QUERY
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DKATTPSESPFAAAEVADGA ${ }^{10}$ VVDD ${ }^{20}$ VAMKYETPEDHVKVG SSANTASPAAATTNAKHVTVQLQSSAFSPAQIHVTPG SAADPSACAQEPAQAAANAPTISGDNFAFSQPALTVPVGG

 DDIEVHIDNFVFQPAELRIKVG A WAETPEVKMGADSGMLAFQPAEVTIKAG GTVSVSIVDFAFSPKTITVPVG AAACTPPAAFAQGPNGPLVTIRNFMFSPMSTTIKAG TSALTTSA
 TASKTVHSGKVEI DMKNMAFSPKVVYVTEG
 DKDTVTSEKPVAAADVPADAVVVGI EKMKYDTPEVTIKAG MPAATSMDPPASPVAGTEVRIDNFAFVPATLTVKRG PTS $\square P S A D N E I I I Q \square F A F S P E T L N I K V G$
AASPAVAQQHTVVI EAMQFSPQVIEVRAG SANAAPKTYIVTI ENMQFNPATLTVKRG DAAKPSPNTVNI DNFAFSPATLTVTKG TMPMQVQKQTVASTPNAIV I $A \square T P V Q A$
 P $\square$ A S RASDQPVRRVEI RRFTYSAEVLI I KAG GVASAQAKTVEVKLGTDAG

FS WSAAAEQTVDVT IRREYR RFSPQEVRIKAG LPAAEDAGSESTETTELLISQDGNTFTPETVLARTG ALAAAVQUQUKGMNF VSVASLAVTLSAHAATVKLGADSGALVFEPSTVTVAPG TTSAATSLFAGGVQAAEHEDQQVQYTY A VAFTTAK




AATQQVMMQDYAFSPAALTVRVG
MPSSSQSTPDKPVATNTVSDKNFVFDPASITVVKVG QGNPDYDPDVAVVQQG SMPTAADAPSDPVPAGPAVVNENFAFNPPTLTVPAG PSMA T Q A A APSSAPEGPNVI SITNFAFGPETLTVPVG AATLAALPVLAAQAQTTHTVTLKNFAFSPADLTIAAG
TVTVPEAEQNETGASEVIDVEDRDYKYDPDSLTVDVG
 A A P VRADDPVRVSMDKNLFTPQTLKVRPG

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 AASDQPRGADKASAKKYAVSISEFAFKPDKLTIEAG A ASDQPRGADKASAKKYAVDI TGYKFKGKKVVVEVGG AASPVEVDPTAGGGTISIAQFAFTPNNLTVKVG SSSMPAPSQ $\square$ HTVNDAEGTPGCEETNECY DPYS VEEPSAGANQNSEPAEYET GGFEYNPSELTYYEN PKSAPEFP $\square$ S $\square$ KGGAT $\quad$ TMDATAYSPPELAVNDG


GAEETSSGAKSD IANVE DVVTVKMGSDSGQLVFDPKVVTIKVG DGQAQTFVVEVDDMTFSPADLTISVG ATVENAAGSSTPGCEPDCFDPSTVVI TVVG GDTGSESGAAATVTVKNMSYSPASVTIKKG
 KANAGSSFSPNPAEVKVG PAGPQTHKVS $\square$ PAGTSVPGCESNKFSPASITINAG ETYT I KMGSDKGMLAFEPSKLVSVQAG AESGATAS $\square T P P P A S G D Q V A D D G F A F A P T T L T V A G$ VASTVHVVSUQNMQFVPAVLIT: Q

## QUERY

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UniRef90_UPI00036EFF48



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SAVDMLSSSAFAAQ

 GFQTVEISKFAFTPKEVTVAPG HNVQUQGMKFSPANLNVAVG

PTTDTPRAATTIRVDDMAFSPASVTIATG S S GEADA G GSAPAAVI EVVKNMAYTPA QVT A K K G
 ETYQVKLGSDKGLLAF QPKTLTIMPG
 PAVAAEHEVGQKNKAFTAKELRI KVG
 E P A A T V ATAAAEVIDRGFQYDPSEVTLKRG

 DADYVVDMTAVAFEPAALTVSQG TAASEGAHAGGSAHVADRNFAFEPAQITVKAG | $V$ | $E$ | $I$ | $R$ | $F$ | $S$ | $F$ | $D$ | $P$ | $A$ | $S$ | $V$ | $T$ | $I$ | $A$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $Q$ | $V$ | $T$ | $K$ | $L$ | $A$ | $F$ | $V$ | $P$ | $A$ | $A$ | $I$ | $T$ | $A$ | $K$ |
| $V$ | $V$ | $G$ |  |  |  |  |  |  |  |  |  |  |  |  |  | GTTAVEPLSSEAHQGK $V L I S G F K F E P E T L T I N A G$

 STPSPTPNTPATTVTVDVKDMKFTPTTVTVKPG SSPTFAQTNEALAEATVEI RGFQFKPASVTLQKG



## K M GTDSGALAFEPKDVTICAG

 ETYTVK LGGSDKGLLVFEPAKL TVKPG $T V S I K D F A F A P A Q V R V K V G$
A AD HVI DVKAVS F DPEKLRIVTG MPASPSGTGAPAAPVTNAVAIQNFAFSPATLKVKAG GAVDAQAETIRVTIEKMAFVPAEIVERDG



K I A A G
 A G L A VA T S A A LDP VLA E E H RVVIDR GMAF EPALLLEVAVG

T GGPNIVPADEADADHVVKAKAAAFKPSELVTVSVG
 VA GMRF NPDSLTVERG


PSTTTAPSQAPTTAAQVVIDNFAFSPANLTVMPG A V S V P A R A A T $\square R \square T \square D K \square A F S P$ A S V A A K V G

GTPTPPA QNVPVQSGTVEVHVSGFRYAPAPLQVRRG


SASPSASLTETADVSTVTVQNFAFAPTMLTVKPG GSPDSAAPEAPTGPVVQVANMAYAPATLTVTAG A A A $\square$ GA A S MF S M T A F A E T H V V V

 QAE $\square$ APG V NVEQWAFGFVPPEI RVRQG SAAVVAGTPVPATTTSGSSENTVIIQKMAFVPSTITVVVGG

 D A D HVVVE M T A VVAA E E P A E E L T ATAAGAVLASNALAVEVLLGGSDGSGABVBSNDEVAAG
 PAGADEAVE $\square$ GMTPSGSQVWFRPRGLLIRPGG
 SAETYTDKLGTDKGLL KFEPSKLITMPG E T Y K I K L G S D K GLLLQ F QP K T L T V K P G


UniRef90 F9CYK8 UniRef90_E9T2SO
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50
60
A V DG $\square$ P ${ }^{70}$
70
80
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 DTVKFVNDTPYAHTVHFHGTHDSVNDGVFPMIMPGEEYTY
TTVKWN
 DTVVFTNMDGMPHT DTVKFVNNKLGPHNAVVE SNVTWVNQDQAPHDVETTSGP
 QTVQWKFDDAGLPHDVAGEGALQDE D SVRWTNNDSVTHTASEVN
DTI QWVNNKVPPHNVVFDSTKNPSLVHTKLPLNPGESATEL GTV WENVDNAAHTVTSGSPADPDGVFDSSLMAGGATFSH


 DTITWTNKDNSVHTVTS NDGLFDS
DRVIWKNDEKRQYHNVWFKG S S GEEEP
QRVSWQNDDGAPHGLVFKDGSTGDD

 EFTNADLYPHTATAKA\|GNLP AFDSGSLPAGKTGSV

 GWVTFVNMDAAPHTATPEAGSQFMG

 DTVVFLLNNKVPPHNVVFDATLNPAKSHKQLLMSPGQSTST DTVAWKHVGGEAHTVTAREESDPEGAFDSGAVQSGQSYKVH TTVVTWTNQDTDAHTVTTVSAGSGGPLHSAALVTHATYSY



 DTVAF EWAAGDAHNVVAREEKDPDGAFDSGALTEGTA YVH
 D K I VWVNK D VAHTATATAA
TEEVTTWNNHEDGN H II QV
D GVVRWVNEDNVPHTVTSR
QSIT TVVNHDSTTHTLTAGSG
D TVE WVNK DALA H T A T A R NGDF DV




 DTVQQWEN MPTHNVVETIDGLVPE GTEKDN SSMMENYQH



TL V H WVN K D TVVTHSVLFPASAH SLVRRFNRDQIRHQVYSFS
 ETVKWVMNN IGPHNVVFEDASSLTHKNMLMAKGSSYTS GTVTWTNESGSPDNDQP QLVPDGAAAWDS GLLSEEGATFE H DTVAFEHAAGEAHTVTAYGDKIPEGAFESGAVQSGQSYTH
 EKI TTFKNNAGFPHNVVFDEDEIPA GVDVSKI SMPGETYSV

QAVRWVNRDAGPANGRPLRMPAGAKPWNSDYLLPGQSYTV

D T I K WV N N K V P P H N V V F D P V K N P GK S H S K L L L N T R Q S V T T
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|  |  |
| :---: | :---: |
| UniRef90_F9CYK8 | FFT DA GEY D Y Y CMLLHPWMTGKVIV1Q |
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| UniRef90-H5X901 | T F N NPGEYRLTCRFHPDMFMTV SV |
| UniRef90_UPI000465B73D | TFTEAGTFNYTCAPHPDMRGQI T V |
| UniRef90_I3D496 | T F DEE GVYKYHCSWHPWRVGLI TVVN |
| UniRef90_K0B717 | HFEEA GLLFMYHCHAFPGMFGTMI |
| UniRef90-A9A2L1 |  |
| UniRef90-Q7NSC9 | VFDKEGDYAYECAVHPYMTGVVHVR |
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| UniRef90_UPI0004716023 | AFNEPGTYS Y Y C EPHAGMVGTDTVQ |
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| UniRef90-K9RLA6 | T $\square P$ A A GEYT FYCEPHA G M V G K V V V E |
| UniRef90-UPI0004679A70 | T FP T P GTY R Y LCP L H P S M R G T I TVVR |
| UniRef90_U5DRY6 | SFDDAGTFDYHCTPHPMMVGTVVV |
| UniRef90_K2CPJ6 | LMDQA GSFDYFCDFH HSMTGLVIVE |
| UniRef90_K9PSZ1 | TFPVPGEYTFYCQPHAGMVGKIVVE |
| UniRef90-B3T4X5 | TFDDVGTY |
| UniRef90_D1YY34 | KFDQA GTFNYECGI HPYMKGTVIV K |
| UniRef90_G2DES6 |  |
| UniRef90_K0B596 | TFEES GVYN YYCS FHP WRVGLVTVV |
| UniRef90-UPI00036F9A49 | TFEEA GTFDYHCTPHPMMLGGTVVVE |
| UniRef90-W7S924 | TFSQPGTYS Y $\square$ C S $\square$ HPDM |
| UniRef90-Q2JKE4 |  |
| UniRef90-K0BCD0 | TFEDVGLLYEYYCMLHPWMTGAV |
| UniRef90_Q489B5 | QFEQLGTFAYECGPHPKMKGKVIVK |
| UniRef90-M0CWX2 | TFETTGTHEYACIPHAGMVGSVTVVE |
| UniRef90-J2KB30 |  |
| UniRef90_K4M7W1 | TFTEAGTYYYMCTVHPYQTGQI IV |
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| UniRef90_UPI000477823A | VVK TK G T Y N Y $\quad$ CTEFHPNMRGKLIVR |
| UniRef90-UPI000379E746 | VVTQEMAGEYYCLFHPHMRG |
| UniRef90_LOA | TFDQK GTYRYRCRPHPFMTGDIVVE |
| UniRef90_UPI000477B9A1 | T F P T A GTY R Y L C P L P P D M R G V T V Q |
| UniRef90_UPI00034BEC78 | EFPVAGVQAYFCEI HPSMQGTIVV |
| UniRef90_V6AU92 | K F Q Q GVY H F C T I HPWRVGMV TV |
| UniRef90_K4MA81 | TFNARGTYNYYLLSHPWTSGMVIVE |
| UniRef90_Q5V701 | T FEVVPGTY Y Y Y Cli P HK G M V G R I V V |
| UniRef90_A7YXT4 | K LDIA GTY NY LCQP H K G MVGGSI TVVN |
| UniRef90_C3N6V0 | TFTTPGVY |
| UniRef90-K0IN94 | NFDPAGAFMYHCHAYPGMYGSIIV |
| UniRef90-Q3M9H8 | TFPAAGDYSFYCEPHAGMVGKI TVV |
| UniRef90_UPI000475EA70 | T F TVPPGRFEY L C T D H P F M T A A V EVV |
| UniRef90_E7QWT8 | TFETKGTFEYYCIPHAGMTGTIVVE |
| UniRef90-X0MXY5 | TFTKPGTYAY L T I HPFMTATVEVV |
| UniRef90-W8 | VVREA GLIDD Y Y CRFHPN |
| UniRef90-K0IM46 | TFDEEGEYPYFCD DHPNMVGTVMV |
| UniRef90-UPI0003601982 | TFTEPGTFTYHCTPHPDMIGSVVV |
| UniRef90_E4NW69 | TFDEPGTYLYACEPHGGMKGAVIVE |
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| UniRef90_UPI00047617F7 | TFTKA G TVV Y VCS $\square$ HPFMHGTVVV |
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| UniRef90_E4NP39 | TFETA GEHPYYC\PHAGMEGTIVVE |
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| UniRef90_W5HJN4 | TLTVVPGTY GFYCEPHA G M V G K V T T V N |
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| UniRef90_I2JHF2 | RFDKPGEYPYICGI H G N M S G Kilv K |
| UniRef90_K0IIG6 | NTAESAEYEYFCTLHPNMVATLTTV |
| UniRef90-C7QET2 | TAPTAGTYPYVCSIHASMHGTLTV |
| UniRef90_H0SA63 | VLNKAGTVDYYCRFHPNMKAS |
| UniRef90_UPI00036E74B6 | TADTAGTFEYFCMVHPWMEGTI IVE |
| UniRef90_M3C7A8 | TFRQSGTFPYHCDIHPDMRATVTVV |
| UniRef90_UPI0003B78B2A | TFDQA GTY TVVCVQHPFMTATVTVVE |
| UniRef90_E4NT81 |  |
| UniRef90-M4UCP5 |  |
| UniRef90_UPI0003749C85 | APNTPGTYDYQCTI HPFMKGTLVVK |
| UniRef90-10W8R4 | TFTEPGTYEYTCSLHPEMTGTVVV |
| UniRef90-11XFG3 | TFEKEGDYVYKC T P P A GMGGAI I V |
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| UniRef90_M0FNC2 | TFETA GTHEYVCDPHA GMVGEVVVE |
| UniRef90-C7BV88 | AFPKAGDYTYWCAPHAGMIGTV HV |
| UniRef90-D7BCC8 | TFQAPGAYQ $\square$ Y CK $\square H P Y M T L S L Q V$ |
| UniRef90-C1CVR2 | EFTEAGTFAYHCHFNMGMYGALIVE |
| UniRef90_A7IB27 | K F T T P GVY NYTCA |
| UniRef90-D2UCQ1 | RFEQP GLVTVGCNIHEDMVGYVMV |
| UniRef90-F4XNC8 | TFDEPGKYSYYCA PHAGMTGEIIVE |
| UniRef90-M0DW05 | TFETEGVYHYYCTPHEGMLLGSVIV |
| UniRef90-13R3Y9 | TFET A GEHQY L C $\square$ P HA GMTGTIVVE |
| UniRef90-P00288 | KLDAKGTYKFYCSPHAGMVGQVTVN |
| UniRef90-O22646 |  |
| UniRef90-P35476 | TLSEK G TY T F Y C AP HA GMVGKV TVVN |
| UniRef90-D8J4T0 | TFEVS GEHNYYCIDPHEGMVGRIVVE |
| UniRef90-A9A1W0 | T LDEPGEYPYYCi VHPWMVGNi Ti |
| UniRef90-W8X3N1 | VFEAPGVY D Y F CLP HA GMVGRIVV |
| UniRef90-Q00GM1 | KFDKAGDYGYYCEPHAGMIGGV TV |
| UniRef90_UPI00036DBD42 |  |
| UniRef90_D4TUY3 | TFPAAGDYTFYCAPHAGMAGKI TVV |
| UniRef90-D7E274 | TFPATGDY LF Y C T P HA GMA GKI TVVQ |
| UniRef90-R4W3M0 | TFTVEGTYDYYCEPHAGMEGSI T V ${ }^{\text {P }}$ C |
|  |  |

