNANSGEKNHNSKKVYLDGTFFGSCGEAARHIGKRQGH KLSDANKGENHSKSKKVYQDGTFFPSTGEAARSLNDRACA KI SKAKSGEKNP
KISKAKSGEKNP
KHSESTTGEKHHASKKVYQYDSSFGSYSEAGRSTGKSHKY Q SSEKLTGRTHKDSKKVYDNGTFFASGGEAARHLNRTSSS KLSAKLSGGNSPNSKPLCAFGKLYDAASTASNTLCEVCNT
KMSKAQIGEKNHASKRVYLDGMSFGSПEKAAQSLGKTNTS KMSKSMTGK
KMSKSMTGK
K MKEANSGEKHP
K MKEANSGEKHP
$R \| S A A K K G E K T H T K F Q Y D M G N S F F D S S K E A A A H L N K R Y E T$

QUERY
UniRef90_J7KF35 UniRef90-M1HDN0 UniRef90_M1GW78 UniRef90_Q9ANR6 UniRef90_B4AHE0
UniRef90 ${ }^{-}$M1GVT1 UniRef90-M1HBV5 UniRef90_D9I6H0 UniRef90_M1IH93 UniRef90-M1HVD1 UniRef90_M1HHQ5 UniRef90_A0A024FSJ1 UniRef90_M1HCS2 UniRef90_A7ITB2 UniRef90-M1I2T9
UniRef90-E5EZ02 UniRef90_E5EZO2
UniRef90 M1I736 UniRef90-M1HXV3 UniRef90-M1IKQ8 UniRef90_M1IBM2 UniRef90_M1IBM2 UniRef90-M1HH99 UniRef90_M116T9 UniRef90_M1HNJ1 UniRef90_C2Q4Y0
UniRef90-M1GY30 UniRef90_M1HFJ2 UniRef90-M1HGZ7 UniRef90_Q3ZJ55
UniRef90-M1HJ14 UniRef90-M1HJI4 UniRef90_F4EMV0 UniRef90_Q20ET1 UniRef90-M1HM08 UniRef90-M1HNK3 UniRef90_M1GWK6 UniRef90_M1HI22 UniRef90-M1H9X3 UniRef90_M1HV86
UniRef90-M11442 UniRef90_M1HTT6 UniRef90-M1HHC1
UniRef90 ${ }^{-}$M1HHC1 UniRef90_M1HHC
UniRef90_A7J784 UniRef90-M1IAL9 UniRef90-M1I2D8 UniRef90_A7K9P7 UniRef90_M1IBD9 UniRef90_17J406 UniRef90-M1HN43 UniRef90_M1H3U9 UniRef90 M1I582 UniRef90-M1H1A9 UniRef90_M1HEC1 UniRef90_M1IMJ5 UniRef90_M1HSV1 UniRef90-M1H3Q4 UniRef90_M1HCV2 UniRef90_A7IWR4
UniRef90_A7IWR4 UniRef90_M1HSG9 UniRef90 K4F7U0 UniRef90_M1I692 UniRef90_M1HCX5 UniRef90_A7K8Y8 UniRef90_C2TDT4 UniRef90_M1HSZ1 UniRef90_M1IC37 UniRef90 M1I136 UniRef90_M1I1W6 UniRef90_M1I683
UniRef90-A7J795 UniRef90- M1I4W3 UniRef90_M1HP68 UniRef90_M11152 UniRef90_M1I5M4 UniRef90-M1HP67 UniRef90_M1I5Z4 UniRef90_A7IUA0 UniRef90 A7IUA0 UniRef90_M1HVL0 UniRef90_M1HT82 UniRef90_M1HHK2 UniRef90_A7ITJ1 UniRef90_M1I5L9 UniRef90_M1I5L9 UniRef90_M1IA42 UniRef90_M1IA42
UniRef90_M1HIT1

## 90



UniRef90 M114K4 UniRef90-M1HFP5 UniRef90-M11AE66
UniRef90- A7J6F7 UniRef90 A7J6F7 UniRef90-M1HLA9 UniRef90-M11065 UniRef90-M1HD38 UniRef90-M115J1 UniRef90_M12B5 UniRef90_M112J6 UniRef90-M112J6
UniRef90 Q89820 UniRef90 M1 HTP9 UniRef90_M1HWS6 UniRef90-M1 HWS6 UniRef90 M1HV11 UniRef90_M11CV6 UniRef90-M1HE94
UniRef90-A7K9F8 UniRef90-A7K9F8 UniRef90_M1HJG0 UniRef90-A7J7R3 UniRef90-M1HEZ3 UniRef90 M1HKLO UniRef90_M1H1J9 UniRef90-M1HLV3 UniRef90-M11C31 UniRef90-M1HLG6 UniRef90-A7IWV8 UniRef90-M15NS UniRef90-M1H395 UniRef90_M1H395 UniRe990_D1JFH5 UniRef90-M1H63
UniRef90-M114FO UniRef90_X2KM55 UniRef90_M1HBY5 UniRef90-M11BE7
UniRef90- A7J791 UniRet90_M1HBY1 UniRef90-M1HBY1 UniRef90-M11N30 UniRef90-17KR10 UniRef90-M1HUW1 UniRef90_M13R3 UniRet90-M1GVT2 UniRef90-M1HBR1 UniRef90_M118P8 UniRef90_M118P8 UniRef90-I6XNS8
UniRef90 M1H152 UniRef90-M11B79 UniRef90-Q3ZJ45
UniRef90 M1HGP4 UniRef90-M1H158 UniRef90 M1HEM7 UniRef90-M114G2 UniRef90 M5BUQ9 UniRef90_Q84603 UniRet90_M1HH80 UniRet90_M11FX8 UniRef90-E3SFOO
UniRef90 M1HTWg UniRef90_F8SY82 UniRef90_O98545
UniRef90_M1HHR3 UniRef90_M11558 UniRef90_M13X7 UniRef90-M1HC24
UniRef90-M1H811 UniRef90-M119Y9 UniRef90_D91CS6
UniRef90_A1BU52 UniRef90_A7IV63 UniRef90_A7RC94 UniRef90_D5UHUO UniRef90_O41133 UniRef90_X1GHL3 UniRef90-M116RO
UniRef90 M110C9 UniRef90-M1HHF2 UniRef90_M2UAN9
UniRet90_17CMV9

