

## QUERY

UniRef90_E6SLW3 UniRef90-UPI0003690EF 1 UniRef90-UPIO00365B49B UniRef90_E311 M6 UniRef90-D90IX4 UniRef90-A9BD21 UniRef90_UPIO0040BCBAO UniRef90-H3NUH6 UniRef90-UPIOO0380FE7F UniRef90-D5QGB3 UniRef90-A5WC24 UniRef90_U3Q0E1 UniRet90-H8KOWO UniRef90_E6N958 UniRef90-UPIO0036DFA1D UniRef90-A7HYO4

## UniRef90-G21J31

UniRef90-UPI0001FFDBD1 UniRef90-UPIO0026257D1 UniRef90-A8MB64
UniRef90_UPI0004112CBF UniRef90_UPIO003F84940 UniRef90-UPIO003809519 UniRef90-15C408 UniRef90-B4SES9 UniRef90-F6FPT7 UniRef90-12GP84 UniRef90-M1Z4J4 UniRef90_UPIOOO376963A UniRef90_Q7UPW5 UniRef90-D3ECL8 UniRef90-A9WPA9 UniRef90-@3J7W5 UniRef90-G8S5J3 UniRef90-B5IBC5 UniRef90-G4R8V4
UniRef90-Q59977 UniRef90-UPI0003707401 UniRef90-A5GWC0 UniRef90-U1Y8X3
UniRet90 A8UGW1 UniRef90_Q1N611 UniRef90-A1W9L4 UniRef90-UPIO003615CE1 UniRef90-UPIOOO37915B5 UniRef90_-DP10002 UniRef90-G8AWA4 UniRef90-A1SF26 UniRef90-M9TRP9
UniRef90_V6j9T8 UniRef90-DORP48 UniRef90-W2EBB7 UniRef90-G2EBH3
UniRef90 K7YHM9 UniRef90-D8JZA3 UniRef90-M4VY20 UniRef90 $-K 7 S 520$ UniRef90-C5COY6 UniRef90-B9LUG8
UniRef90_A3TGT8 UniRef90-A0A017TCE3 UniRef90-A0A031FRU9 UniRef90-10YWX6 UniRef90-H8FSU6 UniRef90-UP10003706DCC UniRef90-DOMCP9 UniRef90-UPIOOO4764D21 UniRef90_UPIO003B328F9 UniRef90-V4XUC3 UniRef90_FOSQGO UniRefofo-Pog9948 UniRef90-R9TBT1 1 UniRef90-LOK099 UniRef90-R4VDH3 UniRef90-O6EUF8 8 UniRef90-T1D1T2 UniRef90-UPIOO03689E04 UniRet90_BoSEJ3 UniRef90- WOJNAO
UniRef90 QOC1A7 UniRef90-U3GTJ6 UniRef90-UPIO002624EFF UniRef90-UPIOOO29A1223
UniRef90 UPIOOO3161175 UniRee90_UPIO003161175
UniRef90_UPIOOO29A740F UniRef90-H5SH60
UniRef90_13ZKJ8
Y

FEETTFLLLHGRपpRRQELEEFSAALARRRADPAHLLESF FEEVVYLLWHGRLPNRAELDAFVQQLRSLQALPGQVLDLI FEEVSFLLLHGHLPSRQELQAFSQKLTSLRALPSALLESM FLETCHLLLYGELPNKQEYLQFRNRVTYHTMMHEQMNKFF FIEVCHLLLKGELPTAAEYEAFENVVTRHTMLHAQFDRFF FLETTYLLI WGNLPNPDELRNFEKEVQMHRRLLSFRVRDMM FLEVSWLLIYGELPTAEQLKKFQTDITKHTLIHEDMRKDF YLETCYLLLNGELPNAEEKKAFVDMVTNHTMVHEQURTFF FMEVAYLLLNGELPDQKAYDTFVTDIKHHTLLHEQTRNFF YLEVCYALLHGELPNAEQKADFYEKVRSHTGVHDQLLKFF FLETSYLLI WGKLPTKDELADFEHEIRYRRRIKYRGRDMM FLEVSYLLIYGELPTQEQLTDFQFRVSRHTLVHEDMLKFF


|






 YE E TA Y L L L Y G E L P T K E A L E K F S A Q M R E L R V I P K K V E E C I
 $F$ L E T A Y L L I WN E L P N R D T L A E F E H E I $A$ Q F H R R $F L E T A Y L L I W G E L P S A E A L X E F Q H D V Q M H R R V G F R I R D M L$

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

 F L E T I Y L L L WN G E L P T A D QLQQAF K A E L A E N A S V P P N E L F E F M F E E V $\quad$ I Y $M$ L L W F G K K F L EVA A LLIF GELPTHTQLDKFHTDIMABSVVDEDLRKQV FMDVA H L L N G E L P T P K Q KK K F V H DVTTY H T M L H E QLA NFY F MEVCYALL Y Y GDLPNAKELKEFEHNITYYTMVHEQLHFFF


 F V E T FTEVA Y L L V Y GELLP DARELLARWDEALMRHSAVPA AVERAV F L E A A F L I L K G E L P P N D A QM T K K Y L E T C Y L L L N GEELPTAE QK Q T FVVNTVVK K H TMMVHE QMNHFF


## F

## F

## 



 Y L E E V C Y L L I H G N AP T E A Q Y K D F V K T I K R H T L V H E GII E F F F
 Y L L



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

## QUERY

UniRef90_E6SLW3 UniRef90-UPI0003690EF1 UniRef90-UPI000365B49B UniRef90_E311M6 UniRef90-D9QIX4 UniRef90-A9BD21 UniRef90_UPIO0040BCBA0 UniRef90 H3NUH6 UniRef90-UPI000380FE7F UniRef90_D5QGB3 UniRef90 A5WC24 UniRef90_U3Q0E1 UniRef90-H8KQW0 UniRef90_E6N958 UniRef90_UPI00036DFA1D UniRef90_A7HY04 UniRef90_G2IJ31 UniRef90 UPI0001FFDBD1 UniRef90-UPI00026257D1 UniRef90-A8MB64 UniRef90_UPI0004112CBF UniRef90-UPI0003F84940 UniRef90-UPIO003809519 UniRef90-15C4Q8 UniRef90-B4SES9 UniRef90_F6FPT7 UniRef90-I2GP84 UniRef90_C3X450 UniRef90-M1Z4J4 UniRef90-UPIOOO376963A UniRef90-Q7UPW5 UniRef90-D3ECL8 UniRef90-A9WPA9 UniRef90_Q3J7W5 UniRef90-G8S5J3 UniRef90_B5IBC5 UniRef90_Q59977 UniRef90-UPI0003707401 UniRef90-A5GWC0 UniRef90-U1Y8X3 UniRef90-A8UGW1 UniRef90-Q1N611 UniRef90_UPIO003615CE1 UniRef90_UPI00037915B5 UniRef90_UPI0002EA8236 UniRef90-D2W3U4 UniRef90-G8AWA4 UniRef90_A1SF26 UniRef90-M9TRP9 UniRef90_V6J9T8 UniRef90_D0RP48 UniRef90-W2EBB7 UniRef90-G2EBH3 UniRef90-K7YHH9 UniRef90_D8JZA3 UniRef90-M4VY20 UniRef90-K7SS20 UniRef90-C5C0Y6 UniRef90_B9LUG8
UniRef90 A3TGT8 UniRef90_A0A017TCE3 UniRef90-A0A031FRU9 UniRef90-10YWX6 UniRef90-H8FSU6 UniRef90-UPI0003706DCC UniRef90-DOMCP9 UniRef90_UPI0004764D21 UniRef90_UPIO003B328F9 UniRef90-V4XUC3 UniRef90-F0SQG0 UniRef90_P09948 UniRef90-R9TBT1 UniRef90-W5TE54 UniRef90-LOK099 UniRef90-R4VDH3 UniRef90_Q6EUF8 UniRef90-H2C7T0 UniRef90-T1D1T2 UniRef90_UPIO003689E04 UniRef90-B0SEJ3 UniRef90-W0JNA0 UniRef90_Q0C1A7 UniRef90_U3GTJ6 UniRef90-UPIO002624EFF UniRef90-UPI00029A1223 UniRef90_UPIO003161175 UniRef90_UPI00029A740F UniRef90-H5SH60
UniRef90_I3ZKJ8




 NGFRRDAHPMAIMCGVVAAALSAFYHDSTDDSDPYHREVAA


 RTLPRTAPMMSWLKTGVDLLSLEDPDAEKTDDESRMKTAT
 RGFRRDAHPMA MCGVVGALSAFYHDSTDDTDPVQRMDAS

 QGFHHDAHPMAVLVGVVGSLSAFYHDYLDDHDQKSREAAL


 K L S P K EVVHPMALLRTALSALSGYDEEAQDMSEAANLRKAT
 $K L Y P K D G N T M A A L K S A V S A L A L Y D A E G D D M S R E A N E K K A V$
$G G F P R D A H P M P V L S S A V S A L S T F Y Q D S D D P F D D D Q V E L S T$ GGFPRDAHPMPVLSSAVSALSTFYQDSDDPFDDDQVELST SGFPRDAHPMAVLSSAVTALSTFYQDALDPDDEQVDDSAII RGFRRDAHPMAVVTGVVGAMAAFYHDSTDISDPEQREIAI
 KCFPSGGHPMDALQSSAASLGLFYSNRALDDENYIRGAVM
 KGFRRDAHPMAVMIGVVGALSAFYHDSLDINDARHREIAA RGFRRDAHPMAVLTGLVGALSAFYHDSTDI NNPEHREI AD
 QAFPYDAHPMPMVSSALAALLSTFYQGSGSVTDEEQUDGST SGFRRDAHPMAVMCGVTGALSAFYHDSTDDDPRQRMDAAH DGFPRDAHPMAMLSSVVSALS
 K LIYPKDTNSMAALRTAVSSLSFYDREAGDMSREANDRKAI DAFPKSAHPMGVLAS LTSALTTAFNPSSVNVSEEDMYKAVV
 RGFRRDAHPMAIMCGVVGALSAFYHDSLDIHDPKQREISA
 RTLADAGERPMAALRTAVSMLSAYEPESDADPEDLDRQGR NGFPRDAHPMPVLSSAVSALGG
$D G Y P S T A H P M A L L S A M V L S S L S$
 RGFRRDSHPMAVMCGVVGAMA
 KCFPESAAPMDALRASVAALGANDPEATGADDDTVRRKAI RGFTRKSHPMADMVGVVGAGSAFYHDDMDDNPEQRMLAAY


 NGFHYNAHPMAMLTGVVGSLSAFYHDTDDDNDPDNRLCAY RQVSRNANPMDVLRTAVSMMGLEDSRDGDT NGFHHDAHPMAMLTGVVGS LSAFYPDAMEARDRSQQEFAQ RGFRRDAHPMAMLCGTVGAMSSFYHRDLDDDPEQRDRCAT NGFPKDGHPMA ITMSCMMGCLSTYYQDSYDPMNEEHREISI QSLVEDERPMAAMRTAVSMLSASEPEPDADDREASGRKGR
DGFRRDSHPMAMLTGAVGAMAAFYPGAMNEDPEERRRDSII SVFPRDAHPMAVLASSLNDLSTYYQDELDPDNPDHDEKAT K FMPVT GHPMDMLHCAVASLGMFYPQQELSDAEHLDAMAM




## QUERY

UniRef90_E6SLW3 UniRef90-UPI0003690EF1 UniRef90-UPI000365B49B UniRef90_E311M6 UniRef90-D9QIX4
UniRef90 A9BD21 UniRef90_UPIO0040BCBA0 UniRef90-H3NUH6 UniRef90_UPI000380FE7F UniRef90-D5QGB3 UniRef90-A5WC24 UniRef90_U3Q0E1 UniRef90-H8KQWO UniRef90-E6N958 UniRef90-UPIO0036DFA1D UniRef90_A7HY04 UniRef90_G2IJ31 UniRef90-UPI0001FFDBD1 UniRef90-UPI00026257D1 UniRef90-A8MB64 UniRef90_UPI0004112CBF UniRef90-UPI0003F84940 UniRef90_UPI0003809519 UniRef90-15C4Q8 UniRef90-B4SES9 UniRef90-F6FPT7 UniRef90-I2GP84 UniRef90_C3X450
UniRef90_M1Z4J4 UniRef90_UPIO00376963A UniRef90-Q7UPW5 UniRef90-D3ECL8 UniRef90-A9WPA9 UniRef90-Q3J7W5 UniRef90_G8S5J3 UniRef90-B5IBC5 UniRef90_G4R8V4
UniRef90_Q59977 UniRef90-UPI0003707401 UniRef90-A5GWC0 UniRef90-U1Y8X3 UniRef90-A8UGW1 UniRef90-A1W9L4 UniRef90_UPIO003615CE1 UniRef90_UPI00037915B5 UniRef90_UPI0002EA8236 UniRef90-D2W3U4 UniRef90-G8AWA4 UniRef90_A1SF26 UniRef90-M9TRP9 UniRef90_V6J9T8 UniRef90_D0RP48 UniRef90_W2EBB7
UniRef90-G2EBH3 UniRef90-K7YHH9 UniRef90-D8JZA3 UniRef90-M4VY20 UniRef90-K7SS20 UniRef90-C5COY6 UniRef90_B9LUG8
UniRef90 A3TGT8 UniRef90_A0A017TCE3 UniRef90-A0A031FRU9 UniRef90_10YWX6 UniRef90-H8FSU6 UniRef90_UPIO003706DCC UniRef90-DOMCP9 UniRef90_UPIO004764D21 UniRef90_UPIO003B328F9 UniRef90-V4XUC3 UniRef90-FOSQG0 UniRef90-P09948 UniRef90-R9TBT1 UniRef90_W5TE54 UniRef90-LOKO99
UniRef90 R4VDH3 UniRef90_Q6EUF8 UniRef90-H2C7TO UniRef90-T1D1T2 UniRef90_UPIO003689E04 UniRef90-B0SEJ3 UniRef90-WOJNAO UniRef90-Q0C1A7 UniRef90_U3GTJ6 UniRef90_UPI0002624EFF UniRef90_UPI00029A1223 UniRef90-UPIO003161175 UniRef90-H5SH60
UniRef90_I3ZKJ8

D LIAKFAT VVAANKRLKEGKEPゆPPREDLSHAANF TYMAN RLVAQFPTLVAADQRVRQGKEPVAPRRDLSDAANFLYMLR SLI AKFATIVAANKRLREGLDPIAPRADLSHAANFLYMSN RLI AKMPTLAAAAYRFSTDWPLRYPRNNLEYVTRFLHMMF RMI AKMPTI AATAFKYSI GQPFIYPNNQLDYASNFLYMMF RLI AKMPTIAARAYKYHIGQPFVSPRNDLNYAENFLRMCF

 RLI AKMPT, A AMAYKYHVGQPFVYPLNSLDYASNFLRMCF RII AK $\square P T I A A W A Y R Y T Q G D A F I Y P R N D L S Y A E N F L S M M F$ RLI AKMPTIAAMSYKYTKGEPFMYPRNDFSYAENFLYMMF

 HRI AKMPTLAAMCYKHSQGMPFMYPDNSRSYSENFLHMMF RLI AKMPTIAAMAYKYSAGQP IVYPRNDLDYAENFLHMCF HR AKMPTLAAMAYKYSVGQPFVYPRNDLSYTGNFLHMTF VRLMKVFTIAAYAYKKSVGQPFLYPDNSLGLVENFLRMTF RLVGKLPTI AAWSYKKNSGQPFVYPKNHLDYCANFLNMMF RLTAVLPTIDAAHYRFSRGLGVIKPKKDLSHAANFLYMMF
 RLVAKMPTIAAAAYKYTMGQPQDYPKNSLSYAGNFLHMMF IRLMKVPTLASYAYKKSIGQPLMYPANKLGYVEDFLRMTF RLLAKMPTFAAWAYKNEVGHPVNYPDNSLDYCSNFLKMMF VLI AKI RTITSYVHRSMRDEPLLVPDYARGYVDDF LIM M RLLAKLPTMATWSYKKSQGHPVNYPKNTLDYIDNFLHMMF RLLAKMPTLVAMSYKYNAGQPFVYPRKDLYYTANFMRMMF KLVAKMPTLVAAWGR $\square R N G E E P I$ APRPDFGYVQNFLYMLS RMI AKMPTI AARAYKYSVGQPFVWPQNDLDYSSNFLRMCF YRIAKLPTI AAYSYKKSMGQPFMYPKNELDYCENFLHMMF KLQAQLPTIDAADARVRQGKEPVAPKAGASDAENFLYMDR
 RLMAKLPTLAAYDYKKS GGHPLPYPDNSLDYVENFLRGTF
 RLL AK I PTMVAAFHMDREGNDPI QPNDKLDYASNFLYMLT RILAKIPTMVAAFQLMRKGNDPVQPRDDLGYAANFLYMLN RVLAKI PTMLAAFHMIRRGQDPIQPRDDLPYASNFLYMLT $R L Q A K V A T V I A A Y H R L R Q G K E V V A P R P D F C L A Q N F L Y M L N$
$R I L G K F P V L V A W A M R K K H G L P L D Y G D N S L G Y V E N V L K M M F$ HRIAKMPTLAAMVYKYNDGQPFMYPRNDLGYSENFLHMMF RLI AKMPTLVAMAYKYGKGEPYMYPRNDLSYAGNFLRMMF NLI A K MPTLVVAAHERMRHGDDPDPPRDDLSHAANFYYMLT A RLAKMPTVAAFAHRHSEGLDPVVFPDNDLGLVENFLRVNF
 RMI AKMPTLGAWSFRHAQGKPFVYPDNELGYTANFLSMEH RLLAKLPTI AAYAYKKS DGHPFVYPRNDLGYVENFLRMTF $K L Q A K I A T L V A G F A R \square R Q G L Q P V V P N K S L S Y A A N F L Y M L K$ RMVAKI PTLAAMAFKYS LGQPFVYPDNSLNYSENFMKMCF RLQAKLPAVIAAFAR\REGKEPLPPAGHDTDAANFLYMLT $K I L G K F P V L V A W T F R K K N G L P L D Y G D K N L G Y V E N D L K M M F$ FRIAKMPTI AAMTYKYSMGQPFNYPRNDLSYAENFLYMMF HRI AKLPTLAAMSYKYSVGQPFMYPRNDLSFAENFLYMCF RLI AK V V P I A A WAYKYSI GEPFIYPDEEMSFSENFLHMLD LLLAKAPTIAAYAHRHSLGQEMIGPEPSLGYVGDFLRMCF RITAKDPTLDAAFERARQGEDPVAPDPDLSHAANFLYMLTT
 RMLAKLPVIAAYAHKKSLGHAFLYPDNSLSFVDNFLKLNF RLI GKMPAI AADAYHRASGRNVSAPNQRLSYAENFLYMKP
 GLMARLPTIVAADRRRRHGLDFIPPREDLTFAENFFHMYF RLIAKLPTLVAAHARDRNGDDPIPPRDDLSHAANFLYMDF RI I AKMPTGGACAYRYAMGWPFVYPQNRYSYAENLLYPTQ


 RLLAKLPTI AAYSYKKSVGQPFLYPDNSLSLVENFLRMTF RITAKLPTVLAAFERYRLGEEPVDPDPDLGLAANFLYMLT RIIAKMPTI AAAAFKHMVGEPFVHPDNRLSYTGNLLNMLF RVLGKAPTI AAAAYLRLAGRPPILPTNSLSYSENFLYMDK


 RITAK $\square P T$ T LAAFERYRQGKEPVDPDTSLGGAANFLYMMT RLVAKMPTIAARCMKYNDGQKFVDPQNRLSYSENFLNMCF VRLMKVPMAAYAHRARHGEPYMYPDNSLNARENFLRMMF KLLAKFPTLAAWTLRRKNDTSLENRDNNLGYVESFLKMMF RLQAKFPTIVAAFQRDRKGQEPDAPRKDLNLAANFLYMLS RLTAEMTTIVAADRR\|LAGLEPVAPRQDLSHAGNFMYMLN $R L D A K V P T I$ AAFAYRHLRGLDYAYPDNELSYVGNFLNMMF

## QUERY

UniRef90_E6SLW3 UniRef90_UPI0003690EF1 UniRef90_UPI000365B49B UniRef90_E3I1M6 UniRef90_D9QIX4 UniRef90-A9BD21 UniRef90_UPI00040BCBAO UniRef90 H3NUH6 UniRef90_UPI000380FE7F UniRef90_D5QGB3 UniRef90-A5WC24 UniRef90_U3Q0E1 UniRef90_H8KQW0 UniRef90_E6N958 UniRef90_UPI00036DFA1D UniRef90_A7HY04 UniRef90_G2IJ31 UniRef90_UPI0001FFDBD1 UniRef90_UPI00026257D1 UniRef90_A8MB64 UniRef90_UPI0004112CBF UniRef90_UPI0003F84940 UniRef90_UPI0003809519 UniRef90-15C4Q8 UniRef90_B4SES9 UniRef90_F6FPT7 UniRef90-I2GP84 UniRef90_C3X450
UniRef90_M1Z4J4 UniRef90_UPIO00376963A UniRef90_Q7UPW5 UniRef90_D3ECL8 UniRef90-A9WPA9 UniRef90_Q3J7W5 UniRef90_G8S5J3 UniRef90_B5IBC5 UniRef90_G4R8V4
UniRef90-Q59977 UniRef90_UPI0003707401 UniRef90_A5GWC0 UniRef90_U1Y8X3
UniRef90 A8UGW1 UniRef90_Q1N6I1 UniRef90_A1W9L4 UniRef90_UPI0003615CE1 UniRef90_UPI00037915B5 UniRef90_UPI0002EA8236 UniRef90-D2W3U4 UniRef90_G8AWA4 UniRef90_A1SF26 UniRef90_M9TRP9 UniRef90_V6J9T8 UniRef90-D0RP48 UniRef90_W2EBB7
UniRef90_G2EBH3 UniRef90-K7YHH9 UniRef90_D8JZA3 UniRef90_M4VY20 UniRef90_K7SS20 UniRef90_B9LUG8 UniRef90_A3TGT8 UniRef90_A0A017TCE3 UniRef90_A0A031FRU9 UniRef90_IOYWX6 UniRef90_H8FSU6 UniRef90_UPI0003706DCC UniRef90_D0MCP9 UniRef90-UPI0004764D21 UniRef90_UPI0003B328F9 UniRef90_V4XUC3 UniRef90_F0SQG0 UniRef90_P09948 UniRef90_R9TBT1 UniRef90_W5TE54 UniRef90_LOK099 UniRef90-R4VDH3 UniRef90_H2C7T0 UniRef90_T1D1T2 UniRef90_UPIO003689E04 UniRef90_B0SEJ3 UniRef90-W0JNAO UniRef90_Q0C1A7 UniRef90_U3GTJ6 UniRef90_UPI0002624EFF UniRef90_UPI00029A1223 UniRef90_UPI0003161175 UniRef90_UPI00029A740F UniRef90_H5SH60

## -

 A
## 



GVEPSPEQARLMDAALILHAEHGFNASTFTADAAFSTETD GEEPSPLHADVMNVALVLHADHELNASTFAARVVAATLSD
 EVPSEPLQAKALDLLLFILHADHEQNASTSTVRLVGSTGAN AVPCEEYKVNAMDRIFVLHADHEQNASTSTVRLAGSSGAN







## 


-

## A

 AWEANPVLVSAMDKLLILHADHEQNCS DYKVNDVLVRALDRILILHADHEQNAS GKEPDEVAI RAFNTAMVLHADHEFNASG DEEEARI FDMALI LHAEHGLDNS

 GEEPNQUADDALDTALVLHADHELNAST NTPCNPVLARAMDKIFLHADHEQNAS
 GYEDPLALRALDQLFLHADHEQNCS NYRPHPRLAKALDVMF:LHADHELNC
GTPCDPVLARAMDKlFI LHADHEQNA
 DRVPSEVEAQMFDKALVLHADHELNA S KYEPHSTAAEALLNKALVLIHADHELDNAST


## 

## 


GTEPD DVVSAE TFD MAL TLLHA D H GLLNA S GYD DPDMVKALDQLLTLHADHEQNC

## A

 GEVVDAEEVVKAFDVSLI LYAEHSFNA DYQANPVLAKALDRLLILHADHEQNA GEKPSEDAEKAMDLILILHAEHGLNAST ATPCNPDIKNALNKIF:LHADHEQNA GYEVDPEVAAALDMLLLHEADHEQNCS ARPDNPVAERALDQLLTLHADHEQNASTSTSMVIGGSMAD EYKPNPRLARVLDLLEHEHEMNCSTAAARHLASSGVD GEKPSSTDVRSMDVSLTLHVDHEMNASTFACLVVASTLSD EYKLEPAVVRAMDRIFTLHADHEQNASTSTVRLAGSSGAN GEEDDEEAAEALDQALLLHADHEQNCSTSTVRLVGSSLLAN GEEVNEVAEAFMQALLMLHADHGLQASTFTSMVIGSTMAD GYEVDPLLVKALDQLLILHADHEQNCSTSTVRMVASAQAN QYKANKNVVAALDRLLILHADHEQNCSTSTVRIVGSSQAG
$G K E P N E D S V A D D K A L V L H A D H E L D A S T F T A R V C V A T L S D ~$ GKEPNEDSVEALDKALVLHADHELNASTFTARVCVATLSD


## QUERY

## UniRef90_E6SLW3

 UniRef90-UPI0003690EF1 UniRef90-UPI000365B49B UniRef90_E311M6 UniRef90-D9QIX4 UniRef90-A9BD21 UniRef90_UPIO0040BCBA0 UniRef90-H3NUH6 UniRef90_UPI000380FE7F UniRef90_D5QGB3 UniRef90 A5WC24 UniRef90_U3Q0E1 UniRef90-H8KQWO UniRef90_E6N958 UniRef90_UPI00036DFA1D UniRef90_A7HY04 UniRef90_G2IJ31 UniRef90_UPI0001FFDBD1 UniRef90_UPI00026257D1 UniRef90-A8MB64 UniRef90_UPI0004112CBF UniRef90-UPI0003F84940 UniRef90-UPI0003809519 UniRef90-I5C4Q8 UniRef90-B4SES9 UniRef90-F6FPT7 UniRef90-I2GP84 UniRef90_C3X450UniRef90_M1Z4J4 UniRef90_UPI000376963A UniRef90-Q7UPW5 UniRef90-D3ECL8 UniRef90-A9WPA9 UniRef90-Q3J7W5 UniRef90_G8S5J3 UniRef90_B5IBC5 UniRef90_G4R8V4
UniRef90_Q59977 UniRef90_UPI0003707401 UniRef90-A5GWC0 UniRef90 U1Y8X3 UniRef90_Q1N6I1 UniRef90-A1W9L4 UniRef90-UPI0003615CE1 UniRef90_UPI00037915B5 UniRef90_UPI0002EA8236 UniRef90-D2W3U4 UniRef90-G8AWA4 UniRef90_A1SF26 UniRef90-M9TRP9
UniRef90-V6J9T8 UniRef90-D0RP48 UniRef90-W2EBB7 UniRef90-G2EBH3
UniRef9- K7YHH UniRef90-K7YHH9 UniRef90_D8JVA3 UniRef90-K7SS20 UniRef90-C5C0Y6 UniRef90-B9LUG8 UniRef90_A3TGT8
UniRef90_A0AO17TCE3 UniRef90_A0A031FRU9 UniRef90-10YWX6 UniRef90-H8FSU6 UniRef90-UPI0003706DCC UniRef90_DOMCP9 UniRef90_UPIO004764D21
UniRef90_UPIO003B328F9 UniRef90-V4XUC3 UniRef90-FOSQG0 UniRef90-P09948 UniRef90_R9TBT1 UniRef90_W5TE54 UniRef90-LOK099
UniRef90 R4VDH3 UniRef90-Q6EUF8 UniRef90-H2C7T0 UniRef90_T1D1T2 UniRef90-UPIO003689E04 UniRef90-BOSEJ3 UniRef90-WOJNAO UniRef90_Q0C1A7 UniRef90_U3GTJ6 UniRef90_UPIO002624EFF UniRef90-UPIO0029A1223
UniRef90 UPIO003161175 UniRef90_UPIO0029A740F UniRef90-H5SH60
UniRef90_13ZKJ8





पY SA
210
$\qquad$
220
230
G T P ERAREW
MYSAI TAAI GALKGPDHGGANEQVMRTLDEIGSPDKAEAW $\square Y$ SAITAGVSSLKGPRHGGANEAVMKMIGEI GSVENVGPW PYACVAAGI A ALWGPAHGGANEAVLKMLGEI GTADKVSKA PFACI A A Gli A CL



## ロ

P
而


| $I$ | $Y$ | $A$ | $S$ |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $Y$ | $T$ | $A$ | $A$ | $A$ | $G$ | $D$ |
| $A$ | $A$ | $G$ | $C$ | $A$ | $A$ | $L$ | $W$ |
| $L$ | $Y$ | $A$ | $S$ | $V$ | $G$ |  |  |
| $A$ | $A$ | $G$ | $N$ | $A$ | $L$ |  |  |

$\begin{array}{llllllllll}L & A & S & A & A & G & N & A & L & S \\ I & Y & S & S & V & S & A & G & N & A \\ P & F & A & C & L & \text { S } & A & G & A & C \\ W\end{array}$
$\square$ Y S GVVA A M G A L K G P
 L F

| M F A S | S A GIN A | L |
| :---: | :---: | :---: |
| P Y A V | S GAVGT | L |
| LFA |  |  |

I N S A L L S A I G A L L
$P F A C I A B A C$
$\begin{array}{lllllllll}P & Y & A & V & V & A & S & A & V \\ G & T & L & A \\ P & Y & A & V & I & A & S & A & V \\ G & T & L & A\end{array}$

## 

P $F$ A A ll A A $\begin{aligned} & \text { A } \\ & \text { P } \\ & \text { A }\end{aligned}$
MFA S V S A G I
LY Q SIISAGINA Y G P

P Y S S A V A A A G V G A

$P$
$\square$

$\begin{array}{lllllllll}Y & S & G & I & S & A & I & G & A \\ L & F & A & S & L & S & T & G & I \\ S & A & L\end{array}$
P F A C C A A GVVA S L W G
P F A C I A A G I A C
 $\begin{array}{lllllllll}W & P & A & H & G & G & N & E & A \\ A & L & N & M & L & S \\ S & G & L & H & G & G A & N & E & A \\ V & L & E & M & L & R & D\end{array}$

$L$ F A S I A A Gll CA L
$W G P$
$Y G P$

| $V$ | $Y$ | $T$ | $A$ | $A$ | $G$ | $A$ | $V$ | $G$ |
| :---: | :---: | :---: | :---: | :--- | :--- | :--- | :--- | :--- |
|  | $A$ | $L$ | $Y$ |  |  |  |  |  |
|  | $F$ | $C$ | $A$ | $A$ | $G$ | $I$ | $S$ | $L$ |


$P F A C l \mid A S$ A $C$ A $A$ | $Y$ | $Y$ | $S$ | $A$ | $I$ | $G$ | $A$ | $G$ | $A$ | $L$ | $K$ | $G$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $Y$ | $T$ | $V$ | $I$ | $S$ | $A$ | $A$ | $I$ | $G$ | $S$ | $L$ | $S$ |

$\begin{array}{llllllllll}P & Y & T & V & S & A & A & G & S & L \\ P & F & A & C & A & A & G & A & S & L \\ W & \end{array}$

| $L$ | $H$ | $S$ | $A$ | $V$ | $T$ | $S$ | $A$ | $V$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $T$ |  |  |  |  |  |  |  |  |
|  | $Y$ | $S$ | $A$ | $I$ | $T$ | $G$ | $A$ | $V$ | $G$ |

P F A C I





$P$ Y A C I SA Gl A S L WG PA HGGGAN EACLLN MLL E E I

PF A A I A A G V A S L W G P SH G GA N EA A L R Q L R E






## QUERY

UniRef90_E6SLW3 UniRef90_UPI0003690EF1 UniRef90_UPI000365B49B UniRef90_E3I1M6 UniRef90_D9QIX4 UniRef90_A9BD21 UniRef90 UPI00040BCBA0 UniRef90_H3NUH6 UniRef90_UPI000380FE7F UniRef90_D5QGB3 UniRef90-A5WC24 UniRef90_U3Q0E1 UniRef90_H8KQW0 UniRef90_E6N958 UniRef90_UPI00036DFA1D UniRef90_A7HY04 UniRef90_G2IJ31 UniRef90_UPI0001FFDBD1 UniRef90_UPI00026257D1 UniRef90_A8MB64 UniRef90_UPI0004112CBF UniRef90_UPI0003F84940 UniRef90_UPI0003809519 UniRef90-15C4Q8 UniRef90_B4SES9 UniRef90_F6FPT7 UniRef90-I2GP84 UniRef90-M1Z4J4 UniRef90_UPIO00376963A UniRef90_Q7UPW5 UniRef90_D3ECL8 UniRef90_A9WPA9 UniRef90_Q3J7W5 UniRef90_G8S5J3 UniRef90_B5IBC5 UniRef90_G4R8V4
UniRef90-Q59977 UniRef90_UPI0003707401 UniRef90_A5GWC0 UniRef90_U1Y8X3 UniRef90_A8UGW1 UniRef90_A1W9L4 UniRef90_UPI0003615CE1 UniRef90_UPI00037915B5 UniRef90_UPI0002EA8236 UniRef90_D2W3U4 UniRef90_G8AWA4 UniRef90_A1SF26 UniRef90_M9TRP9 UniRef90_V6J9T8 UniRef90-D0RP48 UniRef90_W2EBB7
UniRef90_G2EBH3 UniRef90_K7YHH9 UniRef90_D8JZA3 UniRef90_M4VY20 UniRef90_K7SS20 UniRef90_B9LUG8 UniRef90_A3TGT8 UniRef90_A0A017TCE3 UniRef90_A0A031FRU9 UniRef90-IOYWX6 UniRef90_H8FSU6 UniRef90_UPI0003706DCC UniRef90_D0MCP9 UniRef90-UPI0004764D21 UniRef90_UPI0003B328F9
UniRef90_V4XUC3 UniRef90_F0SQG0 UniRef90_P09948 UniRef90-R9TBT1 UniRef90_W5TE54 UniRef90_LOK099 UniRef90_R4VDH3 UniRef90_Q6EUF8 UniRef90-H2C7T0
UniRef90-T1D1T2 UniRef90_UPI0003689E04 UniRef90_B0SEJ3 UniRef90-W0JNAO UniRef90_Q0C1A7 UniRef90_U3GTJ6 UniRef90_UPI0002624EFF UniRef90-UPI00029A1223 UniRef90_UPI0003161175 UniRef90_UPI00029A740F UniRef90_H5SH60

VREKLA K K E R ${ }^{250}$ M G M G H R V Y K A F D P R A G V L E K L A R L V A E K H

280 $V$ K E A L A A K R R I M G F G H R V Y K T L Q HLV A S K GRVVMGMGHRVYKA Y DPRA GVLEKKYAS IVVAEKQ $V$ DKAKDK GFRLMGFGHRVYKNFDPRATVIDRMCHEVLADDL I K R AK D D N F R L S GF G H R V Y K N Y D P R A R V M Q K T CK E V L D V V

 VAKAKDDPFRLMGFGHRVYKNFDPRAKVMKQAADEVLAEL

 V D NL L A T K S K I M G F G H R V Y K K V K D P R A T I L Q Q L G E Q L F E R F
 $\checkmark \operatorname{V}$ K R A I K R A K D D D P F R R L M G F G H R V V Y K N Y D D P R A R R V M Q Q T C H E V L N V L


 IARAKDKKFRLMGFGHRVYKNFDPRATII RETCYQVLEKL F V $\operatorname{R}$ R K V $V$ K N K E R L



 YVVDMAK D K F R I M G F G H R V Y K N S D P R A T I I R A S C D K L L A K L I QE K LD N REKI M GF GHRVYKNGDPRAKHLQKMSREL GEMK
 $F$ VT R V K N K E KL M GF G H R V Y K NY D P R A A I V K K A A Q E MLLS T L VLNALKEKRRIMGFGHRVYK TYDPRAKILKEYAEY LSDKY I ERRA K D DP F R L M G F G H R V Y K N Y D P R A A V M Q E S A R E V L D L L


 LAKAKDDPFRRLMGFGHRVYKSYDPRATVVMKKTCDEVVLAELL
 FMEQVKNKERLMGFGHRVYKNYDPRARIVKDYAHEILEKG

 I Q GVK D GNERLMMGGHRVYKNYDPRAKIIKKSAEDVEFVVT



 DK Y A K D N P F R L M GF GHRRVYK N Y D P R A K V M Q T T C H E V L Q K L VKKAKDKGFRLMGFGHRVYKNYDPRAKVMQKTCHEVLDAH L A K V K $\quad$ D K G D D N L M G F G H R V Y K N Y D P R A E V L L K K S C D E V | $L$ | $E$ | $K$ | $V$ | $K$ | $D$ | $R$ | $G$ | $V$ | $R$ | $L$ | $M$ | $G$ | $F$ | $G$ | $H$ | $R$ | $V$ | $Y$ | $K$ | $N$ | $F$ | $D$ | $P$ | $R$ | $A$ | $K$ | $L$ | $Q$ | $A$ | $T$ | $C$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $F$ | $H$ | $E$ | $V$ | 1 | $S$ | $E$ | $L$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | $M$ | $K$ | $R$ | $K$ | $D$ | $K$ | $G$ | $V$ | $R$ | $L$ | $M$ | $G$ | $F$ | $G$ | $H$ | $R$ | $V$ | $Y$ | $K$ | $N$ | $Y$ | $D$ | $P$ | $R$ | $A$ | $A$ | $V$ | $V$ | $K$ | $S$ | $T$ |$A$

 F $V$ V F V $V$ K L A A K D K F R L
 IVRAPD DSFRLMMGFGHRVYRNFDPRAKVMKQTCDEVVLAELD


 V A K A K D DPFRRLMGFGHRVVYK S Y DPRAAAVLKE TAKEVVL NE L V T K QF ER GKRVVA G $\square$ GHAVVYTTDPRATI L QEMAY DLL K D H


 $V \operatorname{L} S \mathrm{R} L \mathrm{~L}$ S G Q R L M G F G H R V Y K K T M D P P R A K K I L R E Y A K Q L
 $V$ A R A K D D P F R L M G F G H R V Y K N F F D P R A K V M R E T C H E V V L VVE Q A K D K N R L N G F G H R V Y K N F D P R A K


 LDAKMANKEKI WGFGHRVYKTRDPRAA L K EMMEK L A A S NG F I A K K A K D K N R L M GF G H R V Y K N F D P R A K I I K K A A D E V L A A E L V E N A F A N K Q K I M G F G H R V Y R S G D P R A K H L K K M S K Q L A D D $V$ E SVRAKKGKFMGFGHAVYKVEDPRADHLKDLSRRLGLEA | $L$ | $K$ | $R$ | $V$ | $K$ | $A$ | $G$ | $E$ | $V$ | $R$ | $L$ | $M$ | $G$ | $F$ | $G$ | $H$ | $R$ | $V$ | $Y$ | $K$ | $S$ | $Y$ | $D$ | $P$ | $R$ | $A$ | $R$ | $I$ | $K$ | $Q$ | $L$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $R$ | $Q$ | $L$ | $L$ | $A$ | $R$ | $K$ | $E$ | $K$ | $I$ | $S$ | $G$ | $F$ | $G$ | $H$ | $R$ | $V$ | $Y$ | $K$ | $T$ | $E$ | $D$ | $P$ | $R$ | $A$ | $T$ | $H$ | $L$ | $R$ | $R$ | $M$ |
|  | $K$ | $D$ | $L$ | $G$ | $T$ | $A$ | $A$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



## QUERY

UniRef90_E6SLW3 UniRef90_UPI0003690EF1 UniRef90_UPI000365B49B UniRef90 E3I1M6 UniRef90_D9QIX4 UniRef90_A9BD21 UniRef90_UPI00040BCBA0 UniRef90_H3NUH6 UniRef90_UPI000380FE7F UniRef90_D5QGB3 UniRef90-A5WC24 UniRef90_U3Q0E1 UniRef90_H8KQW0 UniRef90_E6N958 UniRef90_UPI00036DFA1D UniRef90_A7HY04