UniRef90 AoRVCo UniRef90-Q2JHE1 UniRef90-Q1YJA7 UniRef90-R1D5E8 UniRef90 WORH05 UniRef90-K9Y×12 UniRef90_UPIo0046DOEF3 UniRef90 UPIO003634DBB UniRef90 R4YU71 UniRef90-W9HDL3 UniRef90 K0B949 UniRet90 UP10003B3F743 UniRef90-V6HNA5 UniRef90-K9RQNO UniRef90 V5UTLO UniRef90-X6GB49 UniRef90-G9AEQ5 UniRet90 T1VWZ7 UniRef90-B7K9D9 UniReffo-MOM1L3 UniRef90- A0A059MVF5 UniRef90-KовEM4 UniRef90-Q28L25 UniRef90 L9VSQ2 UniRef90-K0B647 UniRef90-A0A017HIQ4 UniRef90-UPIO0036558F5 UniRef90 F3KLA9 UniRef90_UPI00036FC87F UniRef90-MODG90 UniRef90-M7P407 UniRef90-K8NSD9 UniRef90-G1FK93 UniRet90_W1JLNO UniRef90_MOLQR4 UniRef90-A3JNW7 UniRef90-UP100047ABBB5 UniRef90 UPI0003FA06AF UniRef90_U109T1 UniRef90-J2A2N1 UniRef90-J3ESG7 UniRef90 UPI0003804805 UniRef90-A6E5V1 UniRef90-A4YG15 UniRef90 F7X8Y1 UniRef90 K0Q356 UniRef90-LoD920 UniRef90_B1KFB5 UniRef90 KOIAN2 UniRef90-CON949 UniRef90-A7T2R3 Unireigo_M5AJ7 UniRef90-A9A2A3 UniRef90-F3KKD7 UniRef90-E8WZ62 UniRef90_D7A7L3 UniRef90-F6EHK3 UniRef90-A4XRM5 UniRef90-T0LG78 UniRef90-M0MJ82 UniRef90 UPI00037CD2CF UniRef90-K4KNY5 UniRef90-13R6L5 UniRef90_L9VM72 2 UniRef90_Q11GK5 UniRef90-S2EPE7 UniRef90-A8TLD7 UniRef90 MOF716 UniRef90_D6V762 UniRef90-B0R7A9 UniRef90-X6FVS0 UniRef90 BoR525 UniRef90-F5SX72
UniRef90
UWP6 UniRef90-I1XFF4 UniRef90 MoLTS7 UniRef90-G7G4U4 UniRef90_BGJAN1 UniRef90 S5SV32 UniRef90-W6RSW
UniRef90_A0JS72 UniRef90 L8DDN1 UniRef90 U7G9F1 UniRef90-F7RV78 UniRef90_B1Z5M1 UniRef90 BoUA34 UniRef90_U1PCE

 P S K P DPVP S D D A E P DVTVVH AV D N R F E P A E V E I A P G DPATAADSLAATSPD■ASNSGTDTQKDKRFSQRHVGHIKTG PTGTSVPGCEDGDKCYDPSTLIIFKG

KATVS I I D Y E Y SPK TVVVVAG
A AEHEVGQKNKAFTVDALKI KVG
$E T Y$ A A HTPVETFTVR
$\square A M A L S \square A A A P A K A E T \square E V T \square G N L A F S P N E I T I S A G$ AVA ATCVPA CGTES AVAATCVPACGTEDPVPDVVVEISNVQFSPMDVTVEHG

Q GNPAYEPTIVTASRD



S F VF D P A F V R L D E G
A A GTEVLGMRGSAFAP QGLAVVAPC A GVGGEPDYDVGMLATAYQPREITVSVG
 $S$ VP GADVLG GPDDLQGSATVEAGQNVFSPAVVVVVEEG ASETHVVHANMMDFDPVVVKINPG A P M V VA T MLGG APVHAETVRVT DNK LVFSPAVVKAKVG P A H A A T $\square E \square$ TMEN L VISSPAEVT A K VG $D F V F D P A I V E L E P G$
TVA A VA Q T GVALA Q STE HAVE DK S F A F Q P A DI K V V V G $A L P S P Q S D G A V M D Q V D R Q F T P H V L T V Q A G$ AVA D DVETVDVVHVIDNRYVPA EIVDSAG
SASKPAAVP


ASAKAGET IVVKDT DLAFDPAEVSARVG

A T SAGQANAEEYRVEMLNMAFEPAVI RAQPG


 VA P A T A DMDQR S QQFAP TV L A V R S G $P D G A E Q S L I S D F A Y S \quad G E L \underset{T}{L} \underset{F}{L} \frac{T}{T} G$
$\square P$ Q G S GT QK E G Q L Y Y D P T I L T V P V SASGDAVS QK GRMFHP GNLTVGRG
TPMKTDATHPPVPAHGYVLTGKNKMFTPHLLVVPTGG E K GAMVF EPDLI KVAPG
$M V Q A T N M D F T P K T V V I Q A G$
SAADRKGSFVVAQEDMQFTPKVLVIPAG A V I S L N GP LD A S QAP P P A L M M D QR D K QF QP HV LVA V R T G ENAVITATPDRSKVE NMGDFGFGPAADAVSPB
 P G Q S G P
$A P A G P F V V D Q V D L T$
$T V D V G E A N G A F G$
$\square G M T R N E$
$D G E A M A$ D GEAMA VVQT GKA F E P K A L L
$T G S S T V T V T V G A Q A N G G A F G F G P A A V V R V S P G$
 $T G S S E V T V D V G \nabla D A N G G A Y G F G P A A V R V D P G$ VA A S TVLMTMNVFAAEHTVTTQGLKFSPDVVKIAPG

S LEE P D P DAS D DY D IGMTRN EFVPDDEYEASVGG
SAFTPK TVATMDQVNK QFSPEELLIVQQKG
 A E EVVE RMQGRAFDP $\quad$ GGVLI KPG
A ARAKADNHTVDAGTMRFDRSHIVVMVG
T A T TPAAPAEPVAAN QVTVA DRMYSPKMLTI SVGG
A A PVEVVEMRGTARGERDWFGPNGLAVAPG SSAEHSPANPKTHDMDQVGRQFLPNVLVVAAG

ATTEEQ $T$ APAATTAQAQTHVVTAEAIVVFNPVVVTMQPG

## UniRef90_AORVC0

 UniRef90-Q2JHE1 UniRef90_Q1YJA7 UniRef90_R1D5E8 UniRef90_K9YXI2 UniRef90_UPI00046D0EF3 UniRef90-UPI0003634DBB UniRef90-R4YU71 UniRef90-W9HDL3 UniRef90-K0B949 UniRef90_UPI0003B3F743 UniRef90-V6HNA5 UniRef90-KgRQNO UniRef90-K2DTY9 UniRef90-V5UTLOUniRef90-X6GB49 UniRef90-G9AEQ5 UniRef90- T1VWZ7 UniRef90-B7K9D9
UniRef90 M0M1L3 UniRef90-KOIIC2 UniRef90-A0A059MVF5 UniRef90-KOBEM4 UniRef90_Q28L25 UniRef90-L9VSQ2 UniRef90_K0B647 UniRef90_A0A017HIQ4 UniRef90_UPI00036558F5 UniRef90- F3KLA9 UniRef90_UPI00036FC87F UniRef90-MODG90 UniRef90-M7P407 UniRef90-K8NSD9 UniRef90-G1FK93 UniRef90-W1JLN0 UniRef90-M0LQR4 UniRef90-A3JNW7 UniRef90_UPI00047ABBB5 UniRef90_UPI0003FA06AF UniRef90_U1Q9T1 UniRef90-J2A2N1 1 UniRef90-J3ESG7 UniRef90_UPIO003804805 UniRef90_A6E5V1

## UniRef90-A4YG15

 UniRef90-F7X8Y1 UniRef90-K0Q356 UniRef90-LOD920 UniRef90-KOIAN2 UniRef90_C0N949 UniRef90_A7T2R3 UniRef90-M5AJ71 UniRef90_A9A2A3 UniRef90-F3KKD7UniRef90 M7Y8E7 UniRef90-E8WZ62 UniRef90-D7A7L3 UniRef90-F6EHK3 UniRef90-V4NUP2 UniRef90_A4XRM5
UniRef90 $\mathrm{TOLG78}$ UniRef90-M0MJ82 UniRef90-UPI00037CD2CF UniRef90 K4KNY5 UniRef90-I3R6L5 UniRef90_L9VM72 UniRef90_Q11GK5 UniRef90_S2EPE7
UniRef90-A8TLD7 UniRef90-M0F716 UniRef90-D6V762 UniRef90-B0R7A9 UniRef90-X6FVS0 UniRef90_B0R525 UniRef90-F5SX72
UniRef90 UniRef90-I1XFF4 UniRef90-M0LTS7 UniRef90-G7G4U4 UniRef90-B6JAN1 UniRef90_S5SV32
UniRef90_W6RSW6 UniRef90-A0JS72 UniRef90-L8DDN1 UniRef90-U7G9F1 UniRef90-F7RV78 UniRef90-B1Z5M1 UniRef90_B0UA34 UniRef90_U1PCE1
UniRef90_M7P3Z4

## 

GSIITWWNEGKFFHTVITS GAS GEEDGLFDSGSVEMGETYTR

 D TVVFVMNK LAPHNVVFDSNGVPSAA

 D TVVWSNKEKRQYHSVVWEEA WK S GKLLDPGQTHTVV QALTIQ NEDTRAHNDRVFENNMD

 | $D T V$ | $S$ | $P$ | $N$ | $F$ | $D$ | $F$ | $Y$ | $H$ | $N$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $D$ | $Y$ | $S$ | $L$ | $S$ |  |  |  |  |  |  |
| $Q$ | $W$ | $Q$ | $N$ | $K$ | $L$ | $P$ | $P$ | $H$ | $N$ | $V$ |

 D TVVHINESLP P HNI
 D E V E WI N K DV LVVHTA TVVK G GA EV GTVEWRFDDGGLLHHVESPGLFDSG DTVKW $T$ NNLDTPCNVVFDNPEVPELSHKELVFADGDTY TTVVTWEWT GGGAHNVVADDGAFNSGPPEDGD$A D G D T Y$ E S S
A NLVVWKNNDDTAHTVTPDHRTSDSYSGDFGVLKPGDTYEF



 D T I E WVNND I LA H T A TVKG DWDV V VP P E T KE L K N N A GFP H NVVF DEDEUPS DT\SWINKDVFAHTATAKNGDFDV

 T A V RWVF E G T AEHDVV TTVVWEWT GGGQHNIVAGDGSFESEYY



## D

 D T V $\underset{H}{ }$ H F F L N N E D D P F F F H S N I NKVVWTNNDGTSHTVTS DDGYHDS
 ETIVTFVNDD S DL L H HVVGVE S
 TLVSFPNSDDI RHQVYSFS