K N A T DETKKKMSASKS GAKNHMYGKDMSEET円E K T P TEETRAKMSESTKGDKHPFYGKPRTDETKK K Y P S D E HK QK L S D AKK GENHPMFGKQHKDDTK Q

S SEETKKKLSNAKSGEKHPMYGKTLSEETKR RTHTE R T H T D D A K E K M S G T M S G E K N P F Y G R T H P D E V V K Q

HTKETRKQISEKVSGKNNPMYGRKHTEEELAA
CYMYGKTLSKETKQKMSESTKGENNHFYGKTHAKETTE KTHTDDAKKKLSEKMSGENNPMFGKTHTDDTKR K HHSDEAKKKI GEAKS GEKHPMYGKTLSEETKQ KTPSEETRAKI SESKKGENNPMFGKPRTEETKQ KTPSEETRAKI SESKKGENNPMFGKPRTEETKQQ K P Q K E EVK S K I S K S Q M G T N N S FY GK K H T E E S L K
 HIGGKEL TGETKKKMSESRSGENNHMYGKTHTEETXQ $K$ ITS DETKQKQREALQGEKSPFFGKKQSEETKQ RALLSDEHKKNLS $\square A K$ K GENNPMFGKSHSDD $\quad$ KKQ
 K HHAEETKKKLSEDRTGEKHHMFGKRHTEETKQQ K H HAEETKKKLSEDRTGEKHHMFGKRHTEETKQ

H T DKTK QKI S D STRGDKNHMFGQVHTDEAKK $K T H T D E A K E K M S V V K F G E N N P F H G R T H T D E S K Q$ K P K T DEVVKEKISKTMSGENNPFYGRTHTDELKQ
 $K P S S V E T R D K D S \| T K \square G D L N P N F G K P R S A E T R A$ K THTEESRAKMSKN MLGKKRSKEACA DEVKQKMSKTKT GEDNHMFGRTHTEEARK K K A S Q T TK EK $\square$ S $\square$ A VS GEKNGFFGKN HTPES RT TEETRAKISEK MLGKKHKDETRQ P SEE S R QKMSKAKK GEKNGMYGKTHTEETKQ K EHTEETKKKMSDALS GEKAFWYGKTLSNDTKE K E HTEETKKKMSDALS GEKAFWYGKTLSNDTKE RKHTEEERKK】GDAQKGQKNHNYGKKATEETRK

 RTLSDDHKQN!SDAKK GKTHPATDDAKQ $K$ T HTEESKQKMREA QTGAKNPMYGHTKTPEQQA ETKQKMSDAHKGEKNPMHGKTPSAETKQ
 ETRAK LSKAKTGEKHYLYGKEHTETTKK TD DHKKNGSNSMSGENHPLFGRTHTEDAKK S D DHKQKMSDSRKGANNYNYGKTQSDFQKQ S DEHKQQ IS DSMTGDKNHMFGKTHTDDTRR K NKTVEVKQKMSEAKTGENHPMYGKT K THTDDVK QK $\square$ S D GHKGDKNHFY GKT $\square$ S D G H K Q SEETKKKMSDTRIGENNPMFGKTRSVETKK SEETKKKMSDTRIGGNNPMFGKTRSVETKK K T H T L E T RQLMSETRRGPNNPMFGKSTSEETKA KTASEETKQKLREANTGEKNHMFGKTHTEDTRQ K THTDDTKKKLSESNKSEKNPMFGRTHTDDAKQ K $\square H S K E A R K S Q S \square A K M G Q P S P F A G H T Q T N D V K \square$


 TEAA AEKM SGAGNPFYGKTHSEETKA
 K TKSEETKTKMSEAQMGEKSYWYGKTKSEETKK K S P GEETKQKMSESQRGDKGYWYGKSDEEETRQ QA $\square$ SERNKGEGNWMYGK SHTPEASK EKKMSEANKGEKHHMYGKKHSEEYKK $K V V S K D S K K K M S D A A K ~ G K \| V S K E T K K$
 E EVKQKMSDARTGENHPSFGQTLSDEHKG K T HTEEAKLKMSELHK GKVLSVEQKK S E DT K Q A D S L S L S GK N N P N Y G K S K S E E H K Q KKKKAMKGSASQETRD HTE $\square$ A R RKMS LTTKK GKNNHEYGKKH SEE T R K
 K S P GEETK QKMSKAQRGDKGHWYG\|SPKEETRQ
 RK H T DEVVK DLM S K N R Q G L N N S F Y N K T H T P E T $\quad$ DE HK GLLK H TEESSKRK ISEANRGKNHPDWGKHHSEKTRR
 KTGENHHNYGRKCAQETKD