## UniRef90_G2IJ31

UniRef90_UPI0001FFDBD1 UniRef90_UPI00026257D1 UniRef90_A8MB64
UniRef90_UPI0004112CBF UniRef90_UPI0003F84940 UniRef90_UPI0003809519 UniRef90_I5C4Q8
UniRef90_B4SES9 UniRef90_F6FPT7 UniRef90_I2GP84
UniRef90_C3X450
UniRef90-M1Z4J4 UniRef90-UPIO00376963A
UniRef90_Q7UPW5
UniRef90_D3ECL8 UniRef90_A9WPA9 UniRef90_Q3J7W5
UniRef90_G8S5J3
UniRef90_B5IBC5
UniRef90_G4R8V4
UniRef90_Q59977 UniRef90_UPI0003707401 UniRef90_A5GWC0 UniRef90_U1Y8X3 UniRef90_A8UGW1
UniRef90-A1W9L4 UniRef90_UPI0003615CE1 UniRef90_UPI00037915B5 UniRef90_UPI0002EA8236 UniRef90_D2W3U4 UniRef90_G8AWA4 UniRef90 A1SF26 UniRef90_M9TRP9 UniRef90_V6J9T8 UniRef90_D0RP48 UniRef90_W2EBB7
UniRef90 G2EBH3 UniRef90_K7YHH9 UniRef90_D8JZA3 UniRef90_M4VY20 UniRef90-K7SS20 UniRef90_C5C0Y6 UniRef90_B9LUG8 UniRef90_A3TG18
UniRef90_A0A017TCE3 UniRef90_A0A031FRU9 UniRef90_IOYWX6 UniRef90_H8FSU6 UniRef90_UPI0003706DCC UniRef90_D0MCP9 UniRef90-UPI0004764D21 UniRef90_UPI0003B328F9 UniRef90_-V4XUC3 UniRef90_F0SQG0 UniRef90_P09948 UniRef90_R9TBT1 UniRef90_W5TE54 UniRef90_LOK099 UniRef90-R4VDH3 UniRef90_Q6EUF8 UniRef90_H2C7T0 UniRef90_T1D1T2 UniRef90_UPI0003689E04 UniRef90_B0SEJ3 UniRef90-W0JNAO UniRef90_Q0C1A7 UniRef90_U3GTJ6 UniRef90_UPI0002624EFF UniRef90_UPI00029A1223 UniRef90_UPI0003161175 UniRef90_UPI00029A740F UniRef90_H5SH60
UniRef90_I3ZKJ8


|  | VPYVPL |
| :---: | :---: |
|  | TGPTRREWVPLEQR |
| UniRef90-UPIO003690EF1 | V |
| UniRef90-UPIIOOO365B49B | R D Y V |
| UniRef90-E311M6 | ПGEPQRDYV |
| UniRef90-D901X4 | TGPTQRDY |
| UniRef90-A9BD21 | TGEEKRT |
| UniRef90-UP10004 | TGATERP |
| UniRef90-H3N | TGYSAR |
| UniRef90 UPIO00380FE7F | TGAPARD |
| UniRet90-D5QGB3 | VGSPERDF |
| UniRef90-A5WC24 | TGKTKRDFVKL |
| UniRef90-U3Q0E1 | TGSHNETYVPI |
| UniP | $\checkmark$ |
| Un | VGPEPRS |
| UniRef90-UP100036DFA1D | T ${ }^{\text {T }}$ |
| UniRet90 A7 |  |
|  |  |
| UniRef90_UP10001FFDBD1 |  |
| UniRef90_UPIO0026257D1 | TGPTQRSY |
| UniRef90- UPIod | T |
| Ref90-UP100 | TGPVMRDY |
| UniRef90_UPIO003809519 |  |
| UniRef90-15C4 | R |
| UniRef90-B4SES9 |  |
| UniRef90-F6FPT7 | P |
| 2GP8 | TGSTMREFVP |
|  | VGETRRDVV |
| UniRef90 M1Z4 |  |
| UniRer90-UP700376 |  |
| Q7UP | IGATQRDVVP |
| UniRet90-D3ECL | M |
| UniRet90-A9WP, | TGEPERAY |
| G8 | TGSPVRDF |
| UniRef90-B5IBC | P DYVE |
| UniRef90-G4R8V4 | GATMR |
|  |  |
| UP10003707 |  |
| UniRet90 A5GWCO |  |
| UniRef90_U1Y\& | VGGPVN |
|  |  |
| UniRef90-A1W9L4 | VGAERRDV |
| UniRet90_UP100036150 |  |
| UniRet90-UPIO0037915B5 |  |
| UP10002EA |  |
| D2W3 |  |
| iRef90-G8AW | TGNPGRAFVPLNKR |
| UniRef90-ASF26 | 俋 |
| UniRef90-V6J9T8 | RLR RV |
|  |  |
| W2EBB7 |  |
|  |  |
|  | TGPRERDYUPLEKR |
| UniRef90-D8JZA3 | A ${ }^{\text {R }}$ |
| UniRef90-M4VY20 |  |
| UniRef90- C5COY |  |
| UniRef90 B9LuG8 |  |
| UniF | ETERD |
|  | TGETARDYVPLDER |
| UniRef90 A0A031FRU9 |  |
| UniF | IG Glor |
| UniRef90-UPIOOO3706DCC | R ${ }^{\text {R }}$ |
| UniRee90--DоMCl | VGPPERP |
| UniRet90-UPIO0047 |  |
| UniRet90_UPI0003B328F9 | V |
| UniRef90 V4x | V |
|  |  |
| UniRef90-P09948 | VGEEAREYTC |
| UniRef90-W5TE54 | TGYGARDY |
| UniRef90-LOKOS |  |
|  | TGPARRDYVPLHRR |
|  | VW |
| UniRef90-H2C7T0 | VGDLGRRY |
| T1D1T |  |
| UniRet90_UP1000368 |  |
| UniRef90 BoSEJ3 | TGPKEISY |
| UniRef90 WOJNAO | T GPDEQELIAPVEDR |
| Uni | D |
|  | Geal Pay |
| UniRef90-UPIOOO29A1223 |  |
| UniRef90-UPI0003161175 | GPQKQQW |
| UP100029A740F |  |
|  |  |
|  |  |



UniRef90_UINGH7

## UniRef90_A3XJU0 UniRef90_F9ZD66

 UniRef90-LOIE77 UniRef90_Q0K8G2 UniRef90-D3RS15UniRef90 E0IDM1 UniRef90-S3Y1L4 UniRef90_C7RUY3 UniRef90-MON3I8 UniRef90_UPI00036DC743 UniRef90_G0A0IO UniRef90-UPI0004134275 UniRef90-W6JYM4 UniRef90-UPIO00255A4F0 UniRef90_U2EIG9 UniRef90-D5CSX9 UniRef90-E7RWC9 UniRef90-Q2CG23 UniRef90-H7FMQ2 UniRef90-S2X712 UniRef90_E0DJ05 UniRef90-F4PCE5 UniRef90-M4UKJ3
UniRef90 UniRef90- 5 5EEE8 UniRef90_K9AVR6 UniRef90-U3AF46 UniRef90-F5RA40 UniRef90-X2GZP3 UniRef90_UPI0003B71487 UniRef90_UPIO00411BBED UniRef90_UPIO0040A0889 UniRef90_Q9RWB2 UniRef90-K7SPC5 UniRef90_C4K7D0 UniRef90-W0RGY2 UniRef90_UPI000466469A UniRef90-L1M7J0 UniRef90-UPI0004130C31 UniRef90-C6X1X0 UniRef90-U1Z1T9 UniRef90_UPI000479CA37 UniRef90-J9G6N4 UniRef90-R8ANH1 UniRef90-UPIO0037F6156 UniRef90-E1QH16 UniRef90_UPI0003B3F5C9 UniRef90-UPI00036C9A23 UniRef90_A4BVD6 UniRef90_NOBN60 UniRef90_LOM528 UniRef90_UPIO00423CE58 UniRef90_IOR165
UniRef90'D3FWY4 UniRef90_L8XZN5 UniRef90-A5GDQ5 UniRef90_U1ELQ0 UniRef90-KOICJ4
UniRef90 C0W847 UniRef90_13CG36 UniRef90-IOICJ7 UniRef90-D2RDI6 UniRef90-UPIO003735CE8 UniRef90-IO11X7 UniRef90_UPI00036B6976 UniRef90_C0BGE8 UniRef90-A1U180
UniRef90-TOSOG0 UniRef90_UPIO00362B24C UniRef90_J9HKR1 UniRef90- U5H9B2 UniRef90_Q4JTL5 UniRet90_E1YKL4
UniRef90-B6BVK5 UniRef90_UPI000469A1DC UniRef90_UPI00037BEEE5 UniRef90_UPI0002F01EB6 UniRef90-A8ZRR9 UniRef90-G8AV74 UniRef90-I1E0U5 UniRef90_UPI0003B3300A UniRef90_Q7NZ52 UniRef90-COZQG9
UniRef90- W5XYM3 UniRef90-W5WER9 UniRef90-K8EXP5
UniRef90_U1P0Z9


## UniRef90 U1NGH7

 UniRef90-A3XJUO UniRef90-F9ZD66 UniRef90-Q0K8G2 UniRef90-D3RS15 UniRef90-EOIDM1 UniRef90-S3Y1L4 UniRef90_C7RUY3 UniRef90-MON318 UniRef90 UPI00036DC743 UniRef90 GOAOIO UniRef90-UPIOO04134275 UniRef90-W6JYM4 UniRef90-UPI000255A4F0 UniRef90_U2EIG9 UniRef90-D5CSX9 UniRef90-E7RWC9 UniRef90-Q2CG23 UniRef90-H7FMQ2 UniRef90-S2X712 UniRef90-EODJ05 UniRef90-F4PCE5 UniRef90-M4UKJ3 UniRef90-I3RCKO UniRef90-X5EEE8 UniRef90_K9AVR6 UniRef90-U3AF46 UniRef90-F5RA40UniRef90 - X2GZ3 UniRef90-UPIOOO3B71487 UniRef90-UPIO00411BBED UniRef90_UPIOO040A0889 UniRef90_O9RWB2 UniRef90-K7SPC5 UniRet90-C8PWJ1 UniRet90-_WORGY2 UniRef90_UPIo00466469A UniRef90-L1M7JO UniRef90_UPI0004130C31 UniRef90-C6X1X0 UniRef90-U1Z1T9 UniRef90-UPI000479CA37 UniRef90-JgG6N4 UniRet90-R8ANH1 UniRef90-T0мТЕ2 UniRef90-UPIO0037F6156 UniRef90-E1QH16 UniRef90-UPIO003B3F5C9 UniRef90-UPIooo36C9A23 UniRet90-A4BVD6 UniRefolonosn6o UniRef90-LOM528 UniRef90-UPIOO0423CE58 UniRef90_10R165
UniRef90 D3FWY4 UniRef90-L8XZN5 UniRef90-A5GDQ5 UniRef90-U1ELQ0 UniRef90-KoICJ4 UniRef90-CoW847 UniRef90-13CG36
UniRefgololc UniRef90-101CJ7 UniRef90-UPIOO03735CE8 UniRef90-1011X7 UniRef90_UPI00036B6976 UniRef90_COBGE8 UniRef90-A1U180
UniRef90
TOSOGO UniRef90-UPIOOO362B24C UniRef90 UPIOOO34816BF UniRef90-J9HKR1 UniRef90-U5H9B2 UniRef90_O4JTKL UniRef90-E1YKL4
UniRef90 B6BVK5 UniRef90-UP1000469A1DC UniRef90-UPIOOO37BEEE5 UniRef90-UP10002F01EB6 UniRef90_l1E0Z4 UniRef90-A8ZRR9 UniRef90-G8AV74 UniRef90-11EOU5 UniRet90 UPIIOOO3B3300A UniRef90 Q7NZ52 UniRef90-COZQG9
UniRef90- W5XYM3 UniRef90_W5WER9 UniRef90-K8EXP5
UniRef90_U1Poz9

RELLADGEEPMAALLRTTTSALLSAYDPDADFNDSEANNRKSR NGFPKSAHPMGVLASLTSALTAFNPDAVNDSEEDMYNAIV SGFRRDAHPMAVMVGVVGALSAFYHDALNDSDPDHREQAL RGFRRDAHPMAVLTGMVGAMSAFYHDAMD DDDPHQREMAD NGFHYDAHPMAMLMGVVGSLSAFYHDSLSVNDPRHREIAA KLYPKNSNSMAALRTAVSSLALYDAEANDMSPEVNVRKAD IALPRDAAPMAVLQAGVSALSTFYQDSLDPNDPEQVRIST AGFRRDAHPMAVMVGTVGALSAFYHDKDDDDPEARMVSTH DGLAADERPMAALRTAVSMLSASDPEESDPDDDAALRKGR SGFRRDAHPMAVLVGVVGALSAFYHDGTDTCAEDRYTAA KSYDLSTHPMAALRTAVSMLGDFDPEADEMNEEANKRKAV KSYDLSTHPMAPVRTAVSMLGLFDPEADEMNEEANKRKAV DAFPKNAHPMGYSSGYSAGTAFNPKSVEYSSADDMYKAII NGFRRDAHPMAVMVGVVGALSAFYHDSDDVNPQNREVSA RGFRRDAHPMAI MVGVVGAMAAFYHDSTDI HDSWQREVAI DGFPRTAHPMGVLAALTSALLTAFNPKSVNVDNDKEMYQAV STFPRGAHPMQTLASSVNLLASYYQDELDPNEEQRNLAAV KปFPRNAHPMSVLASSVNILSTYYQDQLDPLDEAQLDKAV HSFNYDAHPMGMFISSIAAMSTFHPEANPKNLSTRNKQIL SGFRRDSHPMALMVGVVGALSAFYHDSLDDNESHREDAA EKMPRAAHPMGVLRTAVSFLGNLNGEPSATMMDVLKKGD KDFPRNAHPMNVLASSVNDLATYYEDEDDPNTDFQKKNTY EEYATDVHPMTALRTSVSYLAHFDPGADEDDMDSTLERAD RDLAADEVPMAAVRTAVSELSAFDADADPTDREANLAKGK KTYPLSTHPMAALRTAVSLLGVFDEEADVMDPEANYRKA
 RDMPKGVHPMQALRTAVSYLGLLDPQAEDDTPEARRADST RCFPRRSHPMPVLAAGIMALSTFSEKSAGTDPDQVENATD RGFRRDSHPMAVLCGVTGALAAFYHNGLDVHDQNHRESAF EGFRYDAHPMSMLCSAVAAMSSFYPKAKNIFDPAERSMSUD EARPKTAHPMDVMRTGVSALGCDAPESLVHTPEEAKELAD ELVPANAHPMDVMRTGCSVLGTVLPERDGHPASEARDDAD DVFPRSAHPMGVLSSLTSALTAFNPKAVDVSSKEEMDEAA
 KAFRHDSHPMGMMSTLMAAMSTFYPEANPKDKKERNKHDY HGFRRDAHPMAVMCGVSGALAAFYHDSLDTNNDDHRADAA SKY PVEAVPMAALRTAVSLLGLYDEQEADSVEEEANYRKA

## 




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

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




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

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






TKKMP D N C H P M D $V$ V V R T TAA




UniRef90_U1NGH7 UniRef90-A3XJU0 UniRef90-F9ZD66 UniRef90-Q0K8G2 UniRef90_D3RS15 UniRef90-E0IDM1 UniRef90-S3Y1L4 UniRef90_C7RUY3 UniRef90-MON3I8 UniRef90 UPI00036DC743 UniRef90 GOA0IO UniRef90_UPI0004134275 UniRef90-W6JYM4 UniRef90-UPIO00255A4F0 UniRef90_U2EIG9 UniRef90-D5CSX9 UniRef90-E7RWC9 UniRef90-Q2CG23 UniRef90-H7FMQ2 UniRef90-S2X712 UniRef90-E0DJ05 UniRef90-F4PCE5 UniRef90-M4UKJ3 UniRef90-I3RCKO UniRef90-X5EEE8 UniRef90-K9AVR6 UniRef90_U3AF46 UniRef90-F5RA40
UniRef90- X2GZP3 UniRef90_X2GZP3
UniRef90_UPIO003B71487 UniRef90_UPI000411BBED UniRef90_UPIO0040A0889 UniRef90-Q9RWB2 UniRef90-K7SPC5 UniRef90_C4K7D0 UniRef90-W0RGY2 UniRef90_UPIO00466469A UniRef90-L1M7J0 UniRef90-UPIO004130C31 UniRef90_C6X1X0 UniRef90_U1Z1T9 UniRef90_UPI000479CA37 UniRef90_J9G6N4 UniRef90-R8ANH1 UniRef90-TOMTE2 UniRef90-UPI00037F6156 UniRef90-E1QH16 UniRef90_UPI0003B3F5C9 UniRef90_UPI00036C9A23 UniRef90-A4BVD6 UniRef90_NOBN60 UniRef90_LOM528 UniRef90-UPI000423CE58 UniRef90_IOR165
UniRef90 D3FWY4 UniRef90_L8XZN5 UniRef90-A5GDQ5 UniRef90-U1ELQ0 UniRef90-KOICJ4 UniRef90_COW847 UniRef90-I3CG36 UniRef90-IOICJ7 UniRef90_UP10003735CE8 UniRef90-1011X7 UniRef90_UPI00036B6976 UniRef90_COBGE8 UniRef90-A1U180
UniRef90-TOS0G0 UniRef90_UPI000362B24C UniRef90-UPIO0034816BF UniRef90-J9HKR1 UniRef90-U5H9B2 UniRef90_Q4JTL5 UniRet90_E1YKL4
UniRef90-B6BVK5 UniRef90_UPI000469A1DC UniRef90_UPI00037BEEE5 UniRef90_UPI0002F01EB6 UniRef90-I1E0Z4 UniRef90-A8ZRR9 UniRef90-G8AV74 UniRef90-I1E0U5 UniRef90_UPIO003B3300A UniRef90_Q7NZ52 UniRef90_COZQG9
UniRef90-W5XYM3 UniRef90-W5WER9 UniRef90-K8EXP5
UniRef90_U1P0Z9

R|I T A K MP T A L A A Y N R|L|RNGKEP|V|APRAD|L|SHAANF|L|YM|L|N KLLGKFPVLVAWTMRTKKSKPLDYGDDSLNYVENLHKMMF RLIAK LPTITAMAYKYNDGQPFVYPQNNLSYAENFLHMMF RIV A K T P T I LAA A Y D RVR Q GE S P I D P D P D L G L A A N F L Y M L T $R L I A K M P T L V A M A Y K Y N D G Q P Y I V P Q N D L S Y S G N F M R M M F$ H RIA K I P T I A A A A Y K H S V G E P I I Y P R N D L R Y C A N F L R M M F $K$ L Q A QL P TV DAA A F A R DR Q GK D PI Q P K S G V S VA Y N F L Y M L S
 RLIA KMPTICAMAFKYSLGRPFMYPRNDLSYAANFLRMAF


 Y RLAA KL P T I AA Y A Y K K S M GQP F L Y P DN H L S LIT EN F L R M T F VMLMGKFPVLVSWCMRKMKGPLDFGDVDLGYEENFAMMMF RMIA K MPTI A A A A YK H S IGGQPK GGPKNHLDYAANFLDMCF HRLA A KVPTIAAMAYKYNDGETFMHPRNKFSYVENFMYMMF $R$ LI S K M P T L VA M A Y K Y S Q G Q P F A Y P R N K L S Y TA N FM H L M F RLIA K MPTI AA WAYKYSVGQPFVYPRNDLTYAENFDHMCF CKTMKF LVI A T WTY R K S M GY P L N Y Y D N T K GY VENFMN L M F RLMAKVPMLAA YAYRASKGEPYMYPDNNLNARENFMRMMF RLLAKV PMLAA YAYRASKGAPYMYPDNSLNARKNFLRMMF RLLGKVPTIAAACYRHR $\quad$ GGRPYNNPSKNLSYTENFLNMMP YRIGSKMPTLAAMSYKYSQGQPFDYP DNS L S Y A GNF L K MMF S I T A K I P T I VA T M Y R L R N E L E P I E P S K K L S H A A N F L Y M L H RLMAKVPMLAAYAYRASKGKPYMYPDNKLNARENFLRNMF RI QAKI A SLVTAFARVREGKAPVKPDRSLNYAANFLYMLR RLLTA K L P TVVI A A F T R L R D G E E P V NRIA K M P T IV V A M A Y K Y S VGGQP F M Y P R N D L D Y A S N F M Y M MF R L L A K M P T I A T A C Y R H S V $G$ G L LL L A K V P T M I A Y IAAK R A A GLLP L L Y P T S D K S Y T E D F L R P Y Q

 K L I A S L G S ML L Y WY H Y S H N G K VI S L E S D Q S IGG H F L E L L Q RLLSKMPTMAAMCYKYSDGQPFVFPRNNLSYAANFLNMMF
 RLVA SF GS MLL L WY H F A N S GK QI D E T D D D S V G G H F L H ML H

 EMLLAK F S HLLCAWTYRKKMGLSSINHGDDSNYVENFYKMCF R L WAVLDPAAVA LD QRRRRGLQQLVEPRDDDLS YAENF LDWLTF





 RLI AKIPTVAAWAYKFNEGQPFVYPQNHLSYAENFMHMMF RLLAK AKTI A AFAYKKS LGGPFVYPRNDLSYAANLLHMLF SLI A K FPTIVVAYFHRDRTGQNDIHPREDLSHAENFLLYMLH


 RLIS K MPT TVAAAYKHS DGMP LVYPTNSLSYAGNFILNMF RLLASFPSMLLYWHHYQTGGRRITESGEESMAGHFLALFH RI Q A K I A S LV T A F A R V R E G K E P V K P S E D L N Y A G N F L Y M L R
 RLLLSKMPTMVSYDARRADGLPLLLYPDPKRGYVDDFLHMTF
 SLI A KI P TII IA Y F H R I R T G Q NL V H P NPDLGHAENFLYMLK $N L V S Q V R T I A A F S Y K K S \square G E P L V Y P S \square K F T Y V R N F L N M M F$
 K I FAK TPTTVAANFRTRKGDDIIDPKKDLSFSENFFHMCF $\square$ MLMAKFPILAS WTHRK DKGPLNYANDSLSYVENVAHMMF RMLADVFPAI I T Y WY R FA HE G I RIIA N T E C D S I G G VF LE L L H QLMA QVK I MANFYRKTVGKDPI E SNPALGYSKDFLLNMMF A MMARLDPTVVAADHRRRQGLDPIQPDPGLDYAENFFHMCF RLIAAKMPTIAAMAYKYNDGQPFNTPRNELSYAENFMYMMF




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

 HR DA K P A V
 E L M A KL P T I V A LLD DRRR Q GK SY I EPSRKKGFA ENF L WMVV RLF GALPSIVALLTQRRRRGLLPLPPRLDLGFAENFLAMTF

UniRef90_U1NGH7 UniRef90-A3XJU0 UniRef90-F9ZD66 UniRef90 Q0K8G2 UniRef90_D3RS15 UniRef90-E0IDM1 UniRef90_S3Y1L4 UniRef90_C7RUY3
UniRef90 M0N318 UniRef90 UPI00036DC743 UniRef90- G0A0IO UniRef90_UPI0004134275 UniRef90-W6JYM4 UniRef90_UPI000255A4F0 UniRef90-U2EIG9 UniRef90-D5CSX9 UniRef90-E7RWC9 UniRef90-Q2CG23 UniRef90-H7FMQ2 UniRef90-S2X712 UniRef90-EODJ05 UniRef90_F4PCE5 UniRef90-M4UKJ3 UniRef90-I3RCKO UniRef90_X5EEE8 UniRef90_K9AVR6
UniRef90_U3AF46 UniRef90- F5RA40 UniRef90- X2GZP3 UniRef90_UPI0003B71487 UniRef90_UPIO00411BBED UniRef90_UPI00040A0889 UniRef90-Q9RWB2 UniRef90-K7SPC5 UniRef90-C4K7D0 UniRef90-W0RGY2 UniRef90_UPI000466469A UniRef90-L1M7J0 UniRef90-UPI0004130C31 UniRef90-C6X1X0 UniRef90_U1Z1T9 UniRef90_UPI000479CA37 UniRef90-J9G6N4 UniRef90-R8ANH1 UniRef90-UPI00037F6156 UniRef90-E1QH16 UniRef90_UPI0003B3F5C9 UniRef90-UPI00036C9A23 UniRef90-A4BVD6 UniRef90-NOBN60 UniRef90_LOM528 UniRef90_UPI000423CE58 UniRef90-I0R165
UniRef90 D3FWY4 UniRef90_L8XZN5 UniRef90-A5GDQ5 UniRef90_U1ELQ0 UniRef90-K0ICJ4
UniRef90 C0W847 UniRef90_I3CG36 UniRef90-IOICJ7 UniRef90-D2RDI6 UniRef90-UPIO003735CE8 UniRef90-1011X7 UniRef90_UPI00036B6976 UniRef90_COBGE8 UniRef90_A1U180
UniRef90-TOSOG0 UniRef90_UPI000362B24C UniRef90_UPIO0034816BF UniRef90-J9HKR1 UniRef90_U5H9B2 UniRef90_Q4JTLL UniRef90_B6BVK5 UniRef90_UPI000469A1DC UniRef90_UPIO0037BEEE5 UniRef90-UPIO002F01EB6 UniRef90-I1E0Z4
UniRef90_A8ZRR9 UniRef90_G8AV74 UniRef90-I1E0U5 UniRef90_UPIO003B3300A UniRef90_Q7NZ52 UniRef90-COZQG9
UniRef90- W5XYM3 UniRef90-W5WER9 UniRef90-K8EXP5

170
180
190
200
DEEPDDVLAETFDMAJVLUADHGLLNASTFSAMTTASTLLAD SKPNSEYKVDALDKLLILHADHEQNCSTSTVRIVGSSHAG K Y E A N P VIV V R A L D R L L I L H A D H E Q N A S T S TVVR L A G S S GA N






 A Y EVVD PVAAKALDDVLVILHADHEQNASTSTVRMAGSTGAN
 A Y K V N P I L AR A MD R I FTLLHADHEQNASTSTVVRLASSSSGAN




 GEKPTDVVEVEGFNKALILHADHELLNASAFTARCAVSSSLSD
 A Y K P N P VLAK ALLDR IVI LIHADHEQNASTSTVRLAGS SGAN GEEPAAI EVVAFDKALVLHADHELNASTFTARVCVATGSD

## -

 STPCEEYQVRAMDRILILHADHEQNAS T GKKPSDLHVKVMNVSLILYAEHEFNAST
 GEKPSETATRTFDI ALLILHADHELLNASTFAARVIAATMAD





 GHKPPQSSQVKAMHAS LI LYAEHEFNASTFASRVVAGTGS D

 GKKPEDLLQRRAVD ASSLI LYAEHEFNASTTSSARVTAS TVS D
 GYE $\square$ DPAVVRALDMLLILHADHEQNCSTSTVRLVGSADAN
 GEVP D R I E A R A L DV DLI L HA DHELLNASTAAARDAA STLA D
 GKVPS K DVV IK AFDV SLI L Y A E H S F NA STFTSRMI T S TLAA D KRPNEPVVVSALNKLLILHADHEQNCSTSTVRIVGSSHAG



 GDENNRDDVEAFDQSLTLYAEHGFNA DSPVKPYQVKALNVFWILHADHEQNCSSSTVRMVGSSRVN D Y E I I N P V L V R A F E R I L I L H A D H E Q N A S T S TVVR LV G S S GA N GKKPNDSDRK I DD LMFILHAEHSTNASTFASLVTASTMAD
 P Y ELI K K E F VEALDMFWVLHADHEQNCSTSTVRAVGSARAN GRKPSALLWRAMHTSLI LYAEHEFNASTFTGRVIA GTGSD GK K P A QL HV DVMQAS L I L Y A E HEFNASTFTARVCASTTLS D GEEADP EVVVDAFRVSLILLYAEHSFNASTFTARVVVSTLDS E Y K VNPVLARALDRIFTLHADHEQNASTSTVRLAGSSGAN
 GDENSRSDVEAF DKSLL L Y A E E H S F N A S GEEADA LSVEAMNKALVLHADHEFNA


UniRef90_U1NGH7 UniRef90_A3XJU0
UniRef90-F9ZD66 UniRef90-LOIE77 UniRef90_Q0K8G2 UniRef90_D3RS15
UniRef90 E0IDM1 UniRef90-S3Y1L4 UniRef90_C7RUY3 UniRef90-MON318 UniRef90_UPI00036DC743 UniRef90-G0A0IO UniRef90-UPIO004134275 UniRef90_W6JYM4 UniRef90-UPIO00255A4F0 UniRef90_U2EIG9 UniRef90-D5CSX9 UniRef90_E7RWC9 UniRef90-Q2CG23 UniRef90-H7FMQ2 UniRef90-S2X712 UniRef90-E0DJ05 UniRef90-F4PCE5 UniRef90-M4UKJ3 UniRef90-I3RCKO UniRef90-X5EEE8 UniRef90-K9AVR6 UniRef90-U3AF46 UniRef90-F5RA40 UniRef90- X2GZP3 UniRef90_UPI0003B71487 UniRef90_UPI000411BBED UniRef90_UPIO0040A0889 UniRef90_Q9RWB2 UniRef90-K7SPC5 UniRef90_C4K7D0 UniRef90-W0RGY2 UniRef90_UPIO00466469A UniRef90-L1M7J0 UniRef90_UPIO004130C31 UniRef90_C6X1X0 UniRef90_U1Z1T9 UniRef90_UPI000479CA37 UniRef90-J9G6N4 UniRef90-R8ANH1 UniRef90_UPIO0037F6156 UniRef90-E1QH16 UniRef90_UPI0003B3F5C9 UniRef90_UPIO0036C9A23 UniRef90_A4BVD6 UniRef90_NOBN60 UniRef90_LOM528 UniRef90_UPI000423CE58 UniRef90_IOR165
UniRef90 D3FWY4 UniRef90_L8XZN5 UniRef90_A5GDQ5 UniRef90-U1ELQ0 UniRef90-KOICJ4 UniRef90_COW847 UniRef90-I3CG36 UniRef90-IOICJ7 UniRef90-D2RDI6 UniRef90_UP10003735CE8 UniRef90-1011X7 UniRef90_UPI00036B6976
UniRef90_COBGE8
UniRef90-A1U180
UniRef90-TOS0G0
UniRef90_UPIOOO362B24C
UniRef90_UPIO0034816BF
UniRef90-J9HKR1
UniRef90-U5H9B2
UniRef90_Q4JTL5

| UniRef90-E1YKL4 |
| :--- |
| UniRef90 |

UniRef90_B6BVK5
UniRef90_UPIO00469A1DC
UniRef90_UPI00037BEEE5
UniRef90_UPI0002F01EB6
UniRef90-I1E0Z4
UniRef90-A8ZRR9
UniRef90-G8AV74
UniRef90-I1E0U5
UniRef90_UPIO003B3300A
UniRef90_Q7NZ52
UniRef90-COZQG9
UniRef90-W5XYM3
UniRef90-W5WER9
UniRef90-K8EXP5
UniRef90_U1P0Z9

250
260
270
280
WK DA\|DRGER||AGFGHR|VYNVKDPRAATLGGEKSEA|L|GEAA

 IK KVKDKGVRLMGFGHRVYKNYDPRAKLMRETCHEVLEEL I EKAKDDPFRLMGFGHRVYKNYDPRAKIIREVCYQVLDED I NDKLANKVKIMGFGHRVYKDGDPRAKHLMKMSRELGKQQ FMEKVKSKTRLMGFGHRVYKNYDPRAKFVKGDADTVGERQL WR RA K D VAKAKDDPFRLMGFGHRVYKNYDPRAKLMRQTCHEVLDEL
 FMMHVKNKEKLMGFGHRVYKNYDPRASDIM KTADDI LGRL Y $\square$ A K A K D K N R L M GF G H R V Y K N F D P R A K I I K K $V$ QGVK DKKYKLMGFGHRVYKNMDPRASVVRQTCYEVLKEL GE F I K QV K N K L M G F G H R V Y K N Y D P R A K L M Q E T C A E V L T E M LARAKDDPFRLMGFGHRVYKNFDPRAKVMKESADEVLDLL YMAKAKDKERLMGFGHRVYKSFDPRAQIDKKAANEVLETL RVKNKEPGVRLMGFGHRVYKSYDPRAAABKKTAHEVL QHL
 VARAKD DPFRLLMGF GHRVYKSHDPRATVVMRKTCHALLSDLLK FFNALKEKRKIMMAGHRVYKTYDPRARIFKKYAKML FMNRVKNKEPLMGFGHRVYKNYDPRAALVKESAHEILDHLD
 I K R A K D K N F K L M GF GH R V Y K N F D P R A K L M R Q T C Y E V L T E L I Q N K LD N K EKI M GFGHRVYRKGDPRAPHLRVMSQKL TEELT

 ITGKLDNKEKIMGVGHRVYKYFDPRSRVLRDYAEHVANKE
 I A R A K D K N F RL M G F G H R V Y K N Y D P R A K V MK E A C D E L N E L N

L
 LDDALAHKRKIMGFGHRVYKHGDSRVPTMRATLDDLVDHY HRQMFAEKKKISGFGHRVYHTEDPRATHLRRMSEELSKTS
 LEAMVARKEKIMGFGHRVYKVYDPRAKILKKYAAYI SEKS






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

 FVRKVV DKERLMGFGHRVYKNYDPRAALVKEAAHDVLDRLL L K A M L E R K D K I M G F G H A V Y S K Y Y D P R N A Ti K A W S K T L L D N L K A T K G K L F G F G H GVVYK S Y D P R A MVVLK K S A D K V L A K L $V$ LK KLERKERIMMGFGHRI YRNVMDPRTI ELDRNLAKKLAKM

 Y M A K A K D K N R L M G F G H R V Y K K N F D P P R A R I I K K A A D E V L A E M



 VLDQCDAKNKI MGFGHRVYKKGDSRVPTMEAAMRRTAANH K AVE R A K D K R L M GF G H R V Y K T Y D P R A K I M K M T C D N L L K K L I E R A K D D S F R L M G F G H R V Y R N K D P R A E E M R K T C H E V L I R R R V A D K E DI DG F G H P V Y T S G D P R N R I DR E V A R NL S V E A
 VARAKDKNFRLMGFGHRVYKNFDPRAKVMRETCHELQELN AVKRAKDKNRLMGFGHSVYKTYDPRAKI MKKMCDKLAVAN I R R R V E NKEVVI GFGGHPVYTVSDPRNDVIRGDAHKLSVDA LLGMLARREKI MGFGHAI YSESDPRNAVIKEWSEKLLAKAN LEHALANKKKIMGFGHRVYKNGDSRVPTMRAAMEAMLEHF $M Q G V K D K R Y K L M G F G H R V Y K N M D P R A A D M K Q T C D E V L N E L$ MS EKLLA AKEKVMMGFGHRVYKNGDSRVPTMK QALLDVAAA T A K E K L N N K D L V M G F G H R V Y K K G D S R V P TM E A A F K E L A E E H V A R A L A A K R T I M G F G H R V V Y K N G D S R R V P T M R A A A L R T $V$ E E M V D R G S R V P G WG H R V Y S V T D P R A A I L R S K LDE D|LA A A S

UniRef90_U1NGH7 UniRef90-A3XJU0 UniRef90-F9ZD66 UniRef90 Q0K8G2 UniRef90_D3RS15 UniRef90-E0IDM1 UniRef90_S3Y1L4 UniRef90_C7RUY3 UniRef90-MON3I8 UniRef90_UPI00036DC743 UniRef90 GOAOIO UniRef90-UPIOO04134275 UniRef90-W6JYM4 UniRef90_UPI000255A4F0 UniRef90_U2EIG9 UniRef90-D5CSX9 UniRef90-E7RWC9 UniRef90-Q2CG23 UniRef90-H7FMQ2 UniRef90-S2X712 UniRef90-E0DJ05 UniRef90_F4PCE5 UniRef90-M4UKJ3 UniRef90-I3RCK0 UniRef90-X5EEE8 UniRef90_K9AVR6 UniRef90-U3AF46 UniRef90-F5RA40
UniRef90- X2GZP3 UniRef90_UPI0003B71487 UniRef90_UPIO00411BBED UniRef90-UPI00040A0889 UniRef90-Q9RWB2 UniRef90_K7SPC5 UniRef90-C8PWJ1
UniRef90_C4K7D0
UniRef90-W0RGY2
UniRef90_UPIO00466469A UniRef90-L1M7J0 UniRef90-UPI0004130C31 UniRef90-C6X1X0 UniRef90-U1Z1T9 UniRef90_UPI000479CA37 UniRef90-J9G6N4
UniRef90-R8ANH1 UniRef90-TOMTE2 UniRef90-UPI00037F6156 UniRef90-E1QH16 UniRef90_UPI0003B3F5C9 UniRef90-UPI00036C9A23 UniRef90-A4BVD6

## UniRef90-NOBN60

UniRef90_LOM528 UniRef90_UPIO00423CE58 UniRef90_IOR165
UniRef90'D3FWY4 UniRef90_L8XZN5 UniRef90-A5GDQ5 UniRef90-U1ELQ0
UniRef90-KOICJ4 UniRef90_C0W847 UniRef90-I3CG36
UniRef90-IOICJ7 UniRef90-IOICJ7 UniRef90_UPI0003735CE8 UniRef90-1011X7 UniRef90_UPIO0036B6976 UniRef90_C0BGE8 UniRef90_A1U180
UniRef90-TOSOG0 UniRef90-UPI000362B24C UniRef90-UPI00034816BF UniRef90-J9HKR1 UniRef90_U5H9B2 UniRef90_Q4JTL5 UniRet90_E1YKL4
UniRef90-B6BVK5 UniRef90_UPI000469A1DC UniRef90_UPI00037BEEE5 UniRef90_UPIO002F01EB6 UniRef90-l1E0Z4 UniRef90_A8ZRR9 UniRef90-G8AV74 UniRef90-I1E0U5 UniRef90_UPI0003B3300A UniRef90_Q7NZ52 UniRef90-COZQG9
UniRef90- W5XYM3 UniRef90-W5WER9 UniRef90-K8EXP5
UniRef90_U1P0Z9

290
300
E K GlL $A$
310
320
GDTRWYEMSVA\|EEY\|SDEKGLAB PNVIDFYSATTYYQM GDEDEVLAIAKGEALEDEYFVKRKLYPNVDFYSGIIYRAL
 G L H NDPLFK LAMEALEDEYFVSRKLYPNVDFYSGIVQRAL NDNPLFELAMKLEEIADEYFVERKLYPNVDFYSGIIYQAL



 GDEDPVLDVAKGLSDVDEYFKSRNLYPNVDFYSGIIYRAML
 GDDPMLAMAKKLEAAADEYFKSRNLYPNVDFYSGUYYRAGL GGDELLDLAMKLEEDADDYFVSRKLYPNVDFYTGLIYRAM GHEPLVEVADELEKHADSYFVEKKLYPNVDFYSGLIYKAM

 GDTKWYEMSVAAVEEYMQEEKGLA LPNVDFYSATVYHSM GNDRLFKDAMELERDADEYF LEKKDYPNVDFYSGDVQKAL



 GMDKDLEI A LKKLE EAADDYFVSRKLYPNVDFYTGLIVRSM




GKE P WFEMSRKI E QF VK A
 GFKKWY D A SK V E EI MDN K K WYEMS L K I E DL VTSSQK GE K GIIF P N V D F Y S G M Y Y Y S M


## $\bigcirc$

## \section*{G}

K
1
$G$

## 

## G

## 


 D GQRWV DMYDNMQKAMDQRTGIQ PN PNLDFPA GPTYYML H S D P L L D I A K K L E DVAA L K Y F L E H NLLY P N I D F Y S G IMMLR AL



 GLHNDPKFKLAMEALSDP DGEK WVQMYEI L E K T G Q T K WV E MY DI LA A K T ME ENVTSAT GIMK P N L D F F P T G P A Y F L M DGQRLLDDYESLLAGAVFAAKGLHPNLDYPAGPAYHL M


UniRef90＿U1NGH7 UniRef90＿A3XJU0 UniRef90－F9ZD66 UniRef90－Q0K8G2 UniRef90－D3RS15 UniRef90－E0IDM1 UniRef90＿S3Y1L4 UniRef90＿C7RUY3 UniRef90－MON3I8 UniRef90＿UPI00036DC743 UniRef90－G0A0IO UniRef90＿UPI0004134275 UniRef90－W6JYM4 UniRef90－UPIO00255A4F0 UniRef90＿U2EIG9 UniRef90－D5CSX9 UniRef90－E7RWC9 UniRef90－Q2CG23 UniRef90－H7FMQ2 UniRef90－S2X712 UniRef90＿E0DJ05 UniRef90－F4PCE5 UniRef90－M4UKJ3 UniRef90－I3RCK0 UniRef90－X5EEE8 UniRef90－K9AVR6 UniRef90－U3AF46 UniRef90－F5RA40
UniRef90－X2GZP3 UniRef90＿UPIO003B71487 UniRef90＿UPI000411BBED UniRef90＿UPIO0040A0889 UniRef90－Q9RWB2 UniRef90－K7SPC5 UniRef90－C8PWJ1 UniRef90＿C4K7DO UniRef90＿UPIO00466469A UniRef90－L1M7J0 UniRef90－UPI0004130C31 UniRef90＿C6X1X0 UniRef90＿U1Z1T9 UniRef90＿UPI000479CA37 UniRef90＿J9G6N4 UniRef90－R8ANH1 UniRef90－TOMTE2 UniRef90＿UPI00037F6156 UniRef90－E1QH16 UniRef90＿UPI0003B3F5C9 UniRef90－UPI00036C9A23 UniRef90－A4BVD6

## UniRef90－NOBN60

UniRef90＿LOM528
UniRef90＿UPI000423CE58 UniRef90＿IOR165
UniRef90＇D3FWY4 UniRef90＿L8XZN5 UniRef90－A5GDQ5 UniRef90－U1ELQ0 UniRef90－KOICJ4 UniRef90＿C0W847 UniRef90＿I3CG36
UniRef90－IOICJ7 UniRef90－D2RDI6 UniRef90＿UPIO003735CE8 UniRef90－1011X7 UniRef90＿UPI00036B6976 UniRef90＿COBGE8 UniRef90＿A1U180
UniRef90－TOSOG0 UniRef90＿UPI000362B24C UniRef90－UPIO0034816BF UniRef90－J9HKR1 UniRef90＿U5H9B2 UniRef90＿Q4JTL5 UniRet90＿E1YKL4
UniRef90－B6BVK5 UniRef90＿UPI000469A1DC UniRef90＿UPI00037BEEE5 UniRef90＿UPI0002F01EB6 UniRef90－I1E0Z4 UniRef90－A8ZRR9 UniRef90＿G8AV74 UniRef90－I1E0U5 UniRef90＿UPIO003B3300A UniRef90＿Q7NZ52
UniRef90＿C0ZQG9 UniRef90－W5XYM3 UniRef90－W5WER9 UniRef90－K8EXP5
UniRef90＿U1P0Z9
$\mathrm{G}|\mathrm{P} \square \mathrm{D}| \mathrm{YT} 330$
330
340
A HIV LIE Q WE ${ }^{350} \mathrm{D}$ R R I I R PRAQY
GI PVEMFTVMFAMGRVPGWI A QWREMRDRKEPI GRPRQVY

GI PTSLIFTCIFALARTPGWDSQWEEMDDPEYKI GRPRQLIF

GIARDLFTPIFAISRLSGWTAHDLEQYENNRLDRPRAEY
GFPTAMFPPLFALGRTIGWIAQWKEMDASDQHIARPRQRY

G 1 EHDLFTPIFAVSRVSGWLAHWLEQYE NNRLDRPRAEY
GFPTKMFTVLFALGRLPGWI AQWREMDDPATKIGRPRQVY

GIPTSMFTAI FAMARTVGWLAQWSEMLDPDQK GRPRQLY


GAPS

## G

## $\stackrel{\circ}{\circ}$


G
A
G

## A G

G
G
G

## 

$$
00
$$

## 

$$
\mathrm{G}
$$ －ー GFPPRMFTPLFAVGRIDGWHAHWREMMDPSTR｜GRPQQLY GFPTHMFTPLFALARTVGWITHWNEMDDPKMKISRPRQRY NDPHDLFTPAFAVSRTSGWIAHVLEQYAQDNRIMRPRAQY GFPTKMFTPLFALGRLPGWDAQYREMDDPAKRLGRPRQVY G｜PTNMFTVMFAIGRMPGWDAQWWEVNQQKSRIYRPRAEYY G｜PDDLFIPMEAMGRMAGWTAHVIEQYVVNRLDRPRALY

 GFDVDFFTPIFVIARMTGWSAHDNELLKDNRLDRPGSKY
 GLPTNMFTAMFVLGRLPGWLSQWKELREDGTKIARPRQVY G PTNMFTVIFAVSRTIGWWSHWHEMQEASYKISRPRQSYY