 DTVTFVVNEDFYDHNVYSESTGN
 EALRF R INDDGELLHHAYLKS PEFQFDSGDQKPGSKFEV
 T TVVTEEWVSNTHNVAVESQPDSADWGGVEE』NNE GYTDSH D SVSWTNMSTHVVEMIEGLVPEGAFKSEMS
 ETVVWWKNTS GADHTVVTAREDSSLPEEAYRGGRRLGTRETYYEH

DNVTFIPVDKG HNVETFKGLIDPEAAEFK SKANEMYRV QMVRW NL NPGNSHTT TAYHPANF GSWDS DYLLDPD E S
 TIVRFVNRDKGSHTATCYHPPAAA DLVVSFPNS DS $\quad$ R H HVVYSFSSAA D SVVHFVAADSG HSVES $\quad$ VP GMAPDGA DTVEWVSRDFVAHTATARDETWDVA


| UniRef90 A0RVC0 |  |
| :---: | :---: |
| UniRef90-Q2JHE1 | AFVDPGEYTYYCTPHAGMVGKI IVN |
| UniRef90-Q1YJA7 | T F PRQGNYEVRCG】HPRMSLAVSVVE |
| UniRef90_R1D5E8 | KFDEAGSYQYHCTPHGTMNAVIVVQ |
| UniRef90-W0RH05 |  |
| UniRef90-K9YXI2 | TFPEKGEYSYYCQPHAGMNGKI IVE |
| UniRef90_UPI00046D0EF3 |  |
| UniRef90_UPI0003634DBB | VF DEAGDFEYDCSVHPEMTGVVRVR |
| UniRef90-R4YU71 | TFNQVGT F NYRCGPHPKMMGTV HVQ |
| UniRef90-W9HDL3 | PFTEAGTYHVFCGTHPKMKLLVDVVE |
| UniRef90-K0B949 | KFEELGEEYDYFCMI HPWANASVIVVK |
| UniRef90_UPI0003B3F743 | A YPAAGTFAYKCGI HPTMFGTVV |
| UniRef90-V6HNA5 | KFEK T GKVTVQCAlUPEMKMTI DVQ |
| UniRef90-K9RQN0 | E $\square$ T D P GEYA YF CAP P A GMVGK |
| UniRef90-K2DTY9 | T F S EAGGSVEYYDPTYPGLTGT |
| UniRef90-V5UTL0 | VFADVGG Y NFFCGPHAGMTGDVHVE |
| UniRef90-X6GB49 | ALQKAEAFDYFCRFHPNMKGHLTV |
| UniRef90_G9AEQ5 | LL Q EPGSFD Y $\square$ CRYHPNMKGHITVVQ |
| UniRef90-T1VWZ7 | TFESVGGVYEYSCSVVP Y M T GVI TVV |
| UniRef90_B7K9D9 | TFSDSGEYTYSCQPNANMVGKIVVQ |
| UniRef90-M0M1L3 | TFPEAGEFPYHCAPHEGMVGTVIVQ |
| UniRef90_KOIIC2 | R LEE E T GT F D Y Y C T V HP PMKGKI I I E |
| UniRef90-A0A059MVF5 | TFEEPGTYEYTCSVHRYMTGTVTV |
| UniRef90-K0BEM4 | LFT EPQEIHYHCQPHPWMKGS L I V E |
| UniRef90-Q28L25 | R IT R S GVID F Y C Q Y HP T M L G Ri T A E |
| UniRef90_L9VSQ2 | DAEETGTQPYYCSPHAGMYGALETE |
| UniRef90-K0B647 | QFNK LG DF Y Y Y C S $\square H P W M N G V V H V$ |
| UniRef90-A0A017HIQ4 | T LE R P GVY D Y Y C Q PHA GMVGRIVV |
| UniRef90_UPI00036558F5 | T FTVP GAYEYVC\PHGGMYGTVVVE |
| UniRef90-F3KLA9 | TFTEP G $\square Y$ QY $\$ D SIY P GEQ G I A AVR  \hline UniRef90_UPI00036FC87F & K VAA GKHDFKCRIHPSMAGSI I AK  \hline UniRef90_M0DG90 & TFETPGVYDYYCRPHLGMVGLVIV  \hline UniRef90-M7P407 & TFEQEGIY 1 ¢YQCTPHAGMGGAVIV  \hline UniRef90-K8NSD9 & VIIK K A G GVEEYY CRFHPNMKARI DV  \hline UniRef90_G1FK93 & ALTEP GTYS FYCAPHAGMVGKVTVN  \hline UniRef90-W1JLN0 & VLKK K A G M VE Y Y C R Y HP N M K A T L K V E  \hline UniRef90-M0LQR4 & TPDSDGVQHYYCEPHAGMEGSLIV  \hline UniRef90-A3JNW7 & TKDFAGE YFCKFHPNMKGSI Til  \hline UniRef90_UPI00047ABBB5 & LF D TP GVVELGCNVHD WMLGYIVV  \hline UniRef90_UPI0003FA06AF &   \hline UniRef90_U1Q9T1 & TFESPGVYY Y H C T P H Q G M L G V I EV  \hline UniRef90-J2A2N1 & K A PKA G S P P I C T IHP P M K G A L T V R  \hline UniRef90-J3ESG7 & TFDVTGTYEYVClPHEGMTGTVTVE  \hline UniRef90_UPI0003804805 & VVK Q A GVLGY FCRVHPNMTGTLNVN  \hline UniRef90_A6E5V1 & 1 FTEPGEYPYVSTFRSHMKATVLVR  \hline UniRef90_A4YG15 & TFTK A GVYVYQCLI HP GMM GVVIVN  \hline UniRef90-F7X8Y1 &   \hline UniRef90_K0Q356 & VLK A T T SVD Y Y CRFHPNMKGRI SV  \hline UniRef90-L0D920 & VVPDKP GVVRLACDIHSHMCGYVVV  \hline UniRef90_B1KFB5 & $V$ F D TP GVI EVECAI H S K M F L L I EVVK |
| UniRef90-KOIAN2 | 1 I TKEGEYPYHCDPHPWMQATVVVV |
| UniRef90-C0N949 | TFDTEG I Y I Y C C P P A GMGGALIV |
| UniRef90_A7T2R3 | $\square F D K P G V V V L G C N D H D W M L G Y V Y V$ |
| UniRef90_M5AJ71 | TFDEPGVVYSLFCTL H P D MVA TVVSV |
| UniRef90-A9A2A3 | QFDELGGDFYYYCTLHPWMNGVVHV |
| UniRef90-F3KKD7 | T F S A P GKVDYFCMV H P WMVGSVEVE |
| UniRef90-M7Y8E7 | T F TERGTF Q V L C G I H P K M K L V V R V |
| UniRef90-E8WZ62 | RFDHDGVSYIFCNIHPEM GAVIV |
| UniRef90_D7A7L3 | T F T Q A GVY GVK C K P H M G MVGLIVV |
| UniRef90-F6EHK3 | T F D DA GEYEYVVCSEHPQKTGLIVVE |
| UniRef90-V4NUP2 | KFDSEGTVAIIGCNIHDSMQA Y I RV |
| UniRef90_A4XRM5 | LFDKPGLVVLGGCNI HD WMLGGYI Y V |
| UniRef90-T0LG78 | QFVNKGTF GYHCVVHGGETGAVKV |
| UniRef90-M0MJ82 | T F DRPGVYKYVCEPHEGMKGAVFV |
| UniRef90-UPI00037CD2CF | EFNSEGTVTLGCNIHDWMRGYVY |
| UniRef90-K4KNY5 | KFDEPGIVELGCNIHDEMKGYLFV |
| UniRef90-I3R6L5 | TFEEAGTFTYSCVPHEGMKGAVVVE |
| UniRef90_L9VM72 | T F EVPP GEY D Y $\square$ C EP HVGM |
| UniRef90-Q11GK5 | TFDQE GVY GF R C L P H M G MVGLI QV |
| UniRef90-S2EPE7 | K LEHTGAYYYFCEIHPWFTGKI |
| UniRef90_A8TLD7 | TLA TA G IVDVRCRIHPKMKLVVTVE |
| UniRef90-M0F716 | TFEEA G TYKYACT PHEGMKGAVVVE |
| UniRef90_D6V762 |  |
| UniRef90-B0R7A9 | TFDTEGVYTYYCNPHMGMKGAIVV |
| UniRef90_X6FVS0 |  |
| UniRef90_B0R525 | TFETAGVYTYFCSPHMGMKGAVVV |
| UniRef90-F5SX72 | T F D K E GVY $\square$ Y K C T P HA GMGGAVIV |
| UniRef90_19WP61 | T F D K P GL Y GF K C S P HMGMVGLI EVV |
| UniRef90-I1XFF4 | T FTQEGIY LTYKCTPHAGMGGVI I V |
| UniRef90-M0LTS7 | TFEDVPGTYTY DCEPHVGMVGTVVV |
| UniRef90-G7G4U4 |  |
| UniRef90_B6JAN1 | V VKKAETI D Y Y CRFHPNMKGRI EVV |
| UniRef90-S5SV32 | K F DVP GA Y V VK CAP HA GMVALI EVV |
| UniRef90_W6RSW6 | TFTEQGVYDYYCDPHAGMVGRi IV |
| UniRef90_A0JS72 | KFNKAGEFDY $\square$ C AL H D GMKGTVEVR |
| UniRef90_L8DDN1 | TFDTAGTFTYHCTPHPDMTATI VVE |
| UniRef90_U7G9F1 | A LE T P GVY D Y Y C $\square$ P H A A MVG RIV V |
| UniRef90_F7RV78 | DFPRS GLVVVGCNIHDDQMIGYIVV |
| UniRef90_B1Z5M1 | KFDTPGVYYGYRCLPHHGMVGLIVV |
| UniRef90-B0UA34 | VLIRA GE@E Y Y C R Y H P A M R G R M |
| UniRef90 ${ }^{-}$U1PCE1 | TFEIP GEYGYVCIP HESMVGTVIVE |
| UniRef90_M7P3Z4 |  |

UniRef90 A6WYV2 UniRet90 D2RQR4 UniRef90-MON101 UniRef90-M01661 UniRef90 MOJK37 UniRef90-B51L29 UniRef90-UPIO0047B9B51 UniRef90_C7QAl2 UniRef90 L9XJ01 UniRef90-E7QSG3 UniRef90_13RANO UniRet90 MOKDR6 UniRet90_MOMVC2 UniRef90-A6UM J3 UniRef90 UPIO0036E3571 UniRef90- H 0 JJYO UniRef90-UPIo00237631D UniRef90 B9LTP3 UniRef90 G8PQJ8 UniRef90-W1YWD6 UniRef90-LOHC28 UniRef90 K6ZXF9 UniRef90 F9CWM3 UniRef90-KOILH4 UniRet90-WOHE99 UniRef90 GOHTU9 UniRef90 E4NUX5 UniRef90-E6P9G3 UniRef90-JOVQU5 UniRet90 G9E9M9 UniRef90-H6WG90 UniRef90 J4KRRO UniRef90-D9VBZ1 UniRef90 E4NQY6 UniRef90-B3Q3D4 UniRef90-HOSA44 UniRef90_D4GV20 UniRef90-K0IMPO UniRef90-UPIO0031035BB UniRef90 BoR3Q1 UniRef90 R1B8S7 UniRef90-MOMYB5 UniRef90 F2G673 UniRef90 MOHNB6 UniRef90-P07465 UniRef90-19NGZ6 UniReefo-K2M76 UniRef90-MOML40 UniRef90_BOR463 UniRet90 A0A059FIC9 UniRef90-S6HLG2 UniRef90-M6CJU9 UniRef90 E7QVP9 UniRef90-11DXW9 UniRef90-E7QW72 UniRef90-E4NQ51 UniRef90 Q111R2 UniRef90-M0MK63 UniRef90-E7QQRO UniRef90-13ZE34 UniRef90-A1SLB2
UniRef90-F2U237
UniRet90 Q11UC7 UniRef90-UPI00036E2BBD UniRef90-F4AHK9 UniRef90_E4P146 UniRef90 MOH8H5 UniRef90-MODLM4 UniRef90-S9UIF1 UniRef90'UPIO0034B6788 UniRef90 L0JXD5 UniRef90-A719M5 UniRef90-UPI00036C3F2B UniRef90 B8IFB8 UniRef90-V6AUUO UniRef90-A0A0311Q35 UniRef90 UP100036CBDC2 UniRef90 UPI0003B3513F UniRef90-V4RLR3 UniRef90 L9WGV4 UniRef90 MONYB5 UniRef90-A4YL28 UniRef90-A9A1N1 UniRef90_UPIO0036020F6 UniRef90 J5KG24 UniRef90-M0M3V8 UniRef90_O5SF01 UniRef90 M0E994 UniRef90-WOK2L1 UniRef90_GoHXL4

VT \LIAGLLIITVPAKAKTПE\|TVEKLLAFSPQNIIEANVG T GMNRNAFLPDEYEASVG
 $A \vee T V A V G V S G N S$ GAYAF DPAAVRVAPG E E L G F D P K S I QVPVG
SASPLVTVAARTATVKVVDNRFVPSNLVRVRKG PGAGTGSTGVPVGAPQIVIVNFTFSPSTLSVSAG I GMT R N E F DP E EYEAS VG
 PTGTVDA