UniRef90 M114K4 UniRef90-M1 HFP5 UniRef90-M1AE66 UniRef90-A7J6F7
UniRef90-A7J6F7 UniRef90-M1 HLA9 UniRef90-M11065 UniRef90-M11065 UniRef90-M1HD38 UniRef90-M115J1 UniRef90-M12B5 UniRef90-M12J UniRef90-Q89820 UniRef90_M1HTP9 UniRef90-M1HWS6 UniRef90 M1HWSE UniRef90-M1ICV6 UniRef90-M1HE94
UniRef90_A7K9F8 UniRef90 A7K9F8 UniRet90-M1HJGO UniRef90-A7J7R3
UniRef90 M1HEZ3 UniRef90-M1HKLO UniRef90-M1H1, 9 UniRef90-M1HLV3 UniRef90-M1H3N7 UniRef90_M1C31
UniRef90_M1HLG6 UniRef90-A7IWV8 UniRef90-M115N5 UniRef90_M1 1LJ UniRef90-M1 $\mathbf{H} 395$ UniRef90-D1JFH5 UniRef90-M1H63
UniRef90-M114FO UniRef90-Х2KM55 UniRef90-M1HBY5 UniReforo-M11BE7 UniRef90-M1HBY1 UniRef90_M1HBY1
UniRef90 M1IN30 UniRef90-M110Z0 UniRef90-17KR10
UniRef90 M1HUW UniRef90 M113R3 UniRef90-M1HA11
UniRef9O-M1GVT2 UniRef90-M1HBR1 UniRef90_M118P8 UniRef90_M118P8
UniRef90_-I6XNS8 UniRef90-M1H152 UniRef90-M11B79 UniRef90_O3ZJ45
UniRef90_M1HGP4 UniRef90-M1 HI58 UniRef90 M1HEM7 UniRef90-K4FK34
UniRef90 M114G2 UniRef90-M5BUQ9 UniRef90-O84603
UniRef9O_C4MZP2 UniRef90-M1 HH80 UniRet90-M1IFX8 UniRef90-E3SFO
UniRef90
M1 UniRef90-F8SY82 UniRef90-O98545
UniRef90-M1HHR3 UniRef90-M115J8 UniRef90_M113X7 UniRef90-M1HC24
UniRef90 M1H811 UniRef90-M119Y9 UniRef90-D9ICS6
UniRef90-A1BU52 UniRef90-A7IV63 UniRef90-A7RC94 UniRef90-D5UHUO
UniRef90 A5JO40 UniRef90-041133 UniRef90-X1GHL3 UniRef90-M116RO UniRef90-M1HHF2 UniRef90_M2UAN9
UniRef90_I7CMV9