 GI PTNMFTVMFAMGRLDGWIA QWKESNDPKNALIRPLSSY GIPNSMFTAVFALARTAGWIAGWNEMVADNLKMGGRPRQIY <br> <br> \section*{\section*{$$
0
$$ <br> <br> <br> <br> \section*{\section*{－} <br> <br> <br> \section*{<br> <br> \section*{<br> <br> ， <br> <br> <br> \section*{<br> <br> \section*{<br> <br> ， <br> <br> <br> \section*{<br> <br> \section*{<br> <br> ， <br> <br> <br> \section*{<br> <br> \section*{<br> <br> ， <br> <br> <br> <br> ロロロロロロロ <br> <br> <br> <br> ロロロロロロロ <br> <br> <br> <br> ロロロロロロロ <br> <br> <br> <br> ロロロロロロロ <br> <br> <br> <br> <br> คดด} <br> <br> <br> <br> <br> คดด} <br> <br> <br> <br> <br> คดด} <br> <br> <br> <br> <br> คดด} <br> <br> <br> <br> <br> คดด}

## 

คด

## $\Omega \Omega \Omega$





 GQSNALIRPLSQY

UniRef90 U1NGH7 UniRef90-A3XJUO UniRef90-F9ZD66 UniRef90-Q0K8G2 UniRef90-D3RS15 UniRef90-EOIDM UniRe990_S3Y1L4 UniRef90-C7RUYZ UniRef90-UPI00036DC743 UniRef90 GOAOIO UniRef90-UPIOOO4134275
UniRef90 W6JYM4

## UniRet90_W6JYM4

 UniRefol UPEIGSUniRef90-D5CSX9 UniRef90 E7RWC9

UniRef90_Q2CG23 | UniRef90-H7FMQ2 |
| :--- |
| UniRef90 |

UniRef90-EODJO5
UniRef90 ${ }^{-14 P C E 5}$
UniRef90-M4UKJ3
UniRef90-13RCKO
UniRe90_-K9AVR
UniRef90-U3AF46
UniReto
UniRef90-UPI0003B71487
UniRef90-UPIIOOO411BBED
UniRef90 Q9RWB2
UniReffo-K7SPC5
UniRef90 C4K7DO
UniRef90-WORGY2
UniRef90_UPIO00466469A
UniRef90 LiM7Jo
UniRef90-UPI0004130C31
UniRef90-C6X1X0
UniRef90-U1210
UniRef90-J9G6N4
UniRefon
U8ANH
UniRef90-TOMTE2
UniRef90-UPIOOO37F6156
UniRef90-E1QH16
UniRef90 UPI0003B3F5C9
UniRef90 UPIO0036C9A23
UniRef90-A4BVD6
UniRef90-NOBN6C
UniRef90-UPIO00423CE58
UniRef90-IOR165
UniRet90_D3FWY4
UniRe90 L8XZN5
UniRef90-A5GDQ5
UniRef90 U1ELQ0
UniRef90 KolcJ4
UniRef90 CoW847
UniRef90_13CG36
UniRef90-IOICJ7
UniRef90-D2RDI6
UniRef90-UPIO003735CE8
UniRef90-101117
UniRet90_UPIOOO36B6976
UniRet90_COBGE8
UniRef90-A1U180
UniRef90-TOSOGO
UniRef90 UPIO00362B24C
UniRef90-UPIo0034816BF
UniRef90-J9HKR1
UniRef90_U5H9B2
UniRef90_Q4JTL5
UniRef90-ETYKL4
UniRef90
U6BVK5
UniRef90-UPIOOO469A1DO
UniRef90-UPI00037BEEE5
UniRef90_UPIO002F01EB6
UniRef90_11EOZ4
UniRef90 A8ZRR9 UniRef90-G8AV74
UniRef90-I1EOU5
UniRef90 UPIO003B3300A
UniRef90-Q7NZ52
UniRef90-COZQG9
UniRef90_W5XYM3
UniRef90 W5WER9
UniRef90-K8EXP5
UniRef90 U1POZ:

TGDRDAEFIPVDER GGETHRPFKAMSER TGAGMRD TGPEEREYVPDDER VGAATRDVPDVAKR RGPSQRDYLPIAKR TGPANAKYIPIAER TGEAERAYVPIEER TGEATRPYVPIAER VGPENREFVPIDDR VGPPRRDYAVNNR KGVTQRDVQPISSR VGPKHQTYKPVEER I GEGARDYVAIDQR VGEPLRPYVSIENR TGYELRDYVDIDNR RGATRRDFVPLAKR MGQTKRK
LGETSRDYVDDENR TGAADRDF
TGETERDFVPRDQR TGETHRVVIPRSER VGEAKRSYVPDDAR TGLIDQKFDNVTDR TGEGKRAFVSRDKR TGQKDRKYVAl EER VGPKDQTFTLIDER VGPARRDVKPVEQR VGAPRRDYVSQDRR VGPTERDYVPARRR IGETKRNYPGFE
TGARDQHYVDTKDR TGEQERAYRTDDR TGPDDQKFVPLDER
RGYTQRAF
TGPAERQY
TGPEDLEFVPTEKR TGVEQRAYVPI EQR
 QGAQKRDYLDLSAR VGPAPSPY川PAEDR KGYTKRDYDPSDQR
TGETQREFHAMHER TGETQREFHAMHER 1 GPDKQAYVSI EDR IGRTDSRFVPIDER VGPEEQNYIPIEQR TGATRREYVSLDQR
 TGPEDKPFVALENR NGHTDRKYEPIENR TGPAER
VGPAKQTYDPDEQR IGHTLRH
TGPEPMAYDPMDQR IGETNRTYLITEER VGPMGCEYTPLSGR TGEAERHYVAMHRR $\square G P E S R P Y V T \square D K R$ TGARERAW
IGEKGKKYIPLRER VGEPGRHYCNVSER
 TGHTQR
TGPEHQDWDPTDKR TGETERNYKDISER TGRERRSVPDPAQR TGHDPRDY TGEPNRAF PREKR LGEGSRPYVPMLER VGPEQRPV
NGP LTPY PD DDER KGKLLRNV
DGPEEREFVPDSAR
 TGYTTRDFTPLNKR VGETMREVLPI DER
 NGEDQREV
TGAARRDFVEVAKR SGVPQRTVV
VGEEQRSVPP
TGSAQREFI
VGPENRSYLPVEER


## UniRef90_UPI000405F800 UniRef90-UPIo003B30F4F

 UniRef90-K9ULS8 UniRef90-UPI0002D3FDBC UniRef90_W6EFI8 UniRef90-LODCV5 UniRef90-UPIO0035EFB2F UniRef90_L8F7M7 UniRef90-F3KJY9 UniRef90_UPIO003614F62 UniRef90_L8JDD2 UniRef90 A0CAS4 UniRef90-UPIO0022609F8 UniRef90-F4P4G1 UniRef90-B8GRN8 UniRef90-R9C7Z7UniRef90 B3QGC1 UniRef90-UPIO0045E9528 UniRef90-UPI00036EC6BA UniRef90-D2EFP4
UniRef90-TOMQG7
UniRef90_C8WDG3 UniRef90_UPI00031B19FA UniRef90-S6DBFO UniRef90-UPIO00425126C

FNEIVNYLL ${ }^{50}$
60
70
 FVETAYLL:SGRLPTREELTRTSVYLNDFSPMEENMKAFY FEEVAYLIWNGELPTQDQLSEFNERERGQRAVSQELIDDIT



## 

F
F


$34 C 06$
,

## 



##  <br> 

## 





## 




## F F F



F
F
F
F

## $F$ $Y$ $F$ $F$ $F$ $F$ $F$ <br> $F$ $F$ $F$ $F$ $F$

Y
F
F

F V EAA WLV DF GK L P TV V DRNRFSDLLTENSMMNENMRKHF
 Y L Q V C Y L L F K G E L P N K E Q Y Q T F V


UniRef90 UPIO00405F800 UniRef90-UPIO003B30F4F UniRef90-K9ULS8 UniRef90-UPIO002D3FDBC UniRef90 W6EFI8 UniRef90-LODCV5 UniRef90-UPIOOO35EFB2F UniRef90_L8F7M7 UniRef90 F3KJY9 UniRef90-UPIO003614F62 UniRef90-L8JDD2 UniRef90 A0CAS4 UniRef90-UPIO0022609F8 UniRef 90 -F4P4G1 UniRef90_B8GRN8 UniRef90-R9C7Z7 UniRef90-B3QGC1 UniRef90-UPIO0045E9528 UniRef90-UPI00036EC6BA UniRef90-D2EFP4 UniRef90-TOMQG7 UniRef90_C8WDG3 UniRef90_UPI00031B19FA UniRef90-S6DBFO UniRef90_UPIO00425126C UniRef90_UPIO003B30EA0 UniRef90-D8PHT4 UniRef90-STTLD5 UniRet90_SOEU46 UniRet90_A9WCM5 UniRef90_J5KGSO
UniRef90 B9L3Y9 UniRef90-F7VBG4 UniRef90_S0FQ86 UniRef90-V4L-1P5
UniRef90 S5RPH UniRef90-E1PND2 UniRef90-UPIOOO3B34C06 UniRet90-GOEGE5 UniRef90-T5KEN1 UniRef90-K2BKU6 UniRef90-W6LZ888 UniRef90-A1AXW0
U1WX UniRef90-Q8NSL1 UniRef90-F5ZAC9 UniRef90-I2NA89 UniRef90-E6VT08 UniRef90_COXUZ9 UniRef90_A6VTS6 UniRef90_H5TF32 UniRef90_G7E529

UniRef90 F2L4X7 UniRef90-F3KYA0 UniRef90-D6ZKM6 UniRef90-UPIO003621C70 UniRef90-G4E2L5 UniRef90-C5KTF6 UniRef90-X0QZZ2 UniRef90-D8JTR5 UniRef90-13BNS2 | UniRet90_UPIOOO16C5223 |
| :--- | UniRef90-E8N806 UniRef90-K6×860 UniRef90-UPIOO046FA2A8 UniRef90-H2FUP1 UniRef90-R5ENG6 UniRef90_U7PY58 UniRef90-A6W461

 UniRef90-T2BH666 UniRef90-M8D550
UniRef90 D8QLL4 UniRef90_D3RVR9 UniRef90_UVKOZ4 UniRef90-DOYTR8
UniRef90-Q96ZM7 UniRef90-M4R626 UniRef90-UPI000407D6F7 UniRef90-G4RNL9 UniRef90-W9DTL7 UniRef90-Q2GHY1 UniRef90_UP10004730772 UniRef90_U3Q639 UniRef90-UPIO0041153DE UniRef90-D5GEH4 UniRef90-G8W1P3 UniRef90-C3GAH9 UniRef90-AORMFO UniRef90 W7ZZ35

ETVIPVGAHPMGTLAAAVINLLAAYHGDDLEPEDADARDRAG GSYPPKSHPMG\|LSAMINALRSFYPELVDLDEEMNQ TFG KCFPETGHPMDALQASAAAGGLHYSRHALPNQDYARQAVI RTLPRNAHPMDIMRTGCSTLGCLEPEADNFSDQASKDTRGL EGFPLNAPPMAVLSAMDNTLSSSSCDGKLHEDDIDDLSA ERIPKDAHPMDVMRTGCSMLGNDEPEE GNNFDQAGDRID GNWRKDADPMDMLQAFVSALAGYYDEEFAT KEASYDKA KLYPADANTMAVLRTAVSALLLYDDSANDNSPASNQLKAL EADPADAHPMDVMRTGCSMLGNLDQEQDFSEQWEKTDILL EQVPAATHPMDVMRTGLSALGCVLPERRDQNPVGAREDAD KSFRYDAHPMGMLVSAIAAMSTFHPEA BYENESMVNKQIF KLMPLNVHPMAVLRSTVSLLGAYDESADVMDSETNYLKAV EALPAAAHPMDVMRSGVSSLGCVLPEAGDLNHPGARDDAD DSSPTSAHPMDVVRTAVSVMGAHDPTSDDASPGATDDKAV

 DLLSTSCHPMDVARTAVSVLGANHPKASDSSPEANLEKAM ERLPAATHPMDVARTAVSVLGCALDPERSDCPTAGALEKAM TRTPETCHPMDVIRTMISYLGAEDPDEDSASPMSLLDKAQ

RTLPPAASQMDRVKAAVAALLALFDPQREERTAETYRAVAV QAFRYDAHPMGILDSSVAAMSTLYPEAKNDHDPAVREKQ1
 ESLPAATHPMDVLRTGVSTLGCVLPERPDTPSAGARTDAD KTLPRSMTPMDMLQAATPLLIQADENAGKQTPADAQNSAE QSMPHDAHPLGAHVSAMSTLSLFHPDANPSSKQVRDEQTF DSFPDNAHPMAVLQGAVSSLSAFYPDHLNMNKEEYMEMAA GSFPRNAHPMSVMASAINALATFHPETCDVNDPDQLLKEAA EKLPQNAHVLDKMRVLVTLLYGWYGDGKPRMDTSKQVDAK
ELVPLDAHPMDEVRTAVSLIGASDPGAGGSSPEQNLERST EALPKTAHPMAVLETASSAIIGALQSEEAETPENDADYLIA EGFPPNAHPMALLSAMDNAMSCYEPGMMEDEDETTLEQAA STFPKTAHPMGVLSSATAALSAYYQDHPNPTDNDKEELFA HSLPKEAHPMDVMRTAVSYMGTKDSEYFTTDSEHDRKVGH ERLPKDAHPMDVLRTGCSMLGNLEMENDFSEQQQATDRML DGFPSAGHPMALLSAVINAMGCYHPDLLEGTDEEFLRATA ES KLIPKDTHPMDVMRTGCSFLGNVEPEADFEKQPQQRQAAN AAFRYDSHPMSIMVSAFSSLGAFSPEANPKALAVMDKQDF RSLAK AHPMFALEAAVAAEGAFDGRYKQEEKDLADKDAE RTV VDGHPMDVLRTAVSALAAFDPHTSDNSSEAVMQKTL TAFPSNGHPMSVLQAGVAGLATYYEDTLNPDPEQLEEATV EQDPPSAHPMDVMRTAVSMLGTLETEKDDMSVHGARADGD GGFQSSAHPMAVMVAVVGAMSAFYHDKDDWKNPAHRDMAD EALPAAAHPMDVLRSGISALGCALPEASDHNDHGTREDAD ELLPAATHPMDVLRTYVAVLGCVLPEKDGHKVAEAREDAD
 DGFPTAAPPMALLSAMINTLSAHEPVWSAHDDESDERAAA ERIPANAHPMDVMRTGCSMLGNLEPEQSDDNQQQLASN QAFRRDSHPMAVLCGVAGALSAFYHDSLDDTYDPEHRETAT KSFRYDSHPMSMLTATFASLGAFAPEANPDALLRTLDKQUI DDLPLTHPMDVVRTAVSVLGALDPAAGDASPEAELAKAE YGLPRDSDAVGMMETAFSALSSIYGSPW NKVTNRETAG DLIPADVDMMSVLRTGVSALAABYSADDHWPPSDDQVI EGFPRSAPPMA LSAMUNALSCFHPDYFELEEDHFQAAAA ESMPKDAHPMDTLRT FTSFVGQFDDHFTRDADH REDG号 GAFPSKGHPMSVLQAGVAGLATYYEDTLNPLDPEQLEAAT FSMPRNCDADGMMETAFGILASDYDPKWNR ATNKELAV QGFRRDSHPMAMLCGAASTLAAFYNDLVDTSCDKSRETALI GLLPKSAEPMDVLRTAVSAMGM GRNLSDRSPEAELERGG KEFEFGTEALDGLRTAISCTAHFDEENNHHTPDANKNKS KSFPRDSHPMS\|LMACFSALASCYHNQDNSADQLKC AK DCLPRDTEVMSALRTCIISAL

GSMRYDQDVM
GSMRYDSHPM TMCANPALQGRNLYIIHD
SGFRRDSHPMALMCALVGALAAFYHDVLDVNPQHRALAAT
ENDSKEADMMSKIRTILSSLGTNHFKWKPTDDDADR TAD
DCFDKAHPMAVLQASVATMSAYYKRDMNFDDMNYMELAK
DALPPGAHPMDEIRTAVSVIGAREGHEGGPTREENVARSL
 UniRef90_UPI0003B30F4F UniRef90_K9ULS8 UniRef90_UPI0002D3FDBC UniRef90_W6EFI8 UniRef90_LODCV5 UniRef90_UPI00035EFB2F UniRef90_L8F7M7 UniRef90 F3KJY9 UniRef90__UPIO003614F62 UniRef90_L8JDD2 UniRef90-A0CAS4 UniRef90_UPIO0022609F8 UniRef90-F4P4G1 UniRef90_B8GRN8 UniRef90_R9C7Z7 UniRef90_B3QGC1 UniRef90_UPI00045E9528 UniRef90 UPI00036EC6BA UniRef90_D2EFP4 UniRef90_TOMQG7 UniRef90_C8WDG3 UniRef90-UPI00031B19FA UniRef90_S6DBF0 UniRef90-UPIO00425126C UniRef90_UPIO003B30EA0 UniRef90-D8PHT4 UniRef90-S7TLD5 UniRef90_SOEU46 UniRet90_A9WCMS UniRef90-J5KGSO UniRef90_B9L3Y9 UniRef90-F7VBG4 UniRef90 S0FQ86
UniRef90 V4L1P5 UniRef90_S5RPH0 UniRef90 E1PND2 UniRef90-UPIOOO3B34C06 UniRefefo-GOEGE5 UniRef90-T5KEN1 UniRef90-K2BKU6 UniRef90-W6LZ888 UniRef90-A1AXW0 UniRef90-Q8NSL UniRef90-F5ZAC9 UniRef90-I2NA89 UniRef90-E6VT08 UniRef90-C0XUZ9 UniRet90-A6VTS6 UniRef90-H5TF32 UniRef90_G7E529 UniRef90-G2L427 UniRef90-F3KYA0 UniRef90_D6ZKM6 UniRef90-UPIO003621C70 UniRef90-G4E2L5 UniRef90-C5KTF6 UniRef90-X0QZZ2 UniR Refo-DOUTR UniRef90-li3BNS2 UniRe990_E8X2K7 UniRef90-UPIOOO16C5223 UniRef90-E8N806 UniRef90-K6×860 UniRef90-UPIIO0046FA2A8 UniRef90-H2FUP1 UniRef90-R5ENG6 UniRef90_U7PY58 UniRef90-A6W461
UniRef90 H2C5U0 UniRef90-T2BH66 UniRef90-M8D550 UniRef90-D8OIL4 UniRef90-D3RVR9 UniRef90-DOYTR8 UniRef90-O96ZM7 UniRef90-M4R626 UniRef90_UPI000407D6F7 UniRef90-G4RNL9 UniRef90-W9DTL7 UniRef90-Q2GHY1 UniRef90-UPIOO04730772 UniRef90_U3Q639 UniRef90-UPIOOO41153DE UniRef90-D5GEH4 UniRef90-G8W1P3
UniRef90 C3GAH UniRef90-C3GAH9
UniRef90 AORMFO UniRef90_D1BWFO

KIVLIMAQPQLIAAYAYRAVQGLDDFJVIDPKPELITDRENFLYMMF RLISKIRTMSAMAYK SRGHRVI YPRPDLCYCANFLNMMF RLLAKIPTMVAAF OLMRKGNDAVLPRDDLDYAANFLYMLT MGIV FPSILAYWHHYHVNGKELAPTSDLGYAANFHHMLH KLMSKVRTIAAYSYRRSLGLPFIYPDPKLRYVANFLHMMF RMVGVFPSIDCYWYRFSHDGVRVKTETDDDVGAHFLHMLH RMFAVLPTIVAADTRRRRGLEPIAPHSHLSYAENFLRMSLL NLIAKIPTIIASWQRVRDGLEDIDPDPSLDHAANFLYMMF
 RMIGSTTTITSLAYRNRDGRQPNQPHQQLGYVDNFLYMMD RCVASLGSLLLYWYHYATNGRRDEVETDDDVGHFLHLLH RCLGKLPTLAACAYRHRDGRSYNTPSNEDEYTENFLYMET RLACLGSALLY WHAYAHDGKR EETDDDSGGAF HMMH RLLASFGSMLDYWYHFAHTGRRIEETDDDSDGGHFLHLLH RLFAQLPAVVAYDQRRRRGQDLVPPRHDDDHAQNFLHMTF SITARIPSI IAAFDRVRKGKEIVAPLKEGSTAFNFLYMLN KI DAKTATUSADGRIKEGKEMIEPDNSLNHSANFLYMLT TLI AKVSTI AAATGRFRAKKSYIHPDNSLGHSENFLYMLT HRLAKLPTIAAMAYKYSVGQPFVYPDNSLSYVGNFLRMTF ELFAAFPAVVAYDQRRRRGQETVAPRDDLDYSANFLWMTF RLVASTGSMLLYWYHFSNHGRRIDTNTDDSVGGHFLHLLH RMFAVLPTVAADLRRRRGLEPIAPHHGLGYAENFLTMCF RLEAKLPSIVAYDQRRRHELEFVEPRDDLGYSANFLWQTF KISGVVRTISAFAYRKSMGRPFMYPDPNRSYCSNFLHMMF RL YA QL P TI I VNSYR LDSQGQEPATPRADLNHNANFFWMLT WRI IQQ I P TI AAFAYRTR $\quad$ GGRPFNLPDSSLSYTANLLYMMD RMI ATMPSIVTYWYKYSHEGDDIDLVNDDSMAGHFLHDLH RLVAQVPTIVATDGRLRRGLAPVPPADEPSTARAFLRTLH KLIACLGSMLLYWYHFSNHGRRIAETEDDSDGGHFLHLLH YLI SGLSTLIAAWDRVRNGRTPLAPDTSLGHAANFLYMLT
 RIVAKIPTIVATAYRYKHGFPMAYPNDDRGFTENFLYMLR TIIMKARTIVSYYLRRRRDEPMLYPDYSRGYVDDFLRMCF
 VFPALLMYWYYYANEKKRПEINLE DESVAAYFLHLLH ARTSKVRT AAASYKMSVGQPLMYPRADYKYAQNFLHMMF KIISNMSTLVAMWARISAGYDPIPPSRGMSYAKNFLYMSF QLLGQVKLIVARSYRNSQGLDPIESDSSLSYSKDFLNMMF TLLAQLPMVLAMDDRRRKGLDIAAPDSSKSVAENLLSMVF ACFPSUICYWYRFTHDGVRIDVETDDDSIGGHFLHMLH KIISKVRTI ATWSFRKGQGLPFMYPDPKLSYCRNFLHMMH TLLTKLPTVVALDTRRRRGEGYMEPDPAKGYAENFLWMVF RLLAAFPAIMCYWYRYSHEGLEUDCSSDESLGGHFLRLLN RLLGKSDTIAAMAYRDRQGRPFNRPPAGLSFVGSFLWMQK KLVAKLPTIVAYHYRFSRGLEPVRPRADLSHSANFLYMFF RLTSQVPMIVAAHHRDRQGLAPIEADASLGHAAHFLYQLS QLLAKLSVMVATIAKRAAGLPQLYPDASRELTEDF RMCF RLVACLGSALLYWHHYSRHGRRIEETDDESVGGHFLHLLH R $\ V G K M P T L A A M A Y K T A D G Q P T V Y P K K K Y S V A E N F L Y M M F$ RMLAVFPSITNYWYRFTHDNVRIETETDDTUGGHFLNLLK RLIASSGSMLLYWYHYANNGQRUSDDTGEDTAGQFLHLLH GLIASMPSALLYWYHFSRHGRRDEETEDDSDAGHFLHLLH RLLAQPPVAGAAHHRVVKGQPVVPARQDLGHAANFEYMLR VLLSKARTIAAAAYKSSDGEPIVYPRYDVKYVENFLHMMF RLLAAFPSIDCYWYRFSHHGVRINTTDDEQWGAHFLHLLH LLLALLPSMLCYWYRYTHDGERLDTADDDDSLGGHFLHMLR RIIGKAPTLAAAAYRMRQGRPFNRPGQDLSYTGNFLFMLD RLFAALPAVVAHAQRRRLGGQAPPPRDDLDHAANFLWMVT KV ${ }^{2} A R A S T V V T N V R A K E G K K R D P E P S D F A R S F L E A S F$ RLLGULPSMLCYWHHYVNFGKEDDFDSNQSDAGYFLEKLK SLTAKMPTVVAHRFARLAGREPLNPRQDLNHTANYLYMLK GLISKDRTIAAYAYRHSIGGQPYIYPHPGQRYDPNFLHMMF RLLAKFPTAVALDTRRRKGKGYVEPSKEKGFAENFLWMVF FQLGKVPTMVAMIAKRAEGLPTLYPDSSRELTEDFIRMTF QIIAKTAT TANIYRAKEGLKPKIDPESESYAESFLAATF RLLAKMPTLAAMCYKYSVGRPFMYPQNHLSYAGNFLYMMF SLLAKLPTVVAYDLRRRRGADVIAPSRDRGVASNFLYMCF EVIASMPFIAANWDRTRRGDEIADPQAE GHAEYFLRACK LLVAKVASIIAALYRYSTNEDFVESDTKLSYGANFVYMLS ALTA APTI AYWYRKMNGQEVVEPNENLDHVANYLYMDT HLDAKLPDLAALTYRKKVGLPPPHDNPNLDYTSNLLEMFF R I GKSATVAAASMRVRMNRPFIAPRSDMGFAENMLYMMD RLLSKMPTIAAMSYKYTDEQPAAYPRNDLSYAGNFLQMLF
 RLFAALPATVAYGQRRBHGLTPVPPREDLTYAQNFLWMTH

## UniRef90_UPIO00405F800 UniRef90-UPIooo3B30F4F UniRef90-K9ULS8 UniRef90-UPI0002D3FDBC

 UniRet90_W6EFI8 UniRef90-LODCV5 UniRef90-UPIIOOO35EFB2F UniRef90_L8F7M7 UniRef90-F3KJY9 UniRef90_UPIO003614F62 UniRef90-L8JDD2 UniRef90-AoCAS4 UniRef90-UPIO0022609F8 UniRet90-F4P4G1 UniRef90-B8GRN8 UniRef90-R9C7Z7UniRef90 B3QGC1 UniRef90_UPIO0045E9528 UniRef90-UPI00036EC6BA UniRef90-D2EFP4 UniRef90-TOMQG7 UniRet90_C8WDG3 UniRef90-UPIOOO31B19FA UniRef90 S6DBFO UniRef90-UPIO00425126C UniRef90_UP10003B30EA0 UniRef90_D8PHT4 UniRef90-S7TLD5
UniRef90 SoEU4 UniRef90-A9WCM5 UniRef90_-JKGSO UniRefo-byI3Y9 UniRef90-F7VBG4 UniRef90-SOFQ86 UniRet90-S5RPHO UniRef90-E1PND2 UniRef90OUP10003B34C06 UniRefefo-GOEGE5 UniRef90-T5KEN1
UniRef90_K2BKU6 UniRef90-W6LZ888 UniRef90-A1AXWO UniRef90-Q8NSLL UniRef90-F5ZAC9 UniRef90-I2NA89 UniRef90-E6VTO8
UniRef90_C0XUZ9 UniRet90-A6VTS6 UniRef90-H5TF32 UniRef90-G7E529
UniRef90 F2L4X7 UniRef90-FЗКҮА0 UniRef90-D6ZKM6 UniRef90-UPIO003621C70 UniRef90-G4E2L5 UniRef90-C5KTF6 UniRef90-X0QZZ2 UniRef90-D8JTR5 UniRef90-13BNS2
UniRef90 E8X2K7
 UniRef90-E8N806 UniRef90-K6×860 UniRef90-UPIOOO46FA2A8 UniRef90-H2FUP1 UniRef90-RENG6 UniRet90_U7PY58 niref90-A6W461
UniRef9O-H2C5U0 UniRef90-T2BH66 UniRef90-M8D550 UniRef90-D8OIL4 UniRef90-D3RVR9
UniRef90-UTKOZ
UTR UniRef90-DOYTR8
UniRef90 O96ZM7 UniRef90-M4R626 UniRef9O-UP1000407D6F7 UniRef90-G4RNL9 UniRef90-W9DTL7 UniRe990_O2GHY1
UniRet90_UPIOOOA730772 UniRef90-U3Q639 UniRef90-UPIO0041153DE UniRef90 D5GEH4 UniRef90-G8W1P3

UniRef90 C3GAH9 UniRef90-AORMFO | UniRet90_WBZZ35 |
| :--- |

180
190
200
GKEADPQLVTALDKLLEVHADHEQNCSTSTVRMVASSGAN P Y H $\quad$ DD D D M V R A L N V F W
 NK QPS ELWWI KAMHVSLI LYAEHEFNASTFAARIGASTLSD SMPYE QEVV DADNLIL MLHADHE QNCSTSTVVRVVGSSSKAN


## 

 GK E P S A E WV K A M H V

 GATPPPVVADAFRVVMVLVAAEHSFNA




 GHKH GDAMAQVLNV S LI LYA EHEFNASTFAARVTA STMT D S IP Y K EA Q DK AL S L F L VMHA D HE Q NC SCSTVRMVCS SQA N GHEPS DLI GRAFNV SQLI LYAEHGYNASTGAARVTVVSTLS D


 GEPPDPETAAFF DAGLVLHAE HSFNASTFTARQVASTKAH



 GKKPENLLSGAVDDSFILYAEHEFNASTFAARVTAATKA D




 DK EPSALHTQVMNASSI LYAE HEFNASTGTARVVCASTTLSD

 $G \operatorname{L} P Y Q P A M V R A L D R L D I L H A B D H E Q N C S T S T V R F V G S S H A N$

 GEKPNELHTKVMNVSLI LYAEHEFNASTFTARVCASSTLS D
 GCAASAEWVGAMETALILYAEHEFNASTFAARVIAGTGSD



















UniRef90_UPIO00405F800 UniRef90-UP10003B30F4F UniRef90-KgULS88 UniRef90-UPI0002D3FDBC UniRet90_W6EFI8 UniRef90-LODCV5 UniRef90_UPIO0035EFB2F UniRef90_L8F7M UniRef90-F3KJY9 UniRef90-UPIOOO3614F62 UniRef90_L8JDD2 UniRef90 AoCAS4 UniRef90-UPIO0022609F8 UniRef90-F4P4G1 UniRef90-B8GRN8 UniRef90-R9C7Z7
UniRef90
B3QGC1 UniRef90-UPIO0045E9528 UniRef90-UPI00036EC6BA UniRef90-D2EFP4 UniRef90-TOMQG7 UniRet90_C8WDG3 UniRef90_UPI00031B19FA UniRef90-S6DBFO UniRef90-UPIO00425126C UniRef90-UPIO003B30EAO UniRef90-D8PHT4 UniRef90-STTLD5 UniRef90-A9WCM5 UniRef90_-J5KGS0 UniRef90-B9L3Y9 UniRef90-F7VBG4 UniRef90_V4L1P5 UniRet90_S5RPH0 UniRef90_E1PND2 UniRef90-UPIOOO3B34C06 UniRefefo-GOEGE5 UniRef90-T5KEN1 UniRef90-K2BKU6
UniRef90
W6LZZ8 UniRef90-A1AXW0 UniRef90-E1WXU5 UniRef90-Q8NSL1 UniRef90--52ZAC9 UniRef90-12NA89 UniRef90-E6VTO8
UniRef90_C0XUZ9 UniRef90-A6VTS6 UniRef90-H5TF32 UniRef90-G7E529 UniRef9-G2L4X7 UniRef90 D6ZKM6 UniRef90-UPIOOO3621C70 UniRef90-G4E2L5 UniRef90-C5KTF6 UniRef90-X0QZZ2 UniRef90-D8JTR5 UniRef90-13BNS2 UniRef90-E8X2K7
UniRef9O_UPIO0016C5223 UniRef90-E8N806 UniRef90-K6×860 UniRef90-UPIO0046FA2A8 UniRef90-H2FUP1 UniRef90-R5ENG6 UniRef90_U7PY58 UniRef90-A6W461 UniRef90-H2C5U0 UniRef90-T2BH66 UniRef90-M8D550 UniRef90-D8QIL4
UniRet90 D3RVR9 UniRef90-D3RVR9 UniRef90-DOYTR8 UniRef90-O96ZM7 UniRef90-M4R626 UniRef90-UPIO00407D6F7 UniRef90-G4RNL9 UniRef90_W9DTL7 UniRef90-Q2GHY1 UniRef90-UP10004730772 UniRef90-U3Q639 UniRef90-UPIOOO41153DE
 UniRef90-С3GAH9 UniRef90-AORMFO UniRef90_DBWFO
UniRef90_ W7ZZ35

sse
 IYYAVVAGIVSALWGPLHGGANQAVIHMLEKIUKGGMSFDE MYSAVAGAVGALKGALHGGANEAVMAMLEEVGTADKASAW TYSAITAAI GVLRGPLHGGANEAAMELI SEYKSVHEATRG LYASCAAGVGALWGPLHGGANVAVLEMLEADHEGGMSAAE IYSAVTAAI GALKGSLHGGANEAVMHDMIEMGSADRVPEW MYSAASAA GALSGELHGGANTEVMKMLLEGGTDDNVVPW IYTAl A GAAAA Y G MYSALCGGDGALRGPKHGGANEVALEDQQRYQTPDA QF PFVCLAGASSALYGPSHGGANEAALRMLEEDGSDEK DPAF MYSALTGAlGALRGPKHGGANEVACEWQLRYHNPDEAEAD VYSGITSAI GALKGPLHGGANEAVMKMLTEDGS $\square D N V E P Y$ FYSAlVGAIGALRGPKHGGANEAAFEDQKRYATAEEAEAD

- <
- <



## - -

UniRef90_UPI000405F800 UniRef90-UPI0003B30F4F UniRef90-K9ULS8 UniRef90-UPI0002D3FDBC UniRef90_W6EFI8 UniRef90-LODCV5 UniRef90_UPI00035EFB2F UniRef90_L8F7M7 UniRef90_F3KJY9 UniRef90-UPI0003614F62 UniRef90_L8JDD2 UniRef90 A0CAS4 UniRef90-UPI00022609F8 UniRef90-F4P4G1 UniRef90_B8GRN8 UniRef90-R9C7Z7 UniRef90-B3QGC1 UniRef90_UPI00045E9528 UniRef90_UPI00036EC6BA UniRef90-D2EFP4 UniRef90-TOMQG7 UniRef90_C8WDG3 UniRef90_UPI00031B19FA UniRef90-S6DBF0 UniRef90_UPIOO0425126C UniRef90_UPI0003B30EAC UniRef90-D8PHT4 UniRef90-S7TLD5 UniRef90_SOEU46 UniRet90_A9WCM5 UniRef90_B9L3Y9 UniRef90_F7VBG4 UniRef90-V4L1P5 UniRef90-S5RPH0 UniRef90_E1PND2 UniRef90-UPIO003B34C06 UniRef90_G0EGE5 UniRef90-K2BKU6 UniRef90-W6LZ88 UniRef90-A1AXW0 UniRef90_E1WXU5 UniRef90-Q8NSL1 UniRef90-F5ZAC9 UniRef90-I2NA89 UniRef90_E6VT08
UniRef90_COXUZ9 UniRef90-A6VTS6 UniRef90-H5TF32 UniRef90-G7E529 UniRef90-F2L4X7 UniRef90-DVZKM6 UniRef90_UPI0003621C70 UniRef90_G4E2L5 UniRef90-C5KTF6 UniRef90-X0QZZ2 UniRef90_D8JTR5 UniRef90-I3BNS22 UniRef90_UPIO0016C5223 UniRef90-E8N806 UniRef90-K6X860 UniRef90-UPIO0046FA2A8 UniRef90-H2FUP1 UniRef90-R5ENG6 UniRef90_U7PY58 UniRef90-A6W461 UniRef90-H2C5U0 UniRef90-T2BH66 UniRef90_M8D550
UniRef90_D8QIL4 UniRef90-D3RVR9 UniRef90_U7KOZ4 UniRef90_DOYTR8
UniRef90_Q96ZM7 UniRef90-M4R626 UniRef90-UPI000407D6F7 UniRef90-G4RNL9 UniRef90-W9DTL7 UniRef90_Q2GHY1
UniRef90_UPIO004730772 UniRef90-U3Q639 UniRef90_UPIO0041153DE UniRef90 D5GEH4 UniRef90-G8W1P3
UniRef90- 3 GAH UniRef90_AORMFO UniRef90-D1BWF0

250
260
270
280
KVKNKEDGVR|LMGFGHR|VYKSYDPRAVI|GKKTAHEVDELL
 QCDESDPKYKFMGFGHRVYKVKDPRAMMLQDLAEQLERKF
IDDALAKKAKIMGFGHRVYKKGDSRVPTMRKAFEDMVRVK I YEKLENKAKIMGFGHRVYVSNDPRNIVIKEWSRKLADDV

 I KERMEKGERIMGMGHAVYKTYDPRATVLKELSRKLGAKT I KQKLAANREKI MGFGHRVYKQGDPRAKHLQRMSRQLSGMK



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

 VREALARKQRIMGFGHREYKHGDERARIAKQYVIELVNSK

 LRRLDAKEVI IGFGHPVYT IDSDPRNEII KRAALKLAQKS
 I KRAKDDPFRLLMGFGGHRVYKNFDPRAKVVLKKLRDQLIDELL VDRAKDAGERISGLGHRVYKSYDPRAAI AKQYLGKIMERK
 I KALLEKKTLI MGFGHRVYTQNDPRSDIIKQWAKRLSLYF
 ALEKAKDKEDLMGFGHRVYKNFDPRAKIIKVQCDKVLEKD DNNALDNKNVVMGFGHRVYKRGDSRVPSMEKSFRELAARH MMAMLARKDKIMGFGHAIYSESDPRNEDIKGWSEKLAADV LDEALSARRRIMGFGHRVYKHGDSRVPIMQAADDRLVARA

 MAAMLERKEKIMGFGHAIYRTSDPRNVIIKAWSEKLAKQN LERVKRKDADLSGFGHRVYKTSDPRSHIVVKVAEEEVFEVT VEAATKPGGPLMGVGHRVYKAYDPRAKIFKKLVEDYTAKF
 LQEKLDSQEKIMGFGHRVYKTQDPREKYLREMAKELTE GT
 LA DVKAKKDRLMGFGHRVYKNFDPRATYMKKLTYEVLEAC
 I RKRVEAREVIDGFGHPVYTVSDPRNKI I KEVARGLAAGA $V R S A L A R K E R I M G F G H R V Y K A G D V R A G U L K K Y A R G A A D T A$ LDDALANKRKIMGFGHRVYKKGDSRVPTMKTADDTLVAHY YVRKREDGVKLMGFGHRVYRNFDPRSKDLRAAAEDLLEEM
 I ARAKDDPFRLFGFGHRVYKTFDPRAIVMRDTCHEVLDHK MQAVERRERVLVGFGHRVYKNVDPRSVADRKLAEEVFAVT LAA A LA GHRKVMGFGHRVYRHGDSRVPTMHAALRELATDR FQKKI EGKARLMGFGHRVYKTYDPRAKLFKRFAKQLAERN VNKKLENKELLMGFGHRVYGLGGDPRNALIKVWSKH

 CKDRLASKQVVMGFGHRVYKTGDSRVPTMEAAFKKLAANT FVEKKAEGVKLMGFGHRVYKSYDPRAAVVKESAHDVLSRL FEEK IIKGKRLMGFGHRVYKTYDPRAKIFKTLAKSFAEKN IARAKDDPFRLMGFGHRVYKNYDPRAKVMRETCHEVLKEL

 IQKVKDGNKRLMGFGHRVYKNYDPRAKIMYKICRELNNDN $V R Q K L E N K E K I M G F G H R V Y R T H D P R A E A L K E V S K Q I S D$ WIEKAKNKKRLMGFGHRIYKNFDPRAKDAKKVAEN DQQL LRSALERGERLMGFGHRVYKTRDPRALALREVVEETMRGED
 I RRELLENDSRIIGF

[^0]UniRef90_UPI000405F800 UniRef90_UPI0003B30F4F UniRef90-K9ULS8 UniRef90_UPIO002D3FDBC UniRef90_W6EFI8 UniRef90-LODCV5 UniRef90_UPI00035EFB2F UniRef90-L8F7M7 UniRef90-F3KJY9 UniRef90_UPI0003614F62 UniRef90_L8JDD2 UniRef90-A0CAS4 UniRef90-UPI00022609F8 UniRef90-F4P4G1 UniRef90-B8GRN8 UniRef90-R9C7Z7 UniRef90-B3QGC1 UniRef90_UPIO0045E9528 UniRef90_UPI00036EC6BA UniRef90-D2EFP4
UniRef90-TOMQG7
UniRef90_C8WDG3
UniRef90_UPI00031B19FA UniRef90-S6DBF0 UniRef90_UPIO00425126C UniRef90_UPI0003B30EAO UniRef90-D8PHT4 UniRef90-S7TLD5 UniRef90_SOEU46 UniRef90_A9WCM5 UniRef90-J5KGSO
UniRef90 B9L3Y9 UniRef90-F7VBG4 UniRef90-S0FQ86 UniRef90_V4L1P5 UniRef90-E1PND2 UniRef90_UPIO003B34C06 UniRef90-G0EGE5 UniRef90-T5KEN1 UniRef90_K2BKU6 UniRef90-W6LZ88 UniRef90-A1AXW0 UniRef90_Q8NSL1

## UniRef90_F5ZAC9

UniRef90-I2NA89 UniRef90-E6VT08 UniRef90-COXUZ9 UniRef90_H5TF32 UniRef90-G7E529 UniRef90-F2L4X7 UniRef90-F3KYA0 UniRef90_D6ZKM6 UniRef90_UPIO003621C70 UniRef90_G4E2L5 UniRef90-C5KTF6 UniRef90-X0QZZ2 UniRef90_D8JTR5 UniRef90-I3BNS2
UniRef90 E8X2K7 UniRef90_UPIO0016C5223 UniRef90-E8N806 UniRef90-K6X860 UniRef90-UPIO0046FA2A8 UniRef90-H2FUP1 UniRef90-R5ENG6 UniRef90_U7PY58 UniRef90-A6W461 UniRef90-H2C5U0 UniRef90-T2BH66 UniRef90-M8D550 UniRef90-D8QIL4
UniRef9OD3RVRR9 UniRef90-D3RVR9 UniRef90-DOYTR8 UniRef90-Q96ZM7 UniRef90-M4R626 UniRef90_UPI000407D6F7 UniRef90-G4RNL9 UniRef90-W9DTL7 UniRef90-Q2GHY1 UniRef90_UPIO004730772 UniRef90_U3Q639 UniRef90_UPIO0041153DE UniRef90_D5GEH4 UniRef90-G8W1P3
UniRef90 C3GAH9 UniRef90-A0RMFO UniRef90-D1BWF0
B34C06
3
6
6
6
6
6