T T S S S VD $T G Q E S A T V V G V Q A N G G A F G F G P P A$
TGTK QTEVAVGAKGNGGNFAFSPPABRVDPG GAMVFEPAFVKVNPG

$P A A S P G A A P S L L Q A S P T V E Q E R M R F V D A L T V V M M P G$ S S V G GE P GY DV G M VA D G Y RPA E L T V A V G
GHPSAEAE GVTVVTMYKYRFCPEKLTVVVG S GAS $\square$ QA GNQAS K T Y A M S Q Q N R E F T P R T L V V D Q S G N P VP N A VVS A QGEP Q D HVMD QVNS QF LDP HVVVVQQN
 A A GAVSGGK AEMDQRDQEFSPRVLAVHTG
 T N GAMVFEPS F L K I I APG $D A G G M V F E P G Y L Q \vee A P G$
A TEVVTM G NVV F E P S E I N I I S S A G
TQPPSPPAAANSTANA $\quad V A D K D F A F A P A A T T V K K G$ T A T G G G G S G G GP TK TVTVGPGNLVFSPGTLEIAPG



VKLGAD N G QLV F VP D E I E I C K G

TGASEVTVTVGSQANGGAFGFSPPAI QVDPG D DGS L MVF

$T E V T \square S P$ AP GSGAP GCEDTADGCY P S TAT I DVG
 VT $\square E M R G \square W F S P Q G L A V S P G$ A VLTLQGAA GRPAVALKADMDQRD KEFVPHVLAVRTG EGFAHVLMDDNSFSPPMQRIMVG
AVVELVSPAGTALPAGEPASVTQQGLDFHPFVSAVVRG IA TPTSGPE GGTTTVVEMKTDGNGSYFDPDGLYMLPG ANSGTTETDGETPTATVSVGDGEFVFTPGTLTITAG EAANYKVTMGAGGLQFAPKKVTVQPG
 $\square Q A T M P D A P \square D V A D M D Q V N L Q F L P Q V L I I Q K N$ P L Q A T M P D A P $\square$ A R GGPTVVSAANMMF
PVETVTPS DAPDY II TWD
V P R G T P
APPPAPKQYRL
A NAVVSAKGAPKDQTAQMAVMDQ $\mathbb{V}$ NS QFAPHVLVVQQKN S VDS ARPATPVSA E $\quad$ PY QKDRAFHPHVLVVVVG VTVGS E A N G G A F G F S P A A I R V T E G $T V D A T G Q D E V T V E V G G L S F G P A A V A V S A G$
 FVFDPAFVTVDFG
TT LIGGSAGVNPQVLVVDKG

P TVAAETDRDRDED\AYTPQHVAAHVG DIIP GSALPD QK D N F VP K LVVNDQLG $A V V T L Q G P P G A S S A V G L A N M D Q R G Q R F A P H V L A V M H T G$ D L i l E V G DGDPMVFEPAFLKI APG $M \vee F E P P F L V$ R A PG GD WEFDPEELTI AVG $T G Q D E V T V A V G G F A F D P A A A B I D S S$ | $H$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | MVFEP AEA K R K

MA GCVGSSS Q GDSNTKSVGMTDVKF DPETVVHVSVG AVAAVLAAFTGSAFAADFEVVRMLNMVFEPAFVKVNPG SEVTVSVGAGGLLFDPPAILVDPG


## UniRef90 A6WYV2 UniRet90-D2RQR4 UniRef90-MON101 UniRef90-MOJK37

 UniRef90-B5IL29 UniRef90-UPIO0047B9B51 UniRef90_C7QAl2 UniRef90-L9XJ01 UniRef90-ETQSG3 UniRef90_I3RANO UniRef90 MOKDR6 UniRef90_MOMVC2 UniRef90-UPIO0036E3571 UniRef90- HOJJYO UniRef90-UPIO00237631D UniRef90-B9LTP3 UniRef90-G8PQJ8 UniRef90-W1YWD6 UniRef90-LOHC288 UniRef90-K6ZXF9UniRef90 F9CWM UniRef90-KolLH4 UniRef90-WOHE99 UniRef90-GOHTU9 UniRet90-E4NUX5 UniRef90-E6P9G3

UniRef90 - joVQu5 UniRef90-G9E9M9 UniRef90-H6WG90 UniRef90 J4KRRRO UniRef90-D9VBZ1 UniRef90-E4NQY6 UniRef90-B3Q3D4 UniRef90-HOSA44 UniRef90-Kolmpo UniRef90-UPloo031035BB UniRef90-B0R3Q1 UniRef90-R1B8S7 | UniRef90-MOMYB5 |
| :--- |
| UniRef90 | UniRef90-MOHNB6 UniRef90-P07465 UniRef90-19NGZ6 UniRef90-K2M768 UniRef90-l3D3C1 UniRef90-M0ML40 UniRef90-B0R463 UniRet90 A0A059FIC9 UniRef90_S6HLG2

UniRef9O-M6CJU9 UniRef90-E7QVP9 UniRef90-11DXW9 UniRef90 ${ }^{-1}$ E7QW72
UniRef9O E4NO51 UniRef90-Q111R2 UniRef90-M0MK63 UniRef90-ETQQRO UniRef90-I3ZE34 UniRef90-A1SLB2 UniRef90-F2U237 UniRef90-Q11UC7 UniRef90-UPIOOO36E2BBD UniRef90-F4AHK9 UniRef90-E4PI46 UniRef90 MOH8H5
UniRef90
MODLM4 UniRef90-S9UIF1 UniRef90-UPI00034B6788 UniRef90-LOJXD5
UniRef90-A719M5 UniRef90-UPIO0036C3F2B UniRet90_B8IFB8 UniRef90-V6AUUO
UniRef90
A0AO311Q35 UniRef90-UP100036CBDC2 UniRef90 UPIOOO3B3513F UniRef90-V4RLR3 UniRef90-L9WGV4 UniRet90_MONYB5 UniRef90-A4YL28 UniRef90_UPI00036020F6 UniRef90_J5KG24 UniRef90-MOM3V8 UniRef90-O5SFO1 UniRef90_WOK2L1
UniRef90_GOHXL4


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| :---: | :---: |
| UniRef90_A6WYV2 |  |
| UniRef90-D2RQR4 | TFEVVPGTYTY |
| UniRef90-M0N101 | T F Q E A GE T Y HCAP HE G MVGTIVVQ |
| UniRef90_M01661 | T FEDS GEYRYVCVP HEGMVGAVVVE |
| UniRef90-M0JK37 | T FETKGTYEYYCIP HEGMVGTI EVV |
| UniRef90_B5IL29 | RFEAVGRFPFWCEPHA G M E GLLIVE |
| UniRef90_UPI00047B9B51 | T L S K K G T Y TVVCDP HP HMKMKI KV R |
| UniRef90-C7QAI2 | TPATAGTYAYTCTDHPFMHGTLTV K |
| UniRef90_L9XJ01 |  |
| UniRef90-E7QSG3 | TFSTAGEYAYVCAPHAGMTGSI TVV |
| UniRef90-I3RAN0 | T F TE T G I Y R Y ECGP H T G GRGAII V E |
| UniRef90-MOKDR6 | T FEEA GLYK Y Y C D P H K G M K G AVVV |
| UniRef90-M0MVC2 | TFEEKGAVNYACVPHMGMRGAVLV |
| UniRef90-A6UMJ3 | S F DVP G V Y GVK C TP H M G M V G A V V V |
| UniRef90_UPI00036E3571 | NFGREGVYTYHCVPPHPWMRGSVTVE |
| UniRef90-H0JJY0 | VFDQP GVVVVGCNIHDWMVGY |
| UniRef90_UPI000237631D | KLD TA GVVLLSCHLH G S M R G HVVFV |
| UniRef90_B9LTP3 | TFEDAGRYDYVCDPHE G MYA TVVFVE |
| UniRef90-G8PQJ8 | TFLSA GS QQYLC GPHQKMIGMV TV |
| UniRef90_W1YWD6 | TFDQTGVVELGCNIHDWMLGYIVV |
| UniRef90-LOHC28 | K F TRPGVYEYSCII A P A M Q G R VTV |
| UniRef90_K6ZXF9 | T F D K P GVVVLGGCNI H D Q M $\square \mathrm{G}$ Y I Y Y V |
| UniRef90_F9CWM3 | SFNTPGIVYKYFCSLHPWATGSITV |
| UniRef90-KOILH4 | SLAEPGQY DYFCTI HPYMTGKLTV |
| UniRef90-W0HE99 | LFD K A GVVVLGCNIH D WMVGY |
| UniRef90-G0HTU9 | TFESE GMFKYVCVPHE GMKGAVVVR |
| UniRef90-E4NUX5 | T F EK S GV H R Y V C A P H K T M |
| UniRef90_E6P9G3 | T F TSP GTYEYFCTLLHPWMNGVVEV |
| UniRef90-J0VQU5 | KFDVPGAYVLKKCTPHVGM GMVT |
| UniRef90_G9E9M9 | $T$ L E E Q G V V V Y C P P H M N M T GVI QV |
| UniRef90_H6WG90 | TFPEAGDFAFWCAPHAGMDGI AHV |
| UniRef90_J4KRR0 | T F D TEGVYVVYQCDPHMAMIGVIQV |
| UniRef90_D9VBZ1 | TFSTPGTFEY L C T $\square$ HPFMTATV TV |
| UniRef90-E4NQY6 | TFETLGEYSYFCQPHAGMVGTI VV |
| UniRef90-B3Q3D4 | T $\square$ S R A G AVDFYCRFHPAMTGTL EVVR |
| UniRef90_H0SA44 | T F K E S G DVTVVIC A $\square$ H P R M K M S V K V |
| UniRef90_D4GV20 | TFEAEGTYDYFCS PHKGMVGRVV |
| UniRef90-K0IMP0 | TFTEEGTYNYLS D I H P WLK G TVI VK |
| UniRef90_UPI00031035BB | LF DQPGVVVLGCNIHDQMVGWI |
| UniRef90-B0R3Q1 | TFEGPGEYSYVCDPHK GMK G K V I V N |
| UniRef90_R1B8S7 | K F DVA GS Y A Y Y C E P HA G M N G ALTVV |
| UniRef90-M0MYB5 | TFEET GEFAYHCAPHE GMVGTIVVQ |
| UniRef90-F2G673 |  |
| UniRef90-M0HNB6 |  |
| UniRef90-P07465 | K LT TP GTY GVYCDP H A G M K M T ITTVQ |
| UniRef90-19NGZ6 | T FDVPGAYVVKCTPHAGM |
| UniRef90-K2M768 | TVTAGMTQAYFCRFHPMM |
| UniRef90-I3D3C1 | TATEA GEVPFFCMVHPWMKGLII VQ |
| UniRef90-M0ML40 | SFDSS GMYRYYCAPHMGMKGAVVV |
| UniRef90_B0R463 | TFETAGEYTYVCMPHS GMIGGTVVVE |
| UniRef90-A0A059FIC9 | IL TVP GVV D Y Y C VP H A A M V G R I V V |
| UniRef90_S6HLG2 | L F D KP GVVVLGCNDH DWMLGY |
| UniRef90-M6CJU9 | TFSKEGVVFPYFCSFHA GMVGGVVV |
| UniRef90-E7QVP9 | TFNTAGDYEYYCVPHAGMTGSI TVV |
| UniRef90-I1DXW9 |  |
| UniRef90-E7QW72 | TFNAVGTHDYYC\\|PHKGMVGRIIV |
| UniRef90-E4NQ51 | TFDVPGEYHYWCEPHKGMIA DIVVE |
| UniRef90_Q111R2 | S $\square$ P T A G D Y E F F C T P H A G MVGGHMIV K |
| UniRef90-MOMK63 | T FTGNRVVKYSCPAYE GMKGLIVV |
| UniRef90-E7QQR0 | T F DVP GFYKFHSAPYA GMVGRIVI |
| UniRef90-K6ZCY7 |  |
| UniRef90-I3ZE34 | VFS R E GVVS Y I F C N I H P D M S A V V |
| UniRef90-A1SLB2 | TFGGA GSYPYRCTFHPSMTGSVRV |
| UniRef90_F2U237 | RF LEP G VY N Y H D S F HS F VNA AI TV |
| UniRef90-Q1IUC7 |  |
| UniRef90_UPI00036E2BBD | T F M V I G S S D Y IC S P HPGMFGTI T V |
| UniRef90_F4AHK9 | TFEKPGVVVLGCNDHDQMDGYI Y I |
| UniRef90-E4PI46 | VFF DKPGIVELGGCNIHDHMQGFVVV |
| UniRef90-M0H8H5 | TFDETGTFLYECS PHKGMKGAVVV |
| UniRef90-M0DLM4 | T F E E T G $\square$ QK Y VC T P H A G M K G A V V V Q |
| UniRef90_S9UIF1 | TADKAGTFEFHCS $\square$ H D GMKGELVVE |
| UniRef90_UPI00034B6788 | T F A NPSDFEYRCRFHS GMRGKVIVK |
| UniRef90_L0JXD5 | GANAPGTQAYYCSPHAGMYGAI GI E |
| UniRef90_A719M5 |  |
| UniRef90_UPI00036C3F2B |  |
| UniRef90_B8IFB8 | MLT HA GKVEYYCRYHPNMQGSISVV |
| UniRef90_V6AUU0 | LFTEDTEI EYHCQPHPWMKGKLIV |
| UniRef90-A0A031IQ35 | LF DKPGVVVLGCNDHDWMLGY |
| UniRef90_UPI00036CBDC2 | $\checkmark \mathrm{V}$ N \( |
| ) VGSNPYECS FHPSMAGTITVQ |  |
| UniRef90_UPI0003B3513F | RFTKPGLYGYKCLP H A G M V G L V Q V |
| UniRef90_V4RLR3 | T FETPGI Y G Y K C L P HMGMVGVI QV |
| UniRef90_L9WGV4 | T FEVA GEYVYVCTPHPQMAGEIIYVE |
| UniRef90_M0NYB5 | SFDNT G I Q L Y Y CNPHNGMLGA I EVV |
| UniRef90-A4YL28 | T F K E A GEVAVVICA 1 H P R M K M TVKV |
| UniRef90-A9A1N1 | SPTEEGEYPYFCMVHPWMQGTI I |
| UniRef90_UPI00036020F6 |  |
| UniRef90-J5KG24 | TFEIP GVVY G Y Q C T P H A M MVGVI QV |
| UniRef90-M0M3V8 | TFEQA GQYGYFC】PHE |
| UniRef90-Q5SF01 | T F DVP GVY G VK C T P H M G M VA A VVV |
| UniRef90_M0E994 | T F A DA SVFR YACGP HQGMKGAVAV |
| UniRef90-W0K2L1 | T FEGPGEYNYVCDPHAGMEGVVIVN |
|  |  |