KMSASKSGAKNPNSKKVYQYDTSFVTCGEAAQSLLNKSGSA
 $K M S D A H K G K K S N N T K E V Y Q D G T F F A S R G E A A R S L H K N D G S$ KMSEAKSGEKHP
KMSEAKSGEKHP
KMSDAK $M$ GD K H HRSSK VY LD GTFFCSGGEAARSLNKKGG
SMSEWQKGEK
SMSEWQK GEK
$K \square S A A K T G A K N P R S K K V Y D N G T F F G S S G E A A R H V G S V V A S$ KMSKAHKGKKEHKKKQYELDGTFF DSTEEAARSLKKKE GS KMSDSKKGEKHHNSKKVYQYDLSFGSSGEAARALGKTNGS KLS I A N T GK I H T D E T K KLS $\|$ A N T G K I H T D E T K
$K Q S E S R T G E K N P R A K C V Y Q F D M S F Q T V A E A A E Y L G K V H G G$ RMSLA Q $\square$ GKKPSKAKAVCAF GKLYDSASSASKILRDVCDT RMI EAQTGKTHSDETK
RMIEAQTGKTHSDETK
$K \square S A A L I G E K N H N S K A V Y Q Y D \square S F G S T G E A A R S L N K S D G S$ KMSDAHVGKKNHNSKKVYQYDISFESAGEAARSLNKTTSS K LS DAAIGDKNHKSKPICVFGKLYDSASTASKILDCDVKN KI S K AVSGENNP
K I S K AV SGENNP
K I S A AL DGEKNHNSKMVYQYDLSFSSTGEAARSLNKSSGS $K I S K V H S G K K N H M S K K V Y T D G T Y F A S V G E A A R Y I N K S S S S$ KMSKSR LGEKNHKSKKVYVVVQSFASSRDAAQSINKNS GT QWRETRKGANNPRAKQYDLDGTFVQSFAEATQSLHKS GT KMSEAQTGENNHNSKKVYLDGTSFASSGEAARALGKTDGS KMKEA QLGDKHHKSKEVYQY DISFACSGEAARKLKMKS S S K $\square$ S A S N T GKKRPNAKPI CAFGIVYSCADDASNALRH K M S E Y R K S T F K P N S K P I CVVF GKLY G SVVKDAS D TLRDVCDT KMSDARTGEDHPNSKKVYINGTEFASSEDAARSLNKTSGS K M S E S H K GK K H S N S K R V Y L N G T S F G S C G E A G R D C G K K Q G N $K M S K A K S G E K H P K T K R V Y L D G T Y V D S F G K A A Q A V G K D D G A$ K IS EA LS GEKNHMY GKTGENNPNYGKTHTAE SKEKDIS KISEALS GEKNHMYGKTGENNPNYGKTHTAESKEKIIS
 KMSEAHTGKNNHNSKKVYLDGTYFASSGEVARSLNKTDGT K M S E S R S GEKN H A SKK KVYID GT S Y G F S E E A A R A L G K T D G S NMSDAHKGEKNSLSKKVYLDGTFFASSGEAARSSLNKIS GS K $\square$ SESHKGDK NHRSKTVVYQYDKSFVSSEDAARS L NK K F S S KTSGQNSGKNNHNSKPICVFGKAFPAASVASNALRANRNF K MSEAQKGEKSHMYRKTLTD
KMSEAQKGEKSHMYRKTLTD
KMSEAQKGEKNHRSRGVYQYDLEFSSAEEAARSLNKKDGA K $\square$ S E A M S GKKNYKSKKVYLDGAYFASSGEAARALGKTDKS K M S E S R K GEK A S R K S P V EVVNGVE Y S T M K L A Y E A I GLLS R S G QMSNAKKGEKHPRSKRVYLDGTFFATGGEAARSLNKKQGT
 K M S K N NHMSKKVY I N GTFFASCEEAA WSLNKKCSN
GENHPASKKVY DGGMFYAS DEDATQSGNKTS GS
 KHSES I T GEK NPMFGKTGEKSHMFGKMGEKHPMFGKTRSV LLSTAAFKGNHPHTKFQYTQDKKEYDS DRQAAEDTGDSRNY KLREANLGKETHNSKKVYQYD LISFDSGG GAAKHLNKKNG】 K MS KNSHNSKKVYLDDTFFTSGGEAARSLNKTDGN F I S Q $\square$ N S GKK D R R K P L FI N F DYYE SVVSEAS QK T G L N R R L AI SAA A S GEKH HNSKRVVYD GDVY F GSTGEAARALDNAAACAA KLS $\square$ AK Q GKNNCTSKRVYQYDTSFASSGEAARFLGRKDGT NLSESNKSGKNTKAK PLCAFGKLYGSAGEASNDLRDVCNT K IK D NMPGANNPAAKPIEVNGVKYKCMKDASKATGLS
$K M S N A K Q G G K H P R A R P V W V Y G I L Y D S C R S A S D Y L R T T K N F$ $K$ L S EA A K T WF K N N N T GFAVET TVVYR S $\square N E A A R S I N D Y A S S$ K M S D A Q K GKNNPNSKQYDLD GMYFRSCREAGRSLGKGHKY KMSKKHSGKNNPNA $\square T V K Y N G E E Y T S D S S A A K A A G L S T S T$ KMSEARLGDKNPNAKKVY LDDGKSFGSCGEAGSSDGKSKGS KISESLLGKNHNSSKRVYRYALSFGSCEEAGRHLKKNGRN KIS DKAKERKNPAAKKVVLNGIEYGSMKQASVATGLDS KMS E A AK GKKHK K VF QY T L D GQS F A S S GKA A Q T L G K S D G S KMSDSRKGGNNPRARPVWVYGILYDSCRSASDSFGMKSNF K L S L A N R GENNSNS K K V Y V Y G NL Y A S C DE A S K Y L N
KMSESHKGKKNNKSKKVYINGTFFASSGEAARSLNKNNGN S $\square$ S K A QK GDKNHRSKKVYQYNLSFASSEDAARSLNKTRGS KMSKSHKGKTNPDSKKVY INGTFFSSCGTAASHLNKKHQS
 $K L T D A H K A K \square S R S V S I D G V V Y A S G S D A S K A L G L S R S G$ KMSNAWKSRKAHATKKVEVDGEAFNSVKEASEKYSLLQATH KMSRSRLGVKNSKARAVYAFGNWYGSCSVASDALRRKDNF K $\square$ SEAKTGENHNSSKRVYLDDTSFGSCEEAGRHIKKNGRN KMSAARKGRPMPSSKR
$K$ L R N $\square A Q N R T H D P V K G L D V E T T T Y S S V R E A A S Y L N S D D K T$ KISK TLLTGRKNHNAKKVYQDGKYFDSCEEAARHLEKS DGS K MRESRSGEGNA
$K Q S D S D R G E K N C N S K K V Y Q Y D L S F G S C G D A A R H L T K N S S S$ $N L S E S H K G E K N Q N S K K V Y L N G T F F A S G G D A A R S L N K N P G S$ $K M S \square A D S G E K N P N S K R V Y Q Y T L D F S T S K E A A Q K L G R E D G S$