320


## B

UniRef90 UPIO00405F800 UniRef90-UPIoo03B30F4F UniRef90-K9ULS8 UniRef90-UPI0002D3FDBC UniRef90_W6EF18 UniRef90-LODCV5 UniRef90-UPI00035EFB2F UniRef90_L8F7M7 UniRef90 F3KJY9 UniRef90-UPIO003614F62 UniRef90_L8JDD2 UniRef90- A0CAS4 UniRef90_UPIO0022609F8 UniRef 90 -F4P4G1 UniRef90-B8GRN8 UniRef90-R9C7Z7 UniRef90-B3QGC1 UniRef90-UPIOOO45E9528 UniRef90-UPI00036EC6BA UniRef90-D2EFP4
UniRef90-TOMQG7
UniRet90_C8WDG3
UniRef90-UPI00031B19FA UniRef90-S6DBFO
UniRef90_UPIO00425126C UniRef90 UPI0003B30EA0 UniRef90-D8PHT4
UniRef90-D7TLD5 UniRef90 SOEU46 UniRef90_A9WCMS
UniRef90_B9L3Y9
UniRef90-F7VBG4 UniRef90_S0FQ86 UniRef90-V4L1P5
UniRef90
S5RPH UniRef90-E1PND2 UniRef90_UPIO003B34C06 UniRet90-GOEGE5 UniRef90-T5KEN1 UniRef90-K2BKU6 UniRef90-W6LZ888 UniRef90-A1AXW0 UniRef90-Q8NSL UniRef90-F5ZAC9 UniRef90-I2NA89 UniRet90-E6VT08 UniRef90_C0XUZ9 UniRet90-A6VTS6 UniRef90-H5TF32 UniRef90_G7E529 UniRef90-G2L427 UniRet90-F3KYAO UniRef90_D6ZKM6
UniRef90_UPIO003621C70 UniRef90-G4E2L5 UniRef90-C5KTF6 UniRef90-X0QZZ2

## UniRef90_D8JTR5

UniRef90-E8X2K7
UniRef90-UPIO0016C5223 UniRef90-E8N806
UniRef90-K6×860 UniRef90-UPIO0046FA2A8 UniRef90-H2FUP1 UniRef90-R5ENG6 UniRef90_U7PY58 UniRef90-A6W461 UniRef90-H2C5U0 UniRef90-T2BH66 UniRef90-M8D550 UniRef90-D8OIL4 UniRef90-D3RVR9 UniRef90-DOYTR8 UniRef90-O96ZM7 UniRef90-M4R626 UniRef90-UPI000407D6F7 UniRef90-G4RNL9 UniRef90-W9DTL7 UniRef90-Q2GHY1 UniRef90-UPIOO04730772 UniRef90_U3Q639 UniRef90-UPIOOO41153DE UniRef90 D5GEH4 UniRef90-G8W1P3
UniRef90 C3GAH9 UniRef90-AORMFO UniRef90_D1BWFO
UniRef90_W7ZZ35


340
350
360
GFSTDFFTVLFATGRTPGWIISQFNEQVSEPSKINRPRQTY GIPTNMFTVMFAIGRLPGWI AQWKEDLDPEMKLCRPRQI Y GIPADLFTPVFAIARVAGWLAHWNEQLEANRGYRPTQIY GПPTAYFTPIFVMSRTAGWAAHVVEQR GDNKLIRPNSEY G! PTSMFTVI FADGRMPGWDAHWKEQHDRASRIARPRQ\Y
 K 1 PMDLNTPIFAISRVAGWAAHIIEEKAPKPALYRPKAVY





 GIQPDLYTAI FAMSRVSGWTGHFVEQAANNRLI RPRABY




 GI PRESMSTPLFVCSRITGWCAHVMEQQEAHNRLIRPRALY
-

##  <br> 

 <br> }
## 

## G

 KIPQTHFTP DFAMARSA GWTAHWHE





## G


RVPTAMFTPLFVMARTAGWAAHVIEQRDDGKIIRPAANY
GFDTPTFTPLFVAARVTGWTAHIIEQTA SNALIRPLGAY

## -


-

UniRef90 UPI000405F800 UniRef90-UPI0003B30F4F UniRef90_K9ULS8 UniRef90_UPI0002D3FDBC UniRef90_W6EFI8 UniRef90_LODCV5 UniRef90_UPI00035EFB2F UniRef90_L8F7M7
UniRef90-F3KJY9
UniRef90_UPI0003614F62
UniRef90_L8JDD2
UniRef90 A0CAS4 UniRef90_UPI00022609F8 UniRef90_F4P4G1 UniRef90_B8GRN8 UniRef90-R9C7Z7
UniRef90
B3QGC1 UniRef90_UPI00045E9528 UniRef90 UPI00036EC6BA UniRef90_D2EFP4
UniRef90-T0MQG7 UniRef90_C8WDG3 UniRef90 UPI00031B19FA
UniRef90_S6DBF0
UniRef90_UPIO00425126C
UniRef90-D8PHT4
UniRef90-S7TLD5
UniRef90_S0EU46
UniRef90 A9WCM5
UniRef90_J5KGSC
UniRef90 B9L3Y9
UniRef90_F7VBG4
UniRef90_S0FQ86
UniRef90-V4L1P5
UniRef90 E1PND2
UniRef90_UPI0003B34C06
UniRef90_G0EGE5
UniRef90_T5KEN1
UniRef90_K2BKU6
UniRef90_W6LZ88
UniRef90_A1AXW0
UniRef90_E1WXU5
UniRef90_Q8NSL1
UniRef90_F5ZAC9
UniRef90_I2NA89
UniRef90 E6VT08
UniRef90_C0XUZ9
UniRef90_A6VTS6
UniRef90 H5TF32
UniRef90-G7E529
UniRef90 F2L4X7
UniRef90_F3KYA0
UniRef90 D6ZKM6
UniRef90-UPI0003621C70
UniRef90_G4E2L5
UniRef90_C5KTF6
UniRef90-X0QZZ2
UniRef90-D8JTR5
UniRef90_I3BNS2
UniRef90_E8X2K7
UniRef90_UPI00016C5223
UniRef90_E8N806
UniRef90 K6X86
UniRef90_UPI00046FA2A8
UniRef90 R5ENG6
UniRef90_U7PY58 UniRef90_A6W461
UniRef90-H2C5U0
UniRef90_T2BH66
UniRef90_M8D550
UniRef90-D3RVR9
UniRef90 U7K0Z4
UniRef90_D0YTR8
UniRef90 Q96ZM7
UniRef90_M4R626
UniRef90-UPI000407D6F7
UniRef90_G4RNL9
UniRef90_W9DTL7
UniRef90 Q2GHY1
UniRef90_UPI0004730772

UniRef90_U3Q639
UniRet90_UPI00041153DE
UniRef90 ${ }^{-}$D5GEH4
UniRef90_G8W1P3
UniRef90_C3GAH9
UniRef90 A0RMF0
UniRef90_D1BWF0
UniRef90_W7ZZ35

T GETDREFVAIIENR TGHEDNHYVPLDER TGEHQQPYMA GGDR $D G P E Q R E V$
IG P EN R A YVD $\square \mathrm{KN} \mathrm{R}$
 SGHPQRALV

 QGY K K T R E Y VG P E D R A F V H I H N R
TGPENQPWMPMDKR VGPERDEYVPVNKR V GPEN RLDFVPIE QR V G S P ERH

V G EKNLD WVP VIE ER | $V$ | $G$ | $K$ | $I$ | $D$ | $L$ | $E$ | $Y$ | $L$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $I$ | $E$ | $K$ | $R$ |  |  |  |  |  |
| $S$ | $G$ | $S$ | $V$ | $D$ | $L$ | $K$ | $Y$ | $T$ | $P$ | $T \mathrm{G} V \mathrm{~S} T \mathrm{R} \mathrm{D} Y \mathrm{~V} \mathrm{~N} \mathrm{I}$ E N $N G P E Q R Q V$

VGPDNRPFVPLRER S GPQQRSV

## NGVDERHVPVKD

 TGPAPRTYEPLDRR MGPA E R K Y R S I E E R IG P S ERRPVLPL S QR | l | G | $E$ | $S$ | $S$ | $D$ | $W$ | $V$ | $D$ | $I$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $G$ | $R$ |  |  |  |  |  |  |  |  |

 $V G P D E C R F D G I E E R$ $N G \square W \mathrm{~L}$ R H Y E P V K E R
VGSKKR
L G E T
 $T G P L N L P Y L$
$D G P D E R H V$
TGPVPRAFIP DQDR
$M G N T \square Q D Y V P R D L R$
$\square G S N F R N Y$
TGATERNYKDLGER


$\square G \mathrm{D} T \mathrm{P}$ R P Y $\square \mathrm{P} \square \mathrm{DK}$ K NGPDERHV
IG P D H S E WVD ID D R VGADPRKVI PI A QR TGETQRDWVDI K DR
 IGHSERHYQNLRAR
 I GP ENRA WKPL L QR $V$ G S R MREYV
 TGAE K R I Y $V$ PMD QR
 $K G P A A R N V V P L A R R$ $N G V D E R H$
I G P T DVQWK P R S ER

 | $V$ | $G$ | $P$ | $G$ | $H$ | $R$ | $D$ | $L$ | $P$ | $D$ | $K$ | $R$ |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $T$ | $G$ | $K$ | $E$ | $L$ | $R$ | $S$ | $V$ | $K$ | $S$ | $M$ | $S$ | $R$ |
| $R$ |  |  |  |  |  |  |  |  |  |  |  |  | VGEAARDYAALEAR DGPPLRH

VGP P DR R E VI P D E L R I G V E P R K F V K i Q D R I GSMP
$V G P G R R E Y T P V G E R$ $V G P G D T D H V P R E A R$ NGPEERSVPAEN
VGAAERHY
IGPEKKREFKP $\square E L R$
TGHKERH
V G P G R R E $\square N P$
I GPQGGLRY V Q C E A R
V
IG YKK Y T P VE Q
I G Y K K R
V G S MP E S Y I
V G P Q VR D YV P $\square$ E C R
$V$ G E G Y R D V V
TGDTKQK
VGP T
TGAPERQV
UniRef90 UPI00037FA1AC UniRef90-UPSE62
UniRef90-BSSE4K6
UniRef90 M2Y4K6 UniRef90-M2Y4K6
UniRef90- UPI0004125CB6 UniRef90 G7QL96 UniRef90_UPI00041FF062 UniRef90-R8W078 UniRef90-P39119 UniRef90-Q65DF7
UniRef90-R7ZD46 UniRef90-E7QXM0 UniRef90-D4J2C9 UniRef90-R5YAT3
UniRef90-W1SP45 UniRef90-WOK3Y7 UniRef90-R6C7T4 UniRef90-Q9ZN37 UniRef90_UPI0003F93EF6 UniRef90_J9HVR1 UniRef90_C6BZ69
UniRef90 Q9YB84 UniRef90-R7B3H7 UniRef90_D1ATK7 UniRef90_UPIO0037369DF UniRef90-R6RU61 UniRef90-E5VRA6 UniRef90_Q97C64 UniRef90_UPIO002E098D4 UniRef90-D4LSA3 UniRef90-UPIO0041750CC UniRef90_UPI000424CA71 UniRef90-R6UFY6 UniRef90-K4R1N0 UniRef90-B6ABP9
UniRef90 K2FQF4 UniRef90_C4GAH2 UniRef90-K6W8W6 UniRef90-R6X1S2
UniRef90 F7V4M2 UniRef90_UPI0003B2F822 UniRef90-F4LL89 UniRef90_UPI000475A5BF UniRef90_U5LDK6 UniRef90_M3UMV3
UniRef90_H9UMI5 UniRef90-UPI000315EECB UniRef90_R6H0G6 UniRef90-AOBSH2 UniRef90-E0E2Z1 UniRef90-V8C965 UniRef90-S9SZK7 UniRef90-D3SXN5 UniRef90_R6FZJ8 UniRef90_R5WY31
UniRef90_R6CMB1 UniRef90-R6RHY8 UniRef90-U2KZE4 UniRef90-M3CYH1 UniRef90-H5XWY2 UniRef90-D4LCH0
UniRef90 C8VYE3 UniRef90-B0PHJ2 UniRef90-D5HIK8 UniRef90-UPIO0036FDB0E UniRef90_R7HZX6 UniRef90-W7Z5W6 UniRef90-R5S6S8 UniRef90 R2SAK6 UniRef90_R6SNJ5
UniRef90_F8WZD0 UniRef90-R5L9M8 UniRef90-R6T8Q1
UniRef90_D1PQ17 UniRef90-B1C288 UniRef90_R6WDF3 UniRef90-R5T5H3
UniRef90 R6IAK7 UniRef90-R6BFG6 UniRef90-F9T3X4 UniRef90-J8Q414 UniRef90-G9RSW9 UniRef90-R5Zl33 UniRef90-R7HUN1 UniRef90_UPIO004689EC2 UniRef90_R4KQA9 UniRef90-A0A011RJM4 UniRef90_UPI00035C5383 UniRef90_Q2ES55 UniRef90_E4T397 UniRef90_C4P321
-


 IT K G LIK G I A A A E T S | $V$ | $K$ | $R$ | $G$ | $L$ | $R$ | $G$ | $V$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $A$ | $G$ | $L$ | $T$ |  |  |  |  |
| $V$ | $H$ | $Y$ | $G$ | $L$ | $K$ | $G$ | $I$ | $T$ |



|  |  |
| :---: | :---: |


VKPGLRNVVVTKT

VKRGLRGVLAGLT
VKRGLRGVLAGGT VKRGLEGIVAAETAI


DPGYTSTASCCSAA
PGLDGVVATETEL V

RGLRGVLVGETD VKRGLRGVCAGL
 VKRGLRGVLAGLTE

$\qquad$
V $\begin{array}{llllllllll} & G & P & G & L & E & G & A & A & C \\ V & F & V & S & A & S & C & S \\ V & R & R & L & R & G & V & L & T & G \\ N & R & G & L & R & G & V & L & T & G \\ L\end{array}$
 $V K R G L R G V L T G L T N$


 | $V$ | $K$ | $R$ | $G$ | $L$ | $R$ | $G$ | $V$ | $L$ | $T$ | $G$ | $L$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $E$ | $I$ |  |  |  |  |  |  |  |  |  |  |
| $V$ | $R$ | $G$ | $L$ | $R$ | $G$ | $V$ | $M$ | $A$ | $G$ | $L$ | $T$ | $N$ | $V$ K R GLL R GVVLA GLT

 K GLK GVV A V Q T \begin{tabular}{l|lllllllllll}
$V$ \& $K$ \& $R$ \& $G$ \& $R$ \& $R$ \& $G$ \& $V$ \& $L$ \& $V$ \& $G$ \& $L$ <br>
$V$ \& $K$ \& $R$ \& $G$ \& $L$ \& $R$ \& $G$ \& $V$ \& $R$ \& $A$ \& $G$ \& $L$ <br>
\hline

 $V$ K R GLL R G V L V G L T E I 

$V$ \& $K$ \& $R$ \& $G$ \& $L$ \& $R$ \& $G$ \& $V$ \& $L$ \& $A$ \& $G$ \& $L$ \& $T$ <br>
$V$ \& $E$ \& $I$ \& $S$ <br>
$V$ \& $K$ \& $R$ \& $G$ \& $L$ \& $R$ \& $G$ \& $V$ \& $L$ \& $T$ \& $G$ \& $L$ \& $T$ <br>
$N$ \& $N$ \& $I$ \& $S$
\end{tabular}

V $V$
$V$
$V$
$V$
 $\vee \mathrm{K} R \mathrm{G} L \mathrm{R}$ G V L T G L T








| $V$ | $K$ | $R$ | $G$ | $L$ | $R$ | $G$ | $V$ | $L$ | $T$ | $G$ | $L$ | $T$ | $N$ | $I$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $K$ | $K$ | $G$ | $L$ | $R$ | $G$ | $V$ | $L$ | $T$ | $G$ | $L$ | $T$ | $N$ | $I$ | $S$ |
| $V$ | $P$ | $R$ | $G$ | $L$ | $T$ | $N$ | $V$ | $V$ | $A$ | $A$ | $T$ | $T$ | $A$ | $L$ | $G$ |



VKRGLRGVLVGLTKVGDVVGYEGKLYYRGDDVEDDANRLG
UniRef90_UPI00037FA1AC UniRef90_B0SE62 UniRef90_M2Y4K6 UniRef90_UPI0004125CB6 UniRef90_G7QL96 UniRef90_UPIO0041FF062 UniRef90_R8W078 UniRef90_P39119 UniRef90_Q65DF7 UniRef90_R7ZD46 UniRef90_E7QXM0 UniRef90_D4J2C9 UniRef90_R5YAT3
UniRef90_W1SP45 UniRef90_W0K3Y7 UniRef90_R6C7T4 UniRef90_Q9ZN37 UniRef90_UPI0003F93EF6 UniRef90_J9HVR1 UniRef90_C6BZ69
UniRef90_Q9YB84 UniRef90_R7B3H7 UniRef90_D1ATK7 UniRef90_UPI00037369DF UniRef90-R6RU61 UniRef90_E5VRA6 UniRef90_Q97C64 UniRef90_UPI0002E098D4 UniRef90_D4LSA3 UniRef90_UPIO0041750CC UniRef90_UPIO00424CA71
UniRef90_R6UFY6 UniRef90_R6UFY6 UniRef90_B6ABP9 UniRef90_K2FQF4 UniRef90_C4GAH2 UniRef90_K6W8W6 UniRef90_F7V4M2 UniRef90_UPI0003B2F822 UniRef90_F4LL89 UniRef90_UPIO00475A5BF UniRef90-U5LDK6 UniRef90_M3UMV3 UniRef90_H9UMI5
UniRef90_UPIO003

Y LE A C Y|L L ${ }^{50}$ Y GELLPDRDQKQEFVG LIAN ${ }^{70}$




 <br> \section*{F <br> \section*{F <br> <br> F <br> <br> F <br> <br> Y
F
F
F
F
F
F
F} <br> <br> Y
F
F
F
F
F
F
F}

6 Y E E I



## T1ד



## F


F

## 


 UniRef90-M2Y4K6 UniRef90_UPI0004125CB6 UniRef90_G7QL96 UniRef90_UPI00041FF062 UniRef90-R8W078 UniRef90_P39119 UniRef90_Q65DF7 UniRef90-R7ZD46 UniRef90-E7QXM0 UniRef90-D4J2C9 UniRef90-R5YAT3 UniRef90-W1SP45 UniRef90-R6C7T4 UniRef90_Q9ZN37 UniRef90_UPI0003F93EF6 UniRef90_J9HVR1 UniRef90_C6BZ69 UniRef90_Q9YB84 UniRef90-D1ATK7 UniRef90_UPI00037369DF UniRef90-R6RU61 UniRef90-E5VRA6 UniRef90_Q97C64 UniRef90_UPI0002E098D4 UniRef90-D4LSA3 UniRef90_UPIO0041750CC UniRef90_UPIO00424CA71 UniRef90-R6UFY6 UniRef90-K4R1N0 UniRef90-B6ABP9 UniRef90-K2FQF4 UniRef90-C4GAH2 UniRef90_K6W8W6 UniRef90-R6X1S2
UniRef90 F7V4M2 UniRef90-F7V4M2 UniRef90_UPI0003B2F822 UniRef90-F4LL89
UniRef90- UPI000 UniRef90_UPI000475A5BF UniRef90-U5LDK6 UniRef90-M3UMV3 UniRef90-H9UMI5 UniRef90_UPIO00315EECB UniRef90_R6H0G6 UniRef90-H6LJY5 UniRef90-AOBSH2 UniRef90-E0E2Z1
UniRef90-V8C965 UniRef90-S9SZK7 UniRef90-D3SXN5 UniRef90_R6FZJ8 UniRef90_R5WY31 UniRef90-R6CMB1
UniRef90- R6RHY8 UniRef90-U2KZE4 UniRef90-M3CYH1 UniRef90-H5XWY2 UniRef90-D4LCH0 UniRef90_C8VYE3 UniRef90-B0PHJ2 UniRef90-D5HIK8 UniRef90_UPIOO036FDB0E UniRef90_R7HZX6
UniRef90_W7Z5W6 UniRef90-R5S6S8 UniRef90-R2SAK6 UniRef90_R6SNJ5
UniRef90-F8WZD0 UniRef90-R5L9M8 UniRef90-R6T8Q1 UniRef90-D1PQ17 UniRef90-B1C288 UniRef90_R6WDF3 UniRef90-R5T5H3
UniRef90-R6IAK7 UniRef90-R6BFG6 UniRef90-F9T3X4 UniRef90-J8Q414 UniRef90_V61690 UniRef90-R5Z133 UniRef90-R7HUN1 UniRef90_UPI0004689EC2 UniRef90-R4KQA9 UniRef90-A0A011RJM4 UniRef90_UPIO0035C5383 UniRef90-Q2ES55 UniRef90-E4T397


RGFRRDAHPMAVLTSMAGALLAAFYHDSTDINNPKHREAA11
 KNDPSSMDMMAVLRTVLSSLGDDKFGGWPSDDDQAV

 QSLPNNMDDMSVLRTVVSALGENTYTFHPKTEE K SLLPNNTHPMDALRTGISALAGYYDPELNDRSQAANRSKALL KLLPNGTHAMDGLRTGISILAGYDQQUHDRSTEMNLKRAF RAAAADDADPMDALRMGVAAATLGHETDGPEDE
$\square M K S P S K D M M N S L A R S V L A L Y S Y D D Y A D D T S E P N V L R Q C L$
 DAAERGLPAMDAVRMGI AAAPLTRDGEED IMKAPSKDMMNTLARSVLTLYSYDDRADDTSLPNVLRQCM SAFPSNAHPMAKLSSGVSULSTGYSTHQNHTEEDYQTMAR
 EGFPSHKNQMA ILSAVINALGSYHPDLYDDNDKSEFFLAV

QSLPRDAHPMADLDASFAALAARYHGANSLDP PAIAAAGSSFNPLAGLRTALSLLTPPLWDADPVRRKADAM
 RQLPRESDAVAMQMAAVAS MAASEQKFKWNKDTDRDVAA


## 


 IM K A P S K D M M N G I A R S I L L M L Y S Y D K H A D D N S I I D N V L R Q C L



1-

UniRef90_UPI00037FA1AO UniRef90-B0SE62 UniRef90_M2Y4K6 UniRef90_UPI0004125CB6 UniRef90 G7QL96 UniRef90-UPI00041FF062 UniRef90-R8W078 UniRef90-P39119 UniRef90_Q65DF7 UniRef90_R7ZD46 UniRef90-E7QXM0
UniRef90-D4J2C9 UniRef90_R5YAT3 UniRef90-W1SP45 UniRef90-W0K3Y7 UniRef90_R6C7T4 UniRef90_Q9ZN37 UniRef90_UPI0003F93EF6 UniRef90_J9HVR1 UniRef90_C6BZ69
UniRef90_Q9YB84 UniRef90_R7B3H7 UniRef90-D1ATK7 UniRef90_UPI00037369DF UniRef90-R6RU61 UniRef90-E5VRA6 UniRef90_Q97C64 UniRef90_UPI0002E098D4 UniRef90_D4LSA3 UniRef90_UPI00041750CC UniRef90_UPI000424CA71 UniRef90-R6UFY6 UniRef90-K4R1N0 UniRef90-B6ABP9
UniRef90-K2FQF4 UniRef90_C4GAH2 UniRef90-K6W8W6 UniRef90-R6X1S2
UniRef90 F7V4M2 UniRef90_UPI0003B2F822 UniRef90-F4LL89 UniRef90_UPIO00475A5BF UniRef90-U5LDK6 UniRef90-M3UMV3 UniRef90-H9UMI5 UniRef90-UPIO00315EECB UniRef90-R6H0G6 UniRef90-H6LJY5 UniRef90_AOBSH2 UniRef90-E0E2Z1
UniRef90-V8C965 UniRef90-S9SZK7 UniRef90-D3SXN5 UniRef90_R6FZJ8 UniRef90-R5WY31
UniRef90-R6CMB1 UniRef90-R6RHY8 UniRef90-U2KZE4 UniRef90-M3CYH1 UniRef90-H5XWY2 UniRef90-D4LCHO UniRef90_C8VYE3 UniRef90_B0PHJ2
UniRef90 D5HIK8 UniRef90_UPIO0036FDB0E UniRef90-R7HZX6 UniRef90_W7Z5W6 UniRef90-R5S6S8 UniRef90-R2SAK6 UniRef90_R6SNJ5
UniRef90_F8WZD0 UniRef90-R5L9M8 UniRef90-R6T8Q1 UniRef90-D1PQ17 UniRef90-B1C288 UniRef90-R5T5H3 UniRef90-R6IAK7 UniRef90-R6BFG6 UniRef90_F9T3X4 UniRef90-J8Q414
UniRef90-V6I690 UniRef90-V6I690
UniRef90-G9RSW9 UniRef90_R5Z133 UniRef90-R7HUN1 UniRef90_UPI0004689EC2 UniRef90_R4KQA9 UniRef90-A0A011RJM4 UniRef90_UPIO0035C5383 UniRef90_Q2ES55 UniRef90_E4T397

RLLTAKMPTLVAMAYKHSVSQSCPYPNNALSYSGNFMRMMF RLLAK $\square R T I$ AAFTYKHAVGHPFVYPDDKNPYCTNFLYMMH R ALTS $T$ VP S DADRYRNQNGQS DVMPDQNDNHVENFLYMLT RLDAKI RTI AAFSYKKIVGQPFVYPLDKHPYCTNFLYML F



 QLI ANFPLLSVYSYAAYDYYYNHQPRPDYSTAENILHCLR



 RLLALVPQUVANSYHGARGEGLVQPRSDLSFVANSLYMUT

 VAISQVPGVATIYRHTAGLPLTKADPHLGYVQNFVGMMF

 KLTAVAPII IA Y RKRYIDGKEFVKPHPNLNHVANYLYMLN NLISVEPLLSVYGYQAYNHYY IHNPKKNLSTAENILRMLR RLTGLLPVVIAYRHRRANGLPWPEEADERDHVAHYLHLLIF
 AAAAAVPTLLTALLYRLSQGREPVEPRDDLSYAANYLYMLT IRIAAKMPTMVAWAYKNSDGEPLIYPRGDLSYTDNFLHMMF QLIANFPLLSVYGYQVYKHYYEHNPNPALSTAENDLHCLR RVAALTPTI LSADHRIRSGEEPVAPDPDLSVAANWLYQLS
 QI 1 GKVPLMSVYAYHAYRHFNI RNPKKDLSTAENILYMRN RLI A QFPSLMVYYYYNKQSLII HSPDPQLSAAENILHMDH
 RAAAVVPTVLAAAHRLSRGQEVLDADPDADHVSDYLRMAT


 MLI STFPMMAAYGYHAYNHMYI HRPDKNLSLAENLLRMLR R I AKI PTMMAFCYRNSVGAPFIDPDVSKSYVENFLYMLR RLVSVIIPTIVTTYWRYRSGKEPVDPRDDLGHTANYLYMLS


 A LTA A LP VMTAAFYRDQNGQQPVESRDDLGHTANYLWMIT T
 KL I S C L P T L A V Y A Y Q A L S H Y H I H P P R L D L S TAAENI L HM I R




 QLI A V F P M L S AVY GYY H A Y N H Y Y 1

 MLL I S $\operatorname{S}$ V F P M L A A V Y G G Y H A Y N N H Y E CHHRP D D N L EL I S K FP TII A Y A Y N I Y R H S H I R H P H











UniRef90_UPIO0037FA1AC UniRef90_B0SE62 UniRef90_M2Y4K6 UniRef90_UPI0004125CB6 UniRef90_G7QL96 UniRef90_UPIO0041FF062 UniRet90-R8W078 UniRef90_P39119 UniRef90_Q65DF7
UniRef90_R7ZD46 UniRef90_E7QXM0 UniRef90_D4J2C9 UniRef90-R5YAT3
UniRef90-W1SP45 UniRef90_W0K3Y7 UniRef90_R6C7T4 UniRef90_Q9ZN37 UniRef90_-UPI0003F93EF6 UniRef90_J9HVR1 UniRef90_C6BZ69
UniRef90-Q9YB84 UniRef90_R7B3H7 UniRef90_D1ATK7 UniRef90_UPI00037369DF UniRef90_R6RU61 UniRef90_E5VRA6 UniRef90_Q97C64 UniRef90_UPI0002E098D4 UniRef90_D4LSA3 UniRef90_UPI00041750CC UniRef90_UPI000424CA71 UniRef90_R6UFY6 UniRef90-K4R1N0 UniRef90_B6ABP9
UniRef90_K2FQF4 UniRef90_C4GAH2 UniRef90_K6W8W6 UniRef90_R6X1S2
UniRef90-F7V4M2 UniRef90_UPI0003B2F822 UniRef90_F4LL89 UniRef90_UPI000475A5BF UniRef90_U5LDK6 UniRef90-M3UMV3 UniRef90_H9UMI5 UniRef90_UPIO00315EECB UniRef90_R6H0G6 UniRef90_H6LJY5
UniRef90_A0BSH2 UniRef90-E0E2Z1 UniRef90_V8C965 UniRef90_S9SZK7 UniRef90_D3SXN5 UniRef90_R6FZJ8 UniRef90_R5WY31
UniRef90_R6CMB1 UniRef90_R6RHY8 UniRef90_U2KZE4 UniRef90-M3CYH1 UniRef90-H5XWY2 UniRef90-D4LCH0 UniRef90_C8VYE3 UniRef90-B0PHJ2
UniRef90 D5HIK8 UniRef90_UPIO0036FDB0E UniRef90_R7HZX6 UniRef90_W7Z5W6 UniRef90_R5S6S8 UniRef90_R2SAK6 UniRef90_R6SNJ5
UniRef90_F8WZD0 UniRef90_R5L9M8 UniRef90-R6T8Q1
UniRef90-D1PQ17 UniRef90_B1C288 UniRef90_R6WDF3 UniRef90-R5T5H3
UniRef90 R6IAK7 UniRef90_R6BFG6 UniRef90_F9T3X4 UniRef90_J8Q414 UniRef90_V6I690 UniRef90_G9RSW9 UniRef90_R5ZI33
UniRef90_R7HUN1 UniRef90_UPI0004689EC2 UniRef90_R4KQA9 UniRef90_A0A011RJM4 UniRef90_UPIO0035C5383 UniRef90_Q2ES55 UniRef90_E4T397

## 

ATPCEDYEVRADDRDF\|LUADHEQNTSTSTVR|LICGS GTN KYNVPEEFDRDLNQMWILHADHEQNVSNTAVQVVGSTQAN
 D Y I P T E D IDD R IL N QLLWI L Y A D HE QNVS NTTVQQVI GSTCQAN
 P D K Y T P L E A Q V L D L A L V L HM E H G GN N S S F T T H V V T S S G T D GE QP S EAKKKKALLETYMILLATEHGMNASTKFSARVVTLS TES D

G PDKFTPLEAKLLDVALILHMEHGGNNS ENRQYTAEAEI LDMALVLHMDHGGNNSTFTTHVVTS DTM GNVP LAA D DEAL ETYMI L TVLEHGMNAS
 GYPYTPLEVEAFDKILTTLHADHGQNASS $G K R P T E A Q K K A L E T Y M I L$
$K$
$K$ A M E S H G A M N A S T


 G VI PS SA H I NA L E T Y M I L T M E H GMN A S T P DKKYTDEAK L D L A L I L HMEHGGNN

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


## -

## 。

G
E
P
K
K

P
K
P
PN
A

## \section*{P}

PDSSYTEEAKVLDIVAMLHAEHGGNNS

EQQPSAVQTEALETYLKLTMEHGMNAS
PDSNYTLEARLLDLALVLHAEHGGNNSSFVTHVVTISTESD
PDKYS DLEAKI L DLALLVLHAEHGGNNSSFTVVVVSSS GTD
PDKF TKLEAKLLDLALVLHAEHGGNNSTFATHLVTSSGTD

G

## 

 PKEYTELEAKVLDDALVLHAEHGGNNST

D S SYTEDEARILDVALVLHAEHGGNNS

EDKYSSDEATVLDLALVLHAEHGGNNST
PNKYTVATHVVTSSGTD
PNKEYTETARVLDMALVLHMEHGGNNSTFTTRVVTSAGSD
KRDFTDGDARTLDLLLVLQAEHGGNNSTFTVRVTSSTGTD
QGEQQELAVSLLNADLVVHSEHGSNASTFATRVACGAQSD
GEVPEDWQTEIFDRSLLLYSEHEMPNSTFAARVIASTNSD
GIDPDPKKEKALNAYWNTVADHGLNASTFTARVIVSTQSD
ADKY ELEARTLALVAEHGGNSTFTMHVVTSSGTD
PDKKYTHEAKVLDLALVLHMEHGGNNSTFTTRVVTSSGSD
 PDSTFTLEARLLDDALVLHAEHGGNNSTFVTRVVTSSGTD AYTPNPVLVRALDRMLTLQADCGQDAATATVRMAGSSGAN GAKPDADWVRAMHTSLILYAEHEFNASTFTCRVDAGTGSD GPNNYTEDVKILDLTLILHADHGNNST AYKTNPVLTRAMDQ\|F\|LHADHEQNASTSTVRILAGSSGAN

UniRef90 UPI00037FA1AC UniRef90_B0SE62
UniRef90 M2Y4K6 UniRef90_M2Y4K6
UniRef90 UPI0004125CB6 UniRef90 G7QL96 UniRef90_UPI00041FF062 UniRef90_R8W078 UniRef90_P39119 UniRef90_Q65DF7 UniRef90_R7ZD46 UniRef90_E7QXM0 UniRef90-R5YAT3 UniRef90-W1SP45 UniRef90_W0K3Y7 UniRef90_R6C7T4 UniRef90_Q9ZN37 UniRef90_UPI0003F93EF6 UniRef90_J9HVR1 UniRef90_C6BZ69 UniRef90-Q9YB84 UniRef90 D1ATK7 UniRef90_UPI00037369DF UniRef90_R6RU61 UniRef90-E5VRA6 UniRef90_Q97C64 UniRef90_UPI0002E098D4 UniRef90_D4LSA3 UniRef90_UPI00041750CC UniRef90_UPI000424CA71 UniRef90_R6UFY6 UniRef90_K4R1N0 UniRef90_B6ABP9 UniRef90-K2FQF4
UniRef90 C4GAH2 UniRef90_K6W8W6 UniRef90_R6X1S2 UniRef90_F7V4M2 UniRef90_UPI0003B2F822 UniRef90 F4LL89 UniRef90_UPI000475A5BF UniRef90_U5LDK6 UniRef90_M3UMV3 UniRef90_H9UMI5 UniRef90_UPIO00315EECB UniRef90_R6H0G6 UniRef90_H6LJY5
UniRef90_A0BSH2 UniRef90_E0E2Z1 UniRef90_V8C965 UniRef90_S9SZK7 UniRef90_D3SXN5 UniRef90_R6FZJ8 UniRef90_R5WY31
UniRef90_R6CMB1 UniRef90_R6RHY8 UniRef90_U2KZE4 UniRef90_M3CYH1 UniRef90-H5XWY2 UniRef90_D4LCH0 UniRef90_C8VYE3 UniRef90_B0PHJ2
UniRef90_D5HIK8 UniRef90_UPI00036FDB0E UniRef90_R7HZX6 UniRef90-W7Z5W6 UniRef90_R5S6S8 UniRef90_R2SAK6 UniRef90_R6SNJ5
UniRef90_F8WZD0 UniRef90_F8WZDO UniRef90_R6T8Q1 UniRef90_D1PQ17 UniRef90_R6WDF3 UniRef90_R5T5H3 UniRef90_R6IAK7 UniRef90_R6BFG6 UniRef90_F9T3X4
UniRef90 J8Q414 UniRef90_V6I690 UniRef90_G9RSW9 UniRef90_R5ZI33 UniRef90_R7HUN1 UniRef90_UPI0004689EC2 UniRef90_R4KQA9 UniRef90-A0A011RJM4 UniRef90_UPI00035C5383 UniRef90_Q2ES55 UniRef90_E4T397
UniRef90_C4P321

F A AlI A G 210 A 220 LFASISAGIMAQWGAREGGRPTAAAGGI ED IVTKTPVKD
 $M V S A I T G A D G A M K G P L H G G A P S E V M D M L D E V G S K E H A E K W$ LFASISSSAI NALWGSREGGGRQVAAVGLIEDILLKSRKSVPE $M V S A L T G A L G A M K G P D H G G A P S G V T A M L D Q U G K K E N A E G W$

 $L V S A V T G A V G A L K G P L H G G A P G P V L D M L L D D H N S G D A A G Y$ TYAAIAAALGSSLKGPKHGGANNDKVVMMFDEMKSVLKDWED
 $V V S A V T$ GAVGADKGPLLHGGAPGPVLDMLDRAQAADAPA GL

 $\frac{\mathrm{L}}{\mathrm{L}}$
$>1$
T


##  <br> T L L

T
$T$
$T$
$T$
T
F
T
P

## M

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


 TYSTI A A ALGSSLKGPRHGGANIKVVQMFEDMKRNVNDWYD


##  <br> M T

TYSSSVA A S I G S L L

## T <br> T




TY SVI A A A L S S
TYS SIIA A Gll G S
TYSSSIA A GI G S
$\begin{array}{llll}M Y G A L & G A & A & S \\ L I & A & A & G A \\ G & A\end{array}$
TYSAVAASLAS
TYATI A A A L C S
$T Y$
LA
A
$L$
$T$
Y S A A M V
PYSAMAAALGSLKGPRHGGANDKVI QMLEDMKQNLKSWKD P Y A C L S A A A C L A GKA LGGGTSEACLA I LA G DGDAARAGG』


UniRef90 UPIo0037FA1AC UniRef90_B0SE62 UniRef90-M2Y4K6 UniRef90-UPI0004125CB6 UniRef90 G7QL96 UniRef90-UPIOO041FF062 UniRef90-R8W078 UniRef90-P39119 UniRef90-O65DF7
UniRef90_R7ZD46 UniRef90-R7ZD46
UniRef9O-E7QXMO UniRef90-D4J2C9 UniRet90-R5YAT3 UniRef90-W1SP45 UniRef90-WOK3Y7 UniRef90- R6C7T4
UniRef90 O9ZN37 UniRef90_O9ZN37
UniRet90 UPI0003F93EF6 UniRef90_J9HVR1 UniRef90_C6BZ69
UniRef90 $\mathrm{O9YB} 84$ UniRef90-R7B3H7
Oヌロய UniRef90_D1ATK7 UniRef90 UPIO0037369DF UniRef90-R6RU61
UniRef90-E5VRA6 UniRef90-Q97C64 UniRef90-UP10002E098D4 UniRef90_D4LSA3 UniRef90-UPIOOO41750CC UniRef90 UPIOOO424CA71
UniRef90- R6UFY6 UniRef90-R6UFY6 UniRef90-B6ABP9 UniRef90-K2FQF4 UniRef90-C4GAH2 UniRef90_K6W8W6 UniRef90-R6X1S2
UniRef90 F7V4M2 UniRef90-UPI0003B2F822 UniRef90-F4LL89 UniRef90-UPIO00475A5BF UniRef90-U5LDK6 UniRef90_M3UMV3 UniRef90-H9UM15 UniRef9-UPOOOO315EECB UniRef90-R6HOG6 UniRef90-A6LJS5 UniRef90-EOE2Z1 UniRet90_V8C965 UniRef90-S9SZK7
UniRef90-D3SXN5 UniRef90-R6FZJ8 UniRef90-R5WY31
UniRef90-R6CMB1 UniRef90-R6RHY8 UniRef90_U2KZE4 UniRef90-M3CYH1 UniRef90-H5XWY2 UniRef90-D4LCH0 UniRef90-C8VYE3 UniRef90_BoPHJ2
UniRef90 D5HIK8 UniRef90-UPIOOO36FDBOE UniRef90-R7HZX6 UniRet90 W7Z5W6 UniRef90-R5S6S8 UniRef90 R2SAK6 UniRef90-R6SNJ5
UniRet90 UniRef90-R5L9M8 UniRef90-R6T8Q1 UniRef90-D1PQ17 UniRef90-B1C288
UniRef90 R6WDF3 UniRef90-R5T5H3 UniRet90-R61AK7 UniRef90-R6BFG6 UniRef90-F9T3X4
UniRef90 J8Q414 UniRef90-V61690 UniRef90-G9RSW9 UniRef90- R5Z133
UniRef90 R7HUN1 UniRef90-UPIO004689EC2 UniRef90 R4KQA9 UniRef90-A0A011 RJM4 UniRef90-UPIOOO35C5383 UniRef90-Q2ES55 UniRef90-E4T397
UniRef90_C4P321

UniRef90＿UPIO0037FA1AC UniRef90－B0SE62
UniRef90 M2Y4K6 UniRef90＿UPI0004125CB6 UniRef90－G7QL96 UniRef90＿UPIO0041FF062 UniRef90－R8W078 UniRef90－P39119 UniRef90－Q65DF7
UniRef90－R7ZD46 UniRef90－E7QXM0 UniRef90－D4J2C9 UniRef90－R5YAT3
UniRef90＿W1SP45 UniRef90－WOK3Y7 UniRef90－R6C7T4 UniRef90－Q9ZN37 UniRef90＿UPI0003F93EF6 UniRef90－J9HVR1 UniRef90＿C6BZ69
UniRef90 Q9YB84 UniRef90＿R7B3H7 UniRef90－D1ATK7 UniRef90＿UPIO0037369DF UniRef90－R6RU61 UniRef90－E5VRA6 UniRef90－Q97C64 UniRef90＿UPIO002E098D4 UniRef90－D4LSA3 UniRef90＿UPIO0041750CC UniRef90＿UPIO00424CA71 UniRef90－R6UFY6 UniRef90－K4R1N0 UniRef90－B6ABP9 UniRef90－K2FQF4 UniRef90＿C4GAH2 UniRef90－K6W8W6 UniRef90－R6X1S2
UniRef90 F7V4M2 UniRef90－F7V4M2 UniRef90＿UPI0003B2F822 UniRef90－F4LL89
UniRef90 UPI0004 UniRef90＿UPLO00475A5BF UniRef90－U5LDK6 UniRef90－M3UMV3 UniRef90－H9UMI5 UniRef90＿UPIO00315EECB UniRef90－R6H0G6 UniRef90－H6LJY5 UniRef90－AOBSH2 UniRef90－E0E2Z1
UniRef90－V8C965 UniRef90－S9SZK7 UniRef90－D3SXN5 UniRef90－R6FZJ8 UniRef90＿R5WY31
UniRef90－R6CMB1 UniRef90－R6RHY8 UniRef90－U2KZE4 UniRef90－M3CYH1 UniRef90－H5XWY2 UniRef90－D4LCH0 UniRef90＿C8VYE3 UniRef90－B0PHJ2
UniRef90－D5HIK8 UniRef90＿D5HIK8
UniRef90＿UPI0003 UniRef90－R7HZX6 UniRef90＿W7Z5W6 UniRef90－R5S6S8 UniRef90－R2SAK6 UniRef90＿R6SNJ5
UniRef90＿F8WZD0 UniRef90－R5L9M8 UniRef90－R6T8Q1 UniRef90－D1PQ17
UniRef90－B1C288 UniRef90－B1C288
UniRef90＿R6WDF3 UniRef90－R5T5H3 UniRef90－R6IAK7 UniRef90＿R6BFG6 UniRef90－F9T3X4
UniRef90－J8Q414 UniRef90－V6I690 UniRef90－G9RSW9 UniRef90－R5ZI33
UniRef90 R7HUN1 UniRef90＿UPIO004689EC2 UniRef90－R4KQA9 UniRef90－A0A011RJM4 UniRef90＿UPI00035C5383 UniRef90＿Q2ES55 UniRef90＿E4T397
－