S A HA AEHEVVMLDIGADKETMVFEPADVGM
 GMMVF DPAFVTLKPG P A A V R V D P G A GPAFGAEHVVKMGMFVFEPAVVKVAPG D K E P M V F E P A V L K I A P
KA DMDRRGVFEPALVKINPG
 A PAAFA EEHVIEMRNMVFEPAYLEVEPG
 T P T A GVEMVTTDDGGTHFEPHVARVVTG
 GTVDMTGQDEVT TEVGAFAFGPAAVRVDPG
 EA QEQTVIDDMT D DLVVFAPDDVTVAPBG ATALLGSS A WAQTYEVKMRTATAGMVFEPDYLQIAPG QS SMTGMPAPESP GAQPSESQQVISNMAYTVPT$S V R P G$ A A PAEPDPEPAVMRQRDMTFDPHVLADVDVN $M A L T G T A A L A E T V E V K M K G E K G A M V F E P D F V R V Q P G$


DNGTMVFEPDLVQIAPG
 $V$ DIDES GAFNPANVTINVN
S S MLLAGSALAADYRVEMKNMVFEPRLVRVEVG
$E$ S T D S E A Q A NLLK E F T I E S R GLSS F TP DE I R V NV G

 A GAVLSVAGQAQRKPAPVADMDQLDKQFVPAVLAVATG

S STPVLAETHEVRMFNMVYEPSFLRIAPG
S S TETAPEAV MDQRDRQFVPQVLAVRTG
K G T P P T A P P G V S A E
 K LTV D Q S D L Q F S P K H T I V P $\quad$ G



S GTVYTVG DE NNAF VDGSL VTVRMTALRFTPDVVRVKQG QVYRV S QKGRAF QPSALVI KK G
DTATDNSASGSGS

FTVVDKA DEVTVNVGADGLDSGPAAVAVSSG

 A GVSSTAAA QESASTETERVATVGNGMFMPHLLIVPVG

T D P V I A E I E H N T F E P L V S $V$ V
T A A V S V A R P A L A Q S QT VV EMLDNMVF SPRRVVVVQPG

STVFTHAAQAEVHEVKMGSMVYEPDYLRDAPG GNFAFEPAAVRVDPG VF S A GAQA A QYE DQMGSMVFEPGYL K V QP G A VG G TVY A V K $\square E G N A F \square S G T I S I V A G$ LF S T S A Y A ETFEVK MGSMVFEPDYLEI KP G

ETATAPTASPTASPPSADSSVVPVAAGLRFDPEEDEVAAB
GQANEDT RT DQ $\quad$ DD M D D M R F S P D Q L E
VT T L R Q D Q Q G G G T T H T VGMY TE
GS D

QADGSSTTVTVGPGGLVFFPGTLQITPG
$Q \mathrm{VT} Q P A T S T S T A S N A S D G P T Q T V G G A L V F A P G T M Q Q T P G$
 LTSEVLSSDPSQADTLYSMVQKDREFTPR\|LVVPQN $A D Q E V A D A P G S F S F D P E T F E V P A G$
 S SEVTVVQVGA GDDA F GPPAVWVDTG
 $T L A T S L A L F A L P A F S V E D E V K M E A M V F E P A V V K A Q P G$



 TPA $\square$ NPNAAGK $\quad V Q K N K M F N P K V T V V Q T G$ $G S D P R Q G S G T K S D P Y V V G M S S F Y F S P V G L Y V E K G$


UniRef90_UPIOOO377933E UniRef90_G9ZCF1
UniRef90_GOHUE1 UniRef90- B1ZA48 UniRef90-E4NR40 UniRef90-G1Y2H8
UniRef90 C8NBPO UniRef90-14Z386 UniRef90-UPIO0031E381E UniRef90-G2MM55 UniRef90-QOAP32

UniRef90_MOEH19 UniRef90-MOP6R4 UniRef90-V4X6M4 UniRef90-UPI000363BE62 UniRef90-MOD368 | UniRef90-TOB2G8 |
| :--- |
| UniRef90 | UniRef90_UPI0002F28307 UniRef90-A1UHG6 UniR Ref90_U2FTJ9 UniRef90-K21739 UniRef90-MOCRJ1 UniRef90-V4GTX3 UniRef90-K2IV58 UniRet90-V4XBJ4 UniRef90-Q1QRN2 UniRef90-LONHJ3 UniRef90-K2ABG7 UniRef90-UPI00036838EA UniRef90-W6W9S3 UniRef90-C7P1W5 UniRef90_UзНмт3 UniRef90-UPIO00225F1D6 UniRef90-UPI000467DB3B UniRef90-MODNJ8 UniRef90-A2SC88 UniRef90-UPIOOO35CC42B UniRef90-V4XXM3 UniRefolo-Q3IN42 UniRef90-B1ZUL5 UniRef90-F3KJ37 UniRef90-K2BG82 UniRef90_D1C1Q5 UniRef90-UPIOO0477697F UniRef90-W7YMV8 UniRef90-B9LN12 UniRef90-UPI0003766B97 UniRef90-Q21LC8 UniRef90-UPIOOO28920BE UniRef90_U1PZL4 UniRef90-IOWLZ1 UniRef90-UPL0002E5B3CF UniRe990_A8LIH9 UniRef90_Q8TQT5 UniRef90-UPIOO04183DF1 UniRef90-U5VGV3 UniRef90 MODANO UniRef90-F9Q5R0

UniRef90 K2BYD
UniRef90-J1JX34 UniRef90_UPIo00476F6FA UniRef90-UP100037DC3FC UniRet90_G2MIK7 UniRef90 MOL7T9 UniRef90-W0DWU2
UniRef90-M0LX84 UniRef90-UPI0004665666 UniRef90-GOLGP8 UniRef90-U1NPP6
UniRef90 G8RTK4 UniRef90-R9VC81 UniRef90_U1JM60 UniRef90-GOHTM5 UniRef90-D8J646 UniRef90-KOINQ6
UniRef90 W6WJA1 UniRef90-E0XT15 UniRef90-A0AO11AK11 UniRef90-MOD6W7 UniRef90_UPIo0035E9188 UniRef90_11YH15 UniRef90-F7XPI7
UniRef90 UPIOOO36AE098 UniRef90-U2YXJo UniRef90-MODWV1
UniRef90_A9WAB5

50
DTVRWVWGDG SHTTTCDPGPAGAATWNSPIINSFNTTFDY DTVTFLPATRGHNVESKLIPDGAEAFKS SEPDDEKYSV
 TTVVWKWNGGSSHNVV AEDGSFKSEMVGTGHTFSH DKVTFQSVD AGHNVESTPGMDPDGAQAFTGKPNETLTV
 ETVTFENDSGSHSATAYKKGPNGANAWDSGUDEGGATFEH DTVTFVNAMGV HNAQTDDGMLPDG VEGFVGDMNSDDSF GTVVWTVESGSHNAAAYHPGPEGTEAWDSEMLSEGATFEH
 TTVVWEWTGGGQHNVAGETHDFESPMQGS SAVEFPNRDSVRHHVYSFS RPAKTFELKKLYLGKPAKPVV TTVVWENVGQIPHSVTAYEDEDPEEAYPDGEIVGGDSYER QQLTIVNRDDPNHTVTADDEANSLFDTRLSGGGGUKSF DTVKFVATDKG HNAESDLDMDPDGA DTFKGKINEEDEV TTVVWEWTGGPTSHDVAEADGGYASDLHTGNSEDATFSH
 DTIE WVNEDIFFVHATARNGDWDVE DKVIWTWVSN DTVTFIUTDKGHNSASMKNGPDGASPWKGKV DTVRDKYK NTVGTHDFT
TELAFPNRDKVRHHVYSFS



PEGAKPFKG QM
GDGPLDSGVDT
PAKRFELRLYEG
TTVTWEWIGTDEHNVVAADGTFDAGGPDGRLYE
STVEFSNQDTEVHNIYSKSMNNQ
TTVVWEWTGGGGHNVVAVDERFESELVN
TTVTWEWTGGGGANNVAVDERFESELVN VEVEAGGYTFEH
DRVEFPNLDDDSHYNVFSYSAPDGKRFDLGRY
DKVIWI NYDSTAHKIVSGVPAHPDHAFSTGVLKPGQSNSV

DTVTWNVENAHD

ETVQIVNDDGDLLHHAYVDSPTFH
DKVTLKNTEGAHGLADPDFNVD
TTVVWEWTGGGDHNVSATDGEF TPVQFPNHDTVRHHVYSFS
TVVSFPNSDDVRHHVYSFS
ALVVTPNRDRVRHHVYSFS

$\qquad$ ESST

A G
AGEEGHTFEH TFVVWRNKDSVVHSAEM NDDA
DSIRFRAANVSHDAASDPEMLPAGAEAFKG
DTVVWRNFDESNV
DTIEWVNKDVVAHTATVKGGWEVI
DTVRFLPSQSGHNAAVPGLLPAGAEAFMSRLNAPKKSASLL
TTVVWEWTGKGDA HSLAAADGSFDAELVET
DTVTFRATNKSHF VHSKALPEGAQKFQSPVEEED
DKIHFIATQKSHNAATIDHMPQGASPFKSK
SMVTVTNADSAPHTVTAKDHGGFDVAVD

TNVTWDWTGGGQRNVVALDGTFDSGRTNAQM GTMED
DTVRFFVRNMGQLKKHEVMGTLDELKEHAEMMKYHPHMDH DTVEWTVESGQHSTASYSQGPEGAKSWDSGVISSG SF SY
ETLAFFNDGGELHHAYLSS TTVEFVWDSDNHNIVVESQPDSANWEGHEPDENAGFSYTH
 AKVEFPNADSILHHVYSFSEA KTFELKLYKEQPKAPG
 TTVDWEWTGEGGSHNVSNTGDLGFESETSGGEAGFTFEY STVRWPNSSNGPHNVVGDTGLDPDAGDSGFDQPGRSWQY DTIEWLPTNKG HNVEFLAGPKMDLLP KRSKDDEVHSV TTVTWEWTGGGSNNVVADSDGSFESNEFNTGIVMPGQSKAH OVFPNQDEFRHQVYSFSKP
QLVDFPNSDRHVYSFSKA
DTVRWDNKGPRVHRLL
KAFELKLYADKPEQPV
TSI NFPNEDTVRHHVYSFS
PGAKKFESGKLYAVNETNTH