I G K R K LA Y GFRWS Y SI GKCANGNRKTAY | S | G K C A N G N R K T A Y |
| :--- | :--- |
| A | S Q A R GK F K WS Y |

UniRef90_M1I4K4 UniRef90_M1IAE6 UniRef90 A7J6F7 UniRef90 A7J6F7 UniRef90_M1HLA9 UniRef90_M1I065 UniRef90 M1I065 UniRef90 ${ }^{-}$M1HD38 UniRef90_M1I5J1 UniRef90_M1I2B5 UniRef90 M1I2J6 UniRef90-M1I2J6 UniRef90_Q89820 UniRef90-M1HWS6 UniRef90_M1HWS6 UniRef90_M1HV11 UniRef90 M1ICV6 UniRef90_M1HE94 UniRef90-A7K9F8 UniRef90_A7K9F8 UniRef90 M1HJG0 UniRef90-A7J7R3 UniRef90-M1HEZ3 UniRef90 M1HKLO UniRef90_M1H1J9 UniRef90_M1HLV3 UniRef90-M1H3N7 UniRef90- M1IC31 UniRef90_M1HLG6 UniRef90-A7IWV8 UniRef90 M1I5N5 UniRef90_M1HLJ6 UniRef90_M1H395 UniRef90_M1H395 UniRef90 D1JFH5 UniRef90_M1IH63 UniRef90_M1I4F0 UniRef90 X2KM55 UniRef90_M1HBY5 UniRef90-M1IBE7 UniRef90_A7J791 UniRef90_M1HBY1 UniRef90-M1IN30 UniRef90_M1IOZ0 UniRef90-I7KR10 UniRef90-M1HUW1 UniRef90_M1I3R3 UniRef90 M1HAl1 UniRef90_M1GVT2 UniRef90_M1HBR1 UniRef90_M1I8P8 UniRef90 M1I8P8 UniRef90_-I6XNS8 UniRef90_M1HI52 UniRef90_M1IB79 UniRef90_Q3ZJ45 UniRef90_M1HGP4 UniRef90_M1HI58 UniRef90_K4FK34 UniRef90-M114G2 UniRef90 M5BUQ9 UniRef90_Q84603
UniRef90_C4MZP2 UniRef90-M1HH80 UniRef90_M1IFX8 UniRef90_E3SF00 UniRef90_M1HTW9 UniRef90 F8SY82 UniRef90 Q98545 UniRef90_M1HHR3 UniRef90_M1I5J8 UniRef90 M1I3X7 UniRef90_M1HC24 UniRef90_M1H8I1 UniRef90_M1I9Yo UniRef90-D9ICS6 UniRef90_A1BU52 UniRef90_A7IV63 UniRef90 A7RC94 UniRef90_D5UHU0 UniRef90_A5J040 UniRef90_O41133 UniRef90 ${ }^{-}$X1GHL3 UniRef90_M1I6R0 UniRef90_M1I0C9 UniRef90 M1HHF2 UniRef90_M2UAN9 UniRef90 I7CMV9
$\square$ GKCARGERFKWSY I R GKCK TY GFK WS Y $\square$ K $\square$ S A CARGDRKTAY
$\square$ A S C A R G D R MRDWAKHTKHNVFYVS

K $\square$ R N CARGTQKNAY I C S CARGE GFKWS Y


NDRSCARGGFKWS Y | 1 | $R R C A R A H G F K W S Y \square$ |
| :--- | :--- |
| $N$ RRKANGKFKWSY |  | Ni RKCANGKFKWSY CI SRCANGNGKTAY SI RSCAAYGFKWSR SI RNC

I Y K L K S K N F
1 R D WIK H K K H NVFF Y V S
I GKRKSAYGFKWSF LISQCANYGFKWSY! $M \vee K W A R K P Q H N V F Y I S$ NIRMCASGKFDWSY

TGKCCKGKR
LI SMCARGKRPSAY
SII SKCARGK RPSAY ITRVCKGRRYE WNYL SI RACANYGFK WS Y SISECARYGFKWSF INDWTRNKQHKTFY!

NTSKCARNKYVSAY
SIGKCARGKRPSAY FYTRLDSPKWPNY S IS ECANGKFKWSFI IRSCARGERFKWSYi NISRCASGKFKWSY VI GKCANGKRKTAY SlRDCANGKFKWSF ETKKKHSE
ETKKKHSE
$\square \mathrm{SKCDK}$
AI NECANPNYK
SISKCA $\square$ GKF $\square \mathrm{WS}$ Y IRERCHSQ
RGDRPTAYDFKWSY ClSSCARGDLNTAY MSKWVRKPEHNVFYVS
I L K R VK S K K H P
LS NWEK
T E CVRDERFRWS Y
FRRR
RGEQKKAYDFRWSY $\square$ RACASGEKFKWSYV
A $\square$ SKCACGKFKWSY V 1 RDRCHSD
$4{ }^{4} \mathrm{~K} W \mathrm{~W} \mathrm{~K}$ S K K H P
$\square$ CARKSAYGFK WS Y M
Y S S ECANGKHESAY
SI YECANGNRKTAY
NISCCARYGFKWSYV
LKYRLLNNEKTDYVYI
LDYRLKSDKFP
I SRVCRGKRYKWEY I
i RRYVYQDKHP
$I R A C A S G K D F K W S Y$ V
LLRREKSQ
DiSKCARGKRKTAY
$K \square S \square C A T G K F K W S Y$ V
SI GECARYGFKWSYM
VI AKCKAYGFKWSY
VIRYMQS
LTRRCNS
LTRRCNSEKFPNY

20
30


GSK
SEETKKKMSVSKQDKNHPMFGK
NMARD IK GEKNPFYGKKHSLETRA
HCYGKKASEEAKQKMSDSRTGGLK RTEETKK
RTHSEETKALMALNKLGANNSLFGKTHSEKTKE RVHS DKTKALIS RALVGENNPFYNKNHSDDAKDL $R \bigvee H S D \square T K G L I D K A L T G E N N P F Y N K K H S D E S R V V$ SD DA K K R DG S K N S FF GKK H S E E T K R
$H \square R \square K M R S E E A K R N M S D N H A G E N N P M Y G K K F$ TEEHKN