## 6FDB0E <br> \section*{E}

 GIPKNMFSVMQVIGRLPGWLAHWREQRMKGFSKVRPKQIY GFPLDMYPLLFALLPRGAGWLAHWYESGREETHVMRARQUC GUPKELFTAMQVIGKDPGWDAHWREQRVSGNSKARPKQIY



 DLPPALYTPIFATARGVGWSAHRLEELKNVDKMDRAYKP NMDSELTFPTFTASRMVGWTAHVLEQAENNTYYPQSKY

 NFDASLFTPTFSAARMVGWCAHVLEQAEENTIFRPSAKY



G


ค
O

D
G
G

\section*{| $G$ |
| :---: |
| $G$ |
| $G$ |
| $G$ |
| $K$ |
|  |}

## OO <br> － <br> \section*{G}

## ローテ






N
G
Q
M

G


$G \mid P V R M F T T L F A L A R T S G W S A Q W Y E M K G K D Y K \prod C R P$


UniRef90_UPI00037FA1AO UniRef90-B0SE62 UniRef90-M2Y4K6 UniRef90_UPI0004125CB6 UniRef90_G7QL96 UniRef90-UPIO0041FF062 UniRef90-R8W078 UniRef90-Q65DF7 UniRef90_R7ZD46 UniRef90_E7QXM0 UniRef90_D4J2C9 UniRef90_R5YAT3
UniRef90-W1SP45 UniRef90-W0K3Y7 UniRef90-R6C7T4 UniRef90_Q9ZN37 UniRef90_UPI0003F93EF6 UniRef90_J9HVR1
UniRef90_C6BZ69 UniRef90-Q9YB84 UniRef90_R7B3H7 UniRef90_D1ATK7
UniRef90 UPI0003
UniRef90-UPIO0037369DF
UniRef90_R6RU61
UniRef90-E5VRA6
UniRef90_Q97C64
UniRef90_UPI0002E098D4
UniRef90-D4LSA3
UniRef90-UPI00041750CC
UniRef90-UPIO00424CA71
UniRef90-R6UFY6
UniRef90_K4R1N0
UniRef90-B6ABP9
UniRef90_K2FQF4
UniRef90-C4GAH2
UniRef90-K6W8W6
UniRef90-R6X1S2
UniRef90-F7V4M2
UniRef90_UPI0003B2F822
UniRef90 F4LL89
UniRef90_UPIO00475A5BF
UniRef90-U5LDK6
UniRef90_M3UMV3
UniRef90_H9UMI5
UniRef90_UPI000315EECB
UniRef90-R6H0G6
UniRef90-H6LJY5
UniRef90-AOBSH2
UniRef90-V8C965
UniRef90-S9SZK7
UniRef90_D3SXN5
UniRef90-R5WY31
UniRef90_R5WY31
UniRef90_R6CMB1
UniRef90_R6RHY8
UniRef90_U2KZE4
UniRef90-M3CYH1
UniRef90-H5XWY2
UniRef90_D4LCH0
UniRef90_C8VYE3
UniRef90-B0PHJ2
UniRef90-D5HIK8
UniRef90_UPIO0036FDB0E
UniRef90-R7HZX6
UniRef90-W7Z5W6
UniRef90_R5S6S8
UniRef90 R2SAK6
UniRef90-R6SNJ5
UniRef90-F8WZD0
UniRef90 R5L9M8
UniRef90_R6T8Q1
UniRef90-D1PQ17
UniRef90-R6WDF3
UniRef90-R5T5H3
UniRef90-R6IAK7
UniRef90-R6BFG6
UniRef90-F9T3X4
UniRef90-J8Q414
UniRef90_V61690
UniRef90 G9RSW9
UniRef90_R5Z133
UniRef90_R7HUN1
UniRef90_UPIO004689EC2
UniRef90-R4KQA9
UniRef90_A0A011RJM4
UniRef90 UPI00035C5383
UniRef90 Q2ES55
UniRef90-E4T397
UniRef90_C4P321

UniRef90 Fotojg UniRef90-D8RHR6 UniRefifo-AORDV6 UniRef90 C4Z761 UniRef90-M2VUT4 UniR Refo-J3EZAA UniRef90-LSNBC1
UniRef90
B8GVR9 UniRe90-_OPFI5 UniRef90-R9MTX5 UniRef90-R51K66 UniRef90-R7PDH4
UniRef90 R6NNU7
UniRef90-JOL1A2 UniRef90-B9YBJo UniRef90-R6TBW2 UniRef90-R5Z114 UniRef90-S310H9
UniRef90 U2PXL3 UniRef90- ${ }^{-} 7$ YGGV3 UniRef90-UPI0003B760AC UniRef90-U2V284 UniRef90-Q6L2P8 UniRef90 D4M2G6 UniRef90 R5LRA8 UniRef90-A0A024QJ96 UniRef90_UPI000299F350 UniRef90_M3KIB6 UniRef90-C7NAY9 UniRef90-A6X0R5 UniRef90_UPI000375C64A UniRef90-R6Z7B5 UniRef90_UPIO0047C26E5 UniRef90_UPI0003B5FCAF UniRef90 C2BGG6 UniRef90-UPIO0036D95D6 UniRef90-EOVRF1 UniRef90-R613U1 UniRef90-H4TYE9 UniRef90_J5GW12 UniRef90_F9MQS9 UniRef90 R9KDH6 UniRef90-A0A021X676 UniRef90-V3ZIF7 UniRef90-TOMEV1 UniRef90-R5HBY7 UniRef90-D3QA14 UniRef90-A0A017SYB5 UniRef90-L9TQ07 UniRef90-A4YKX3 UniRefoloulin 21 UniRef90 C2CF50 UniRef90-UPIO00376D47B UniRef90-B7TLL8
UniRef90_D3F2T4 UniRef90_C70265 UniRef90-M5E312 UniRef90-H9K626 UniRef90-A3TRT8 UniRef90-H1XV55
UniRei90_UPIOOO4745C13 UniRef90-A7HRE7 UniRef90_M1UT78 UniRef90_U1R3J5 UniRef90-A0A024TLB9 UniRef90 E2SDHO UniRef90_Q553V1 UniRef90_A6R9J0 UniRef90-J4H1PO UniRef90-UPI000255D87A UniRef90_UPI000363E6CD UniRef90-UPI0003B46B86 UniRef90-F9X435 UniRef90-A9T4H6 UniRef90_D2VD05 UniRef90_UPIOOO344F9C2 UniRef90-UPIO0044115A5 UniRef90-X1ULL UniRef90-C7NOE4
UniRef90-E5SV78 UniRef90-E6UWE6 UniRef90-X1SQV2 UniRef90-C7PR78 UniRef90 W6QB01


VKRGLRGVVAGLTRTSDVHGDEGKLT\CGYNTEKLVAHAQ VKRGLRGVLVGLTNGDVVGYKGELYYRGYEITELTRRG MKNGLEDVI AAETRLSDVDGPAGRLIIRGVSLDDLVADGT DKRGLRGVLVGVTKVGDVDGEEGELYYRGYPLTSLVERGG MKNGLEDVIAAETQLSDVDGERGRLVIRGVSUDDLVPGET
 DPGFTSTASCESKITFIDGDEGILLHRGFPIDQLATDSN VKKGLRGVRVGLTKVSDVVGYDGKLYYRGYSLNDLVDGSG VNRGLRGVLTGGTTUSKIVPCDGQLWYRGYNVQTLVKQFG
MYGGMRGDRGLVTETSVLDPDEG TRFRGYSDPECQEEPL MYGGMRGMKGLVYETSVLDPEEG I RFRGYSIPECQEEPL VNRGLRGVLTGLTNSKIVPCEGQLWYRGYNIKDLIQEFG KPGLEGVVAFETELAEPDKQGGSLRYRGVDVELDGHAS AGGLDGVVVADTLLSEVDGERGHLLLAGYDLETLSSDTT GLDGVPAAETVLSHVDGQQGELIIAGHRVVDLAAGTG
 RGGLRGVIAGETKISTVGMEGTSLRYRGYDATKLTDTHT
 DKQGLRGVVVGFTKIGSVHGYEGKLFYRDVEVEELVKFG R TYIDGDAGVLDYRGYPVEQLAEKST MYGGMRGDKGLLWEPSVLDPEEG RFRGKS:| PECQKEPL
 DRGYLNTACMESNI TFFDGKRGYI QYRDYSIDHLFRNND GLDNVVAAETMLSHVDGEAGREVAGYEVEDLVEAHD RGDEGVLVAESTLSYDDGGAGQLVYRGYDIEDLAEHAS
 VYGGARGUKSLVWEGSVLDPEEG URFRGKTIPECQEEPL
VFSGMRGVVSLLTCTSKLDPEEG $\square R F R G Y S \square P E \square R E K P \square$
GGARGVKCLVTDTSYLDPFEG TRFRGHTПPEVMDKPY
DDRGFLNTACMESNITLIDGEAYIGYRDHSDPEMDKPY GGMRGIKGMLWETSLLDADEGY QYRDHS EHLFDNND PGLEGVLAFETEMAEPDKEGGALRYRGVD ENLVGRVT DKGYLNTACMESSVTLTDGKRGYI QYRDKSIIDEVRNND DHKGLVGLYVDESLITYUDGDNGKLYYRGYPI RELCENST


 DPGLQNTAVTESPDSFSDHERGLLLYRGYTLDQLWG CD

UniRef90 Foto.j9 UniRet90-D8RHR6 UniRef90-AORDV66 UniRef90 C4Z761 UniRef90-M2VUT4 UniRef90-J3EZA9 UniRef90-L5NBC1 UniRef90 B8GVR9
UniRef90 - XopFI5 UniRef90-XOPMTX5
UniRet90-R9MTK UniRef90 R51K66 UniRef90-R7PDH4
UniRef90 R6NNU7 UniRef90-R6NNU7
UniRef90_JOL1A2 UniRef90-B9YBJo UniRef90-R6TBW2 UniRef90-U5F5B5 UniRef90_R5Z114 UniRef90-S310H9
UniRef90 U2PXL3 UniRef90- ${ }^{-} 7$ YGGV3 UniRef90-UPIO003B760AC UniRef90-U2V284 UniRef90-Q6L2P8 UniRet90_D4M2G6 UniRef90-R5LRA8 UniRef90-A0A024QJ96 UniRef90-UPI000299F350 UniRef90-M3KIB6 UniRef90_C7NAY9 UniRef90-A6X0R5 UniRef90-UPI000375C64A UniRef90-R6Z7B5 UniRef90-UPIO0047C26E5 UniRef90-UPIO003B5FCAF UniRef90 C2BGG6 UniRef90-UPIO0036D95D6 UniRef90-EOVRF1 UniRef90-R613U1 UniRef90-H4TYE9 UniRef90-J5GW12 UniRef90_F9MQS9 UniRef90-R9KDH6 UniRef90-A0AO21X676 UniRef90- $\mathbf{3 Z Z I F 7}$ UniRef90-TOMEV1 UniRef90-R5HBY7
UniRef90 D3QA14 UniRef90-D3QA14
UniRef90-A0A017SYB5 UniRef90-L9TQ07 UniRet90-A4YKX3 UniRefoloulw 21 UniRef90_-a9W401 UniRef90-C2CF50 UniRef90-UPIO00376D47B UniRef90-B7TIL8 UniRef90-D3F2T4 UniRef90_C70265 UniRef90-M5E312 UniRef90_TOZKH8 UniRet90_H9K626 UniRef90-A3TRT8 UniRef90-H1XV55 UniRef90-M7SIU1 UniRef90-UP10004745C13 UniRet90-ATHRE7 UniRef90_M1UT78 UniRef90_U1R3J5 UniRef90-A0A024TLB9 UniRef90-E2SDHO UniRef90-Q553V1 UniRef90-A6R9JO UniRef90-J4H1P0 UniRef90_UPI000255D87A UniRef90-UPI000363E6CD UniRef90-UPI0003B46B86 UniRef90-F9X433 UniRef90-A9T4H6 UniRef90_D2VD05 UniRef90-UPIO00344F9C2 UniRef90-UPIO0044115A5 UniRef90- X1ULL UniRef90-C7NOE4 UniR Refo-E5SV78 UniRef90-QORXYO UniRef90 UPIOOO465AOC0 UniRet90-E6UWE6 UniRet90-X1SQV2 UniRef90-C7PR78 UniRef90-W6QB01

## F350

FEETTYLLLIFGGLLPTKGELEEFVSLLANYQR|LIPEEFARDM F QVAYLLIYGDLASKAKLSRFEDSVRKETCCHKGAMGLI YLDAVHLLLEEHLASNEDEKATLEKKLKEEYAVPEGVFNVL FEELSWLLLFGKLPTQQQLDFFNDVLADFRALPPGFAEDM F LDVSFLLIHGSLPSKQESEVWKDLIMSHTYUHEDVLAQL YEEVAWLLEDGRLPTDTELVEFTDELSDARRLTDDDVYNLI FEDAAHLLLDGFFDDAPESDLSSALGEARVGVFAEVAALG


F
Y
Y
Y
Y
Y
F
Y
Y
F
Y
F
F

F
F
F
F



PEGLFY पMLLGEDPSHDDVKFLSQNWAERANTPPHVFNVI
VEGFWYLLLTGDTPTKEQAEEVVEDFKKRAQVPQYVFDTL YEEVVHLLI WGHLPSTQEKTKLRKAFAAAATPPRPVVEVV PEAMLWLLLTGEVPTPQQTEGLRADLQQRAQQDPKTVEFV FGRVWGLLVDDSFSPGLPFPDPIDDPVRTGDVRVDVQSTL FEEVAYLGIHGKLPSNSEFNAFKDSLIDKERNTPDNIVSIL FGDVWGLLVDGHFDNGLAPDEP
PEGVFWLLCTGDDPTDKQVEADKKEMNERAVLPEHVVKMT


PEGLLFYLMLIGELPEEA DVQHLSNQWARRSHVPNHVFAAワ FEEMFHLLLWGTYPTASQFEELRRQLAQYMQVPD\|VRQTI

UniRef90 Fotoj9 UniRef90-D8RHR6 UniRef90-AORDV6 UniRef90-U2D2T4 UniRef90 C4Z76 UniRef90-M2VUT4 UniRef90-J3EZA9 UniRef90-L5NBC1 UniRef90-B8GVR9 UniRef90-X0PFI5 UniRef90-R9MTX5 UniRef90-R51K66 UniRef90-R7PDH4
UniRef90 R6NNU7 UniRef90-R6NNU7 UniRef90-B9YBJo UniRef90-R6TBW2 UniRef90-U5F5B5 UniRef90-R5Z114 UniRef90-S310H9
UniRef90 U2PXL3 UniRef90-F7YGV3 UniRee90 UPI0003B760AC UniRef90-U2V284 UniRef90-Q6L2P8 UniRef90-D4M2G6 UniRef90-R5LRA8 UniRef90-A0A024QJ96 UniRef90-UPIOOO299F350 UniRef90-M3KIB6 UniRef90-C7NAY9 UniRef90-A6XOR5 UniRef90-UPI000375C64A UniRef90-R6Z7B5 UniRef90_UPIOOO47C26E5 UniRef90 UPI0003B5FCAF UniRef90 C2BGG6 UniRef90-UPIO0036D95D6 UniRef90-EOVRF1 UniRef90-R613U1 UniRef90-H4TYE9 UniRef90_J5GW12 UniRef90-F9MQS9 UniRef90-R9KDH6 UniRef90-A0AO21X676 UniRef90-V3ZIF7 UniRef90-TOMEV1 UniRef90-R5HBY7 UniRef90-D3QA14 UniRef90-A0A017SYB5 UniRef90-L9TQ07 UniRef90-A4YKX3 UniRefoloulw 21 UniRef90_-a9W401 UniRef90-C2CF50 UniRef90-UPI000376D47B UniRef90-B7TIL8 UniRef90-D3F2T4 UniRef90-C7Q265 UniRef90-M5E312 UniRef90-T0ZKH8 UniRef90_H9K626 UniRef90-A3TRT8 UniRef90-H1XV55 UniRef90-M7SIU1 UniRef90-UPI0004745C13 UniRef90-A7HRE7 UniRef90_M1UT78 UniRef90 U1R3J5 UniRef90-A0A024TLB9 UniRef90-E2SDHO UniRef90-Q553V1 UniRef90-A6R9JO UniRef90-J4H1P0 UniRef90-UPI000255D87A UniRef90-UPI000363E6CD UniRef90-UPI0003B46B86 UniRef90-F9X435 UniRef90-A9т4H6 UniRef90-D2VD05 UniRef90-UPIO00344F9C2 UniRef90-UPIOO044115A5 UniRef90- X1ULL1 UniRef90-C7NOE4 UniR Refo-E5SV78 UniRef90-QORXYO UniRef90 UPIIOOO465AOC0 UniRef90-E6UWE6 UniRef90-X1SQV2 UniRef90-C7PR78 UniRef90-W6QB01 UniRef90_UQQBO1
UniRef90_UPIO0035FB7AA

KSQPKNAHAMGLLATAISSMSSFYPQPDGAYQDKHVQDQL K ПMKAPSPDVMNKLARSILAMYSYDDEAEDLSMGNVMRQCD DMKAPTSDIMGSMTRSLLTHGSYDKEKESLEDPNVLRQSM RRFRYNAHPMGIMIATLAALMAFHPEAYEKSKESCNKQIF EKLPSSTHPMDALRTGVSALAGHDERLEDRSPEVMRTTAL DEGLARRDPVEALRALLARIPDGDD GLKTAL
RTTSNTHQHPMSTLRTAISMLGTQTDATGTSEQVQGR VMKAPPANTMNALQKCIVLLYSYDARPDDDAVSNVLRQSL LLRMPGRNLMNKLQDAVLTLYNYDDDPDNTDVYETLVKGUV IIMKAPSPDIMNKLARSVLALYSYDENPDDTSLEN L RYPSMNVMNQLQKALLMLYGEDPLADDISVANTLDQGL

 DSAALGDP PVDAMRALDARDPDGDD
 SDFPKTAHPMAVLRTMVSVVGLFDHWAERITPENTMRKGI PRTTYSHSDMNVLQRATLLLYAFDRDPDDTAPTHEDDVAL DTFPSGODLSMASSVFAALADDNNMKWSDDENKRNAGR IDL EGQNDMNDLSRSVLEMYDHDPNPEDLSLENLMIQSD ILSLRGRCVMNMLARSVLGGYTADDEAENYSDENLLKKSM
DDVLLELPPIVEVVR DLRKPSADTMNQLQRAVLCLYTLDSNPDDVDLSNLDDQSLC NGFRRDAHPMADMVGIVGALSAFYHDSMDLNNQRRYDSAG
 ATLL $L$ A LPPDDAMRALVARDPDGED

## D

ПMKVPGADIMNKMMRSMLALYTYDENPDGTDSTNVLSQAL DEGLLALP PVDAMRAMIARLV NEGLHNLHPMSQLCCAVMALESEHGVHKSKYWEYVYEDSM HAFRRDSHPMAVMCGITGALAAFYHDSDDVNPRHREIAA
 ILLRDPGKHLMNKLQHALLTLYNYDSDPDNTEVYO
NNFPTNLHPMSQFSAADTALNSESKFAKAYYWEYVYEDSM DNFPTNLHPMSQLSAAITALLSESSFARAYYWELI YEDCM $\square M K A P S R D \square M N S M T R S V L T L A N Y D D Q D V N G G L G N S D R Q C D$
$A M L D$ GDALAADDGMDADRAAMAHLGGDVAPAVLAGAAATFAAAW EALPAASHPMDVMRTGVSALGCTLPEKEGHTVSGARDDAD LAATTGLSIIDGFRAAIAALR RNFPPKVHPMAQFVAAVAALSSHHGVPKNTYWEYAFDDSM NNMPTTLHPMSQFAAAVTAALNHDSKFAKAYYWEYVYEDSM
 GGFHYDAHPMAMLAASVASLSAFYHDTLDLNDEQRRLAAI A MLAPAWGF
A MLA P

VWG ${ }^{\text {V }} \mathrm{Q}$
GQLLDVSDEEARDQLA
HGFHYSRDVMNKLQRAULVLYSYDEKPDCLD DDRULIQSL KNFPKSAHPMAMLSAVAASMSAFYHDSMDIYNPRRREIAA A Q L A A VWGFKPL LDDDAAEARDNLARASVMAL REMPRDTHPMTMFSAA LDAMQYNEGLSKMDYWDPYYEDALL RAFPKDSDTFPMDLAGLSAYAGVDPGTEKTHHEGRDAADI
 RTLRQDGDPMAALQTTVSMLSAYDRDAEPTDTAANVARGR


DRCPSTMHPMAQFSLALTALLEHESVFAKAYYWQYTFEDSMM MDRQMY
 QAFPRDALTGTMLLAGLAAWAACDPGTQSVHQENRPKADI NKFPTTAHPMSQLSAGIMALQTQSQFAKAYYWQPVYEDSM KSTPNNLHPMTQFSMA!LAL ATLAPR QAFPRDS它TFPMLLAGLSAFAAVDKGTQQVHEPAVDAAAV KSFPRNTTRGELLRTASSALSLYDPDDYDYTEPANDRKGLV


 VNLPKETSPLPLVLAGLSAYLACNPTDYQRDDKRADQ\|IL

UniRe990_Fotoj9 UniRef90_D8RHR6
UniRef90_AORDV6 UniRef90-U2D2T4 UniRef90 C4Z761 UniRef90-M2VUT4 UniRef90-J3EZA9 UniRef90_L5NBC1 UniRef90-B8GVR9 UniRef90-XOPFI5
UniRef90 R9MTX5 UniRef90-R51K66 UniRef90-R7PDH4 UniRef90-R6NNU7 UniRef90-JOL1A2 UniRef90-B9YBJo UniRef90-R6TBW2
UniRef90 U5F5B5 UniRef90-R5Z114 UniRef90-S310H9
UniRef90 U2PXL3 UniRef90 F7YGV3 UniRef90-UPI0003B760AC UniRef90-U2V284 UniRef90-26L2P8 UniRef90-D4M2G6 UniRef90-R5LRA8 UniRef90-A0A024QJ96 UniRef90-UPI000299F350 UniRet90_M3KIB6 UniRef90-C7NAY9 UniRef90-A6X0R5 UniRef90_UPIO00375C64A UniRef90-R6Z7B5 UniRef90-UPIO0047C26E5 UniRef90-UPI0003B5FCAF UniRef90 C2BGG6 UniRef90-UPIO0036D95D6 UniRef90-EOVRF1 UniRef90-R613U1 UniRef90-H4TYE9 UniRef90-J5GW12 2 UniRef90-F9MQS9
UniRef90
R9KD UniRef90-A0A021X676 UniRef90-V3ZIF7 UniRef90-TOMEV1 UniRef90-R5HBY7 UniRef90-D3QA14 UniRef90-A0A017SYB5 UniRef90-L9TQ07 UniRef90-A4YKX3 UniRefoloulw 21 UniRef90_-a9W401 UniRef90_C2CF50 UniRef90-UPIO00376D47B UniRef90-B7TLL8 UniRef90-D3F2T4 UniRef90-C7Q265 UniRef90-M5E312 UniRef90-H9K626 UniRef90-A3TRT8 UniRef90-H1XV55
UniRe90_MPSU1
UniRef90-UPIOOO4745C13 UniRef90-A7HRE7 UniRef90_M1UT78 UniRef90_U1R3J5 UniRef90-A0A024TLB9 UniRef90-E2SDHO UniRef90-Q553V1 UniRef90-A6R9Jo UniRef90-J4H1P0 UniRef90-UPI000255D87A UniRef90 UPIO00363E6CD UniRe990 UPIOOO3B46B86 UniRef90-F9X435 UniRef90-A9T4H6 UniRef90-D2VD05 UniRef90-UPIOOO344F9C2 UniRef90-UPIOO044115A5 UniRef90- X1ULL UniRef90-C7NOE4 UniR Refo-E5SV78 UniRef90-QORXYO UniRef90 UPIOOO465AOCO UniRef90-E6UWE6 UniRef90-X1SQV2 UniRef90_C7PR78 UniRef90_W6QB01

KLLIALFPSII $\frac{130}{V V Y Y C F A F S H Y H}$
150
150
160 RVLGQLPIYI AHIFQHAEGMVLPNPSSELPYEN LOYMLR RVLGQUPIYYAHIF QHAEGMVLPNPSSELPYVANFRYMH1T EII AGTPTIITNAYQVHKSMYFHLPKREHSTAQTILRTVR QLIAVFPMLAVYAYHAYCHMYDHRPEKDDSDAENFLRLLR RILGKVPTIAACAYRMRVGRPFNSPDSTMSFTGNFLAMLD RVVASCPTVVAAYWRYRQGKEPVQPRDDGAHTANFLYMLS R

MLTVTTA I I N DLR
QLI AKMPMMSVYAYYAYRMFHFDPPKPELSTAENLLYMLR NLMAKLPSTACYHYYNRDSLFTHYANPKYSTAENFLLLRK ELISKEPTI IAYAYNMLRHKHIRHPQKDLSLAENFLYMLK SUIAQMPVI MVYAHYYKKSMY: HPVKPEHTTAQAVLGSi R STLAKMPAILCYSMAAKAHFFEHPVKPELSUAENILSLLR SII SKLPNI MVSAYQVKKRCYMHPLDPTHSTAEMILSALR NILAKLPSI LCYAYQSKMHRYNHPVQQKDSDAENILYMLR SMLARLPRIAAFAHMHGSEMHVPHPTPGLSTAETILQVLR RLLAAPAVFLPAIIRLDQGQEPLAPDGSLSQAADLLRMLT MLI SDFPMLAVYGYHAYNHYYDHRPDENLSTAENLLRMLR R RLIAAPAVLTPALLRLQRGEQPVAPDGKADHAADMLRMLR SLLGRWPRAASDAHQAYVAEQIPPAREGYTMAETDLDVIH IGLSFN VFANDYLHUKGKKLYNDDLGDPVSGFLRVTN ELI AKLPLIAVYSYHAYRHFRKDNPEKGRSLAENILYMLR RLIAQIPAVIAYAYNMYHYSVFHKPKTKYS JAENFLYMLK ALLGKLPAITVNSYRLITQGQKAVQPNQDLAYSANFLYMIT SLIAKFPVIVAYAYFGMRHSYQRHPQPELSAAENFLYMLK
 HLMAAPAVFTTA ILRGQKGRRPDHPDPTDPHSADILRMMN RLIAKMPTLAAMSYKYSTGQPYMYPQNKMSYAENFLLHMMF SLLARLPRIAADAHSVRNRAHDPRPNPSYSMAET\|LQVRE SLIAARFPVIVAYAYFGMRHSFQRHPRPELSDAENFLYMLK SLIAKMPLIAYSYQVKDHNFDHNPDPEKSDAENDLAMRD HLMAAPAVFLPA ILRLQAGRRPVAPDASLPQSADMLRMLT
 KLLGCFPSTVANHYFHSDSLHMHFPVPELSTAENFGRMLR RISASLPPVMCYAYQAKRHYFNHYPDEKLSMAENILQMRV NI MGKLPSII AVYAYMSKMHYYHHYPRADYSTAENILSILR ELTSDFPMLAVYGYHAYNHMYDHRPEPELSTAENLLMMLR RMI AKMPTVAAMAYKYHDGQPFVYPKNDLDYASNFLRMCF DLIAKLPTLAAYRNGYRDGSTPCADDPKKDWSQNFSHMLG RLISEFPMLAVYAYHAYNHMYIHRPDPSLSTAENFLRMRH RVSVTADSYVAARGVGRPAVPQKEDDKSDTIVERFMRRWR ARRREGHAPVAPDPSLRQ

A EDMLRMVR KLLASLSSTLLYWYHYSHNGERTQPTDDDSTGGHFLHLLH TIVGACPVIAGALVQRARGAQPIAPNPDVSHASDTLRMVR GLLAKLPTLAAMUYRYREGTADGADDPNKDWSGNFATMLG SLIAKKISQLAAYYSYQVKGGKGSRSIDSSLDWSANFVKMLDG SATK SQAA YYYQVKIHNFDHNPKEDETIJANILSMRT EATTQISAAVAYVIA SYNDSKTSELDDEYTVASSML RLIAKVPTLAAAVHRYSDGWP DRYPRNNLGYVERFLHMMF RASVMALSFVAARGDGRPPVSQRVIDGARSPPERFLTRWR AAVMALSFVAQSARSIEHPGQAMVPQSEVDIVERFMIRWR KLIARFPTVISYGFQAKAHYFDHNPKNELGTAANDLHMDR
 SFIGQSPEAAHGQTSPMVPQKRVDEGRTVVERFMDRWR RTLSALATVIADTYCHKRGREFTPADPNGSFVANTLLMMG RLFAALPSVVALTQRRRRGLLPLEPRADLGYAENFLYMTF RLGAAAVFTAALCRAREKKSPVAPDARSGHAEDFLRMLR RITAKLPTALATFARARDGEEPVAPDEELDHAANFLYMLN NLIARIPEVAAYRSTYFDECLDIKYDSSLDYSANFARMLG AVMVLSYVAQAARGVGQPMVPQSEDDKAGTDTERFLTRWR DVIAKLPEVAAYQNTYKKSDDTHKIDENLDWSANFNRMLG DLIAKLPTIAAKDYRNVFKDGKVAPDQKDKDYGFNLANQL RLI GKATTLAAMAYRVRQGRDFVTPPVGLSYTGSFLYQMD DLI SRLP AAY DYRRVFHNQYIDPDPSLDWAGNLAHMMG PLLSTPTAVAANFRARKGDDDIDPKKNLSFSENFFHMCF DLLAKLPEAAAYワYRGKYKDTPIAPDKNLDFGGNFAHMMG RTTQAMATTIALAYCHKRGKPFTQPEREGTFGGNVLTMMG NLMAQLPEVAAFIYRRYKGGKT DPPDPKLDYAANYAHMLG NCDARLPLVAS\|IYRKTYHNQY IKSDSSLDWAADY ASMM AASTALSLIAQSARGEAPRVPRSSSDQGTSVVERFMTEGR RIVAKMPTLLAFAHRTQTNLLPIIEPSEDLSHSANYYYMMT $R D Q L A R V S A D T L S F D A Q S A R G A E L P A V P E S D T E R F L V R W R$ NLIAKLTPLAAMDYQNTFKNQDCAIDPQKDWSANFCLMLG A SVMALSYVASARGDYQPAVPQKRIDEAKTVTERFMVRWK RVSATALSI IAARGAALPDVPQRRVDDARGTTERFLVRWR RLVAAPAVYTAAVMRWRLGVQALAPDESLRYAADMLEMLH MSYKDSRGHKVVYPRPDLAYCANFLNMMF DLTARLPRTAAYПYRRKYKNNHIQPNGLLDWAGNFAHMLG RTVAAYAVVFGAVRSHRपGПPWKSPS DHQTYYENLLVDPK
UniRef90_Fotoj9 UniRef90_D8RHR6
UniRef90-A0RDV6
UniRef90_U2D2T4 UniRef90_U2D2T4 UniRef90_C4Z761
UniRef90_M2VUT4 UniRef90-J3EZA9 UniRef90_L5NBC1 UniRet90_B8GVR9
UniRef90_XOPFI5 UniRef90-R9MTX5 UniRef90-R5IK66 UniRef90-R7PDH4
UniRef90_R6NNU7 UniRef90-J0L1A2 UniRef90-B9YBJO UniRef90-R6TBW2
UniRef90 U5F5B5 UniRef90-R5ZI14 UniRef90_S310H9
UniRef90_U2PXL3 UniRef90-F7YGV3 UniRef90_UPIO003B760AC UniRef90_U2V284
UniRef90 Q6L2P8 UniRef90-D4M2G6 UniRef90-R5LRA8 UniRef90-A0A024QJ96 UniRef90_UPIO00299F350 UniRef90_M3KIB6 UniRef90_C7NAY9 UniRef90-A6X0R5 UniRef90-UPIO00375C64A UniRef90_R6Z7B5 UniRef90_UPI00047C26E5 UniRef90-UPI0003B5FCAF UniRef90-C2BGG6 UniRef90_UPIO0036D95D6 UniRef90_E0VRF1 UniRef90-R613U1 UniRef90_H4TYE9 UniRef90-J5GW12
UniRef90 F9MQS9 UniRef90-R9KDH6 UniRef90-A0A021X676 UniRef90-V3ZIF7 UniRef90-TOMEV1 UniRef90-R5HBY7
UniRef90_D3QA14 UniRef90_A0A017SYB5 UniRef90_L9TQ07 UniRef90_A4YKX3 UniRef90-U1MH21
UniRef90_OW4401 UniRef90_Q9W401
UniRef90_C2CF50 UniRef90_C2CF50 UniRef90-B7TIL8 UniRef90-D3F2T4 UniRef90-C7Q265 UniRef90-M5E312 UniRef90_H9K626 UniRef90_A3TRT8 UniRef90-H1XV55 UniRef90_M7SIU1
UniRef90_UPIO004745C13 UniRef90-A7HRE7 UniRef90-M1UT78 UniRef90_U1R3J5 UniRef90-A0A024TLB9 UniRef90-E2SDHO UniRef90_Q553V1
UniRef90_A6R9JO UniRef90-J4H1P0 UniRef90_UPI000255D87A UniRef90_UPI000363E6CL UniRef90_UPIO003 UniRef90_A9T4H6 UniRef90_D2VD05 UniRef90_UPI000344F9C2 UniRef90-UPI00044115A5 UniRef90-X1ULL1 UniRef90_C7N0E4
UniRef90-E5SV78 UniRef90-QORXYO UniRef90_UPIO00465A0C0 UniRef90-E6UWE6
UniRef90 X 1SQV2 UniRef90-C7PR78 UniRef90-W6QB01


UniRef90_Fotoj9 UniRef90-D8RHR6
UniRet90 AORDV UniRef90-U2D2T4 UniRef90 C4Z761 UniRef90-M2VUT4 UniRef90-J3EZA9 UniRef90 L-LNBC1
UniRef90 B8GVR9 UniRef90-B8GVR UniRef90-R9MTX5 UniRef90 R5IK66 UniRef90-R7PDH4
UniRef90 R6NNU7 UniRef90-J0L1A2 UniRef90_B9YBJ0 UniRef90_R6TBW2 UniRef90-R5ZI14 UniRef90-S310H9
UniRef90 U2P
U23 UniRef90- ${ }^{-} 7$ YGGV3 UniRef90_UPI0003B760AC UniRef90-U2V284 UniRef90-Q6L2P8 UniRef90_DM2G66 UniRef90-A0A024QJ96 UniRef90-M3KIB6 UniRef90_C7NAY9 UniRef90-A6XOR5 UniRef90_UPI000375C64A UniRef90-R6Z7B5 UniRef90_UPI00047C26E5 UniRef90-UPI0003B5FCAF UniRef90 C2BGG6 UniRef90-UPIOOO36D95D6 UniRef90-EOVRF1 UniRef90-R613U1 UniRef90-H4TYE9 UniRef90-J5GW12 2 UniRef90- R9KDH6 UniRef90-A0A021X676 UniRef90- $\mathbf{3 Z Z I F 7}$ UniRef90-TOMEV1 UniRef90-R5HBY7
UniRef90 D3QA14 UniRef90-D3QA14
UniRef90 A0A017SYB5 UniRef90-L9TQ07 UniRef90-A4YKX3 UniRefotoulw 21 UniRef90-Q9W401 UniRef90_C2CF50 UniRef90-UPIOOO376D47B UniRef90-B7TLL8 UniRef90-D3F2T4 UniRef90-C7Q265 UniRef90-M5E312 UniRef90-H9K626 UniRef90-A3TRT8 UniRef90-H1XV55 UniRef90_UPIOOO4745C13 UniRef90-A7HRE7 UniRef90_M1UT78 UniRef90_U1R3J5 UniRef90-A0AO24TLB9 UniRef90-E2SDHO UniRef90-Q553V1 UniRef90_A6R9J0 UniRef90-J4H1PO UniRef90-UPI000255D87A UniRef90_UPIO00363E6CD UniRef90-UP10003B46B86 UniRef90-F9X435 UniRef90-A9T4H6 UniRef90_D2VD05 UniRef90-UPIO00344F9C2 UniRef90-UPIo0044115A5 UniRef90-X1ULL UniRef90-C7NOE4 UniRef90-E5SV78 UniRef90-QORXYO UniRef90-UPIOOO465AOCO UniRef90-E6UWE6 UniRef90-X1SQV2 UniRef90_C7PR78 UniRef90_W6QB01


Lb9

210
220
230
DIJK A NVGNWE 240
TYSVI A S ALL G S|L|K GPRHGGANDKVIVQM|IED|I|KANVGNWED LYTCLAAGVATLGGPFHGGANEACANMI QEIGTVDNTPAY LYGALTGAVASLKGSLHGGANEAVMYMLLEAGNVEKFEEL TYSVISAAMSSLKGKKHGGANLMVMNMMDDIKSHVKDYED PYTAISAAAAAHYGPRDSGVSDAVIGMLSEIQDPSSVRSF PLSAATAAVGALKGPRHGGALERTFELLTDLDETADPTAVV LYGALTGAVASLKGNLHGGANEAVMHMLDEGKTTDGFRHLL
 DYSTVCGSTGSMKGPRHGGANIKVAEMMDAVLEETGGYTA TYSSIAAGI GSLKGPRHGGANIKVSNMDHHLKDTMTDWMLD TYSAI AAGIGALKGPKHGGANIKVAQMVDFIRNDVADDND YYSCLTAAVSALKGPLHGGANERVFEMIEDIEKKQIKPKD DYSAMAASVGSLKGPRHGGANDSARRMMDAMITRDLEQDM LTS SVLA GL GALKGPLHGGAPGPVIEMLDAIQAHGDAAGW

 TYSAIAASIGSLKGPRHGGANLKAQGMFDDIKKSVKDWIL

 MTSSILAAI GALKGPLHGGAPAPVLDMLDAIGNAKNAEVW TYSSI SASI GSLKGPMHGGANSMVTQMIEDMKKNTNPYDF
$P$


 TYSTMAAALSSLKGPRHGGANDKVIEMLQDVKGHESDWTD VAACTSSG GALSGPLHGGAPSRVLHMLEEVERTGDAKTY VYSAI IGAIGALRGPKHGGANEVSLEDQQRYETPDEAEAD

 PYASVAAGITALWGPAHGGANEAVLKMLEEDGDAKNV AAAALSGAVGALSGPLHGGAPSRVLTMLDEVEALGDAEKW AAAALSGAVGAMSGPLHGGAPARVLHMVEAVEEIGDARKY TYSAVGAAVGSLKGPKHGGANLRVKAMVDNIKDNLDNYSD AYDSFAAGMNGLAGPLHGLANQEVLIWLEKVQSDEKVAEF VAACLSGADGALSGPLHGGAPSRAQHMLEGVERTGDATAY PTSSLVSGVVSAYGPLHGGADDLAYKGFEEVGTVDNVSQL
 LHASVTGAMGALSGGS AAAALSGAVGAMSGP HGLIANQEVLGWIMDLHDEETDTKF AAAALSGAVGAMSGPLHGGAPARVLTMLEEVEKSGDAEKY PMLSLAAGLNGLAGPLHGLANQEVLTWLMEMKSDEAVKGY PYYSFSAGMNGLAGPLHGMANQNVMHWLEKMMDEEQVREF THSAMVGGISALKGPLHGGANEVVMKMFFDIKEPENAEKY AYYSLSAGI NGLAGPLHGLANQEVLRWIDDVFKKEQLTQF
 PYLSLSAGMNGLAGPLHGLANQEVLKWLKEVQKDEVLRQL VAAALSGAVGAMSGPLHGGAPARVLHMLDETERDGDARTY PISCKITAGVVSGYGPLHGGADDLAYKGFEEVGTPERVPELD VAAALSGAIGAMSGPLHGGAPARVLPMDEEVERTGDARAV PYDSFSAAMAGLAGPLHGLANQEVLVFLHMTYKSDDAKKY VAAALSGAL GAMSGPLHGGAPARVLPM SEMVERTGDARAV LASAVLAGISALKGPLHGGAPGPVLDALDA\|GTAANARHW


UniRef90_B7TIL8
UniRef90 D3F2T4
UniRef90_C7Q265
UniRef90-M5E3I2
UniRef90-TOZKH
UniRef90_H9K626
UniRef90_A3TRT8
UniRef90-H1XV55
UniRef90-M7SIU1
UniRef90-UPI0004745C13
UniRef90_A7HRE7
UniRef90_M1UT78
UniRef90 U1R3J5
UniRef90_A0A024TLB9
UniRef90_E2SDH0
UniRef90_Q553V1
UniRef90_A6R9J0
UniRef90_J4H1P0
UniRef90_UPI000255D87A
UniRef90_UPI000363E6CD
UniRef90_UPI0003B46B86
UniRef90_F9X435
UniRef90-A9T4H6
UniRef90_D2VD05
UniRef90_UPI000344F9C2
UniRef90_UPI00044115A5
UniRef90_X1ULL1
UniRef90_C7N0E4
UniRef90_E5SV78
UniRef90_Q0RXY0
UniRef90_UPI000465A0C0
UniRef90-E6UWE6
UniRef90- X1SQV2
UniRef90 - C7PR78
UniRef90-W6QB01
VK DALDRGERLMGFGHRVYRAEDPRARVLRRTAMQL GSR
$V K S V L D K G E R L M G F G H R V Y R A Q D P R A R V L R R T A K E L L D A P$

LA QAKDKSSHLMGFGHRVYKNFDPRAKI I RETCHKVLSREL



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

VE QALEDGRRVAGFGHRVYDVKDPRARILGERSEEL
A WD T L K A G K VI P GYGHA V L R K T D P R Y S CQRE FA L K H MP ND

L WE G L N A G R VVVPG F GHA V L R K T D P R Y T C C Q R E F A L K H L P P Q D






AEKKLARKEKI M
VRS SLDRKERLMGFGHRVYRAEDPRARVLRRTCKELGAA
LLKHL E S GQVI P GYGHAVLRK T DPRF LSQKKQFAENHIIKN D
$V$ K GIL D R K E KL M GF GHRVVYRAEDPRAAVLRATAAKALNA A