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| :---: | :---: |
| UniRef90＿UPI000377933E |  |
| UniRef90＿G9ZCF1 |  |
| UniRef90＿G0HUE1 | T FEEDGI Y P Y V CVP HE GMKGAVVV |
| UniRef90＿B1ZA48 | K F D R E GV Y G F K C S P H M G M Va LVVV |
| UniRef90＿E4NR40 | T F E E A GVVWKY A C T P HMGMKGAVVV |
| UniRef90－G1Y2H8 | T F D K P GVYGYRCKP H |
| UniRef90－C8NBP0 | K LD K E GVY $\square$ Y VCP P H S N M VGVIQV |
| UniRef90＿14Z386 | $T \mathrm{~F}$ DKA GVYGYKCKPHMGMVGLVVV |
| UniRef90＿UPI00031E381E | LF DKP GVVVLGGCN】H D WM L G Y I Y ${ }^{\text {V }}$ |
| UniRef90＿G2MM55 | TFETTGTFDYFCTPHKGMVARIVV |
| UniRef90＿Q0AP32 | T A SEEGLYYGDKCMPHMGMVALI KV |
| UniRef90－M0EH19 | T F DEP GVVREYVCTP HQ G M R G SVEV |
| UniRef90－M0P6R4 | T FETE GVY Y Y Y C A P HEGM $\square \mathrm{G}$ S $V$ I V |
| UniRef90＿V4X6M4 | T F EEA GI QL Y Y C T P H R G |
| UniRef90－UPI000363BE62 | TFDTPGDVEYHCS $\quad$ H P Y M S G T V HV |
| UniRef90－M0D368 | ELDGEGVVKYACTPHAGMKGAVVV |
| UniRef90＿T0B2G8 |  |
| UniRef90＿R4W3Q4 | TF DVE GEYGYFC】P HE G M V A T L TV |
| UniRef90＿UPI0002F28307 | T F S I P G L Y G $\square$ Q C TP H M G M V MLI QV |
| UniRef90－A1UHG6 | TPTTPGTYPFHCKYHANMHGMLTVVE |
| UniRef90＿U2FTJ9 | LFDQPGVIALGCNDHDKMHAFIVVN |
| UniRef90＿K21739 | TLDDQPGLVYGVKCLPHMGMVMTVAV |
| UniRef90－M0CRJ1 | TFETT GTYEYYCIP HEGMSGFVKV |
| UniRef90＿V4GTX3 | T F EEA GVS K Y Y C TP H L M M K GVVEVVR |
| UniRef90－U1NK59 | TFTVP GTY S Y A CVP HA G M V G TI IV E |
| UniRef90＿K2IV58 | T F D A E GVY A VKCNPHMGMVM |
| UniRef90－V4XBJ4 | TFETAETFKYYCTPHKGMKGVVVVE |
| UniRef90－Q1QRN2 | VLKK K GVVD Y Y CRYHPNMKARLTI |
| UniRef90＿B9XT59 | TFTSAGSFPYTC\｜VH GFGGTVNVQ |
| UniRef90－LONHJ3 | T $\square E T$ P G VVY M Y Q C T P H M G M $\square$ G A I V |
| UniRef90－K2ABG7 | QFDKA GAYEFFCSVHAGMKGTLVVE |
| UniRef90＿UPI00036838EA | LF DQPGVVLLGCNIH D S M VGWVLV |
| UniRef90＿W6W9S3 |  |
| UniRef90＿C7P1W5 |  |
| UniRef90＿U3HMT3 |  |
| UniRef90＿UPI000225F1D6 | TLTVP G S Y Gi K C S PHM G M V M L E EV |
| UniRef90＿UPI000467DB3B | QFDQP GKVAL GCNDH DAMLGY |
| UniRef90－M0DNJ8 | TFESAGVYRYVSEPQA GMKGVVVVE |
| UniRef90＿A2SC88 | VFPD P GTAVLGGCNTHDAMTAYVRV |
| UniRef90＿UPI00035CC42B | SLLQP GP PVLRCNLHKDMVGTI FV |
| UniRef90＿V4XXM3 | T F TES G IHEYVCTPHQGMRGWVEV |
| UniRef90－Q3IN42 | TFDEPGAALLYVCTAHQNQYGAVVVE |
| UniRef90－B1ZUL5 |  |
| UniRef90－M8B4N8 |  |
| UniRef90－F3KJ37 | VLT D Y GA Y Y Y F CEDHPWF TGKI |
| UniRef90＿K2BG82 | AFTTAGVFPYYDPTYPNMTATITVN |
| UniRef90－D1C1Q5 | TFTAP GVVYPFYCTVHVEMMGYLIVE |
| UniRef90－UPI000477697F | VFP PVS GTFA V L C Gl H P K M K L A V RV |
| UniRef90＿W7YMV8 | TADKA GTY DFNCSVHENMVGQLIVE |
| UniRef90－B9LN12 | TFEEAGTYTY VCTPHEGMKGAVYV |
| UniRef90－M0MSJ6 | TFEKEGA】KYACLPHMGMRGAI LVV |
| UniRef90－UPI0003766B97 | VF DQP GTAVLLGCNIH DQMVA WV HV |
| UniRef90＿Q21LC8 | KFD TA GKVVVGGCNI H D S M L G Y I F V |
| UniRef90＿UPI00028920BE | VFP D A GVVSLGGCNIH D A M S A FI FVV |
| UniRef90＿U1PZL4 | TFETLG TYEYYCAPHAGMGATI IVE |
| UniRef90－IOWLZ1 | YFGTPGTYDYVCRYHHGMRGRITVV |
| UniRef90＿UPI0002E5B3CF | TFTAPGTYG |
| UniRef90－A8LIH9 | PFPTPGFYGYKC TPHAGMVGLVIVE |
| UniRef90－Q8TQT5 | T F VENGSYSFSANGYPNMQMTI TVVK |
| UniRef90＿UPI0004183DF1 | ILKAA GAVDYF CRFHPNMKGHVNV |
| UniRef90－U5VGV3 |  |
| UniRef90－M0DAN0 | QFGGVGVSKY |
| UniRef90－F9Q5R0 | T LDKA GVYVYTCPVHMNMNGII QV |
| UniRef90－K2BYD8 | T F S D P GVVFPYYDP TY P DMQATI TVVN |
| UniRef90－J1JX34 | T F D K S GFY G I K C T P H Y A M G MVMLV K |
| UniRef90＿UPI000476F6FA | K P D S P GEY G FVVCSFHSRMTGTLMVK |
| UniRef90＿UPI00037DC3FC | TFPEPGEFAYYCQPHAFMAGVVRV |
| UniRef90＿G2MIK7 | TFTVPGEYVYVCAPHA M M V G Sil TV |
| UniRef90－M0L7T9 | $\square F D E V G E Y$ R Y V S E P H E G M K G AVIV K |
| UniRef90－W0DWU2 | TFDQPGTYYY GCHYEA GMIIGKILV |
| UniRef90－M0LX84 | TFRTEGTY DYYCTPHKGMVARIV |
| UniRef90＿UPI0004665666 | DF PVLGD Y M V L C G $\square$ H P K M KL I V HV |
| UniRef90＿G0LGP8 | TFETLGAYEYFCQPHAGMGASI EVV |
| UniRef90＿U1NPP6 | TFETLGGTYDYYCEPHAGMGATI EVV |
| UniRef90＿G8RTK4 | APSKPGEYAFYCVYHPSMKGTLIVK |
| UniRef90＿R9VC81 |  |
| UniRef90＿U1JM60 | VF DQT GVVELGGCNIHDWMLGYi V V |
| UniRef90－G0HTM5 | RFEVPGEYEYHCVPHQGMTGSFTV |
| UniRef90－Y0KDS3 | LF DKA GTVVLGCNIHD TMLA Y V Y I |
| UniRef90＿D8J646 |  |
| UniRef90－K0INQ6 | RFDEA GVFNY LC T $\quad$ H A GMRGTLII |
| UniRef90－W6WJA1 | TADKPGAYVFKCTPHFGM GMVAV |
| UniRef90＿E0XT15 | VF K $\square$ P G V Y V Y G C T P H M G M L G L I I V |
| UniRef90＿A0A011AK11 | KFDKPGEYFYNDAFFAQNTGKVVV |
| UniRef90＿M0D6W7 | EAPESGVVSYACAPHSGMRGALVV |
| UniRef90－UPI00035E9188 | EF DKP GVVALLGCNDH D N M L A Y I Y V |
| UniRef90－11YH15 | RFDQHGVVVLGCNI HD TMVGYI Y C V |
| UniRef90－F7XPI7 | TFESKGQHDYLCIVTA LR G TV IVE |
| UniRef90＿UPI00036AE098 | PFEQA GVVTLGCNI H D S MVGYıYV |
| UniRef90－U2YXJ0 | QF TVEGTYDYYC』PHKGMVGRVV |
| UniRef90＿M0DWV1 | AFEVPGTHQYLCTPHQGMRGSVEV |
| UniRef90＿A9WAB5 |  |

UniRef90 C3KNR1 UniRef9-UP10002F6CCCB UniRef90-MOCJG1 UniRef90-131F27 UniRef90_UPI00047A8047 UniRef90-B1M469 UniRef90_UPIo004653C87 UniRef90_13X5L6 UniRef90-UPI00035EC246 UniRef90-G4VNW4 UniRef90-H3SHT7 UniRet90-A5UXZ8 UniRef90-G2TEZ3 UniRef90-K01179 UniRef90-A1SAB0 UniRef90 B9TA36 UniRef90-UPIO0036AEFF5 UniRef90-TOR4V6 UniRef90 M0GRG1 UniRef90-14W3J3 UniRef90-MODRR5 UniRef90 UPI0003B4046B UniRef90-M0M9U4 UniRef90-K6WXJ4 UniRef90-UPIOO047E6944 UniRef90-K6X7Y8
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UniRef90 UPIOOO46697A9
UniRef90-W7WK19
UniRef90-K2DAY1
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UniRef90_MOEETO
UniRef90-UPI0002FD5D15
UniRef90-Q7MDD3
UniRef90—13R2Q8
UniRet90_C6XA08
UniRef90 BoSFY5
UniRef90-UPIO0037C13D4
UniRef90-F2BBF5
UniRef90- Q11MX3
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UniRef90-V4TFL8
UniRef90-B8R8W9
UniRef90 A8AFZ1
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UniRef90-Q31TH3
UniRef90-EOXQZ55
UniRef90-A7H8W0
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UniRef90-MONHG1
UniRef90-E7SOT3
UniRef90_A4WW09
UniRef90-J3JGT1
UniRef90_UPIO0036F4E17
UniRef90-U1JTL1
UniRef90-M1XRA7
UniRefofo-H2CE87
UniRet90-F5RH33
UniRef90 U1ROM8
UniRef90-MOFQC9
UniRef90-J2IDS9
UniRef90-A3SLD8
UniRef90-D7DPE5
UniReffo-A3X329
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UniRef90-R9LDM4
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UniRet90-B4D7A4
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UniRef90-JoSOK4
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UniRef90-A0A037XG28
UniRef90-A7NN78
UniRef90-UPIOOO225F828
UniRef90-W9GRI1
UniRef90-V5SFC1
UniRef90-K2DU48
UniRef90-×5LKM8
UniRef90-F6GFC8
UniRef90-G9EG31
UniRef90_14WUU8
UniRef90-D5ROS2
UniRef90 ${ }^{- \text {R4WAD2 }}$
UniRef90-Q46BR6
UniRef90_UPI000366B4C8
 SQAAEHEVRAVGVKFDPMFIII EPG A VAVGLAGCGQTSGDTGNYDVGMTTRKFDPVRVEVAPG LTMAGTVLASASHAGEALMDQRQNMFVPKVLADRTN
 AGGAHAAEHEVKMGAMVFEPAFVKAAPG $T T V V T Q E R M Q F D P M V T M V H P G$ NKDAGASNNEGAAPAASSGAVTLKAKNFEFDQTEERVKKG

A Q A ETFDVKMLTRGGSMVFEPEDI TLAPG PPQSVTVT $1 P$ AGASLADNNVNFTPKDITVVLG DAAVELISDADPATTAAGEHYEMSQKNRTFTPFVLAIPKG PEGGASAGGKPAAALI EKKGKFLPGVTVVQTG
 GALAFSPAGIWI DPG

 AAEGESDYDDGMSASAFLPDDFEPRVG



AGDAKSAKRTDEDGMGNMRFTPDRIVVRQG TQDEQAPSTDSSQTASEAAVKDTSSGFEPQTITIKAG


$A \square G T \square A \square T A \square P V R A A T K D H Q V M M G A M V F E P D F I V A A P G$
$G A M V F E P A D T Q V A V G$
TTTAFAQTHEVLMKNMVYEPDYLAI QPG

A GDADAVTRTDRVTMTDMRFDPDRIQVRDG
SADTSANKVVIYGT FAPABTIEEIMAG
AAMFMSTPAFAADLT DEMLNKDAHGMVYSEEIASIEVG

GTVVDATDRKRVTVSVGAGPYAFAPAAVNISTG
ATKDASEAGVTRNGNKVTVKMVSFAYEPSDVKLKVG AATLMLVLGTAAQAATHEVIMLNKGMVFEPAFVAAQPG ASVLVEVGTNANGGAFGFGPAAVQVDPG

TNQDEVVIETGGFSFNSPGMVVSTG
SCGSPGEGGGFAHV TMMDNFFSPPGSRMVKG APRPARIEQVRKSFMPQVSAVQVG GHFA
AVVFLESAAASAAVKPVDARIVQKDKTFDPDVEVIPRG ESGAMVYEPSVLRMAPG


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


PSLAADIEVUMGAMVFEPAYYKANPG
$E T G A M V F E P G F V R A E P D$ \Q GMNYGPSDIWDDVG
AAVSLLACSLAGNAFAEEHVVEMKRMLFQPDFIKANVG QAPTPTQTPGLUTDQPDKTFEVVGKPFEFNPKELVMVKGG SAAGNLPQEENTYQRDAAFHPKVLTVPTD AKTVHVIVLDKMMFGPMPTGVRAG
TGQGAAAEPAATVRVAGETFAYDPALVRIPVG A DET GT DTVTVAVGAFA Y GP S A V A I SV G
KPDAPAANSGAGEGGAAQEVVIVATNFKFDQAEYKVKAG

UniRef90 C3KNR1 UniRef90-UP10002F6CCCB UniRef90-MOCJG1 UniRef90-131F27 UniRef90-UPIo0047A8047 UniRef90-B1M469 UniRef90-UPIoo04653C87 UniRef90-13X5L6 UniRef90-UPIIOOO35EC246 UniRef90-G4VNW4 UniRef90-H3SHT7 UniRef90-A5UXZ88 UniRef90-G2TEZ3
UniRef90-K01179
UniRef90-A1SAB0
UniRef90-B9TA36
UniRef90-UPIO0036AEFF5 UniRet90-TOR4V6
UniRef90-MoGRG1 UniRef90-14W3J3
UniRef90 MODR UniRef90-MODRR5
UniRef90
UPIOOO3B4046B UniRef90-M0M9U4 UniRef90-K6WXJ4 UniRef90_UPIo0047E6944 UniRef90-K6X7Y8 UniRef90-Q1PZD9 UniRef90_UPIO0046697A9 UniRef90-W7WK19 UniRef90-K2DAY1 UniRef90_13CWC8
UniRef90 MOEFT0 UniRef90-UPIo002FD5D15 UniRef90 Q7MDD3 UniRef90-l3R208 UniRef90-C6XA08
UniRef90 BOSFY5 UniRef90-UP100037C13D4 UniRef90-F2BBF5 UniRef90-Q11MX3 UniRef90-A0AO21XBX0 UniRef90-V4TFL8 UniRef90-B8R8W9 UniRef90-A8AFZ1 UniRef90-L7VYN4 UniRef90-UPI0003A9EF18 UniRef90-Q5P6B5 UniRef90_Q8TSJ6 UniRef90-Q31TH3 UniRef90-EOXQZ55 UniRef90-JOKNH6 UniRef90-MONHG1 UniRef90_E7SOT3 UniRef90-A4WW09 UniR Refo-J3JGT1 UniRef90_UPIOOO36F4E17 UniRef90_U1JTL1 UniRef90-M1XRA7 UniRef90-H2CE87 UniRef90-F5RH33 UniRef90-U1ROM8 UniRef90_MOFQC9 UniRef90-A3SLD8 UniRef90-D7DPE5 UniRef90-A3Х329 UniRef90-HOA9S8 UniRet90-MOLS65 UniRef90-UP100035C6BBB UniRef90-R9LDM4 UniRef90-Q084P6 UniRee90_B4D7A4
UniRef90_D9QNS6 UniRef90-Josok4 UniRef90-LONH10 UniRef90-K2CYB6
UniRef90 UPIOOO3A5F01B UniRef90-A0A037XG28 UniRef90-A7NN78 UniRef90_UPIO00225F828 UniRef90-W9GRI1 UniRef90-V5SFC1 UniRet90-K2DU48 UniRef90-X5LKM8 UniRef90-F6GFC8 UniRef90-G9EG31
UniRet90-14WUUZ UniRef90-D5ROS2 UniRet90-R4WAD2 UniRef90-Q46BR6
UniRef90_UPI000366B4C8