HSEET $\square$ KK $\square$ S G SNNHFGGKAHTLETKV
E EHRFYGK T R T DE TK Q
SEETK TK LSNA LS GERNP IY G DRRSN ETRK
$K M S L K Q T G E N N P L F G K T H S E E T K E$ RKHSDEVKDLMSKNRTGLNNSFYNKKHTAENDE $\square Y$ S DE HK K N $\square$ S E S K T GEKNPMF GKK F FKE T KE

K $\square$ AS E ET K QK NREAHV GNNPFYNKSHSIESKR RVH TDETK ALI A RALTGENNPFYNKSHSMENKV T DEVVK S RLS K L K K $\qquad$


ASENTRDKMS $\square A R T G Q K$
VHTSESRRK IGAAQK GKRKSLLEMTT GKKVTNPE ILLAKLSAATRGENNPRYGKPVSEETRE

MSGENNGMFGKKGADHP
H TEETKALMSLKKS GSNNPLFGKTHNDDTKE RTHSDETKGLLDARAVTGENNPFYNKSHS DESK $R$ VHSDKTKGLIARAVTGENNPFYNRNHSMESKL

GRTFS QETLE
$R \vee L S A E T K K R L S E Q K Q G E L N A N F G K T A S E E T R A$
$H$ TKETKAKMS LLLQLGEQNHFYGKNHTEEVRQ $K$ VHKEETK LL LMS QL HLGGANNSMF GKKHTDDQKE SEETKKKMSEAAKGEKNHNYAKKLPDVQRK KVINAETKKRMSMSRKGEKHPMYNKKHSSFSKR PSESCAKKSTS MTGKNNPMTGKTLSREQQA
 SGEKHGMFGRTKTPEQDA
HSDETRAKMSKQRK
GRIITNETRK RTHSDKTKTVISKALVGENNPFYNKNHSMETKL RVVHSPETKAALVKALTGQNNPFFGKSHTMESDR
 RKHSEETMSKMKKPKKEETRAKMRKPKSASHCE K THTEEALGLISK PGELNPMFGKKHSEATKA
KEKSEEFVAHMYKDRKGSNNPMFGKTKSEETGA RVMSQEAREALAEQRRGAGNPNYGRRASDATRA GMKLSKEARKSEKAK LRTGEKNPMYGK

P T GE T K DKLS R A A M GR $\square$ H S LIETRA GHKMSAEA RAALSEQRRGSGNPNFGKKASAETRA MS VRTGSKRP QETKD LS L L N G K N N P M Y GK K S T 】E T K A KPPTAETRAKI SATLMGKPHP GKPHTPETRA RKVSRETREKLSELHKGKNNFLYGKHLSKEHKE SEETKAK LSASNKGV SRGLGKKHSEETKS HSEETKN RKHTKDHRRKNSEAKKGEKNPNWNKPRGAAVSK NTDRCVENNSFFGKDHTPELKK K $\square$ S E S $\square$ S GEKH FMYGKH HTESSTKN

TAATKAKMSAAQK K T GE L N P NYGKK
RQHTDEHREKNRLAKSG\|NNPNFGKPRDKXVR TEEHKFKDGKTWRGKKRPLTGRK LDPPEHVA $P$ T DETKKKLS LAA A L L R K H T P D T I A TKE QRKQRSDRAKGKNNPMYGKKFTEDHKK ATEETRAKLSAVKSGDNNPMYGKVLSEEHKR

[^0]