I E R A KD K K F R L M GF GHRRVYKTY DPRAK IMK KMCDLL N K L K


UniRef90 Fotoj9 UniRef90-D8RHR6 UniRef90_AORDV6 UniRef90-C4Z761 UniRef90-M2VUT4 UniRef90_J3EZA9 UniRef90-L5NBC1 UniRef90-B8GVR9 UniRef90_XOPFI5
UniRef90-R9MTX5 UniRef90-R5IK66 UniRef90-R7PDH4 UniRef90-R6NNU7 UniRef90-J0L1A2 UniRef90-B9YBJO UniRef90-R6TBW2
UniRef90 U5F5B5 UniRef90-R5ZI14 UniRef90-S3IOH9
UniRef90-U2PXL3 UniRef90-F7YGV3 UniRef90 UPI0003B760AC UniRef90_U2V284 UniRef90-Q6L2P8 UniRef90-D4M2G6 UniRef90-R5LRA8 UniRef90-A0A024QJ96 UniRef90-UPI000299F350 UniRef90_M3KIB6 UniRef90-C7NAY9 UniRef90-A6X0R5 UniRef90_UPIO00375C64A UniRef90-R6Z7B5 UniRef90_UPIO0047C26E5 UniRef90-UPI0003B5FCAF UniRef90 C2BGG6 UniRef90_UPIO0036D95D6 UniRef90-E0VRF1 UniRef90-R6I3U1 UniRef90-H4TYE9 UniRef90-J5GW12 UniRef90-F9MQS9 UniRef90-R9KDH6 UniRef90-A0A021X676 UniRef90-V3ZIF7 UniRef90-TOMEV1 UniRef90-R5HBY7 UniRef90-D3QA14 UniRef90_A0A017SYB5 UniRef90_L9TQ07 UniRef90_A4YKX3 UniRef90-U1MH21
UniRef90_OW4401 UniRef90_Q9W401 UniRef90-C2CF50 UniRef90_UPIO00376D47B UniRef90-B7TIL8 UniRef90-D3F2T4 UniRef90_C7Q265 UniRef90-M5E312 UniRef90-TOZKH8 UniRef90-H9K626 UniRef90-A3TRT8 UniRef90-H1XV55 UniRef90-M7SIU1 UniRef90-UPIO004745C13 UniRef90-A7HRE7 UniRef90_M1UT78 UniRef90_U1R3J5 UniRef90-A0A024TLB9 UniRef90-E2SDH0 UniRef90-Q553V1 UniRef90_A6R9J0 UniRef90-J4H1P0 UniRef90_UPI000255D87A UniRef90-UPI000363E6CD UniRef90-UPI0003B46B86 UniRef90-F9X435 UniRef90-A9T4H6 UniRef90-D2VD05 UniRef90_UPI000344F9C2 UniRef90_UPIO0044115A5 UniRef90-X1ULL1 UniRef90-C7N0E4 UniRef90-E5SV78 UniRef90_UPIOO0465A0C0 UniRef90-E6UWE6 UniRef90-X1SQV2 UniRef90-C7PR78 UniRef90-W6QB01 UniRef90_UPI00035FB7AA

290
300
310
320

$G Q L D K D E L I E R V E R L G P K V M R D V R H S T N \square D M Y T G F V Y S M L$ NRIIL DTALELLERVALDYFMEKKDYPNTDFFSGLLFNELL GLDDEFADYDRVERIA GEEDMTHRKCANVDFYSGFVYTML GKEKEFEFLELIEQRAMECFINKRVCANVDLYSGFIYDML NRLKEFNLYAMDERLAPEVFYDFKVCANVDFYSGFVYQCL NANKDRLHLAEAVETANKHKPERMLSTNVEYYTALLLEQL DADEEFELCFSNVEKFTKEDGKDFELGCANVVDLYSGFVYKGL
 $Q \mathrm{~V}$ D R A E GU E K A ALLAMMLK ERKP DR P L D V N V E F Y T A L L L E S L GKEA D F A F VE N I E K I GQ K LI R A Y P P CA N V D L Y S G L V Y D M L



RAEVAEALESAALAELRARKPDRVLATNVEFWSAVVLDYA RYEVALALEEAALAELHERRPDRVLETNVEFWAAVVLDFA GRLQEFELYDNDESLTKEDFKDCEVCANVDLYSGFVYQLL GDNPLEELADRLEEIADEYFVERKLYPNVDFYSGIIY $K D F K L V Q V F K V V P P I L Q E T G K V K N P W P N V D A H S G V L L Q Y Y$
 DSNPLLRIAFEIDRIINEYFTSRNDKANADLYGCFLYTAL

$E L F Q\|V E\| Y Q Q M P G \| L T E H G K T K N P Y P N V D S H S G V L L Y H Y$
 $P$ LLF KL V Q $L$ GKDALLETAMALLHDAAMEYFIVKRKLAPNVVDCC GLLIMYAM

 LIF K VVS M Y E V AP D I L K E Q GK A K N P WP NV DA Q S GVI Q WY Y


 SANPLLRVALE DDRVAGQYFTSRNLXVNADLYGCFLYTAF

RYEVAAAELEQAALTELLRERRPDRADETNVEFWAAVILDFA P MVQLLWDLE DVVPD LL NS LGGKVKNPYPNVVAHSGVLLQHY RYEAAAALE QAALA ELLRERRPDRADETNVEFWAAVILDFA RYEVVA AL E QA ALAELRERRPDRAI ETNVEFWAAVI L D FA SVVNAA E A A E Q A A L A A L L R E K K P D R A L E T



UniRef90_Fotoj9 UniRef90-D8RHR6 UniRef90_AORDV6 UniRef90-C4Z761 UniRef90_M2VUT4 UniRef90-J3EZAA9 UniRef90_L5NBC1 UniRef90-B8GVR9
UniRef90- XOPFI5 UniRef90-R9MTX5 UniRef90-R5IK66 UniRef90-R7PDH4
UniRef90 R6NNU7 UniRef90_J0L1A2 UniRef90-B9YBJ0 UniRef90-R6TBW2 UniRef90_U5F5B5 UniRef90_R5ZI14 UniRef90_S3IOH9
UniRef90_U2PXL3 UniRef90-F7YGV3
UniRef90_UPI0003B760AC
UniRef90_U2V284
UniRef90_Q6L2P8
UniRef90-D4M2G6
UniRef90-R5LRA8
UniRef90-A0A024QJ96
UniRef90-UPI000299F350
UniRef90-M3KIB6
UniRef90-C7NAY9
UniRef90-A6X0R5
UniRef90-UPI000375C64A
UniRef90-R6Z7B5
UniRef90_UPI00047C26E5
UniRef90-UPI0003B5FCAF
UniRef90-C2BGG6
UniRef90_UPIO0036D95D6
UniRef90_E0VRF1
UniRef90-R6I3U1
UniRef90-H4TYE9
UniRef90-J5GW12
UniRef90-F9MQS9
UniRef90-R9KDH6
UniRef90-A0A021X676
UniRef90_V3ZIF7
UniRef90-TOMEV1
UniRef90-R5HBY7
UniRef9O-D3QA14
UniRef90_A0A017SYB5
UniRef90_L9TQ07
UniRef90-A4YKX3
UniRef90_U1MH21
UniRef90_Q9W401
UniRef90_C2CF50
UniRef90_UPIO00376D47B
UniRef90-B7TIL8
UniRef90_D3F2T4
UniRef90_C7Q265
UniRef90-M5E312
UniRef90-TOZKH8
UniRef90_H9K626
UniRef90-H1XV55
UniRef90-M7SIU1
UniRef90-UPIO004745C13
UniRef90-A7HRE7
UniRef90-M1UT78
UniRef90_U1R3J5
UniRef90_A0A024TLB9
UniRef90-E2SDPHO
UniRef90_Q553V1
UniRef90_A6R9JO
UniRef90-J4H1P0
UniRef90_UPI000255D87A
UniRef90_UPI000363E6CD
UniRef90_UPI0003B46B86
UniRef90_F9X435
UniRef90-A9T4H6
UniRef90-D2VD05
UniRef90_UPI000344F9C2
UniRef90_UPIO0044115A5
UniRef90_X1ULL1
UniRef90-C7N0E4
UniRef90-E5SV78
UniRef90_UPIOO0465AOC0
UniRef90-E6UWE6
UniRef90-X1SQV2
UniRef90-C7PR78
UniRef90-W6QB01
UniRef90_UPI00035FB7AA


$G \square P E D L Y T P L F V I R N D G W V A H N V E N K L Y D G R D M R P A T K Y$ GI PRDLYTPLFVISRFVGWLAHNIEHKLYDNRIVRPATKY GIPMELYTAI FAIAR』VGWSAHRMEELIGMNKIIRPAYMS GFPTTMFTVLFALARTVGWDAQWNEMDDPEQRI GRPRQDY NKEMNYYTVLFGVSRALGCTASWIWDRALGGDPIERPKSFD

 GRPY
K $\square P R Q A F T P \square F A V A R A A G W T A H A R E Q Q R T G R L \square R P S S A Y$ GLEMAFYTVLFGVSRAMGCLSQLIWSRAMGLP I ERPKSHS D DPEELYYPMFAIARTVGWSAHRLEQDE DSKI I RPAYKS


EVPPELFTPLFTCARTAGWSAH\LEQKREGRLIRPTAKY QVPANMFTSLFTCARTAGWSAHLLEQKKTG RLI RPSSRY NIPEELFTPLFATARVASWCAHRIEQLVSDHKIIRPAYKS

GMEMNYYTVLFGVSRA LGVLS SLVWSRGLGFPDERPKS LS QVPGDMMTPLFVAARTAGWSAHILEQKQTG RLDRPSSRY

 $G L T Q N Y Y T V L F G V S R A M G V L S Q L F W D R A L G L P L E R P K S V T$ QUPPHMFTAMFTSARTAGWSAHILEQKRTGGRLDRPSAIY GKEHNFYTVLFGVSRADGVLSSLVWDRGLGHPIERPKSVT
 G $\square E Y P V Y T M L F G V S R A L G V L T Q L I W D R I Y G L P I E R P K S$ GFDVDFFTPI FVMARDTGWSAHI I E QL

 GKE Q

RVPPAMMPAMFTAARTAGWAAHLLEQKRTGRRVRPSATY GMEMNFYTVLFGVSRADGLMAQLIWSRGLGDPLERPKSMT EVPAHMMPAMFTCGRTAGWCAHILEQKRLGKLVRPAADY QVPPSMMPAMFTAARTAGWAAHVLEQKRTG RLVRPSASY GFGRESFTCVFAAGRVSGWVAHAREQ VKKGRLIVRPQSVY GMPTNMFTVMFADGRLPGWI AQWKEMDDPNWKLSRPRQI Y


| UniRef90_FOTOJ9 | $\text { VAPRQQ Y } \square^{370} \square \mathrm{NQR}$ |
| :---: | :---: |
| UniRef90-D8RHR6 | 1 GEWLQ ${ }^{\text {a }}$ |
| UniRef90-A0RDV6 | 1 GER |
| UniRef90_U2D2T4 | L TAKQSYVP $\square \mathrm{NQR}$ |
| UniRef90-C4Z761 | L V S K K E Y I EREER |
| UniRef90-M2VUT4 | KGEEKRDYVALEKR |
| UniRef90-J3EZA9 | VGPERRQWIPRSDR |
| UniRef90_L5NBC1 | SGPRDL |
| UniRef90-B8GVR9 | VGPEVR |
| UniRef90-XOPFI5 | TGP■NR |
| UniRef90-R9MTX5 | VGY HVVDYQELGER |
| UniRef90-R5IK66 | $V G D$ NKEYTAMEER |
| UniRef90-R7PDH4 | V VD S GVYVPLK D R |
| UniRef90_R6NNU7 | 1 NTAGL YVPITER |
| UniRef90-J0L1A2 | V GPTDRHY |
| UniRef90-B9YBJ0 | V G D L A D Y $\dagger$ P L A Q R |
| UniRef90-R6TBW2 | I S GEKKYI PLDER |
| UniRef90_U5F5B5 | VGAV KEYVKMEER |
| UniRef90-R5ZI14 | V I EPLEYKPLA D R |
| UniRef90-S310H9 | 1 GPV P Q |
| UniRef90_U2PXL3 | 1 V TEKLYK G $\square$ NER |
| UniRef90-F7YGV3 | V G PVPP |
| UniRef90_UPI0003B760AC |  |
| UniRef90-U2V284 | T Y M DER F Y VP $\square$ EER |
| UniRef90_Q6L2P8 | NGDGER |
| UniRef90-D4M2G6 | VGQ HTEFHNRDDR |
| UniRef90_R5LRA8 | V TEP $\square \mathrm{EFTPMEDR}$ |
| UniRef90-A0A024QJ96 | $\checkmark \mathrm{G}$ |
| UniRef90_UPI000299F350 | V Y PRL K Y T F MKDR |
| UniRef90-M3KIB6 | $V \mathrm{GP}$ |
| UniRef90_C7NAY9 | 1 D E |
| UniRef90_A6X0R5 | V G P T |
| UniRef90_UPI000375C64A | TGEKQRDV |
| UniRef90-R6Z7B5 | VME QAEYVPLSER |
| UniRef90-UPI00047C26E5 | VCERH PYRPLSER |
| UniRef90_UPI0003B5FCAF | V G P F P |
| UniRef90-C2BGG6 | LS EM K D Y I S LD E R |
| UniRef90_UPI00036D95D6 | T G P L P K |
| UniRef90-EOVRF1 |  |
| UniRef90-R613U1 | V S $\square$ K G H Y $\square$ P M E Q R |
| UniRef90-H4TYE9 |  |
| UniRef90-J5GW12 | VGED KEYTPFKDR |
| UniRef90_F9MQS9 | VGNTE SY $\square$ PWEER |
| UniRef90_R9KDH6 | V M E EK |
| UniRef90_A0A021X676 | IG A P K R D Y VPV V K R |
| UniRef90-V3ZIF7 | T |
| UniRef90-TOMEV1 | T |
| UniRef90-R5HBY7 |  |
| UniRef90-D3QA14 | V G P G P R K |
| UniRef90-A0A017SYB5 | $V G P R$ |
| UniRef90_L9TQ07 |  |
| UniRef90_A4YKX3 | ЏG P K P |
| UniRef90_U1MH21 | T |
| UniRef90_Q9W401 |  |
| UniRef90_C2CF50 | L NQV K D Y IP L N L R |
| UniRef90-UPI000376D47B | IGVEERD |
| UniRef90-B7TIL8 |  |
| UniRef90_D3F2T4 | V G P A P R |
| UniRef90_C7Q265 | $V G P G P R K$ |
| UniRef90-M5E312 |  |
| UniRef90-TOZKH8 |  |
| UniRef90-H9K626 | TE H $\square$ M R |
| UniRef90-A3TRT8 | $\square \mathrm{DEA}$ A R |
| UniRef90_H1XV55 | T D M L E K |
| UniRef90-M7SIU1 | T G |
| UniRef90_UPI0004745C13 |  |
| UniRef90-A7HRE7 | VGE WPE D |
| UniRef90-M1UT78 | S G P P L R P Y VPMED R |
| UniRef90_U1R3J5 |  |
| UniRef90_A0A024TLB9 | S E W ${ }_{\text {d }}$ E H F |
| UniRef90_E2SDH0 | T G P P T R |
| UniRef90_Q553V1 | T |
| UniRef90_A6R9J0 | T |
| UniRef90-J4H1P0 | VGA G Q R D Y VPVD K R |
| UniRef90-UPI000255D87A |  |
| UniRef90-UPI000363E6CD | $\square \mathrm{G}$ S D H R K VQ S $\square$ D $\square$ R |
| UniRef90_UPI0003B46B86 | T A MLIE |
| UniRef90-F9X435 | T G |
| UniRef90_A9T4H6 | F G Wli |
| UniRef90_D2VD05 | TEWIKK HV |
| UniRef90-UPI000344F9C2 | $\square$ GPAERD |
| UniRef90-UPI00044115A5 | TGSMAQ |
| UniRef90-X1ULL1 |  |
| UniRef90-C7N0E4 | VGP G S R S L K D VE |
| UniRef90_E5SV78 | T |
| UniRef90-Q0RXY0 | T GPAPRTPESVE |
| UniRef90-UPI000465A0C0 | VGPGPR |
| UniRef90-E6UWE6 | VGPMPQD |
| UniRef90-X1SQV2 | T GP LQ R K F VPVDER |
| UniRef90-C7PR78 | T E WMKQFV |
| UniRef90-W6QB01 | T G H A E |
| UniRef90 UPI00035FB7AA | T G P D D $\square$ P F V P L A K R |

UniRef90_D1A6E9 UniRef90-O24135 UniRef90 S2J2K1 UniRef90-W4VHX5
UniRef90 C5XXF7 UniRef90-T1C509 UniRef90-T1CN84 UniRef90-N1QM43 UniRef90_C5KT84 UniRef90_G7XXB6 UniRef90-G8YHV4 UniRef90- WORFR1 UniRef90-A0A024KIU4 UniRef90_Q4UF22
UniRef90 UPI00039BA9D5
UniRef90-N1JLM4
UniRef90-T1CTC4
UniRef90-D5SS60
UniRef90-M1IMP7
UniRef90_UPI000440E19B
UniRef90 UPI00034C6F19
UniRef90-A6R632
UniRef90-D8PX28
UniRef90_U7FSYO
UniRef90-J7SA45
UniRef90-A0E606
UniRef90_B3E863
UniRef90-UPI000462403F
UniRef90-I7IR70
UniRef90-M0SQ89
UniRef90-Q54KL0
UniRef90-N2DZG7
UniRef90_C8X7Y1
UniRef90_G3JGY2
UniRef90_UPIO0037A1B4A
UniRef90-W5FJF2
UniRef90_T0T9B3
UniRef90-D3B4P1
UniRef90-X5X4G0
UniRef90-UPIO0032AC930
UniRef90-R4XFV8
UniRef90_R5Q082
UniRef90_Q5AVT7
UniRef90-E3L2Y3
UniRef90-H5UTB4
UniRef90- X8E358
UniRef90_A5KE63
UniRef90-GOYZF2
UniRef90-Q13UT6
UniRef90-F8KZP7
UniRef90-R0EJ47
UniRef90-UPI000225B09B
UniRef90_H2K297
UniRef90-W4LHN3
UniRef90-Q6YN09
UniRet90_Q6YN09
UniRef90_UPIO00479BDDA
UniRef90-J7R591
UniRef90-R4LN43
UniRef90-Q6J6W2
UniRef90-B2JDWW
UniRef90_UPIO00373C21D
UniRef90_H8MIB3
UniRef90_A0A023NU09
UniRef90 J6EGM0
UniRef90_A0A022GV90
UniRef90-B2UH00
UniRef90_UPI0003602E9D
UniRef90-G8C230
UniRef90_UPIO00369E789
UniRef90-10WXX0
UniRef90 Q6YMS7
UniRef90_UPIO00415D38D
UniRef90-W5VNK4
UniRef90-R4Y263
UniRef90_Q1DF95
UniRef90-C2UV33
UniRef90_B1JXE4
UniRef90_V9PJ27
UniRef90-X0QBC5
UniRef90_UPI0003B4D520

1
YGGMRGПKGLIWEGSVLDADEG TRFRE ${ }^{30}$ T TPECQEKP ${ }^{40}$ KPGLEGVVAFETEDAEPDKEGGALRYRGVDIEDLVGRVS
 Y I G G R G K GLEGUVAAESKDSSIDNDQ VLGGMRGMTGMLDWETSLLDPEE
 I RF RGLS I P ECQKE C L

GGMRGLKAMVWEGSVLDANEG TRFHGKTDKDCQQELP VVGGMRGI KAMITDTSDLDPVEGI RYRGRSLKEVNEALP GLAGUIAGQSAlSMVGHNETGLHYRGYEIHDLAQKSS DPGLRNTTVVETAISFSDHERSLLDFRGYSLEQLWQSD


GGLEDVVAAETVLS DVDGAAGRLTVRGHALDELAGAWR $M K S G L E D V V A A E T M L S D V D G L A G R L D M R G V S L D D L A G T P$




VIGGMRGLKSMLWEASVLDPNEG TRFHGLSTTDCKQQLP PGLE GVTAF RTE DAEPDKDGGALRYRGVDIEQLVGRVT


YGGMRGDKSMVWEGSVLDPEEG TRFRGLTDPEVKKKPD GGMRNVFGLFYDISLLDSKTG ITFRDYNIPEIDQEYQQ GGARDI RSLVTDISYLDPQEG $V V G G M R G L K S M L W E A S V L D P D E G$

VIS GMRGMTGLLWETSLLDPDEG TRFRGDSDPECQKEPD ESKDCLVN EDSIYYRGYDIKDLTAVSS
LS GVPA GNTALCTVGKSGNDLHYRGYDVDDLAEHCE

DPGYLNTAPVRSSTCY\|DGDEG\|LRYRGYPDEEVAESSS
GLKDMDACNTRISSIDDDH LUSYSGYDI SEFMEKAS
 VRATPNDQTGITDI R DGALFYRGRDATELARTST


D P GLLNTTVIESA DSFSDHERGLLLFRGYSLEEDW KSD VF GGMRGLKAMLWDPSVLDSEEG V RFWGRTVAECQQEML TA A A EADPA GGVL RYRGDDVRDLVGVVP
G LIKDAVGMVTETSEDDPKTG I R DRTHTIDSMSGCPY


## GVPVLES S $\square$ TLV AE GRLLYRGHDAMDLA QS A S <br> 

PGSGGDDSVRTRDT LI EQDRYFYRGVDADDDASRHS



## AACASK TI F DDGEKG LLRYRGYD DEYLVMQHS GQPVLES GITLVAG GRLYYRGRDAVRLADSAT

 GLLPVLESATTLID DGQLFYRGESAVALAGSRS GEPVIDSSVSRVGAEG LAYRGHSAVTLAEGRA$G \square P V L E S R \square T Q \square \quad A D G R L R Y R G A D A D A L S D A A T$ ASCSSSITGIDGDVGLLKYRGHDVNYLAENY D
$G L E G V V A F T S D I A E P D K G G G A L R Y R G V D V E E V V E H V T$

## UniRef90 R7S8P4

 UniRef90_D1A6E9 UniRef90-O24135 UniRef90-S2J2K1 UniRef90-W4VHX5 UniRef90-C5XXF7 UniRef90-T1CN84 UniRef90-N1 QM43 UniRef90_C5KT84 UniRef90-G7XXB6 UniRef90_G8YHV4 UniRef90-A0A059LS11 UniRef90 ${ }^{-}$W0RFR1 UniRef90-A0A024KIU4 UniRef90_Q4UF22 UniRef90-UPI00039BA9D5 UniRef90-N1JLM4 UniRef90-T1CTC4 UniRef90-A0LR31 UniRef90_D5SS60UniRef90 ${ }^{\text {M1 IMP }}$ UniRef90-UPI000440E19B UniRef90-UPI00034C6F19 UniRef90-A6R632 UniRef90-D8PX28 UniRef90-U7FSY0 UniRef90-H1Q618 UniRef90-J7SA45 UniRef90-A0E606 UniRef90-B3E863 UniRef90_UPI000462403F UniRef90-I7IR70 UniRef90_U1MIT2 UniRef90-M0SQ89 UniRef90-Q54KL0 UniRef90-N2DZG7 UniRef90-C8X7Y1 UniRef90_G3JGY2 UniRef90_UPI00037A1B4A UniRef90-W5FJF2 UniRef90-T0T9B3 UniRef90-D3B4P1 UniRef90-X5X4G0 UniRef90-G8S1Z0 UniRef90_UPIO0032AC930 UniRef90-R4XFV8
UniRef90-R5Q082 UniRef90 Q5AVT7 UniRef90-E3L2Y3 UniRef90-H5UTB4 UniRef90-X8E358 UniRef90-A5KE63 UniRef90-GOYZF2 UniRef90_Q13UT6 UniRef90-F8KZP7 UniRef90_ROEJ47 UniRef90_UPI000225B09B UniRef90-H2K297 UniRef90-W4LHN3 UniRef90-Q6YN09 UniRef90_UPI000479BDDA UniRef90_J7R591 UniRef90_R4LN43 UniRef90-Q6J6W2 UniRef90-B2JDWW UniRef90 UPI000373C21D UniRef90-H8MIB3 UniRef90-A0A023NU09 UniRef90-J6EGM0 UniRef90_A0A022GV90 UniRef90-B2UH00 UniRef90_UPI0003602E9D UniRef90-G8C230 UniRef90_UPIO00369E789 UniRef90-IOWXX0 UniRef90- Q6YMS7 UniRef90_UPI000415D38D UniRef90-W5VNK4 UniRef90-R4Y263 UniRef90_Q1DF95 UniRef90-C2UV33 UniRef90-B1JXE4 UniRef90_V9PJ27 UniRef90-X0QBC5
UniRef90-UPI0003B4D520



 PEGLLWLLLTGKVPTKEQVDALSKELLARSTVPAHVYKAD


PEGLFWLLLTGEDPSEEQVRQLSADLAARSELPEHVSATL PEAL FWLLLTGGDPSDQEFKFVQEEWKRRGELDQETVKFI


PEGLLWLLLTGKVPNKEQVDGLSAELQSRAKVPDNVFRA】

 PEAMFWLLLTGQVPSVAQVRVFSRELAEQAADPAFVSKML

FVEVAYLLMYGNLPTQSQLA GWEFADSQHSAVPQGLLD\I FEEVIYLLWNGHLPTQMELKYFEAELRKNYDISDAEQCIL




FEDMLHLLVWGSYPTPPQKEQLRSKLAAQMAVPETVQTAV PESMFWYLLTGKVPSEKQDEAFQADLAERSTKPKFVEQLI FDRVWGLLVVDDLG
SEAVLWLLLTNEVPTDQEVKELSLEELCRRSEDPDHVFKVI F DEVSYLLI YGELPTPQQLEDFTTKI QRHTLLHEDLKRFF A E A ML WY $\begin{gathered}\text { T } \\ \text { T }\end{gathered}$ पEE $\square A A L L W E C$ SARADADAPAVPFATAQWAAW PERADHLLYTGNDGSKGEDEDFSNLLQRHADCAPRVIDBD VEEAAALLWGCTVDEAFDQAAPC
PEAMFWLLLTGKVPSVNQFAMAVSALNYTSKFAKAYEQGL $Y \| V N \mathbb{R}$


 PESMLWLLLT GKVPTVEQTNELISELNGRARLPECTEK LLD
 LLEEVAALLWWECSARRVVGAAPAAPLGAAQQWA WLKLVS DVA $L E E V A A L L W E C S A R R V V A A P A A P L A A A Q W S A W L K L W S D S A$
$L E E A A A L L W Q Y P A D A A F A A H A V E A A P V L A$

 PESMLWLLMTGSVPTFEQTGSLRRELADRRKLPHYTEKVL VEAVAARLWQCPVEAAFGAAPPPPPAHLAGMQAA
LETVAAARLW PEEVAEWLWTGELLRPGVRFTAPEQAVVAAR


F Le ITA Y LLFYGVLPNKDEFENFSCNVIEEHSDPQQVYN!I LE SVA GLLWSVAADDPFAVPAAPLPPTAER】AAEAT

UniRef90_R7S8P4 UniRef90-D1A6E9 UniRef90-O24135 UniRef90 S2J2K1 UniRef90-W4VHX5 UniRef90-C5XXF7 UniRef90-T1CN84 UniRef90-N1QM43 UniRef90_C5KT84 UniRef90_K2C6M9 UniRef90_G7XXB6 UniRef90_G8YHV4 UniRef90_A0A059LS11 UniRef90 W0RFR1 UniRef90-A0A024KIU4 UniRef90-Q4UF22
UniRef90-I7IR70
UniRef90_U1MIT2
UniRef90-M0SQ89
UniRef90-Q54KL0
UniRef90-N2DZG7
UniRef90-C8X7Y1
UniRef90 G3JGY2
UniRef90_UPI00037A1B4A
UniRef90-W5FJF2
UniRef90-T0T9B3
UniRef90-D3B4P1
UniRef90-X5X4G0
UniRef90- G8S1Z0
UniRef90_UPI00032AC930
UniRef90-R4XFV8
UniRef90_R5Q082
UniRef90_Q5AVT7
UniRef90-E3L2Y3
UniRef90-H5UTB4
UniRef90_LOAVK3
UniRef90-X8E358
UniRef90-A5KE63
UniRef90 Q13UT6
UniRef90-F8KZP7
UniRef90-R0EJ47
UniRef90-Q2H3P1
UniRef90_UPI000225B09B
UniRef90_H2K297
UniRef90-W4LHN3
UniRef90-Q6YN09
UniRef90_Q6YN09
UniRef9O_UPI000479BDDA
UniRef90-J7R591
UniRef90-R4LN43
UniRef90_Q6J6W2
UniRef90-B2JDW6
UniRef90_UPIO00373C21D
UniRef90_H8MIB3
UniRef90-A0A023NU09
UniRef90-J6EGM0
UniRef90_A0A022GV90
UniRef90-B2UH00
UniRef90_UPI0003602E9D
UniRef90-G8C230
UniRef90_UPIO00369E789
UniRef90-I0WXX0
UniRef90-Q6YMS7
UniRef90_UPIO00415D38D
UniRef90_W5VNK4
UniRef90-R4Y263
UniRef90_Q1DF95
UniRef90_C2UV33
UniRef90 B1JXE4
UniRef90_V9PJ27
UniRef90-X0QBC5
UniRef90_UPI0003B4D520


120 S GDVRVDVQGALPALLATAYGMRPLLDDSDEEARAD D A LPDTA HPMTQFATGVMALQYEKGDHKSKLWEPTYEDSM DRCPKTLHPMSQFSLAVNALQHDSQFAKAYYWDPTFEDTM


D NFPK D DHPMTQFACAVSAMQYERGDSKA DYWEPTFDD S DALPTSMHPMTQLS DGILAMQPYSQFAKKDYWEY ILDDAI EKIPVTTHPMDVLRTGCSFLGTDEPENQSHNQVH DAN


 DGFPRDTHPMTQYITAI SALQTEKTYHKDTCWK LALEDCL NSMPKDSHPMAMFNTAI LSMQKESKFAKNDYWESTLTDGL D NFPKD LHPMTQFAMSV SALSHEKGDSKADYWEPTFNDCI

 Y SLPKESETIGLMEAAFGVLAADYNPTW EKAKNKD DA D SLPNSLHPMTQLGMGVAALNHERGMKKTDYWTYTLEDCI AAFAPAMG LRPLDTDPAQAREDVARVGA
 ERIPADAHPMDVIRTGCSMLGNDEQEDTTVMGEFQEECID DQLPRDLHPMAQFS $\square$ AVTALESESKFAKA YY WDYTKEDSLL TS L P K QLHPMTMLS QSVLYLQKDSTFQQAYYWEYYYEDAM
 D S L P T N A HPMMQYVVAVSALHSLGNLNKNTYWKFYLQDALL

DALPVTAHPMTQFTSGVMALQYEKGMPKTKFWEPTYEDSM

 DDFPRDLHPMTQFAMAVSALNYESKFAKAYYWEPTFDDSI

QSMPHDAHPMGVLASAMSTLSVFHPDANPKSKQVRDKQVV
 KKFPKDMHPMS QL GAAI LAAL QTQK GMKKD QYWVHTMLED S L LP L LA P LEE IYGAMRAGMALL P ALL PATARLT DRLRVTVAAIAAADPFRFDTSPAAVVTTGR D ALPVKA HPMTQFSTGVMALQYE G GDHK S K Y WE P TYYE D S M SAMPKT LHPMTQMS $\square$ A VASSLNHDSAFEKAYYWEPAFEDT $\square$

 FPDPARTGDMSSDVVSAALASVSPVWGFGPQHDDVDATA D GFP R N A H P M P V V L S S A A N A L DGFRYDAHPMGQLVGTVGALSTHYPDAKNVEEESRKLQVR LK LDWS D S T P LD RALVLLPAAAA QMPRVWA L GRDA QLDTA


N K A D
QQLPEDMELMDVLRT\|VSAMD】EK
DADTYKTAT D ALSEHASPVD RL RVAA DAAAA EDPLRFDLSEAAVLNTAR N A L P V S T H P MT QL Q TVVT NA LIE GE A K FRR DA YY WK L ML D D G L




 A ALPEFSSSPVDRLRVAAVAAATSDPLRYDLSEESVLGAAR


 GALLVVCGGTDRLRVAVVAAAAADPLRFDLSRAAVLGGAR


 ALFARHRGQRAEAALLPDFTAASDDDATALWQRSPERQAQ AKLLPRGTPPVAALSALVPLLGARDSARFASPP

E Q ER
A R R WA H LA P LER RTLVLLPPAAAAS LPR LDWAGGRDAQLDSAA KAFPRSAHPMS LIVACAS LAAYNEQYGNDVNSQNLSFG A MLA P
$\left.\begin{array}{ll}A & M \\ Q & D\end{array} \right\rvert\, \begin{array}{ll}A & P \\ P & S\end{array}$
WGYQP LLDD DDDD TARE QLA R $\square G R S$ L A LDR A E A Q D

## UniRef90 R7S8P4

 UniRef90-D1A6E9 UniRef90-O24135 UniRef90- S2J2K1 UniRef90-W4VHX5 UniRef90-C5XXF7 UniRef90-T1C509 UniRef90-T1CN84UniRef90-N1QM43 UniRef90-C5KT84 UniRef90-K2C6M9 UniRef90-G7XXB6 UniRef90_G8YHV4 UniRef90-A0A059LS11 UniRef90 WoRFR1 UniRef90-A0A024KIU4 UniRef90 Q4UF22
 LARVSALVLSFAAQSARGAGLPMVPQRRIDDTERFMIQWR SLIAQVPLVAAYVYRRMYKNGNTIPKDDSDYGANFAHMLG DLIAKLPKVAARIYRNDYKDGKLAEDEDKDYSYNFSKLL NLIDARLPPVASYVYRRITKGGSIVADNSLDYAANFSHMLG
 NLLAKLPTIAAKDHQNAYCGGGALPAENQDWSYNFAAMGK TLIARVPQVAARVYRRSFYNDF ETDPHDDWAGNFANML
 QTVAAYAVVGGLLVSHRKGLRFSPPSRGRSYYENLLVDSR NLMAKLPTIAAVIYRNTYKGGSIKADETLDWAASLSQQMG RLVAAPAVLAPALVRARRGCEAIAPDEARGHAADVVRMLR
 NI TAKLPAI AAAIIYRLRFDKERLEHAGSQDWSKSFL QMM SLLAKLPTIAAKIYHNSYRRGREFPGKDNDWSYNFASMDM RLTAALPTVDAQFHRRRAKLPPGRPRPELSHAAYLLYADL ASVAALSYVAQSARGDLPPVPQSEVDQGRTAVEQFLLRWR ELVAKTATLLANUYRAKEGGKPRDPQPSESGARSFLEAAF TALSVI ADAARAGSGERTRVPDARVAEGATAVERFMIRLR ALLAKIPRLAALVFRPNEDEKKQELDPAQDWAYNFALLGK TLIARLPALAAYHNDYHPGTALPPLNKDMDLVGNYTQMLG VAAAAVPTLLTALYRLGQGQEPVEPREDLSYAANYLYMVT DLGGKLPGIASKIYRNVFKDGKLGKVDLTADYGANLSSLL DLVAKLPRVAALIYRHKYKNGN:SSDNSLDWAANYSHMMG
 NLTARDPTVASYVYRRTYKDGQTIPADSSDYAANFSHMLG RLIGSFPSILEYWYHFSSNGIRINTEVNDSFARHFLTTEQ KLLASLSSLLLYWYHYSHNGERIQPEDDDSTGGHFLHLLH S LLAKLPT $\square A A K \square Y Q N A Y K P A E V D L N Q D W S Y N Y A A L L G K G$
RVLGKAPATAAAAYRLAGRPAVLPSNNLSYSNFLYMDK ELMAKLPTI DTTFARLRTGKMPLKPREDLGFAANFLYMLN DI DAKLPEI AALTYQTYKDGKMPA DDPNLDWSANFNRLLG RLI AAPAVLTPALLRLARGEQPTAPDAKADHAADMLRMLE
 STUAKLPTUAATUYQNVHGVDTSLKDNTEVDLCTNANMLL RTVAAYAVVFG\|VASHRKSTPFTPPSPDRTYCENLLVDPV DLAAMVYPIAARIYVTKYKKNLPADNKNKDLSWNFAQQTG VDHLARTSVLMLSFVAQSARGPELPVVPQSVAERFLVRWR DLLAKNLIVVGYIYRRCFIDPNMKFDPEDDYGSNLAKFDG RLLAKLPTIAAYAYKKSVGQPFLYPDNTLTLVENFLRMTF SLI AQI QVVCAYDFKRSFIDNNVNDDDDFDWSANFAKLI CAMMRLAAAAMRSAAPSNEPLHRQLLSS
ALIAKIPEIAAAVINYHAGWGESKPKPELGYDENFVHMNV QWQLP SARRLASAGLLVRRLLAACLGSRPSTAP LHLQCAR SLLAKLDPTIAAKIVQNAYRGGGALPAEEQDWSYNFAAMGK KL A ADMPTLIAYRYRYSKGLSVISPDSSGGHVENFDYMDT VLI P TLVAALPPVRPDHKDGGP NQ| A WQHQVAAAIYRRIFGDKRVEPNPAHDWSEQFVHMSG
 RLIAKMPTVAAMAYKYHDGQPFIYPKNELNFAANFLHMCF TLISRLPALVGYSKITQDGSPLGQFNSSKDWSYNICSLMG AVVNTGRALIATMVEALPGMSAPAPDPEHPLASALWARLT 1 RLLAGAMILAAPSNDPLHRQLASAWGVRNRAQ
AWQQSPERLAAGCGALLRLLAACLLGTAPDKAPDHDQCAQ S LiP TLATALPLVRSTYADGE GLLR HLAAWVCAARAPERVAPALRERTVADSLAHAW LRET AALLCGDRPSHQPI HRVMAGNW
NLIAS LP LLTGYSNDTNEGHP LGEYSEHVDWCTNDCTCNL ERLAAGCGVLVRLLAACLLGTAPASTPVHRQCAS
ALLRVVFAAM LGRKPDTAPVHLQCQQ SLIPTLVAALP TVGGEADRLSASGSLARQLWPKLT NLI AYLPEVTGRDYSKITGNGGEVLNEDKDWSYNUCRCNL mVRW
LSVAKVPS ITAATYRY\|VNKD\|ILSHKSLSYSRNFLLDFK RLLRWLTAVML R RRPASAAPAHEALA RLISKVPTLADMPYKYTDGQPFVYPRNDFSYAANFDRMCF GCGALVRTLAACLLQTPPDDAPIHAQCARAWG
ARARRLLRHLSA WVCIVANAPGRVTHALNEPTVAQSLARAW
UniRef90_R7S8P4 UniRef90_D1A6E9
UniRef90 O24135 UniRef90_F2LUR1 UniRef90_S2J2K1 UniRef90-W4VHX5
UniRef90-C5XXF7 UniRef90_C5XXF7
UniRef90_T1C509 UniRef90_T1CN84 UniRef90_N1QM43 UniRef90_C5KT84 UniRef90_G7XXB6 UniRef90_G8YHV4 UniRef90_A0A059LS11 UniRef90_W0RFR1 UniRef90_A0A024KIU4 UniRef90-Q4UF22 UniRef90_UPI00039BA9D5 UniRef90_N1JLM4 UniRef90-T1CTC4 UniRef90_A0LR31 UniRef90_D5SS60
UniRef90_M1IMP7 UniRef90_UPIO00440E19B UniRef90_UPI00034C6F19 UniRef90_A6R632 UniRef90_D8PX28 UniRef90_U7FSY0 UniRef90_H1Q6I8 UniRef90-J7SA45
UniRef90 A0E606 UniRef90-A0E606
UniRef90-B3E863 UniRef90_UPI000462403F UniRef90_I7IR70 UniRef90_U1MIT2 UniRef90_M0SQ89 UniRef90_Q54KL0
UniRef90-N2DZG7 UniRef90-C8X7Y1 UniRef90_G3JGY2 UniRef90_UPI00037A1B4A UniRef90-W5FJF2 UniRef90_T0T9B3 UniRef90_D3B4P1 UniRef90-X5X4G0 UniRef90_G8S1Z0 UniRef90_UPI00032AC930 UniRef90-R4XFV8
UniRef90 R5Q082 UniRef90_-Q5AVT7 UniRef90_E3L2Y3 UniRef90_H5UTB4 UniRef90_LOAVK3 UniRef90_X8E358
UniRef90_A5KE63 UniRef90_G0YZF2 UniRef90_Q13UT6 UniRef90_F8KZP7 UniRef90_R0EJ47 UniRef90_Q2H3P1
UniRef90_UPI000225B09B UniRef90_H2K297 UniRef90-W4LHN3 UniRef90_S4MN69 UniRef90_Q6YN09 UniRef90_UPI000479BDDA UniRef90_J7R591 UniRef90_R4LN43 UniRef90_Q6J6W2 UniRef90-B2JDW6 UniRef90_UPI000373C21D UniRef90_H8MIB3 UniRef90_A0A023NU09 UniRef90_J6EGM0 UniRef90_A0A022GV90 UniRef90_B2UHOO UniRef90_UPI0003602E9D UniRef90_G8C230 UniRef90_UPIO00369E789 UniRef90_IOWXX0 UniRef90_Q6YMS7 UniRef90_UPI000415D38D UniRef90_W5VNK4 UniRef90_R4Y263 UniRef90_Q1DF95 UniRef90_C2UV33 UniRef90_B1JXE4 UniRef90_V9PJ27 UniRef90-X0QBC5

170
170
180
190
200
GF GD DP E F VELMRLY I TIUHSDHGGNVSAHTGHLVGSALSD GEPD PRHVKAIDAYWVSAAEHGMNASTFTARVIASTGAD
 GFESNKDFVELMRLYLTIHSDHGGNVSAHTTHLVGSALSD
 NREGTPTAAKALDLLFILHADHEQNASTSTVRLVGSTGAN NREGTEELETRALDVVALILHAADHELDNASTAFAARITASTTLSD



 GTPDADLAAAALDAYL VTVSDHGLNASTFAARVVASTRAG
 G NK T E LF S DVMR LVY A L H S D H G GNV S A H A S HLV G S A L A D GFEES QDMLKMMQLYLMLHCDHGGNVSTFSALTVNSALSD G GK D N Q DF Q D L L R L Y Y M A L H G D H G G N V S S H T T H L V G S A L
 G $\square E P R D E H S M A M D A L L I T S A D F E Y E P S T L A A R L A A G S R V D$

 G GK A N GSSF H D L L R R L $Y$ Y L A A L L H G D H G G N V GEKPN ELLHERVVMNVSSLI LYAE HEFNASSTFTARVVCAS TM S D GEEPDEGRTRAVEQY LISTV IDHGFNASTTTARVIASTGAD
 QKEEYKDVA RMYFILHSDHEGNVS