## 

N

DSIVKKTATSK ${ }^{50}$ SHNAATTDGMVPDG HAGFKGKTNKEI $\frac{80}{60}$ DNVSWVN MPAHMDETDDAMVPEGTEKDMTELGVDVNF

 TQVRFPNGDDVRHHVYSFS LPAKKFELRLYHGMTAEPV DTLVFLNDDTRAHNVLIFATVGF | D 1 |
| :--- |
| $D$ |
| D |
| T |

## 

AAVVWRNNDTQAHRDRSV
DTLRFLPSDRSHNAASIPSMDPDGSWRSVIALGSDRHQ NTVVWVNENVNPERVAGQDEDMPGGFGKIRTLPEGGTFAF ARVDFPNLDRTRHHVYSFSEAKP FELKLYVGKAEAPD ATINFPNNDKVRHHIYSFSPAH TVVSFPNKDTVRHHVYSFSAP STVT WVHANPLAP STVTFVNDDDVRHNVFSVTGMPGAD TTVTWEWSDDTEYNVVA胃DGAFD EPVVWRNTGMRAHTVTAYGSGDPDDA
SSVVFPNSDSTQHHVYSFS SSVVFPNSDSIQUHVYSFSATPAKOA QFVAFPNSDETRHHVYSFSAINA

E


 S A V E F P N R D R V R H H V Y S F S
 GKII RF VNEGNNPHNA INS INKDWST

$K \mathrm{~K}$
G
G
LD
A
G
K
A
K
A
STDLGK


## D <br> E





## 



 S S V I F V N K D K N P R N LHPTH G I YP E F DP K Q Q DEPGKD WT F



 D TVVEWNWYASGTHNVASTGGT ETTNSPTSTPGVNFSH
 GAVRFEPTDKG HNVTPDQALDWAGA PSLDVVPNAEATV T TVVWDWTGGNPHNVEALPAGESDFEFSSGEATGGSGVQY


|  | $\text { TFDQPGFYG }{ }^{90} \text { K CSPHMGMVM0 } 100 \mathrm{~K} V$ |
| :---: | :---: |
| UniRef90_UPI0002F6CCCB |  |
| UniRef90_M0CJG1 | TFETVGTHAYFCVPHEGMVGNVVV |
| UniRef90-I3IF27 | VFPD P P TVVLLGCNIH D S MVAA Y I Y V |
| UniRef90_UPI00047A8047 | TVVRKTGAFDVECVI HEEMHTRVVVR |
| UniRef90_B1M469 | TLVEEPGDFVI Q C Gl H P K M K L T L HVE |
| UniRef90-UPI0004653C87 | $T V T E P G A Y \mathrm{~F} V \mathrm{C}$ C T P H M G MV |
| UniRef90_13X5L6 | $T \mathrm{P}$ TVPPGLYGVVKCSPHMGMVALI Q V |
| UniRef90_UPI00035EC246 | $T L T Q P G P V R L S C H L H S T M R G G L Y V$ |
| UniRef90_G4VNW4 | NFTQPGTYYYA S SEEFLMTGGII E V K K |
| UniRef90_H3SHT7 |  |
| UniRef90_A5UXZ8 | $V \mathrm{~F}$ VEP GRYP F VCD F D P GMSGVLTVVQ |
| UniRef90_G2TEZ3 | TF DVP GVY G I K C S P H M GMVMLVRV |
| UniRef90_K01179 | TFTEEGTYNYLSAAHPWLQGTVTVVK |
| UniRef90_A1SAB0 | LFDKPGLVALGGCN\HDYMQAFI Y V |
| UniRef90-B9TA36 | \|VF D K A G TVV VL G C NI H D K M I A Y V K V |
| UniRef90_UPI00036AEFF5 | $V F D K P G L V A L G G C N I H D W M L A Y V L V$ |
| UniRef90_T0R4V6 | $V$ F H A A GTFH Y Y C Y R Y S F M E A SVTV |
| UniRef90-M0GRG1 | TFEEAGTS K Y F C A P H K N M K G AVAV |
| UniRef90-14W3J3 | AFRRAGIVLVSCNVHHSMELDVLV |
| UniRef90-M0DRR5 | TFDAEGTYKYVSEPYA G M Q GVVVV |
| UniRef90_UPI0003B4046B | GFP ${ }^{\text {P }}$ A G NVALLGCNDH D Q M R G Y I K V |
| UniRef90-M0M9U4 | TFEVPGTYNYFC IP P E GMVGSFEV |
| UniRef90-K6WXJ4 | LFETDGEVELLGCNVHDWMLA Y |
| UniRef90-UPI00047E6944 | SFAPAGTYD Y H C T P HMNMKGKI TIIK |
| UniRef90_K6X7Y8 | Q Y $\square$ N A G VG VLG C N 1 H D N M V G Y I Y V |
| UniRef90_Q1PZD9 | KFDVLGETPLLCNVHA EMAGYV |
| UniRef90_UPI00046697A9 | TVTAEGVVYGIJK T P H Y GMGMVMLVQ |
| UniRef90-W7WKI9 | TFNRPGDFDFACLI HAGMVGK |
| UniRef90-K2DAY1 | MFPDKGTYKYHDHLNPTLFGTVAVE |
| UniRef90-I3CWC8 | MFDKAGTVVLGCN!HDEMVAYVQV |
| UniRef90-M0EET0 | T FEDAADFNYLCEPHEGMKGVVAV |
| UniRef90_UPI0002FD5D15 | TFENQGVVVLGCNDHDSMLGYI Y $\mathrm{V}^{\text {V }}$ |
| UniRef90_Q7MDD3 | VF DKA GVVEIGGCNIH D S M L A WI L V |
| UniRef90-I3R2Q8 | TFEEA GISSKYYCS PHQGMLGAVAV |
| UniRef90_C6XA08 |  |
| UniRef90_B0SFY5 | FFPEEGVFPYFCSFHAGMTGVAV |
| UniRef90_UPI00037C13D4 |  |
| UniRef90_F2BBF5 | K LD K E GVYYVYVCP P HMNMSGVI QV |
| UniRef90-Q11MX3 | AFDKEGVY GVKCTPHMGMVALVVV |
| UniRef90-A0A021XBX0 | TVEQE GI Y G V K C L P H M G M V A L I A V |
| UniRef90_V4TFL8 | $T L T E K G T Y S F Y C S P H A G M V G Q V T V N$ |
| UniRef90-B8R8W9 | T F T A PGAYGVK C A P HMGMVALVVV |
| UniRef90_A8AFZ1 | KYDKPGFYGIK C T P HQ GMVMLI KV |
| UniRef90_L7VYN4 | QLTVEGAY L Y R D S A N P D A TA TI IV K |
| UniRef90_UPI0003A9EF18 | TLD K E GVY GVVKCAPHMGMVALIVV |
| UniRef90-Q5P6B5 | TFNRPGEFDFACLIDA GMVGRIIV |
| UniRef90_Q8TSJ6 | T FEEPGTYVFALKK N P E I K G TVKV |
| UniRef90_Q3ITH3 | PF DEP G I A L Y VCT P H Q S MFGALDV |
| UniRef90-E0XQZ5 |  |
| UniRef90-A7H8W0 | $P$ LA RPGPVVRVGCDVHAWMSAWILV |
| UniRef90-J0KNH6 | LFDQA GVVVLGCNIHDQMT GWIL L V |
| UniRef90_M0NHG1 | AFDSANI YRYVCK PHEGMKGA |
| UniRef90_E7S0T3 | TFDKP GL F WF Y C T L H LEMRGRMMVE |
| UniRef90_A4WW09 | TLT DE GLY GVK C A P H M G MVA L I QV |
| UniRef90_J3JGT1 | V A D A E GVVKYACEPHAAM |
| UniRef90_UPI00036F4E17 |  |
| UniRef90_U1JTL1 | KFENA GVVVLGGCNDHDSMVGYI Y |
| UniRef90-M1 XRA7 | TVDEAGAVLYAC IP H Q G M Y G A I AV |
| UniRef90-H2CE87 | $T Y P A D G V F P Y Y C S F H A G M V A T I V V$ |
| UniRef90-F5RH33 | VFDKA GLVVLGCN】H D Q M V A Y V SV |
| UniRef90_U1R0M8 | TFDT T GVVYKYFCQPHKGMLGAVAV |
| UniRef90-M0FQC9 | TFEQS GTYRYACQPHRSLKGAI IVE |
| UniRef90-J2IDS9 | LFDQS GVAVLGCNDH DEMIA WV V |
| UniRef90_A3SLD8 | TLS A P GVV GVK C T P H M G M V MLI V V |
| UniRef90-D7DPE5 | VFDKA GTVVLGCNDHDQMLAFVYV |
| UniRef90_A3X329 | TLDVE GLY Gl K C T PHMGMVMVI EVV |
| UniRef90_H0A9S8 | T FEET GEYEFIDCSVHA GMAGTI T V |
| UniRef90-M0LS65 | TFTVAGEYAYVCTRHPEMAGTVTV |
| UniRef90_UPI00035C6BBB | VF DKQGVVVLGCNTHDKMAAYVVV |
| UniRef90_R9LDM4 | TADQAGTFEYSCNI HKQMKGVLIV K |
| UniRef90_Q084P6 | RFEQT GHVSMGCNVHDWMSGHLLV |
| UniRef90_B4D7A4 | VFPDVAGLVTLLHCDI HEHMRGLILV |
| UniRef90-D9QNS6 | TFTTA GVAALGCNIH D Q M L A FVRV |
| UniRef90-J0S0K4 | T F T T P G TYVFLCD P HPQMRGAFVV |
| UniRef90 LONH10 | T LD K E G A Y V VKC T P H |
| UniRef90-K2CYB6 | KPQKS GTFKFHDHLFPHFRGTLIVE |
| UniRef90_UPI0003A5F01B | TVQQDGA Y LVKCTPHMGMVALIVV |
| UniRef90-A0A037XG28 | TLLTEPGYY GVKCKPHWGM GMVMV |
| UniRef90_A7NN78 | WFA QPGRYPFVCDFDQDMRGELTVQ |
| UniRef90_UPI000225F828 | TVT EPGLY G VK C T P H M G M V G LVQV |
| UniRef90-W9GRI1 | K FTGVGGTY T Y Y C Y VHAMMKG TVV HVR |
| UniRef90-V5SFC1 | T $\square$ E K P G $\dagger$ Y G $\square$ K C M P H M G M $\square$ A M I V |
| UniRef90-K2DU48 | QFDKA GTFPMFCGVHQGMEGVLIVE |
| UniRef90-X5LKM8 | TFTEPGDYAFYC IY HPAMKGTLTV |
| UniRef90-F6GFC8 | TFTSVGTTDFVCQPHSNMFGTI TVV |
| UniRef90-G9EG31 | KFDQPG V VLGGC $\square$ HDHMQAFIVV |
| UniRef90-14WUU8 | TAKAGSFAFFCKFHPGMTGTLVAK |
| UniRef90-D5RQS2 | TFDSPGVVYPVQCTPHTGMVALIVV |
| UniRef90_R4WAD2 | T FEE T GVA L Y HCEP H L G M K G A I V V |
| UniRef90-Q46BR6 | T FENPGTY SF T L K D N P D $\quad$ K G TV T V |
| UniRef90_UPI000366B4C8 |  |

UniRef90 K2dHaO UniRef90-U1KWS9 UniRef90 W W11TT6 UniRef90_UPIO003791DA0 UniRet90 WoRPP5 UniRef90-F3KW87
UniRef90
V6ASB9 UniRee90 ${ }^{-}$UPI0003B55FEA UniRef90 G6YLR3 UniRef90_UPI00041A1575 UniRef90-B9LNX6 UniRef90 G9A8U1 UniRef90-K8NTH7 UniRef90-A9A4Z5
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 A ADQAVLTRSYKMGQKNRAFTPHLLIVPKQ E K GPMVF EP D FLEI AP G
IS ATNFNFDQAEYHVKAG SSPANVEQKTVAALPSLVFTPATDAVAPG
 T A A $\square G E P$ G Q GKP $\square$ S S T VA V V M S D NMRF EPA Q I K VKA G
 T G Q DEVTVAVGGLKFGPAA LI I DPG