## UniRef90_P16010

 UniRef90-KOPZ94 UniRef90_M1HMX3 UniRef90-M1GMHC UniRef90-M1GZK66UniRef90 Q02677 UniRef90-L8B961 UniRef90-M1F6R8 UniReffo-ROLWG6 UniRef90-T214T7 UniRef90-J8RQ90 UniRef90-O5EM44 UniRef90_M116V2 UniRef90-M1HVJ7
UniRef90 W119So UniRef90-O8SHQ1 UniRef90 M119R4 UniRef90-M1HVP2 UniRef90-M1 H3J4 UniRet90_H6D5D8 UniRef90-F7WD43
UniRef90 D5JFN2 UniRef90-H9CNM8 UniRet90_U1UVS8 UniRef90-M1HZG7 UniRef90_M1HSTO UniRef90-A0A028KAW6 UniRef90-M1HTN7 UniReffo- V5W5J4 UniRef90-M11220 UniRef90-R9U325 UniRef90-R6G1W6 UniRef90_NOACQ5 UniRef90-UPIO003B5801D UniRef90-X1CQE3 UniRef90-M5BUN7 UniRef90-M1 HH 93 UniRef90_19UM08 UniRef90-M1HGW0 UniRef90-M12G5 UniRef90_S5U502 UniRef90-Q06SDO UniRef90-M1H149 UniRet90_SOFSM4 UniRef90-I7HDS1
UniRef90-M2UAP3 UniRet90_E5EYK1 UniRef90_M111D1 UniRef90-Q36580 UniRef90-M1 HY33 UniRef90 M2TER9 UniRef90-G4HTS6 UniRef90-UPI0001E2C29F UniRef90_NOA341 UniRef90 F1YES5 UniRef90-M1HCF6 UniRef90-M1ICP1 UniRef90-X1LVG5 UniRef90 U3PCR9 UniRef90-E5EYT8
UniRef90 ATXFA UniRef90- M1 HIG6 UniRef90-C0JWR2 UniRef90-W1 XZM1 UniRef90-A8IVM2 UniRef90-A7IU18 UniRef90-M1HRZ8 UniRef90-L8WM05 UniRef90-F0HFC8 UniRef90_A0A011NJ05
 KQREARLGAKPPNAMACEI DGVRYHSFSKASEALGIIKAGT NMD KNSPNSK VYLDGTYFGSCRQAAEHTNUARCA AMSNSKSGWNNPNYYPDS DGRYYFD DSRAE KQSESKLGAKHPRARAVYAFGNWYGSCGRASDALR LMGQKALGRKHSDSKGFQLVGVFVSVRRAAKFLGUSSNT RMIEA NSAYPVYIYNVIYPSVSTLANLIKSNHST KISEANKGKYDGGKPKIPIVAIEYASKSDASKDIFPARSF KISKSRSGENAGNRKKVSLDGEDFПNTTEASKETGATRQH LMKQKALGRKHSDAKGVYIYEKFFVSI RRAAKFDG\|SGST KMSEKRKGVYANCSTSITVDGTYFESINEAQRKTGQWASN KMS啫 KISKANKGERNVNSRKIYQYDLTFFSCNESAQILGKKSHS KISEATSGDKNNTSKKVYQYDKSFASCGEAGRYLKISECA LMRQKADGRRHSKERCVSSDSTTFVSGRGAGKYLGGSGNT KMSESRSGAKNHNAKRVYQYDLNFDTCREAAKHLNDSSCA KMSKCQLGSKNHQAKPVMVFGNVYNCMQDASDSLR
KMS GRNNHGSKKTYQYDLSFDCTEEAAQFIGNNDSS
RM!
GRNNHGSKKTYQYDLSFDCTEEAAQF:GNNDSS RIIEA KKAKYVYIYNIIFPSVGTLAKLI K KRSETDKAKKAKLGRSVSIDGVVYSSGSEAAKSLSMSHSG RMIIEA NSAYPIYIYNVIF II SKKNKGNNARAKKVFVGGQLY KLSKSNMGANNSRADPVCDFGKLF KIRKAHLGRKESSTKKYT

MFGRTGALHHNSKPVCVFGKVYPAAQTASDALR
LMRQDADGRKHSLVTRLSMSGVSFVSDRRASKFLDVSGST RIDEAKSSVYVYNSFKELL VIFPSVKTLAKLI KSNSST KISSAMKGKPSPFRKKCSIINGVVYSSUREAVEILQDPRST RMDEA

NSAYPVYU
SSALDGKGHLSARKVFCEGQDFNSHKEASNFYNDSRET RMSEAAKSGQPGSSLSVTGTTTEFQS亡AEAARRLGLNRCA KMSAVRKGRPMPSSVR
LSMANKGR
LIRLSKVGKSASNGTPTYCLVKQFVSFREAGKYLNMSHSN KLIDSITGEKNPNSKKIYQYDLFFYSCTEAANFLEKSYVH $K L S T T H \quad$ K KMSGKKTGALSPNSKPI CVLGKVYPCSKDASDDLR KLREANLGKETHNSKKVYQYDLSFDSGGDAAKHLNKKNGI RMIEA NSLYPVYMYDVIFPSVTTLAKRIDSNHST $L I P G N Q A V L N P Q N R R P V S I N G Q I Y E S A S A A E R T T G D T V Q N$
$K T S N E K S G E K H G K S K P V C V G K V Y P A A S T A S N V L N N K H F$ KLSESNKGRNNPNAKPI CTGVIYETDEAAATTLNDDHGS RMIIEA NSRYSIYIYNUIFPSVNTLAKLIHSNHSS Q R RKNHPGKKNKYNPVYLYDSI YPSVKTLSKKVGANSTT NISKCQLGNKNHQAKPVMVFGNVYNCMQDASDSLR SMSE KKNKYPLGVGUYDLEFSNNVELAKYLGDSKVT N I DAHDNGKYDDKKKVSVDGVEYKSLSEASKULGASRQT K MSAVRKGRPMPSSKR

KGNYNSNSKPVIQDSKEYPS DADVNRQLG $\square N S A D$ KПSESQKNNKNNPGLALSVKTDEYSNFTQAASELGFSRTT KMSAVRKGRPMPSSRR
KMSKAKMGEKHPRATAVYAFGNWYGSCGRASDMFNRKDNF TLSKLVSGDKNPNSKQVYVFGNLYNSCDEASNTLRKSKNF KMSAAHSGKRPEHRTKIS
 KMSKSKTGKANYDDRPVTGKKIKFSSKSEAGKYFRVKSSN KMSQSAKNRNRKGARKIMAEGVLYLTTQECCRKYGISAAS K ISDSQPKKTPVFCTYTLFDSIVFETIADASRFTGVSTGR RFTEERTNDPNTSRKGNISPGGSFLSLAEASRVTNMSRRD K TRVAMKGDKSPVAKKVCVNGEDFNSUREAGDFCNMKPSN KMSAARKGKKHTAASKAKMSAAQKGKKRTAATKAKMSAAQ RMSGTRTGVKAPSSKPVCVFGNVYPSSQCASNELRWTKNF K S S K QPTSKP IADHLETGQTFFETDSKASKLLKUHSGR AI TQNTRGKQHFRAKRFF TDDMEFYDLSDAAKMFGUSYKT