 GTPPDPVAAETFDMALTLHADHGFNASTFAADTVASTTAAD FD D P KMLELMRLYVTIHSDHGGNVSAHTAHLVGSALSD
 TGEANPDLQVKALDAYWVSAAEHGMNASTFTARVVVASTGAD GKEN ENF QDLL R LYYLALHGDHGGNVSAHATHLLVGSALSD
 E Y K P N P R L A R V L D GVEPSEDEDEAMNKALILHADHELNASTGAARVCASTRTD

 F D D P EMLL FMRLYVVSIHSDHGGNVSSHTAHLVASPDLSD
 A GMPD PV K LS CFRRFAMLNADHGMALTVFSALVTAS SLTD F GDS Q GFIELVRLYNALHTDHEGGNVSAHTTHLVGSALSD

 GF E N D E V K D L L R L Y F L L H S D H E G GNA S A HV S H LI G S T L GN
 WRVRNRQQANVLRAALVACADHELNASTFTVRCITSTGAH P N ASPE ELIDEV FK LIFNVLHLDDHGGNLSTFVGKAVAS GLQD A WQLDAA GADLVRRSLVLCADHELNASGFTARCIASTGAN GGRENENFQDLLRLYLALHGDHGGNVSAHTTHLVGSALSD GNRNKTNAKI LE TYG ILTMEHGLNASTFAARVTDSTES D GHPADDASLRVLDDTALALLAADHDLAASSTLAVVRVAASARA H


 A AEPTEQKTAVLNAALVLLADHDMPISTVAARAAASTRAH DYKF T QVVSKAL D I I FILLHADHE QNASTAAVRLSGS S GAN
 HKQPDEAS LRRVLDTALGLLVDHDLAASTLAVRVVAASARAA

 A WQVDDE GAALIRMALVLCAD HEGLNASSFTARCVASTGAS A WNLD A HAAEA, RVAALVLCADHELNASSFAARVVASTGAS
 TKS Q S D DFI DLMRLYTGI HVDHGGNDSAHATHLVGSALND
 NDKVNDVVAKALDVIFI LHADHEQNASTASVRLAGSAGAN
 A YKTNPVLDSRAMDQDFI LHADHEQNASSTSTVRLAGSSSGAN NTRVVKRAPE L L NRALVLCADHELLNVSTFTARVAASSSA D GK K P T E L L E E K $\quad$ I F D D R S
 GDPD P A H VA A I D A Y WVSA A EHGMNA STFTARVIA STGA D

UniRef90_R7S8P4 UniRef90-D1A6E9 UniRef90-O24135 UniRef90-S2J2K1 UniRef90_W4VHX5 UniRef90_C5XXF7 UniRef90-T1C509 UniRef90_T1CN84
UniRef90_N1QM43 UniRef90_C5KT84 UniRef90-K2C6M9 UniRef90_G7XXB6 UniRef90_G8YHV4 UniRef90_A0A059LS11 UniRef90 W0RFR1 UniRef90_A0A024KIU4 UniRef90-Q4UF22 UniRef90 UPI00039BA9D5 UniRef90-N1JLM4 UniRef90-T1CTC4 UniRef90_A0LR31 UniRef90_D5SS60 UniRef90-M1IMP UniRef90_UPI000440E19B UniRef90-A6R632 UniRef90_D8PX28 UniRef90-U7FSY0 UniRef90-H1Q6I8 UniRef90_J7SA45 UniRef90-A0E606 UniRef90_B3E863 UniRef90-UPI000462403F UniRef90_I7IR70
UniRef90_U1MIT2
UniRef90_M0SQ89 UniRef90_Q54KL0
UniRef90-N2DZG7 UniRef90_N2DZG7
UniRef90_C8X7Y1 UniRef90_G3JGY2 UniRef90_UPI00037A1B4A UniRef90_W5FJF2 UniRef90_T0T9B3 UniRef90_D3B4P1 UniRef90-X5X4G0 UniRef90_G8S1Z0 UniRef90-UPI00032AC930 UniRef90-R4XFV8
UniRef90 R5Q082 UniRef90-Q5AVT7 UniRef90_E3L2Y3 UniRef90_H5UTB4 UniRef90_LOAVK3 UniRef90_X8E358
UniRef90_A5KE63 UniRef90_GOYZF2 UniRef90_Q13UT6 UniRef90_F8KZP7 UniRef90_R0EJ47 UniRef90_UPI000225B09B UniRef90_H2K297 UniRef90-W4LHN3 UniRef90_S4MN69 UniRef90_Q6YN09 UniRef90_UPI000479BDDA UniRef90_J7R591 UniRef90_R4LN43 UniRef90_Q6J6W2 UniRef90_B2JDW6 UniRef90_A9BMJ2 UniRef90_UPI000373C21D UniRef90_H8MIB3 UniRef90_A0A023NU09 UniRef90_J6EGM0 UniRef90_A0A022GV90 UniRef90_B2UH00 UniRef90_UPI0003602E9D UniRef90_G8C230 UniRef90_UPI000369E789 UniRef90_IOWXX0 UniRef90_Q6YMS7 UniRef90_UPI000415D38D UniRef90_W5VNK4 UniRef90_R4Y263 UniRef90_Q1DF95 UniRef90_C2UV33 UniRef90_B1JXE4 UniRef90_V9PJ27 UniRef90- X0QBC5

V
-

210 220

230
240
PF L $\operatorname{S}$ YAAALLNGLLAGPDHGLANQEVLRWVQKMPSDEKVAEY VAASFAGAI GAMSGPLHGGAPARVLPMI QKVEQDGDARKV
 PY L S F A A G L N G L A G P L H GLLA N Q E V L R W I GI DA S E E D I K K Y


 FYSCDCS A I G T L L R G P L H G GAN E E A L K L I L Q F N S V E A A E DG





## P

$\frac{\mathrm{V}}{\mathrm{P}}$

## $\stackrel{V}{\mathrm{P}}$

## 

UniRef90_UPI0003B4D520


VK S VLD RHERDMGFGHRTYRAEDPRARVLRRTARELLGSP IHRLWEERAILPGFGPRIPRGGDARVCVLSDWADQLSDQP
 LWRTLK S G QVVP GYGHGVLRKSDPRFVALLEFCDELLASP V R R ALDRGDRLMGFGHRVYRAEDPRARVLRRTARELGAA LWS TLK S G QVV P GY G H GVLLRKP DPRFEALMDFRPDUMANP $L W K T L K S G Q V V P G Y G H G V L D R A P D P R F V A L Q E F C D A R P D L L$
$\square R E R V L A G D R D M G F G H A V Y R T E D P R S R M L R E V A Q Q G F G G P$ LWDTLNSGRVI PGYGHAVLRKTDPRYTAQREFAQRHFPDY $V L N T I R E G R V V P G Y G H A V L R Y T D P R Y D H Q K N F A E R L I C D D$ L WD TL N A G QV I P G Y G H A V L R K T D P R Y TS S QREFCC L N TP G L


 SASGWKTKK W
 WS TL N S G R V V P G Y G H A V L R K P D P R F E AL M D Y A A A R P E IQSAKEGKSRLMGFGHRVYRNYDPRAK LLKSACDQALEAL

LQEKLDSKEKS WDL DTVYTRNR】
$V$ WE GLNA GRVVP GF GHAVLRKTDPRYTCQREFALLKH
|LREKVAHGERIMGFGHRIVRVRDPRADVLKAVVRQLGSEG
I SERLRVSGGIP GF GHLLYQNGDPRAITILRLLGDHPA

 LDEVK Q G R K R L F G Y GHRSYK R $\quad$ DD P R V R F V Q S I L H D L
W S V L K S G RVVVPGYGHAAVLRR K P D P R F A A L R E F G N R RP E VA


AK D F L N S G R VIP G Y G H A V LR VP D P R F LA L R N FA LA H F P N D

 L R E R L A R G D D L P G F G H H L



 | $\mid+$ |
| :---: |
| L |
| M | 149BDDA


LA TRRLAHDEQDSGFGHPLYPDGDPRARLLLDLLDECASSR L R Q RLA R GETLP GFGHHLYPEGDVRAALLLEM

 L WK VL N S N RVVIP G Y GH A V L R K P D PR F T A ML E F A Q K R P T E F




$V V E R L H R G E D L P G F G H T L Y P E G D P R G Q H L L D R L A A A W P E A$ I ARAKDDPFRRLMGFGHRVYKNYDPRAK DLQKTCCHEVLKE L L R E R L A R G E D L P G F G H H L Y P A G D P R A S A L L A R D L P P R R P D
 $L A L R L A H D E R L S G F A H P L Y P D G D P R A R A L L D A L H A A A P E R$

## UniRef90 R7S8P4

 UniRef90_D1A6E9 UniRef90-O24135 UniRef90 S2J2K1 UniRef90-W4VHX5 UniRef90-C5XXF7 UniRef90-T1CN84 UniRef90-N1QM43 UniRef90_C5KT84 UniRef90_K2C6M9 UniRef90_G7XXB6 UniRef90_G8YHV4 UniRef90-A0A059LS11 UniRef90 ${ }^{-}$W0RFR1 UniRef90-A0A024KIU4 UniRef90-Q4UF22 UniRef90-UPI00039BA9D5 UniRef90-N1JLM4 UniRef90-T1CTC4 UniRef90-A0LR31 UniRef90_D5SS60 UniRef90-M1IMP7 UniRef90_UPI000440E19B UniRef90-UPI00034C6F19 UniRef90-A6R632 UniRef90_D8PX28 UniRef90_U7FSY0 UniRef90_H1Q618 UniRef90-J7SA45 UniRef90-A0E606 UniRef90-B3E863 UniRef90_UPI000462403F UniRef90-I7IR70 UniRef90_U1MIT2 UniRef90-M0SQ89 UniRef90_Q54KL0 UniRef90-N2DZG7 UniRef90-C8X7Y1 UniRef90_G3JGY2 UniRef90_UPI00037A1B4A UniRef90-W5FJF2 UniRef90_TOT9B3 UniRef90_D3B4P1UniRef90_X5X4G0 UniRef90- G8S1Z0 UniRef90_UPI00032AC930 UniRef90-R4XFV8 UniRef90-R5Q082 UniRef90_Q5AVT7 UniRef90-E3L2Y3
UniRef90 H5UTB4 UniRef90 LOAVK3 UniRef90-X8E358 UniRef90-A5KE63 UniRef90-GOYZF2 UniRef90_Q13UT6 UniRef90-F8KZP7 UniRef90_ROEJ47 UniRef90_UPI000225B09B UniRef90-H2K297 UniRef90-W4LHN3 UniRet90-S4NN69 UniRef90_UPI000479BDDA UniRef90_J7R591 UniRef90_R4LN43 UniRef90-Q6J6W2 UniRef90-B2JDWW UniRef90-UPI000373C21D UniRef90_H8MIB3 UniRef90_A0A023NU09 UniRef90 J6EGM0 UniRef90_A0A022GV90 UniRef90-B2UH00 UniRef90_UPI0003602E9D UniRef90 G8C230 UniRef90_UPI000369E789 UniRef90-I0WXX0 UniRef90- Q6YMS7 UniRef90_UPIO00415D38D UniRef90-W5VNK4 UniRef90-R4Y263 UniRef90-Q1DF95 UniRef90-C2UV33 UniRef90-B1JXE4 UniRef90_V9PJ27
 RYEAAKALEDAALSILRERRPDRADETNVEFWAAVILDFA
 PLF GLVK LYH HIPGVLTEHGKTKNPWPNVDAHSGVLLQYY
$P L F Q L V K \square Y E V V P P I L T E L G K V K N P W P N V D A H S G V L L N H F$ $G V D P L L D V A L E L E R V A L K Y F V E R K L Y P N V D F Y S G L I Y K A /$ GDLHYFDLLVRLQEVVHREKNL M Y

 ELFKLVNDYEVAPGVLTKHGKTKNPWPNVDSHSGVLLQYY PLFKLVSMYHVVPDILQATGKVKNPWPNVDAHSGVLLQHY


 N NPLF QLVKEIIAPEVLTKHGRTRNPYPNVDSSSGVLFHHY
HYDAAYA LDEAALAELRARRPDRPDETNVEFWAALVLDDA DFEVWEEHADWIEAAAWEVAEQGDPTLLWAVVRMMKYL QVKKYLD



RVEFAVEVERQVEATLAELKPGREDHTNVEFYAGVVMEDC ELFKLVSUYVAPGVLTKHGKTKNPWPNVDSHSGVLLQYY
 KDYPLFKVIAKIFEVAPEHGKTKNPWPNVDAQSGVIQMYY

 PFFKLVKLYEVVPPDLTELGKVKNPWPNVDAHSGVLLKYF KNNNNNNNNNNNERVEEIMFDVLKVHANVDFYNATVFHQS
RYEAAAADEQAA LDALLRERRPDRA DETNVEFWAAVILDFA ADPVFQLNSR $\square A P E V L K K H G K T K N P Y P N V D S S S G V L F H H Y$ GVESP ILD DARNDETQDEYF $\square A R K L Y P N V D F Y S G I I L Q A M$

PNDPLFK LVSSQYEVVPPVLTKQ EAGRRLAFAEQVEQTALEVLRDAAKPQRSLQTNVEFYTA
 PLFQLVSKDKEVPPILTKLGKVKNPWPNVDAHSGVLLNYY GNDSFRLVRETAPAVLKTHGKTKNPYPNVDATSGVLLYHY GRDKEYDFLRLLEQESIKCKTKKPDCANVDFYSGFIYEMI PSTRLLKJAEALEASADDYFRSRGLYPNADFYGNFVFTGli


$S P \square A D V Q R L A R T V R D T T G A E P T V D Y A L A A D E R V L$ $\square P R Q G P A A A L A A E V M A D T G L A P S V D F A L V A L R R H L$ P ALLAAARDVVATTARHTDLHANIDLALSVFTASF KAVRVGSALVEVMRDA $\quad$ GHPAPSMEVGLVMLAEAL
 WQALDDVA FS LVGQRPSIDEA LVALRRHL AVRKRLQTVMDAVAGLTGDGPSVDFALVATRRVL $P \quad A L D A A R D V V T T T A R D T P D H A N V D D A L A V L S V A S$


PE LLAVARTLAETVADLTGERPTLDFALVLSARVI
 WQALTEQA FQLAGQRPSVDFALVAVRRHL
 $P$ V

## UniRef90 R7S8P4

 UniRef90-D1A6E9 UniRef90-O24135 UniRef90 S2J2K1 UniRet90-W4VHX5 UniRefe90-C5XXF7 UniRef90 T1CN84 UniRef90-N1QM43 UniRef90_C5KT84 UniRet90_K2C6M9 UniRef90-G7XXB6UniRef90 G8YH44 UniRef90-A0A059LS11 UniRef90 WoRFR1 UniRef90-A0A024KIU4 UniRef90-Q4UF22

GHQQDFYTVLFGIVISRAFGVAA OLII WDRATGMPLIERPKSY ${ }^{360}$ EVPPAMMPAMFTCARTAGWAAHVLEQKRTG RLVRPSARY GLEARYYTVLFGVSRALGICSQLIWDRALGLPLERPKSVT GREYDFYTVLFGI GRALGVTANIVWDRGLGYQIERPKSIT GLEQDYYTVLFGVSRALGVTSQLIWDRALGAPLERPKS



GVPAHMFAAMFTCARVAGWSAH LLEEKRSGRRVRPTARY
 GFPIVMFTGIFADSRTLGWLAHFDEYVEEQHRLDRPRALY



GLPREMFTPTFAAARVVGWSANILEQ ASDSKDDRPAARY GLEASFYTVLFGVSRAFGVLPQLITDRAVGMSI ERPKSFS GKEFEYYTVVFAVSRALGCTANLVWARAFGLPI ERPGS IT GLEYDFYTVLFGVGRALGCMANIVWDRGLGYALERPKSVT
 GIPDDMYTPIFAMARTAGWVGHILEYQ TENRLDRPRARY


GVPAAMMPAMFTCARTAGWSAHLLEQKRLGRRVRPSAVY GHETLYYTATFGVSRGLGPLAQLIWDRALGDPI ERPKSI GFPTNMFTVLFALGRAPGWLAHWKE IATKGKRIHRPRQUY

VLF GVS RA $\square G$ VLS S LVWDRA $\square$ GHP $\square E R P K S V T$
LVLEAXRRVLF RS GGWLS
GMPSDAGEAIFADARTAGWLAHADEEYANHPVRFRPTGQY GLEENYYTVLFGVARSLGVGPQVCDAR
GLDFNFYTVI FGVSRALGCLTQYVWSRADGQPDERPKS LS GLDPQEYTPIFAMSRIVGWMAHRIEEDNEGRRIDRPAYKS GFEVEMIPAAMLAQRIMMDMAHWREYMHP
GMEFEYYTVLF GCSRAMGGLSQLVWDRVHNLPDERPKS DS EVPPNAFSSLFACARSAGWSAHILEQKQRGTVVDRYAHY N $I N H P \square F$ TALFGLSRAFG $\square L S Q L V W A R A L K Y P I E R P K S ~ L T$
$G \square K Y P Y Y T V L F A \square S R S \square G V M S Q L V L S R G L M Y P L E R P K S V D$
ALPAGAAFTLFAVGRTVGWDAHAMEQTR DGRLIRPRARY GFPYPYFTILFGLARTVGIAVQ\VHERCKGDPIVRPKYDY D LPAGSAFGLFALGRSLGWIAHALEQGR DGSLIRPRAAY GHETGYYTATFGVSRGLGPLAQLVWDRALGLD ERPKSM


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

GLPAGAAFTLFATGRATGWLAHAMEQTADGRLIRPRARY QLPTGSAFGLFALGRCAGWLAQALEQRATRQ I IRPRAAY GMPAEAGETIFAVARTAGWI AHALEEYGERPLRMRPTGHY GLPKGAAATVFAVGRSAGWVAHVLEQREQGH LLRPRARY GLGPHAALSLFAAGRMAGWLAHALEQQDYGG LIRPRANY
 GLPAGSGFGLFAAGRTAGWIAHALEQRAAGQ LIRPRAAY
 DMPAEAGETVFAVARTAGWVAHALEEYAERPLRMRPSGRY
$E V P A H M M P A M F T C G R T A G W C A H I L Q K R L G M L V R P A A D Y$

G $\square P P E A P \square A V F A L G R S V G W M A H V M E Q Y A A A R L I R P R A R Y$ GFPTEMFTVLFAL
GLPDGAAFGLFALGRS $\square G W D A H G L E Q R \quad G S Q D V I R P R A A Y$ GLPSGAGATLFAVGRAAGWVAHVLEQREQGH LLRPRARY
 $A L P D G A A F T L F A A G R T A G W D A H A L E Q Y A \quad D G K L D R P R A R Y$

|  | 37 |
| :---: | :---: |
| UniRef90_R7S8P4 | TA A $\square \mathrm{K}$ K M F |
| UniRef90_D1A6E9 | V G A R P |
| UniRef90-O24135 | M EWLEN H |
| UniRef90_F2LUR1 | T D MLLE |
| UniRef90_S2J2K1 |  |
| UniRef90 W4VHX5 |  |
| UniRef90_C5XXF7 | M E WLLE |
| UniRef90_T1C509 | T G A T K R D Y R P $\square$ T T R |
| UniRef90_T1CN84 | VGP T D LT Y T |
| UniRef90_N1QM43 |  |
| UniRef90 C5KT84 |  |
| UniRef90 ${ }^{-} 2 \mathrm{C} 6 \mathrm{M} 9$ |  |
| UniRef90_G7XXB6 | T GEAEERLLP |
| UniRef90_G8YHV4 |  |
| UniRef90_A0A059LS11 | MEA】E Q |
| UniRef90_W0RFR1 | V G P |
| UniRef90_A0A024KIU4 | $\checkmark$ V P A P |
| UniRef90_Q4UF22 |  |
| UniRef90_UPI00039BA9D5 |  |
| UniRef90-N1JLM4 |  |
| UniRef90-T1CTC4 |  |
| UniRef90_A0LR31 | V G H G P R P |
| UniRef90_D5SS60 | 1 G P T D L Q F L P VD D R |
| UniRef90-M1IMP7 | $V G P S Q R D Y V P L E N R$ |
| UniRef90_UPI000440E19B | M D A LE K |
| UniRef90_UPI00034C6F19 | $T G P P$ P R P LE D |
| UniRef90 A6R632 |  |
| UniRef90_D8PX28 | M D A V E |
| UniRef90 U7FSY0 |  |
| UniRef90-H1Q6I8 | V G P G A P VGVP |
| UniRef90_J7SA45 | T EKYR QLVA LE K R |
| UniRef90_A0E606 | M R W D E E K |
| UniRef90_B3E863 | T A M L E K |
| UniRef90_UPI000462403F | M D A IE K |
| UniRef90_I7IR70 |  |
| UniRef90_U1MIT2 | V G H D D R T F R P VG K R |
| UniRef90_M0SQ89 | TM D WLR T Y T |
| UniRef90_Q54KL0 | T G S D P $\square$ P F T P $\square$ N E R |
| UniRef90-N2DZG7 |  |
| UniRef90_C8X7Y1 | D G H G P R |
| UniRef90_G3JGY2 |  |
| UniRef90_UPI00037A1B4A | Q G LT H R P Y VGLG D R |
| UniRef90 ${ }^{-}$W5FJF2 |  |
| UniRef90_T0T9B3 |  |
| UniRef90_D3B4P1 | T |
| UniRef90_X5X4G0 |  |
| UniRef90_G8S1Z0 | S G R P P |
| UniRef90-UPI00032AC930 |  |
| UniRef90_R4XFV8 | 1 I |
| UniRef90_R5Q082 | $V \mathrm{ME}$ E R T Y VP LA E R |
| UniRef90_Q5AVT7 |  |
| UniRef90-E3L2Y3 | M |
| UniRef90-H5UTB4 | D G R P P R |
| UniRef90_LOAVK3 | LD S L E K |
| UniRef90-X8E358 |  |
| UniRef90_A5KE63 | V H N L E R N Y V K 】E E |
| UniRef90_G0YZF2 |  |
| UniRef90_Q13UT6 | $\square \mathrm{GE} \mathrm{Y} \mathrm{E}$ |
| UniRef90_F8KZP7 |  |
| UniRef90-R0EJ47 | T G P R P |
| UniRef90_Q2H3P1 |  |
| UniRef90_UPI000225B09B | 1 GE |
| UniRef90_H2K297 | V G P R P P R P L P |
| UniRef90-W4LHN3 | T |
| UniRef90-S4MN69 | T G P K P P Q P LP |
| UniRef90_Q6YN09 |  |
| UniRef90_UPI000479BDDA | VGP P L P D |
| UniRef90 J7R591 |  |
| UniRef90-R4LN43 | A GE $\square$ P |
| UniRef90-Q6J6W2 |  |
| UniRef90_B2JDW6 | $\square \mathrm{G}$ Q V N R E V V |
| UniRef90_A9BMJ2 | TGPRP |
| UniRef90_UPI000373C21D | VG A R P P Q P LP |
| UniRef90-H8MIB3 | V G P |
| UniRef90_A0A023NU09 | A G T P P |
| UniRef90_J6EGM0 |  |
| UniRef90_A0A022GV90 | V G P R P A P |
| UniRef90-B2UH00 | V G P M P |
| UniRef90_UPI0003602E9D | TG |
| UniRef90_G8C230 | $\square A$ Q $\square$ K |
| UniRef90_UPI000369E789 | TGPPP E Q P LP |
| UniRef90_IOWXX0 | T G P A P R |
| UniRef90_Q6YMS7 |  |
| UniRef90_UPI000415D38D | VG P H P |
| UniRef90_W5VNK4 |  |
| UniRef90_R4Y263 | T G A H P |
| UniRef90_Q1DF95 | $V E P A H$ |
| UniRef90_C2UV33 | $V \mathrm{GER} \mathrm{N}$ |
| UniRef90-B1JXE4 | $\checkmark \mathrm{G}$ |

niRef90 V9P 127
$\vee G$
UniRef90-_X0QBC5
UniRef90_UPI0003B4D520

## UniRef90_A0A022Q9P1

 UniRef90-UPIO0006CFBEUniRef90-A0A010RVLO UniRef90-A0A010RVLO
UniRef90_LOLKJ8 UniRef90_LOKHI1
UniRef90-K1TKD7 UniRef90-UPI00036A8719 UniRef90 ${ }^{-}$B0L8W7 UniRef90_UPI00037548D2 UniRef90_HOTTS2 UniRef90 A0A058ZE17 UniRef90-D4JEG9 UniRef90_UPI00036F3647 UniRef90- J2L7S8 UniRef90-UPI0003EC2866 UniRef90_UPIO0040B7141 UniRef90_D5VPW9 UniRef90-A0A024YIP6 UniRef90-15BUH6 UniRef90-W3RJZ8 UniRef90-UPI00016A9E2C UniRef90-D4P3K5 UniRef90-W5TCJ4
UniRef90-G7GTN0 UniRef90-A0A052JDD4
UniRef90 Q875S3 UniRef90_UPIO003B4251F UniRef90_A6X0R4 UniRef90 UPI0003B3224D UniRef90-UPI000349094B UniRef90-UPI00037753B9 UniRef90-V8D4L6 UniRef90-UPI0003718377 UniRef90_A0A059FP39 UniRef90-A0A016QN68 UniRef90 UPI0002D2D48D UniRef90-U6KYB7 UniRef90_UPIO0047623C5 UniRef90 Q1GD06 UniRef90 E2QA77
UniRef90-W6X613
UniRef90-X7XW18
UniRef90 DOLF57
UniRef90_UPI0003767D1F UniRef90_UPI00036CD6A2 UniRef90 H0AAZ5
UniRef90-UPI00047D7EDB
UniRef90-D3SMV4
UniRef90_UPI00036AD69B
UniRef90 UPI000374F4EC
UniRef90-JOPBS7
UniRef90-B9NULO UniRef90_UPIO0036A4544 UniRef90 UPI00047B6ABC UniRef90_UPI00047A77EA UniRef90-D2PMZ9 UniRef90_UPI0003F63915 UniRef90-A0A010YQ41 UniRef90-KOCl23
UniRef90 UPI000382F62C
UniRef90_C1DWH2 UniRef90-A6FVH7 UniRef90-HOTEK4 UniRef90 B8IVL3 UniRef90-H9KHY1 UniRef90-D7B5J3 UniRef90_UPI0003658EF0 UniRef90 F6CLI8 UniRef90-K2AL65 UniRef90-UPI00037B1D02 UniRef90_UPI00035C70FB UniRef90 UPI0004705EA3 UniRef90_F8GY95 UniRef90-F5XJN4 UniRef90 F1KSZ0 UniRef90-K2L8T7 UniRef90-10HTI3 UniRef90-B8A210 UniRef90 D7FN48 UniRef90-W4H3X0 UniRef90_UPI0003B6F261 UniRef90 U6EE69 UniRef90-C7DA90 UniRef90-K2CYR9 UniRef90_K3WVP6 UniRef90 F0VK37 UniRef90-T1DRK6 UniRef90-W7AFN7 UniRef90 T1HR11 UniRef90-ІЗКНА9
UniRef90_W8QJR7

UniRef90-A0A022Q9P1 UniRef90-UPI00006CFBE UniRef90-A0A010RVLO UniRef90_LOLKJ8 UniRef90-LOKHI1 UniRef90_K1TKD7 UniRef90 UPI00036A8719 UniRef90 ${ }^{-}$B0L8W7
UniRef90_UPI00037548D2 UniRef90 HOTTS2 UniRef90-A0A058ZE17 UniRef90-D4JEG9
UniRef90_UPI00036F3647
UniRef90- J2L7S8
UniRef90-UPI0003EC2866 UniRef90-UPI00040B7141 UniRef90_D5VPW9 UniRef90-A0A024YIP6 UniRef90-15BUH6 UniRef90-W3RJZ8 UniRef90-UPI00016A9E2C UniRef90 D4P3K5
UniRef90-W5TCJ4
UniRef90-G7GTN0 UniRef90 ${ }^{-}$A0A052JDD4 UniRef90_Q875S3
UniRef90_UPIO003B4251F UniRef90 A6X0R4 UniRef90 UPI0003B3224D UniRef90-UPI000349094B UniRef90-UPI00037753B9 UniRef90 V8D4L6 UniRef90-UPI0003718377 UniRef90-A0A059FP39 UniRef90-A0A016QN68 UniRef90 UPI0002D2D48D UniRef90-U6KYB7 UniRef90_UPIO0047623C5 UniRef90 Q1GD06 UniRef90-E2QA77 UniRef90-W6X613 UniRef90-X7XW18 UniRef90 DOLF57
UniRef90_UPI0003767D1F UniRef90_UPI00036CD6A2 UniRef90 H0AAZ5
UniRef90-UPI00047D7EDB UniRef90-D3SMV4 UniRef90_UPI00036AD69B
UniRef90 UPI000374F4EC UniRef90-JOPBS7
UniRef90_B9NULO UniRef90 UPIO0036A4544
UniRef90 UPI00047B6ABC UniRef90_UPI00047A77EA UniRef90-D2PMZ9 UniRef90_UPI0003F63915 UniRef90-A0A010YQ41 UniRef90-K0Cl23
UniRef90_UPI000382F62C UniRef90_C1DWH2 UniRef90_A6FVH7 UniRef90-HOTEK4 UniRef90 B8IVL3 UniRef90-H9KHY1 UniRef90-D7B5J3 UniRef90-UPI0003658EF0 UniRef90 F6CLI8 UniRef90-K2AL65 UniRef90_UPI00037B1D02 UniRef90 UPI00035C70FB UniRef90-UPI0004705EA3 UniRef90_F8GY95 UniRef90-F5XJN4 UniRef90 F1KSZ0 UniRef90-K2L8T7 UniRef90-IOHTI3 UniRef90-B8A210 UniRef90 D7FN48 UniRef90-W4H3X0 UniRef90-UPI0003B6F261 UniRef90 U6EE69 UniRef90-C7DA90 UniRef90-K2CYR9 UniRef90_K3WVP6 UniRef90 F0VK37 UniRef90-T1DRK6 UniRef90-W7AFN7 UniRef90 T1HR11 UniRef90-I3KHA9
UniRef90_W8QJR7

LEDVALLLWDMKRP
LRFEPNAARRKPPSLDSAF LEETAGLLWALPGPVHFEASPPDAPRPTGRAQAFVQLALL FEETAYLLDFGNLPDKEHLEDFKK IVTHYRTDPPYFAEDV


 VEEVAALLWTGEAGRWKQL LEETALLLWN


LEETAAVLWADPGPVVFKAQSSDASQQVGRTSAFARLSTL LENTARLLRRGHGVALKAARQAESLVGDTARQ YEEVAEWLWTGTVTPGARFTAPPEVL EAARRTV AEDVADLLWVGFDSSASLGWDRNELPELAPRGGELDRALV


FEAVAEWLWRGDDTD SGPWRPNAESVAAARAAQ


FEEVRDLLTGVPDADASRASDGRGVRSGEGPDGRGDRSVL LEEVAALLWQMDFDG【I RSDNESTLNDRQTETAPLER


F E S VA A M
PERMAALLWDG
QSEPVWGRNMDPRSVIKQ
LESAAAHFWAADYAP
 LEDTARLL WNCEGRDPFAGAPTGAPWDAALLARRAHLPLT


Y ETVAEWLWT GT LR P SVRRTAPPDADAAARRAVAADPA
FESVAQLLFTGTWQDTFAAWSSDETPADTQRLLRSYEDGL
F GDVWALLVDGEFGHGLPPAEPFPLPDHTGDVRVDVQAGLL
FEETAGWLWTGDEEPENRWQPYPVTIPD LLEHPRDRMR


LEEAAALVM GAPVSRA $\square$ PDARSGVD $\square R \square S A D P L E R R$

VEEAAELIWQSEGAFSDS L
P VMPKDTKALL

AEAVFWLLLTGDVPTKEQTAS L $\square$ AD WS $\square$ RRQKKKDWWSVL

PEGLLWLLLTGKVPTKDQVDADSKELLARSTVPAHVYKVI

## UniRef90 A0A022Q9P1

 UniRef90_UPI00006CFBE UniRef90-A0A010RVLO UniRef90 LOLKJ8 UniRef90-LOKHI1 UniRef90_K1TKD7 UniRef90 UPIO0036A8719UniRef90 ${ }^{-}$B0L8W7
UniRef90_UPI00037548D2
UniRef90 HOTTS2 UniRef90 A0A058ZE17 UniRef90-D4JEG9 UniRef90_UPI00036F3647 UniRef90- J2L7S8 UniRef90-UPI0003EC2866 UniRef90_UPIO0040B7141 UniRef90_D5VPW9 UniRef90-A0A024YIP6 UniRef90-15BUH6 UniRef90-W3RJZ8 UniRef90-UPI00016A9E2C UniRef90 D4P3K5 UniRef90-W5TCJ4
UniRef90-G7GTN0 UniRef90-A0A052JDD4 UniRef90_Q875S3 UniRef90_UPI0003B4251F UniRef90_A6X0R4 UniRef90 UPI0003B3224D UniRef90-UPI000349094B UniRef90-UPI00037753B9 UniRef90 V8D4L6 UniRef90-UPI0003718377 UniRef90_A0A059FP39 UniRef90-A0A016QN68 UniRef90 UPI0002D2D48D UniRef90-U6KYB7
UniRef90_UPIO0047623C5 UniRef90 Q1GD06
UniRef90 E2QA77
UniRef90-W6X613
UniRef90-X7XW18
UniRef90 DOLF57
UniRef90_UPI0003767D1F UniRef90_UPI00036CD6A2 UniRef90 H0AAZ5
UniRef90-UPI00047D7EDB UniRef90-D3SMV4
UniRef90_UPI00036AD69B UniRef90 UPI000374F4EC UniRef90-JOPBS7
UniRef90-B9NULO UniRef90_UPIO0036A4544 UniRef90 ${ }^{-}$UPI00047B6ABC UniRef90-UPI00047A77EA UniRef90-D2PMZ9 UniRef90_UPI0003F63915 UniRef90-A0A010YQ41 UniRef90-K0Cl23 UniRef90_UPIO00382F62C UniRef90_C1DWH2 UniRef90-A6FVH7 UniRef90-H0TEK4 UniRef90 B8IVL3 UniRef90-H9KHY1 UniRef90-D7B5J3 UniRef90-UPI0003658EF0 UniRef90 F6CLI8 UniRef90-K2AL65 UniRef90-UPI00037B1D02 UniRef90 UPI00035C70FB UniRef90 UPI0004705EA3 UniRef90_F8GY95 UniRef90-F5XJN4 UniRef90 F1KSZ0 UniRef90-K2L8T7 UniRef90-10HTI3 UniRef90-B8A210 UniRef90 D7FN48 UniRef90-W4H3X0 UniRef90-UPI0003B6F261 UniRef90 U6EE69 UniRef90-C7DA90 UniRef90-K2CYR9 UniRef90_K3WVP6 UniRef90 F0VK37 UniRef90-T1DRK6 UniRef90-W7AFN7 UniRef90_T1HR11 UniRef90-І3KHA9
UniRef90_W8QJR7

 SVFGTVAEALAPGPWDQP LHRRDATAWNRPDAE QRLARGWSV
 RMALCWRT
$D \square V A R D P \square A A F \square Y N \square K Y R D K Q \square A \square D P K \square D M G A N F A H M \square G$ QAASVLMTVAEALMGDTPAPAPGHP

IIA N A WA
QGWDYATTFLAMDR $S$ S $L A Q T P G I T$ FSFFTGQQDCEYPDPNKSLAENDLVMAR

$L H$ Y R $\square A$
PS LGRSAVSLCADAAHAVDALAQS LGAVAGAAPVHQRDAQ EAADLLEAIVDAATG

QAGDGPAHVRFAA $C L \square P T L V G A L P T V G T \quad G W A G D G R D A R Q L W S R D T$

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

$R E \square M Q$ A LVMATADAAVGEPVVDP

RAAAAMAGSAGPANADRDWSYNDASLLGMTFRDSVNKQHM 1 LQQEAF GLLQLFHNTVLGVSASNMPMHERIAQA ELLVGVPRALAPS EKATLTHERLA EPAAGASVAESLWTALA

ARQLWPRLT
$G \| L D T V V D C \square P V A S G$ DAATVVETLVDAACDGRGEGPAHV QDA $\square G T S \square A A A R L W B P R L T$ $R G M T A A L G G L L W P$
$V L S L L Y G T L E R Q E G V P P A P D L P L H A R L A$
SLWPGAAALLRATAAAASGTEPDGDD I HRHFTR $L V A R A A V T A A H D Y R R K F G D G C V P C P D P K L D F A A N F A R M L D$
$E A G R L V T L I A Q A F G A R R G A N A Q M T H E$
$N$ VS FAEMTWLMVR
MLIPTLVEALPPTGAAARAGTAAEAAGPETDARRLWPRLT LLI Q TMAGCLGYLRASPQFEYRQAHEALAPFILRAT ASVMMALSYVAQSARGUYQPAVPQRVIDECSTVTARFMTRW SVIATMVVAAADRPPTRVPRLHLPAPDSGSLAGVLCGGLL DWWRTG I IDMQPGE $\quad$ RYRGYP I EQLIGQVSFAQMI WLML R MDMNFSDAI FLIL K G L A EMI WL MTR


E VMRWFAALIVGAKCPAAGPLPQA $N \nabla G F A Q M I W L M L R$ NVT F P Q M T WLMVR GFAETI WLLLR SFPSMVWLMLR
$P T \square R G A D T L V A G G G \quad G G S A R A R R E L A R P$
$R T G A D V V R \square L A S L I A G R G A P D A T P \square H Q$ D LTA
S P P
S F P A SFAETTVTTREL SFSEG WLLLR

 TWWSTEIIDMKPGVIRFRGYPIEQLIGGAV
$E L L A T L P A D V G L I A K G E L K N L K E D T G D W V$

CAHHLAGMSYRDADLVEDLIGKK NTTFTEAAVLLK

CAHHDTGMSYRDTDLVEDIIGKMSFTEVMIMQUL
CRHNAEA $\square W Y R D Q N L V D D L L G K Q P F V A T A C R H L L$
N $\square$ S FPGMIWWMTR
$C S H T D T S L H Y R D K N L V D D L L G R R T F T E V M V M Q I L$ $N L I A R \square P P V A S Y V Y R R \square F K D K S \square E A D D S L D Y A A N L S H M L L G$ WF
MGKTSFSQA TY LVLK NI S F S EMI YLLLK
NWWRTS $\quad$ DDMEPGK $\square$ AFRGHP $\square E D L I G N V S F P Q M I C$ WLMTA Y A GMP $\square$ S H $\square$ F E QDMG $\square \mathrm{GGV}$ G G LLWF

WF
$S \square R \square L S \square F Y S K N N L C E S M F T D K V Y D N V C F E D D R N C S N N N D$ Y A GMP $\square \mathrm{S}$ DVLK QNMG G G GVVS LL WF

UniRef90_UPI000262AE16 UniRef90_A0A022Q9P1 UniRef90-UPIO0006CFBEC UniRef90-A0A010RVL0 UniRef90_LOLKJ8 UniRef90-LOKH11
UniRef90-K1TKD7 UniRef90-UPI00036A8719 UniRef90-B0L8W7 UniRef90_UPIO0037548D2 UniRef90-HOTTS2 UniRef90-A0A058ZE17 UniRef90_D4JEG9 UniRef90_UPIO0036F3647 UniRef90-J2L7S8 UniRef90-UPI0003EC2866 UniRef90-UPI00040B7141 UniRef90_D5VPW9 UniRef90-A0A024YIP6 UniRef90-15BUH6 UniRef90-W3RJZ8 UniRef90-UPIO0016A9E2C UniRef90-D4P3K5
UniRef90 ${ }^{\text {W5TCJ4 }}$ UniRef90-G7GTN0 UniRef90_A0A052JDD4 UniRef90_Q875S3 UniRef90_UPI0003B4251F UniRef90-A6X0R4 UniRef90_UPI0003B3224D UniRef90_UPI000349094B UniRef90_UPI00037753B9 UniRef90-V8D4L6 UniRef90-UPI0003718377 UniRef90-A0A059FP39 UniRef90-A0A016QN68 UniRef90_UPI0002D2D48D UniRef90_U6KYB7 UniRef90_UPIO0047623C5 UniRef90-Q1GD06 UniRef90-E2QA77 UniRef90-W6X613 UniRef90-X7XW18 UniRef90_D0LF57 UniRef90_UP10003767D1F UniRef90_UPI00036CD6A2 UniRef90-HOAAZ5 UniRef90-UPIO0047D7EDB UniRef90-D3SMV4 UniRef90_UPI00036AD69B UniRef90_UPI000374F4EC UniRef90_JOPBS7

## UniRef90-B9NULO

 UniRef90_UPI00036A4544 UniRef90_UPI00047B6ABC UniRef90-UPIO0047A77EA UniRef90-D2PMZ9 UniRef90_UPIOO03F63915 UniRef90-A0A010YQ41 UniRef90-KOCl23 UniRef90_UPIO00382F62C UniRef90_C1DWH2 UniRef90-A6FVH7 UniRef90-HOTEK4 UniRef90-B8IVL3 UniRef90-H9KHY1 UniRef90-D7B5J3 UniRef90_UPIO003658EF0 UniRef90_F6CLI8 UniRef90-K2AL65 UniRef90_UPI00037B1D02 UniRef90_UPIO0035C70FB UniRef90_UPI0004705EA3 UniRef90-F8GY95 UniRef90-F5XJN4 UniRef90_F1KSZO UniRef90_K2L8T7 UniRef90-10HTI3 UniRef90-B8A210 UniRef90_DTFN48UniRef9O-W4H3X0 UniRef90_UPIO003B6F261 UniRef90_U6EE69 UniRef90_C7DA90 UniRef90-K2CYR9 UniRef90-FOVK37 UniRef90-T1DRK6 UniRef90-W7AFN7 UniRef90-T1HR11 UniRef90-I3KHA9
UniRef90_W8QJR7

## 

 FND PGMLELMRLYVTIHSDHGGNVSAHTGHLVASALSD
 FHEDEHEIVKCFEKLWILYADHEMTNSTAAFLHAASTLTD
 DREYTKEEAKLLDLCCLMLHAEHGGNNSTFTCRCVTSTGTD

## R

 QSEQYKDVA RQWGCPQAAELIRRALVLLA DHEGLNASTFATRVTASTGAA SLPPPEAFSKALDLLEVLHAEHELNCSTSAMRHISSSAVD GSNDYTHQARVMDTLLVLHADHGGNNSTAANVVISSTGTD A WGTGDGGADLLRRALVLLADHELNVSAFTARVAAGGGAS$A R W G R P E A A D C L R R A L V M L A D H E L N A S T F A V R V T V S T G A A$ ARWGRPEAADCLLR RALVMLADHELNASTFAVRVTVITGAA GWSLDATAAEADRRALVLLADHELNASTFAARVAASTGAS A WSLLAEGADLVRRTLVLLADHELNASTFAARVAASTGAS PREPDPDALAALDLALTLLVDHDLAASTLAVRVAASARAH