[^1]

| UniRef90_P16010 | $\text { L K GRVK A GYY }{ }^{90} \text { K }$ |
| :---: | :---: |
| UniRef90-KOPZ94 | LRKRCLSSNFPNYRL |
| UniRef90-M1HMX3 | RGKQKKAYGFRWS Y T S |
| UniRef90-M1GMH0 |  |
| UniRef90-M1GZK6 |  |
| UniRef90-Q02677 |  |
| UniRef90_L8B961 | I V S Y K K K R E WYF S N |
| UniRef90-M1F6R8 | 1 VNHIKEQT |
| UniRef90-ROLWG6 | 1 DKVLNGEKKHY |
| UniRef90-C3DN84 | 1 S K C CK Ger Y K WVY A N |
| UniRef90-T214T7 | V K R Y 1 l S |
| UniRef90-J8RQ90 | I QKCCRGKGYRWMY $\square$ |
| UniRef90-Q5EM44 | I LRNAKNGK |
| UniRef90-M1I6V2 | LI ARCARYGFKWS Y |
| UniRef90-M1HVJ7 | RGDRKSAYKFRWS Y |
| UniRef90-W119S0 | VRDYVNS GK |
| UniRef90_Q8SHQ1 | L LRREGSQKEK |
| UniRef90-M1I9R4 | VGKRKTAYGF $\square \mathrm{WK}$ Y |
| UniRef90-M1HVP2 |  |
| UniRef90-M1H3J4 | S 1 GKCARGKRKTAY |
| UniRef90-H6D5D8 | IVSVIKEQRGEWYFTN |
| UniRef90_F7WD43 |  |
| UniRef90-D5JFN2 | LK Y R I N S D K Y P |
| UniRef90_H9CNM8 | 11 NVIK K Q |
| UniRef90_U1UVS8 | 1 S |
| UniRef90_M1HZG7 | V G N F VK |
| UniRef90-M1HST0 | IWNWTKSKKHKH |
| UniRef90_A0A028KAW6 |  |
| UniRef90-M1HTN7 |  |
| UniRef90-V5W5J4 | VK R Y ${ }^{\text {V }}$ N |
| UniRef90-E4ZQ93 | L VDVI K |
| UniRef90-M11220 | L K Y K L D P K F D Y V Y $\square$ |
| UniRef90_R9U325 |  |
| UniRef90-R6G1W6 | IRQRCKSNNKNWFY |
| UniRef90_NOACQ5 | VT NRLNKENTNT F |
| UniRef90-UPI0003B5801D |  |
| UniRef90-X1CQE3 |  |
| UniRef90-M5BUN7 | V ${ }^{\text {R Y L }}$ K S G N |
| UniRef90-M1HH93 | I SNCANGKRFKWS Y |
| UniRef90-19UM08 | 1 NACTLGKR |
| UniRef90-M1HGW0 |  |
| UniRef90-M112G5 | LGKRKTA Y GF K W S R |
| UniRef90-S5U502 |  |
| UniRef90_Q06SD0 | 1 S Q S 1 NRGREGWFY ${ }^{\text {d }}$ D |
| UniRef90-M1H149 | V NDWTRNKKH |
| UniRef90-S0FSM4 | 1 SKCCSG |
| UniRef90-17HDS1 | L V S Y I K N K |
| UniRef90_M2UAP3 | 1 V NYIKSKRGEWYFTN |
| UniRef90-E5EYK1 | $\square \mathrm{K}$ R K L D S K N Y N $\square$ R Y V D |
| UniRef90-M111D1 |  |
| UniRef90_Q36580 | V G K Y L N S |
| UniRef90-M1HY33 | I T Y R |
| UniRef90-M2TER9 | IK K Y LK T Y K D K Y F Y |
| UniRef90_G4HTS6 |  |
| UniRef90-UPI0001E2C29F | LS N C C N R V K |
| UniRef90-N0A341 | 1 S |
| UniRef90-F1YES5 |  |
| UniRef90-M1HCF6 | 1 K A F VRAK K Y P |
| UniRef90-M1ICP1 | IN T WTRSGAHP |
| UniRef90-X1LVG5 |  |
| UniRef90-U3PCR9 | \R DACSGRRFHWEYV |
| UniRef90-E5EYT8 | IS K A CK SVNHTWRY |
| UniRef90_A7XFA7 | MRKRVKSEKWKEFY |
| UniRef90-M1HIG6 | IS S IVN |
| UniRef90-COJWR2 | L R K RLNDPT F P |
| UniRef90-W1XZM1 | I SECCKGKR |
| UniRef90-E3SEX9 | VIY R CKS T A E K W |
| UniRef90-A8IVM2 | NRRRLR |
| UniRef90-A7IU18 | 1 S N WL S Y K R H S |
| UniRef90-M1HRZ8 | 1 CS |
| UniRef90-C4MYX2 | $V \mathrm{~K}$ A R L L S D K F P WR Y |
| UniRef90-L8WM05 | LSMGLK K K |
| UniRef90-F0HFC8 | INHNCKAGGFRWEYV |
| UniRef90_A0A011NJ05 |  |
| lupas_21 |  |
| lupas_14 |  |
| lupas_28 |  |
| jnet |  |
| conf | 6654215788703268 |
| sol25 | В В B B B В В |
| sol5 |  |
| sol0 | B |
| jhmm | $\theta$ |
| jpssm |  |


[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5

[^1]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    jhmm