WRVNDPGADELERGRALVLLADHELNASTFTVRCAVSTGLDN ATPCNPVIKNALNKIFILHADHEQNASTSTARIAGSSGAN ASPPAGERELRLGAALILLADHEDATSTFAARVAASVRAD TEPGSPERTSLLNAALVLLAD DHDLSAGTVAARVAASARGS TADQCEDFTNLVRLYCGI HVDHGGNVSAHTTHLVGSALSD


WQKPQASDVI R RILVLLAADHELNASAFATRVAASTGTP GRAPEPAGSRAISAALVLAVDHDLAASTLAARVAASARAD GWGQGSEGTDLI RAALVLVADHELTSSAFAARITASTGAS ARPADAPALAVLDAALTLLIDDDLAASTLAARVAASARAH P IPANRGRIRLLNAALVLLADHDLTASTVAARVAASARGS ALSDRPEPPDVLRTALVLLADHGLAASTLAARVAASARAH A WGMDADGADMVRRALVLLDDHELNASTHASARVAASTGAS AWHLDETGADILRRALVLAADHELNASAFAVRVVASTGAS


## A

 A A EPGPA AVRVVLDAAAL ALLAADH DVAA GATSSPEALHALNGAMIVLADNELAAPATLAAVRVAASARAB QGEPDPRHVEAI DAYWVSAAEHGMNASTFTARVMAASTGAD S R L T TKG VVASVVAALVLLTTDHELASSTMAARVAASVRAD

 GDLPTPGQGALLEAALMSAVDHGQAPS D AARMAATCGVG
 GEMPRKA QAALLEKALVAAVDHGPQAPSIAAARMAATCGV

 GELLPSED QA S L L G I A L GA A V D H GQAP S I A DA RMADVT C GV G
 GELPDTPPQGRLLEAALVAAVDHGPQAPSIAAARMAATCGLD



 GQMP DKA S E KMF EAMMLVSAAVDHGAPPSTVAARAVASTGGA



 A REPRPVDMRIVVDAVLIVVLMEHGLTTPSALATRIXMSAPEN
F D DPRMLE LMRLH
R R R LIP D YA TKFI EMILLMVTADHGPAVSAHNTVVTARAGKD KRKLPP YATKF E F V V L MVTADDHGPAVSAHNAIVTARAGKD GEMSSPEAGKLIDAI FVVSS $\square D H G A P P S A L A A R T V A S T G A E$ GELPQEKKAKMMEAILVSFCDHGVTPSTQVARIMASTGAS

 K R P L P E Y CYRYLERVLMLTADHGPAVCAHNVIVTARAGKD



UniRef90_UPI000262AE16 UniRef90_A0A022Q9P1 UniRef90_UPI00006CFBEC UniRef90_A0A010RVLO UniRef90_LOLKJ8 UniRef90_LOKHI1
UniRef90_K1TKD7 UniRef90_UPI00036A8719 UniRef90 B0L8W7 UniRef90_UPI00037548D2 UniRef90_H0TTS2 UniRef90 A0A058ZE17 UniRef90_D4JEG9 UniRef90_UPI00036F3647 UniRef90 J2L7S8 UniRef90_UPI0003EC2866 UniRef90_UPI00040B7141 UniRef90_D5VPW9 UniRef90_A0A024YIP6 UniRef90-I5BUH6 UniRef90_W3RJZ8 UniRef90_UPI00016A9E2C UniRef90_D4P3K5 UniRef90-W5TCJ4
UniRef90-G7GTN0 UniRef90_A0A052JDD4 UniRef90_Q875S3 UniRef90_UPI0003B4251F UniRef90_A6X0R4 UniRef90_UPI0003B3224D UniRef90_UPI000349094B UniRef90_UPI00037753B9 UniRef90-V8D4L6 UniRef90_UPI0003718377 UniRef90_A0A059FP39 UniRef90_A0A016QN68 UniRef90_UPI0002D2D48D UniRef90_U6KYB7
UniRef90_UPI00047623C5
UniRef90_Q1GD06 UniRef90 E2QA77 UniRef90_W6X613 UniRef90_X7XW18 UniRef90_D0LF57
UniRef90_UPI0003767D1F UniRef90_UPI00036CD6A2 UniRef90_H0AAZ5 UniRef90_UPI00047D7EDB UniRef90_D3SMV4 UniRef90_UPI00036AD69B UniRef90_UPI000374F4EC UniRef90_J0PBS7

## UniRef90_B9NULO

 UniRef90_UPI00036A4544 UniRef90_UPI00047B6ABC UniRef90_UPI00047A77EA UniRef90_D2PMZ9UniRef90_UPI0003F63915 UniRef90-A0A010YQ41 UniRef90-K0CI23 UniRef90_UPIO00382F62C UniRef90_C1DWH2 UniRef90_A6FVH7
UniRef90_H0TEK4 UniRef90-B8IVL3 UniRef90_H9KHY1 UniRef90_D7B5J3 UniRef90_UPI0003658EF0 UniRef90_F6CL18 UniRef90_K2AL65 UniRef90_UPI00037B1D02 UniRef90_UPI00035C70FB UniRef90_UPI0004705EA3 UniRef90_F8GY95 UniRef90_F5XJN4 UniRef90_F1KSZ0 UniRef90_K2L8T7 UniRef90-10HTI3 UniRef90_B8A2I0 UniRef90_D7FN48
UniRef90_W4H3X0 UniRef90_UPI0003B6F261 UniRef90_U6EE69 UniRef90_C7DA90
UniRef90-K2CYR9 UniRef90_K3WVP6 UniRef90_FOVK37 UniRef90-T1DRK6
UniRef90-W7AFN7 UniRef90-T1HR11 UniRef90_I3KHA9


210
220
230
240
L. HATVVAGLLAALLSGPRGGATARAHALLRDAQDAPSAAA L
 PAACLL AYAAYASAAISALK
LSA GLDA GLAA A AGPRHGGA
PY Y
 PYSAVAGSASALKGPLHGGACEAVLDMLEEIGHVDQVPGY 1 YSCISAADGSLKGPRHGGASTKVYQQMKEIMKNDAYQLL LP H S TLAALAAVQGTRHGGAGVAAFDLLRGAPDGDPMAALL LSAAVLSGLAALTGPLHGSAWRSVDAFVEAA SCAGAEDA


## I



 A Y S A L L A G L A A A D S
LSAAVLAGLAABSPLHVGASMRAVDWLRPALQDPRSALDD GYAVVSAA SALIGRHGRAATAAAAIITQTRQIGAEAA





 | $L$ | $Y$ | $N$ | $C$ | $V$ | $A$ | $A$ | $G$ | $S$ | $H$ | $V$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $A$ | $A$ | $A$ | $L$ | $T$ |  |  |  |  |  |  |
| $S$ | $G$ | $A$ | $G$ | I | $M$ | $S$ | $G$ | $P$ | $L$ | $H$ |  |

PFSVVLAGLGSTAGPLHAGASALVYPMLVDAADRGSERA\| GLNNVMATGVNMLGDVHGGAGEQCAELYFDDRDRFEVEGIC
 $M N T S V A A G I S A L G D K H G G A \square E E C \quad M E L L Q S Q A S V K E U$ $\square N S A M A S A V N V L G D D H G G A G Q A D A D Q D A L A R A E S G M P Q$






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




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

 $L$ Q G A V A A G L L A V G S Q F V G T M E N C S R LIDD R I R D
 L Q G A V A A G L MA V G S Q F VGGTME N C S R L L L D R I R Q A P D E A L I I






## UniRef90 UPI000262AE16 UniRef90-A0A02209P1 UniRef90-UPIOOOO6CFBEC UniRef90-A0A010RVLO UniRef90_LOLKJ8

 UniRef90-LOKH11 UniRef90-UPI00036A8719 UniRef90-B0L8W7 UniRef90_UPI00037548D2 UniRef90-HOTTS2 UniRef90 A0A058ZE17 UniRef90-D4JEG9 UniRef90_UPIO0036F3647 UniRef90-J2L7S8 UniRef90-UPIO003EC2866 UniRef90-UPIOOO40B7141 UniRef90-D5VPW9 UniRef90-A0A024YIP6 UniRef90-15BUH6 UniRef90-W3RJZ8 UniRef90-UPIO0016A9E2C UniRef90-D4P3K5 UniRef90- W5TCJ44UniRef90 G7GTNO UniRef90-A0A052JDD4 UniRef90-Q875S3 UniRef90_UPI0003B4251F UniRet90_A6XOR4 UniRef90_UPI0003B3224D UniRet90-UPIOOO349094B UniRef90-UPIO0037753B9 UniRef90-V8D4L6 UniRef90-UP10003718377 UniRef90-A0A059FP39 UniRef90_A0A016QN68 UniRef90_UP10002D2D48D
UniRef90-UKYB7 UniRef90 U6KYB7 UniRef9O-UPIOOO47623C5 UniRei90-Q1GD06 UniRef90- W6X613 UniRef90-X7XW18 UniRef90-DOLF57 UniRef90 UPIIO003767D1F UniRef90-UP100036CD6A2 UniRef90_HOAAZ5 UniRef90-UPIO0047D7EDB UniRef90_D3SMV4 UniRef90-UPIOOO36AD69B UniRef90_UPIO000374F4EC UniRef90_-UniRef90-UPIO0036A4544 UniRef90-UP100047B6ABC UniRef90-UP100047A77EA
UniRef90-D2PMZ9 UniRef90_UPI0003F63915 UniRef90-A0AO10YQ41 UniRef90-K0C123 UniRef90-UP1000382F62C UniRef90 C1DWH2 UniRef90-AGFVH7 UniRef90-B8IVL3 UniRef90-H9KHY1 UniRef90-D7B5J3 UniRef90-UPIOOO3658EF0 UniRe990-K2AL65 UniRef90-UPI00037B1D02 UniRef90-UPIO0035C70FB UniRef90 UPIOOO4705EA3 UniRef90-F8GY95 UniRet90-F5XJN4 UniRef90-F1KSZO UniRef90-K2L8T7
UniRef90 $10 \mathrm{HTl3}$ UniRef90-B8A210 UniRef90 D7FN48 UniRef90-W4H3X0 UniRef90-UPIO003B6F261 UniRef90 U6EE69 UniRef90-C7DA90
UniRef90-K2CYR9 UniRef90-K3WVP6 UniRef90-FOVK37 UniRef90-T1DRK6
UniRef90 ${ }^{-W 7 A F N 7}$ UniRef90-T1HR11 UniRef90-l3KHA9 UniRef90_W8QJR7

I AERWQRGDDLIPGFHHALYYDGDPRAAEVLRLLRERSAGS VWKTLNSGKVVPGYGHGVLRNTDPRYTCQREFALKHLPND

REH LARGYSLPAFGHP LYPDGDPRAAALLAR
WWDTLNAGQVVPGYGHAVLRKTDPRYTAQREFCLK
LAPALQSGRLYPAFGHPLYPEGDVRAQA LLASLLMAASGRL 1 RERVALGERFAGFGHGIYKRGDPRA ISLLDALNRAGA


 I RRWLGHDRPLPAFGHPLYPEGDPRATALLAADD IVAARLSQGASMPGFDHPLYPEGDPRAAALLA VAEYLRAGRRVPGLGHRLYQGEDPRAAALEARLEGDEQAA



 TKGQLRQGTQFHFFGHPLYRETGD VAAVRDGGRGVPGFGQPLYRGTDARARALLPLVGALPGAA VAHHLQSALPIPGFSHHLYPEGDPRAQALLER
VADHLRTGRPVPGLGHRLYRAEDPRARTLFALLEDVPQAA LWS GPD QALPGFGHVVYRDHDPRAEALFELLMATTTGGD VTDRLRAGERLPGFGHSYYRERDPRTDVLGGTVAGSQEA VRARLDEGRALPGFGHPLYPDGDPRAAELLAR
LREATRRHAHPPGFGHPLYPVGDPRGRALLAALQAARPEA VEARLRRGEGVPGFVHPLYPEGDPRAALLPLLPADAAR AKATLKAGGVIPGFGHAVLRVTDPRFTLQREFALKHDQHD VAHHLQSAIPI PGFGHHLYPDGDPRAAAVLEVVSEMAETG



VKRMRQQNKL!MG\|GHRTKSNPDMRVT IKEYALKHFKNN VNKMKATNQLIMGIGHRDKSTTNPDKRVTIIKEFALKHFP LREMKERKKRASGFGHRFHT QDPRTRKLFA LAEED VEYFLNNGKKПPGFGHRFH DKDPRPRKLDKVAKEYGCFG DAWRAQNGKIVSGFGHRFHKPDDPRAPRLMTVVRDAAKAG VDEYGKDDKRMP VAEMKKONELVMGI GHRIKSNPDKRVTIIKEFAMENFPAT VAEMKKQNKLVMGGHRIKSVHNPDMRVQLIKKFCKSNF EDDUNELIMDI PNVDGFFYKNNFFKKKNILKKYLTDYCNS VNSMRKKGQL:MG| GHRVKSNPDMRVKVGKEFVLENFPAT

UniRef90 UPIO00262AE16 UniRef90-A0A022Q9P1 UniRef90-UPI00006CFBEC UniRef90-A0AO10RVL0 UniRef90_LOLKJ8 UniRef90-LOKH11
UniRef90 K1TKD7 UniRef90-K1TKD7
UniRef90_UP100036A8719 UniRef90- BoL8W7 UniRef90_UPI00037548D2 UniRef90-HOTTS2 UniRef90-A0A058ZE17 UniRef90-D4JEG9 UniRef90_UPIOO036F3647 UniRef90_J2L7S8 UniRef90'UPIO003EC2866 UniRef90_UPIOOO40B7141 UniRef90_D5VPW9 UniRef90-A0A024YIP6 UniRef90-I5BUH6 UniRef90-W3RJZZ UniRef90-UPI00016A9E2C UniRef90-D4P3K5 UniRef90-W5TCJ4 UniRef90-A0A052JDD4 UniRef90-Q875S3 UniRee90_UPI0003B4251F UniRef90 A6X0R4 UniRef90 UPI0003B3224D UniRef90_UPIOOO349094B UniRef90-UPIO0037753B9 UniRef90-V8D4L6 UniRef90-UPIO003718377 UniRef90-A0AO59FP39 UniRef90-A0A016QN68
UniRef90-UPIOOO2D2D48D UniRef90-U6KYB7 UniRef90_UPIO0047623C5 UniRef90_Q1GD06 UniRef90-E2QA77 UniRef90-W6X613 UniRet90-X7XW18 UniRef90_DOLF5 UniRef90-UPIIO003767D1F UniRef90-UPI00036CD6A2 UniRef90_HOAAZ5 UniRef90-UP100047D7EDB UniRef90-D3SMV4 UniRef90-UPIO0036AD69B UniRef90-UPI000374F4EC UniRef90-JoPBS7 UniRef90-B9NULO UniRef90_UPIO0036A4544 UniRef90 UPIO0047B6ABC UniRef90-UPIOOO47A77EA
UniRef90-D2PMZ9 UniRef90-UPIO003F63915 UniRef90-A0A010YQ41 UniRef90-K0C123 UniRef90-UPI000382F62C UniRef90_C1DWH2 UniRef90-A6FVH7 UniRef90-HOTEK4 UniRef90-B8IVL3 UniRef90-H9KHY1 UniRef90-D7B5J3 UniRef90_UPIO003658EF0 UniRef90_F6CLI8 UniRef90-K2AL65 UniRef90-UP100037B1D02 UniRe990 UPIO0035C70FB UniRe990 UPIOOO4705EA3 UniRef90-F8GY95
UniRef90 F5XJN4 UniRef90-F5XJN4 4
UniRef90
UKKSZ UniRef90-K2L8T7 UniRef90-KOHT13 UniRef90-B8A210 UniRef90-D7FN48
UniRef9O-W4H3X0 UniRef90-UPIO003B6F261 UniRet90_U6EE69 UniRet90-C7DA90 UniRef90-K2CYR9 UniRef90-FOVK37 UniRef90-T1DRK6 UniRef90-W7AFN7 UniRef90-T1HR11 UniRef90-13KHA9


 PLFKMVSNYEVVPPLLLELGKVKNPWPNVDAHSGVLLNYY
ESNPLLSTAMETDRNADKYFTSRNGKANADDYGCF DYTAF GCFTLPPLFARVRDVGEQLVGER VNVDFALTAMTHAY

$$
\text { F K } V G K \square Y \text { A A } \square R D E G \square A \square T G E Q P N \square D F A \square A S \square S D A F
$$

PPGFAELQADALQRA GEHPTVDFALAALARHH PRKFTREVPERIAEATGE GVNI DYALAVLVHSL DVRRपAAIARRLEEVADVYFRDRKDFPNVDFWTGLLYKAL GSVGYFLY
QTHPGSPTVQAVLADADHMAGETGEAPNTDLADAALVQED VPPVFRDVQRAGEEMMGE KVNVDFALAAMTAAF PMFKMVAQYKIVPNVLLEQGKAKNPWPNVDAHSGVLLQYY NTDETLRSLELAADAATGARPNVDFALAVLTRSL AFDPPPPAELRAATEAATGLAPNIDFALVSLARAL PADAAAREVVAVMA $R$ RQGGLHANVDLALAVLTLAC
 A $\stackrel{\mathrm{P}}{\mathrm{P}} \mathrm{T}$ PVDPRPVAALNVVALSAELDRARRLLPAMNSDFGLAVLATVF RATLTRELRAVFSFLDEVQRDTGLRPRQELAVVVVTRAL AQDKNVQ MKKMSQVAPKHGKTKNDFPNVDSASGLEHHY PGAALEVRASLELLEGELLERRGWVLTVDDALALLTLEH EHLDELPPPYSDLEQSAANILGE KPNVDFALAAVTEIY PVTEAAAADAGVVEA RAGLHPNFDFALAVLTGAA GALAA AR K EVVATTARHAPLPANIDLIALAVLSVAC R KVIRTDEELRGDAGQTDAAFLNSDMALAAIAVRF FTPSGPAGELAAQVAGRPGVFPNVDLGAAVMHAH


ANSAALSS $\$ HT TRRTAERRTGII
ANTDFALGALCFLA VVSGSFAEI GEAVQTATGKQRGEPTAMNI DGATAVIFCEL VVSGRFAAUARAVEAELGAGRSKPIPMNIDGATAVIYAEL EFTE EVSGRYAAVARGDEDLLLRARKGKAL GNDRIAA A EALDAEMRRRRDRER QVSGRYAQTARAVEAELIA QKGRPDPNVDFALAVLTAVA HDEDFQRLLIAAETVEEDSGKPLDF LLLDVFCGRKLNMR TVSGRFADIEEVQAELGRQRGGRPDAMNVDGATAVIFCEL

## 

V

## V

| A |
| :---: |
| V |

 K Y V K F GTHIDETM
$\qquad$
GDALRALRQLAA EKVLDDET
GDALRALLRLAAALDEA
AVSGRFAAGGRAVEDS
QET P LLN FALQVEK
GDK】AA LDMTLSA
$K V L D F A L A V E Q V T T K K R E T D I \quad D N D G C D A A C F V D L$ GNSUL GLAAGRDRDALAVERCLESLLGKPLPINVDGAIAAVLCDLL IHTELIVYI EKLLQQ EMKGISMNIDGANAGI LSDM TVKGRYADI GEAVQANDSTRKPDAMNNIDGATAVI FCEML
 DVLKFALDVEQV

QSQQCUDULNHFIKIEDMFFKYKNKYPSPYYYSMLTFYLL

UniRef90 UPI000262AE16 UniRef90_A0A022Q9P1 UniRef90_UPI00006CFBEC UniRef90-A0A010RVL0 UniRef90_LOLKJ8 UniRef90-LOKH11
UniRef90-K1TKD7 UniRef90-K1TKD7
UniRef90-UPI00036A8719 UniRef90-B0L8W7 UniRef90_UPI00037548D2 UniRef90-HOTTS2 UniRef90-A0A058ZE17 UniRef90_D4JEG9
UniRef90_UPI00036F3647
UniRef90-J2L7S8 UniRef90-UPI0003EC2866 UniRef90_UPI00040B7141 UniRef90_D5VPW9 UniRef90-A0A024YIP6 UniRef90-15BUH6 UniRef90-W3RJZ8 UniRef90_UPI00016A9E2C UniRef90-D4P3K5 UniRef90-W5TCJ4 UniRef90-G7GTN0 UniRef90-A0A052JDD4 UniRef90_Q875S3 UniRef90_UPI0003B4251F UniRef90-A6X0R4 UniRef90-UPI0003B3224D UniRef90_UPI000349094B UniRef90_UPI00037753B9 UniRef90 V8D4L6 UniRef90-UPI0003718377 UniRef90-A0A059FP39 UniRef90-A0A016QN68 UniRef90_UPI0002D2D48D UniRef90-U6KYB7 UniRef90_UPI00047623C5 UniRef90-Q1GD06 UniRef90-E2QA77 UniRef90-W6X613 UniRef90-X7XW18
UniRef90-D0LF57 UniRef90_UPIO003767D1F UniRef90_UPI00036CD6A2 UniRef90-HOAAZ5 UniRef90-UPI00047D7EDB UniRef90-D3SMV4 UniRef90_UPI00036AD69B UniRef90-UPI000374F4EC UniRef90-JOPBS7
UniRef90-B9NULO UniRef90_UPI00036A4544 UniRef90_UPI00047B6ABC UniRef90-UPIO0047A77EA UniRef90_D2PMZ9
UniRef90_UPI0003F63915
UniRef90-A0A010YQ41
UniRef90-K0Cl23
UniRef90_UPIO00382F62C
UniRef90_C1DWH2
UniRef90-A6FVH7
UniRef90_HOTEK4
UniRef90-B8IVL3
UniRef90-H9KHY1
UniRef90-D7B5J3
UniRef90_UPIO003658EF0
UniRef90-F6CLI8
UniRef90-K2AL65
UniRef90_UPI00037B1D02
UniRef90_UPI00035C70FB
UniRef90-UPIO004705EA3
UniRef90-F8GY95
UniRef90-F5XJN4
UniRef90-F1KSZ0
UniRef90_K2L8T7
UniRef90-10HTI3
UniRef90_B8A210
UniRef90_D7FN48
UniRef90_W4H3X0
UniRef90_UPI0003B6F261
UniRef90-U6EE69
UniRef90-C7DA90
UniRef90-K2CYR9
UniRef90-F0VK37
UniRef90-T1DRK6
UniRef90-W7AFN7
UniRef90-T1HR11
UniRef90-I3KHA9
UniRef90_W8QJR7
-

## 

 GLEARFYTVLFGVSRS $\square G \square C S Q L I W D R A L G L A L E R P K S V T$
GFETDD IVAMASLSRMPGVLAHWREMLEKGPMLWRPQQ HLPEDAPLIIFALARTVGWLAHAMEQ ATSGRLIRPRARY GLPRDAPFHLFALGRSVGWAAHLVEQ\|VTGS IIRPRGRY
$G \square P P E A P F V V F A L A R S V G W \square A H A L E Q \square E T G H \quad L I R P R A R Y$
GWPADGPFTVFADSRCVGWLAHADEQVQQGA LI RPRARY

GRGAEDAVTLFALGRASGWLAHADEARTHGQ FTRPRARY DLPEEAPI I I FALARTAGWLAHAMEQDESGH LI RPRARY GMEMNYYTVLFGVSRALGVLAQLVWSRALGFPLERPKSMS GLPRDAPFQLFALGRSVGWAAHMVEQAVSGGSGRPRGRY
 GKGWSFATALVIASRLIGGLIAHCLIEEYEQRQRMIRPRARY

 GMPVAAGEALFT\ARTAGW\AHA $\square E$ GF P A P $L$ S R G L $L$ F C L L

 $G F P A P L A R G L F$ GQE $\square V L A$ GFPAPLSRGLF GFPPE L GRGLVELSRSVGIL A HA WE
 $G F A P E L G R G L I S R S V G I L A H A W E Q K Q Q G G R I K G P M Y T Y$ $G L P A E S G E V V V Q V A R S V G V A A H V V E E Y A E E P D R W R G R$ GF A P E $\quad$ L A R R G L F V V L GFPAPLARGLFVLSRSVGILAHAWEESRSGQRNKGPDPRS

## 

G | $G F$ |
| :--- |
| C |
| $\mathrm{G} F$ |

## G


LRHS GMF T GLEVLGRSLGFI GHYLDQRRLKQGLYR

LRSCGAFTGMFVLGRSVGFDGHYLDQKRLKQPLYR
 GFHWK L G T G I F T I A R R V P A L V
GFPAPLSRGLFCLSRSVGILSHAWEQMQQGGR

LFHCGHFTGLFVLGRS GGF GUFLDQKRLKQPLYR




$N \boxminus P A E A A K G\|F S\| S R G M G \| V A H A Y E E L T K G A L V K G P L V R Y$

UniRef90 UPI000262AE16 UniRef90 $\mathrm{A} 0 \mathrm{~A} 022 \mathrm{Q9P} 1$ UniRef90_UPI00006CFBEC UniRef90 A0A010RVLO UniRef90 L0LKJ8 UniRef90_LOKH11 UniRef90-K1TKD7 UniRef90_UPIO0036A8719
UniRef90 ${ }^{-}$B0L8W7
UniRef90_UPI00037548D2
UniRef90 HOTTS2
UniRef90 A0A058ZE17
UniRef90_D4JEG9
UniRef90_UPI00036F3647
UniRef90- J2L7S8
UniRef90-UPI0003EC2866
UniRef90-UPI00040B7141
UniRef90_D5VPW9
UniRef90 A0A024YIP6
UniRef90-15BUH6
UniRef90-W3RJZ8
UniRef90_UPI00016A9E2C
UniRef90 D4P3K5
UniRef90-W5TCJ4
UniRef90-G7GTN0
UniRef90 A0A052JDD4
UniRef90_Q875S3
UniRef90_UPI0003B4251F
UniRef90 A6X0R4
UniRef90-UPI0003B3224D
UniRef90_UPI000349094B
UniRef90-UPI00037753B9
UniRef90 V8D4L6
UniRef90-UPI0003718377
UniRef90_A0A059FP3S
UniRef90-A0A016QN68
UniRef90 UPI0002D2D48D
UniRef90-U6KYB7
UniRef90_UPI00047623C5
UniRef90_Q1GD06
UniRef90-E2QA77
UniRef90-W6X613
UniRef90_X7XW18
UniRef90 DOLF57
UniRef90_UPI0003767D1F
UniRef90-UPI00036CD6A2
UniRef90 HOAAZ5
UniRef90-UPI00047D7EDB
UniRef90-D3SMV4
UniRef90_UPI00036AD69B
niRef90 UPI000374F4EC
UniRef90-JOPBS7
UniRef90-B9NULO
UniRef90 UPI00036A4544
UniRef90 UPI00047B6ABC
UniRef90_UPI00047A77EA
UniRef90-D2PMZ9
UniRef90 UPI0003F63915
UniRef90-A0A010YQ41
UniRef90-KOCl23
UniRef90-UPI000382F62C
UniRef90-C1DWH2
UniRef90-A6FVH7
UniRef90-HOTEK4
UniRef90 B8IVL3
UniRef90-H9KHY1
UniRef90-D7B5J3
UniRef90-UPI0003658EF0
UniRef90-F6CLI8
UniRef90-K2AL65
UniRef90-UPI00037B1D02
UniRef90_UPI00035C70FB
UniRef90-UPI0004705EA3
UniRef90_F8GY95
UniRef90-F5XJN4
UniRef90 F1KSZ0
UniRef90-K2L8T7
UniRef90-10HTI3
UniRef90-B8A210
UniRef90 D7FN48
UniRef90-W4H3X0
UniRef90_UPI0003B6F261
UniRef90 U6EE69
UniRef90_C7DA90
UniRef90-K2CYR9
UniRef90_K3WVP6
UniRef90 F0VK37
UniRef90-T1DRK6
UniRef90-W7AFN7
UniRef90 T1HR11
UniRef90-13KHA9
UniRef90_W8QJR7

T G A M P E D
V E WLE NYV
$V G P P$
$E G L L P$
$E G L L P$
T GVP
VGP P
VGPSP
VGRWGR
$\underset{T}{V} G P S P A D$
$E G L L P$
GGPPEGYSP

V ${ }^{-1} P$
VGVD H
$T G V R P$
V
TGPRQ
$M P P$ LIE
VGP
$T G P V L E D V$
TGPRPPQPLP
$V G \nabla R P$
A GPRP
V $G P$ L $P$
V G
TGP
TGPALEDAAP
T G
TGTAQ
VPREPR
KGPDPPKY $\square P$
DGPPQRDVPP
T G
EGHPARPVPPAE
$T G P P \square R$
K GP I PRQY $\square P$
TGPLP
$K G P M P P N Y \square P \square E D R$
VGTAERQV
NGPAPRQ
T GPGPR
TGTPPRPF
IRPTYRH
V G Q LP
EGPAPR
QGHPPR K $\quad$ PRED
】WET DDKA $\square$ PFED
EGEPRR
TGPAPRDF
T
DGPATRH
DWETIDHADP
DGPAVRD
DGPRPR
$\square$ WETVEDA $\square$ P
DGPEERK
$\square$ WE T $\square \mathrm{DHA} \square \mathrm{P}$
T G $\square \mathrm{KHRDLEP}$
DGPERRPF
(1)WDTVEHAMP

D G P R G R E
K G P M P P A Y $\square$ P

VGNDPTDYQP

A GVGTRH

lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
UniRef90_Q30T31
UniRef90-Q472W8
UniRef90-D8QEN1
UniRef90-B9L917
UniRef90-F4PAIO
UniRef90-B2V9Q1
UniRef90 ${ }^{-}$N6VV84
UniRef90-U5H719
UniRef90-B3L7W4
UniRef90_M3VGW8
UniRef90-C7QHM2
UniRef90-C5KW76
UniRef90-H6RMK6
UniRef90_X1PTS1

EMGRLLQTSDP $\square Q L I R \square A L L K F S H Q S E Q Q T E T E G E P K S T H$


UniRef90_H2ZP64 UniRef90_Q0KCA2 UniRef90_A0QZ13 UniRef90 Q022L9 UniRef90-G4QNA4 UniRef90-K2QZH9 UniRef90 Q6C3H5 UniRef90-K2Q3W5 UniRef90-R7XS39 UniRef90 G8MNJ5 UniRef90 E1ZG37 UniRef90-UPI000424E63E UniRef90_U6GK48 UniRef90 C3YNY7 UniRef90_D8R981 UniRef90-G9AEX0 UniRef90-T2DNH5 UniRef90 Q54YA0 UniRef90-D1JAP4 UniRef90-F8GV29 UniRef90 UPI0004799A5A UniRef90-K9FBG2 UniRef90-F0SO92 UniRef90_U6KQ81 UniRef90 A818X8 UniRef90-M0TPB5 UniRef90-G7E2U6 UniRef90 ${ }^{-18 T M L 8}$ UniRef90-13UG71 UniRef90-W3VHJ3 UniRef90-HOUNR6 UniRef90 UPIO00310AE8B UniRef90-E3HMM0 UniRef90-UPIO0016AF9E5 UniRef90 E3K2E4 UniRef90 G7Y9B1 UniRef90-U6ML89 UniRef90_UPI00037BEFB1 UniRef90 J2IMY6 UniRef90-Q30T31 UniRef90-Q472W8 UniRef90 D8QEN1 UniRef90 B9L917 UniRef90-F4PA10 UniRef90-B2V9Q1 UniRef90 N6VV84 UniRef90 U5H719 UniRef90_B3L7W4 UniRef90-M3VGW8 UniRef90 C7QHM2 UniRef90-C5KW76 UniRef90-H6RMK6 UniRef90- ${ }^{-1}$ PTS1
$\qquad$ 130
140 RGHDYDITALMK L

 ATSITVRGHDLCDDLIGKKDDFDYFWLLVC



Y A GMP $\square$ S D VF KE DMG $\square$ G G VLS LLWF
S F TEYFY LLLT


PDTGYS 1 GDVISLLWF

WGLGGVI GLLWF


D F G Q M L F LVLK KKDEYWETAR $\square$ YHRSYHDKENY $\square$ SPDFNRDWAANFVHMHH | $G F G E L A F W L A T$ |
| :--- |
| $S ~$ |



UniRef90 H2ZP64 UniRef90_QOKCA2 UniRef90-A0QZI3 UniRef90 Q022L9 UniRef90-G4QNA4
UniRef90 K2QZH9 UniRef90 Q6C3H5 UniRef90-K2Q3W5 UniRef90-R7XS39 UniRef90-E1ZG37 UniRef90_UPI000424E63E UniRef90_U6GK48 UniRef90 C3YNY7 UniRef90_D8R981 UniRef90-G9AEX0 UniRef90_T2DNH5 UniRef90_D1JAP4 UniRef90_F8GV29 UniRef90 UPI0004799A5A UniRef90 K9FBG2 UniRef90-F0SO92 UniRef90_U6KQ81
UniRef90 A818X8 UniRef90-M0TPB5 UniRef90_G7E2U6 UniRef90_I8TML8 UniRef90-I3UG71 UniRef90-W3VHJ3 UniRef90_HOUNR6 UniRef90 UPIO00310AE8B UniRef90- E3HMM0 UniRef90-UPI00016AF9E5 UniRef90 E3K2E4 UniRef90 G7Y9B UniRef90_U6ML89 UniRef90_UPI00037BEFB1 UniRef90 J2IMY6 UniRef90 Q30T3 UniRef90_Q472W8 UniRef90_D8QEN1 UniRef90_F4PA10 UniRef90-B2V9Q UniRef90_N6VV84 UniRef90 U5H719 UniRef90-B3L7W4 UniRef90_M3VGW8 UniRef90 C7QHM2 UniRef90_C5KW76 UniRef90-H6RMK6 UniRef90_X1PTS1

170
180
190
200
QKRLLPEYACKFFEHCLLMMTADHGPAVSAHNT VVCARAGKD GRQPGEKLVATTDACLVATAEHGLVPSVQAARMTDAAAPD GRLPSDAEAALFNAVLVALADHGMTPSVLAARLTYTGAPE GRLPNSNERRLLDAILIGVADHGGAPSCATARLVASGNRQ
 GKRPDKRQTTALNACLVAIAEHGLVPSVQAARMTLAAAPE GTRPTDAQRADLDACLVSIAEHGLVPSVQAARMTDAAGPE GRLPDDHESAVFNSLLVTLVEHGMTPSADAARLTYLGAPE KRRLPRYATKFI EMCDVVLCADHGPCVSAHNTIVTARAGKD
 QRRLAPSYACKFVEMCLMVTADHGPAVCAHNVIVTTRAGKD KYCTKFDEACYMCIILCADHGPCVSAHNTIVTSRAGKD GREPTDNQRYF DDLLLADAEHGMMPTVQAARMTBAAEPD KRKLPPYASKFFEMCLKLVADHGPCVSAHNTVVAARAGKD KKRLPQYVTEFDELALMITADHGPCVSAHNTIVTAMAGKD VRLPEAREKAMVNALLVTTADHGDTPSALAARLTYAGAPE
$G R R A D A P A S A V L N A T L V A D A E H G L V P S V Q A S R M T L A A A P D ~$ GRRADAPASAVLNATLALAEHGLVPSVQASRMTLAAAPD KKKFPAWASKFIDMVIKVVADHGMAAVSAHNAKVTARAGKD KRPLAPYCYRYLELVLLLTADHGPAVCAHNVIVTARAGKD KRKLPKYATKFI EMCVMMCADHGPCVSAHNAIVTSRAGKD
 RRRLPAYASKFLEMVLMLTADHGPAVSAMNTIITTRAGKD ERESRVFNALAVI LVEHGMTPSAIVTMTICGAPEA KRRDPDYCTKFDEMALMLTADHGPAVSGAMNTIITSAGKD GRSPSEEESGVFRADLCAMGDHGATPSTQSARLAASSGSG GRVSKENERDMLNAILVSVMDHGMTPSALSARLTYLGAPE
 $G R D P T P G E S K M M E A V L C S V L D Y S L K P G T V A A R Y C V S G N P S$
$K R R L P P Y A C K F L E M C L Q L T A D H G P A V S A M T T V I T T R A G K D$ KRRLPSYMAKFLELCLVITADHGPAVSALNTIVTARAGKD KRPLAPYCYRYGELVLLLTADHGPAVCAHNVIVTARAGKD GEFPDQRMRRMUNSLVTSDDHGDTPSALATRLTDHGAPE KKRYPRWAVDFLETVLKTVADHGPAVSAHNAKVTARAGKD GRLPDEAEASMMDTLLVTAVDHGDTPSADSTRMTWLGAPE KRRLPPWATKFDEMVLMLTADHGPAVSAMNTVVASRAGKD KKRYPKWATDFIETVIKTVADHGPAVSAHNAKVTARAGKS K R RLP S YANKFIEMVLMLTADHGPAVSAHNTIVTARAGKD
 KRRLDPYACKFLEMVLMLTADHGPAVSAMNTVITTRAGKD PTEGREER KKLLNAFLVCMCEQGDNENTFFVRMLSSVQCH $P E \square D L A H P W V D L L V T M L D D N G L A A S T T A A R V A A S A R A G$ GELPTEAQAKITNAMMVSLAEHAMSPSSATVRFATSGGAE


[^1]
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm



[^2]


[^3]UniRef90_H2ZP64
UniRef90 QOKCA2 UniRef90_QOKCA2
UniRef90 A0QZII UniRef90-Q022L9 UniRef90-G4QNA4 UniRef90-K2QZH9 UniRef90-Q6C3H5 UniRef90-K2Q3W5 UniRef90-R7XS39 UniRef90- E1ZG37 UniRef90-UPIO00424E63E UniRef90-U6GK48 UniRef90 C3YNY7 UniRef90-D8R981 UniRef90-G9AEX0 UniRef90-T2DNH5 UniRef90 Q54YAO UniRef90-D1JAP4
UniRef90 F8GV29 UniRef90 UPIOOO4799A5 UniRef90- K9FBG2 UniRef90-FOSO92 UniRef90_U6KQ8 UniRef90 A818X8 UniRef90-MOTPB5 UniRef90-G7E2U6 UniRef90_18TML8 UniRef90 I3UG71 UniRef90-W3VHJ3 UniRef90-HOUNR6 UniRef90 UPIO00310AE8B UniRef90- ЕЗНММо UniRef90-UPloo016AF9E5 UniRet90_E3K2E4 UniRef90 G7Y9B1 UniRef90-U6ML89 UniRef90_UPI00037BEFB UniRef90 J2IMY6 UniRe990 Q30T3 UniRef90-Q472W8 UniRef90_D8QEN1 UniRef90 B9L917 UniRef90 ${ }^{-}$F4PAIO UniRef90-B2V9Q UniRef90 N6VV84 UniRef90 U5H719 UniRef90-B3L7W4 UniRef90-M3VGW8 UniRef90 C7QHM2 UniRet90_C5KW76 UniRef90-H6RMK6 UniRef90-X1PTS1

|  | DRGCGCFTGVFVLGRSMGFl GHYDDQLRQKQGLYR <br>  GFPLGAGKLVFILGRVAGLSAEVAEEREKAMRIGUP VTY GWPLAALKAIPRLAARAAGLAAHLYEESEGKTGLYR GWP EALKAVPLLARTAGLAAHLYEEMDKPMADE GLDPLLARGFMLVGRAAGLIGHLYEER <br>  LRNCGAFTGIFVLGRSLGFI GHFLDQKRMKQGLYR EFPVAMIKAVPLLARAGGLLAHLDEEQQENPIG LHSSGLFTGFFIVGRSVGGYGHAMDQRRNKQGLYRHQA ALDPLMARGLAVGRSAGLLAHVVEEKQ |
| :---: | :---: |
|  |  |

330
340
350
360

 GWPLAALKAIPRIARAAGLAAHLYEES
GWPLEALKAVPLLARTAGLAAHLYEE
GFD RVARGLGAMARAVGLVGHIAEEMDKPMADE
GDDPLLARGFMLVGRAAGLI GHLYEER


[^4]7 | 7 | 8 | 7 | 4 | 3 | 2 | 2 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 8 | 6 | 2 | 4 | 7 | 8 | 7 | 4 | 5 | 3 | 0 | 0 | 1 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

    B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B B
                                \(B B B B B B \quad B B B B B B B B \quad B\)
    UniRef90_H2ZP64 UniRef90_Q0KCA2 UniRef90-A0QZI3 UniRef90 Q022Ls UniRef90_G4QNA4 UniRef90-K2QZH9 UniRef90 Q6C3H5 UniRef90 ${ }^{-}$K2Q3W5 UniRef90_R7XS39
UniRef90 ${ }^{-}$G8MNJ5 UniRef90 E1ZG37 UniRef90_UPI000424E63E UniRef90_U6GK48 UniRef90 ${ }^{-}$C3YNY7 UniRef90 - D8R981 UniRef90_G9AEX0 UniRef90-T2DNH5 UniRef90 Q54YA0 UniRef90_D1JAP4
UniRef90_F8GV29
UniRef90-UPI0004799A5A
UniRef90_K9FBG2
UniRef90_F0S092
UniRef90-U6KQ81
UniRef90 A8I8X8 UniRef90_M0TPB5 UniRef90_G7E2U6 UniRef90 ${ }^{-18 T M L 8}$ UniRef90-I3UG71
UniRef90-W3VHJ3
UniRef90-HOUNR6 UniRef90 UPI000310AE8B UniRef90_E3HMM0 UniRef90_UPI00016AF9E5
UniRef90 E3K2E4
UniRef90 G7Y9B
UniRef90_-U6ML89
UniRef90-UPI00037BEFB1
UniRef90_J2IMY6
UniRef90_Q30T31
UniRef90_Q472W8
UniRef90 ${ }^{-}$D8QEN1
UniRef90 B9L917
UniRef90_F4PAI0
UniRef90-B2V9Q1
UniRef90-N6VV84
UniRef90_U5H719
UniRef90_B3L7W4
UniRef90-M3VGW8
UniRef90 C7QHM2
UniRef90_C5KW76
UniRef90_H6RMK6
UniRef90-X1PTS1

DGPPPRE
lupas_21
lupas 14
lupas_28
jnet
conf
$\begin{array}{lllllllllllllll}5 & 7 & 6 & 7 & 7 & 6 & 6 & 7 & 7 & 7 & 7 & 8 & 8 & 9\end{array}$
sol25
sol5
sol0
jhmm

VGVP PRGF
$T G Q G R Q$


[^0]:    

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

[^2]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

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

[^4]:    lupas_21
    lupas_14
    lupas_28
    inet
    conf
    sol25
    sol5
    sol0
    jhmm