SAGEP GDPKKAARDIQVTMGEMDGKMMFMPSKVEVKKG FSDDRI SI EPG
 GPMVYEPEFLKVKPG $G G M V V F Q P S F V V A$
$P Q \square K A T T Q A N M A \square M D Q V N K Q F A P R V L I I Q K N$ S S A F A E E Y EVR AVGVKK F DPMFVILQPG
 $E K G G M V F Q P D F V K A A P G$ EKSSMVFEPDFLALQPG VSVG GSNDAFSPSTLTMAG
MTNASGQPGKAAD $T$ RT T D $\square$ NNMRFTPSQ
P Q T P D A G G QV VTVTATTDQGNNVFQPATVEAKPG $G M M V M E P G Y L K D A S G$
AEATSSPVGMPGKAKNVTRTDDVDMMRFTPSNINVKQGB
A VGGQAVPKSLKQAEVEQKDVKFFPLVSVVQVG
A GDAK TVTRTVTFTMDNMRFSPDKVLVVVQG TIEVGAEGNGGALAFSPAGVWIDTG
PAAAKD IVVQMKNMVFEPSFIKAAPG
GAEVADPEKNPVMDQKNCAYYPHVLADPVGB
 Q S M T F S P S Y L E L K VG
ARDERDGNNVTDYQMSFYPDHVEVVNEG
ATSTVGQPGDPANVSRTVEDIDMDDNMRFTPSDIVQVEAG SAGEPGDPKRTARVVQVVMREADGKMLFVPDRLELKKG
 DKPTAPSNASGAAVSVPDGGVAVAVNDKACEPMTLTVPS G

TGQDEVVIETGGFSFSPSGVVVSTG
F DKA HVTASPG
TVTVVS S GTAVPA GPVIA $\square$ E GMGFS A L GPVAP G A G D P A A V R R T TVL RMDDMRFSPNQIEVQEG A G D A S AV T RTVVEVRMLDMRFVPDEIEVR LG

A D QVVTVAD GSAVFDPETFEVPTG


PSREIVVEMGDRYYRPKQLQVKRG QRHHS IDVT D K R F S P A L L
S QP D GSPAANVQ $\square$ NQQTVVI GQRDKAFVPY SVAQRG


GDPREASRTVPDITNMRFSPDSLTVSKG

 TPANSEETGASNDAAA QEVVITEATNWEFDQSEYRVKQG


A A R N P T R T I Q V D M G N M R F T P D R I



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

 $G A M D F E P D F D Q A S V G$ GPMPFEPDYLVVQPG
SDAVRQKAMEVQLNDDFFNPETITIPSG TPVANAVVSFPEDKVAEQTADMDQDDKQFAPYVLVVQKN A STVGVPGNAADVTRTIDVDSMREVPDHVTVKA G QSSANYSEVVTSDSEDGPNTTVVNYTDSGFEPSTVVEIVRG
 $T V R \vee Y M T Q Q R F K P D T I \quad E V R S G$
P D E A V E E V T T T T V T D F E Y E

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UniRef90 C9YCB0 UniRef90_UPIOOO36279A3 UniRef90-H3SHG4 UniRef90_UPIO00475687D UniRef90_UPIO00465D9B9 UniRef90_D5DDJ1 UniRef90_G4QFW8 UniRef90-A0A011PYA8 UniRef90-G0QGW1 UniRef90-W4GW00 UniRef90-M5TE70 UniRef90-IOXTR1 UniRef90-Q11NB3 UniRef90_UPIO00479B216 UniRef90_M0F6IO  , -

QKIT T 50
50
AEVSFPNYDSILDHVYSFS 60

D 70
AEVSFPNYDSILHHVYSFS P AKRFEFKLYR D DRVRFVPTHKGSHNAATDDGMDPEGA EGFKGRDNDEFET DTVTFAF GSVAHNVFFDAAAGAPADIGGTV N NTRVGR



 EQVKFRNNGELDHEFTADNDKHGEAMKKNPDMEHDDEVVW
 D K A AKD G HNAQSIPGMLPEDAFDGEMSR D VVTFVPTHAGHY AQSYVVPEGQSAWKSTMNQPNEE $\underset{F}{I} E$ S QMVDFPNSDDDRHHVYSFSRP KQFEDK LIFSDSEAQPV DRVSWTNMPAHMIETDDVMVPEGT
THVDFPNDDRTRHHVYY FSEAKP

 DTVTFSEVSGSHNVVSDTTGGLFDGKGGNGNVADNNWSVVIV

 ETVVRFTNDGKDPHEFVVGSKDHAEMMRKMPDMQHAENNMV TPILRPNHDKVRHHVYSFS PAKTFELKLYSGVPTSPI
 T T $V$ T WV WT G G G G H NVVVAS E GASSLD S GA A VVS EA GSTY E Y
 DKVK F $\square$ AK A K GH $\square$ T H S V Y S G D K V T K W DHVTWTAKAK GHGKTNEE IGSV
 E TVVRFKNDGQVPHEMVIGGS DEELKAHAAEMLAAAPGMEHEW
 T TFH HK NASSRA LE WE ILK GVMVVDERENDAPNDSDK L TVV


 E T V V R F V N E GLDMMHEFVVIGGT QA DNKA HA A LDMLDRYPNMEHEW ATVVWVWHSSGHNARPRGSTFTGTAGEDETTYDEGHTFSH
 E QV R F V LR N D GYEDHEF LLDDTHAEAMRKNPGMEHGEELL W

 S SVVDFKNSDNVNHNV FAPTKCKPFNLGTYGKGVVKTE




 A KI TVVNS D DVA H TVVTS K |  | $A$ | $K$ | $T$ | $T$ | $V$ | $N$ | $S$ | $D$ | $D$ | $V$ | $A$ | $H$ | $T$ | $V$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $D$ | $S$ | $K$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $D$ | $H$ | $T$ | $W$ | $W$ | $N$ | $T$ | $D$ | $F$ | $D$ | $E$ | $D$ | $I$ | $T$ | $H$ | $G$ | G 1 C




 V K V T F Y Y T T S P DVQQ
 E S V R I L LEAK GNHGLQVVKE L GLLK
 D TVVR FI A A D P G H N A A T I A GMIDP E S G E K F VGG I D E E I E V TLI K G QKEHTFTVEKLGIDAEVQPGK Q MV DFPNSDAVRHHVYSFSSPNQ
ETVRFKNRGKMPHEMVIGSPSMEHEEPNMDTLKPGQRGUW
E T V Q F VVDLS GRPM WVT REHCEN GDAVN ESDQCSAGETYSF



GPNE
$E E G T$

|  |  |
| :---: | :---: |
| UniRef90_K2DHA0 UniRef90 U1KWS9 | EFTEUGEFEFYCSVVQGMVGK |
| UniRef90 W1L1T6 | GFEKPGFYGIKCS |
| UniRef90 UPI0003791DA0 | TFDTPGTYEMHCSDHAGMVSKI |
| UniRef90-W0RPP5 | VFAAAGRYTYSCHIHPEM |
| UniRef90-F3KW87 | TFDKAGTFAFACLVHAGMVG |
| UniRef90-V6ASB | K S T I |
| UniRef90-UPI0003B55 | HFNQSG |
| UniRef90-G6YLR3 | T LS QE GVYGVK C A P H M G MVA |
| UniRef90-UPI00041A1575 | a |
| UniRef90-B9LNX6 | D D A STFNYLC |
| UniRef90-G9A8U1 | T F T DQGVYDYYCVPHAGMV |
| UniRef90-K8NTH7 | KFTKAGEFEYGCLDHAGMVGTILVK |
| UniRef90-A9A4Z5 | T F DEAGFYRLY D |
| UniRef90-K7SEI0 | TFQKSGLYGFRCSPHYGMVGLIVV |
| UniRef90-E7RUD8 | TFTESGLYGVKCLPHMGMVMLI QV |
| UniRef90-F2JVM8 | T L S HEGVHLYYCPPHMGM |
| UniRef90-K6ZFW4 | AFENPGIVALGCNDHDNKIGYI Y V N |
| UniRef90-D01 | D NDGI YV |
| UniRef90-Q12SA5 | LFDNPGLVALGCNDHDYMQA |
| UniRef90-UPI00047E | TVEKDGLYGVKCSPHMGMVALI AV |
| niRef90-UPI0003B5C50E | VTADDMVDYYCRFH |
| niRef90_UPI00036B791D | D R P GF Y G $\square \mathrm{K}$ C |
| UniRef90-UPI00035C6C5C | SFPTAGTFGYYCEAHVGMHGTVRVN |
| UniRef90-UPI00040ED556 | FSNLGTTEYQNDSNSLMQGKVTV |
| UniRef90_A6FDW9 | QFTQAGYVDFACDIHAG |
| UniRef90-W0RQ00 | KVAAPGTYYFQCDPHAG |
| UniRef90-A6FGG7 |  |
| UniRef90-Q6LTI4 | TFTEAGVVDFAC |
| UniRef90-UPI0003743C5B | LF DKVGTVVLGCNIHDQMVAYVQV |
| UniRef90-UPI00031D0253 | TF DKPGVYGILKCKV |
| UniRef90-J3DG92 | NKPGSFDYACLIHAGMMG |
| UniRef90-L9UNK6 | TFEEAGITKYHCVPHEGMLGAVAV |
| UniRef90-TOHQU4 | TVTKPGL |
| UniRef90_UPI0003B5 |  |
| UniRef90-E3HH93 | T FDKAGSVAFACHYPAGMKGAVSV |
| UniRef90-T0RML8 |  |
| UniRef90-L0F3H3 | VA D R A GV |
| UniRef90-W7QFX3 | HFDRTGVVVLGCNI |
| UniRef90-A0A031MHL | QFDQPGKVDFACLI |
| UniRef90-W3RGJ7 | KFTKAGEFEYGCLI HA GM |
| UniRef90-F5S8H2 | KLTHEGVYVYNCPPHMNMSGII QV |
| UniRef90-V9H6T1 | TLL PGEYEMTC |
| UniRef90-A0A017HS | TLTEEGLYGVECKPHAGM |
| UniRef90-M1XSK3 | TVDEAGAVLYVC\PHQGMYGAVAV |
| UniRef90-U1PRZ5 | ETLGE YEYFCQPHQGM |
| UniRef90_A0RYM4 | D T GETGHYPYYCID HPWEKGRVEVR |
| UniRef90-K0VCV2 | QDPGEYAYYCLYHPAML |
| UniRef90-C5TD64 | NRPGTFDFACL |
| UniRef90_C7LN85 | CLIHAG |
| UniRef90-M0D2F0 | EVA GEYEYRC |
| UniRef90-M8ECN6 | TADKAGEFTFNC |
| UniRef90-K2FTX2 | TADKRGTFDFFCSTHSQMKG |
| UniRef90_UPI000467A181 | K F T K G T F EFACLIHAGMI |
| UniRef90-M0L2F5 | RFDHEGVYDYCA |
| UniRef90-UPI000265 | VFDKPGVF YYCDNNYEYVGVIVVK |
| UniRef90-R9PH21 | DFDHS GVVPMGCNIH D WM |
| UniRef90-B3EN78 | TFDKSCVVDLLCNVHSEMSAFVVV |
| UniRef90-Q1N3A8 | DQEGIVVLGCNI HDSM |
| UniRef90_Q82UJ3 | GTI D F A C PV HK G M |
| UniRef90-I3D0R4 | AFDKTGTFDYYCSIHPDMKGTITV |
| UniRef90-UPI000477AC4B | T F NRPGRFEFACLI HAGM】GTI IV |
| UniRef90-K010Z4 | HFNRAGSFDFACLIHAGMTG |
| UniRef90-K1Y6T8 | KFD $\mathrm{C}^{\text {A G E WKYHNHLLRPGD }}$ |
| UniRef90-UPI00036D7A3F | TFDAPGEYQ\\|VCNIHTKMVSTL |
| UniRef90-UPI00037DFDA8 | APTAPGRYPYYCVYHPGMVGVLIVQ |
| UniRef90-B8FZJ4 | VA D K A GVYP F Y C T L H Q |
| UniRef90-A0A052J4M8 | RFPRQGEVAFGCHYPAGMHGTVKVQ |
| UniRef90-A1B6C2 | T LA HEGFYGDKCSPHMGMVMLI RV |
| UniRef90-A3CSW6 | NGADNYTYQSQT T G |
| UniRef90-A0RWE7 | DTSDAGHYGYYCVWHPWETGSFEVR |
| UniRef90-A0A011R9B8 | KFEQPGSVDFACLVHAGMVAKVTV |
| UniRef90_W0RG85 | EVGTELYQCC |
| UniRef90-B4UJY3 | T FDKPGVIFPYYCTL |
| UniRef90-M5DP99 | HFTEAGIVDFACPLHPGMKGT |
| UniRef90-Q8U549 | TVEKEGAYVVKCTPHMGMDALVVV |
| UniRef90-D7BH40 | VFKKAGTYRIVCNSHAQMFGKIVV |
| UniRef90-C9YCB0 | QFTKAGTVNFAC LHPGMKGAVKV |
| UniRef90-UPI00036279A3 |  |
| UniRef90-H3SHG4 | TPEKPGTYEFFCTDHKDMHAKLIVE |
| UniRef90-UPI000475687D | T ID A E GVY GVK CTPHYGM |
| UniRef90-UPI000465D9B9 | TLDAEGIWGVKCSPHMGMVM |
| UniRef90-D5DDJ1 | KPQNPGTYELDCRYHSGMVGKVIVK |
| UniRef90-G4QFW8 | SFKNEGVVVLGCNIHDNMIGYIYIN |
| UniRef90-A0A011PYA8 | KFDRPGSVDFACLVHAGMVAKVTV |
| UniRef90_G0QGW1 | TFDKSGEFGYHNHQGPQDRGTVVV |
| UniRef90-W4GW00 | LGTIRYSCALYSFMTGSVTV |
| UniRef90-M5TE70 | APIPVDCNI HPWMRAYVVV |
| UniRef90-I0XTR1 | GIYPFYCTLHQEMQQYI RV |
| UniRef90-Q11NB3 | TVEKEGVYDVKCVPHYGM |
| UniRef90-UPI000479B216 | TPEEPGDYSFIC TYHPAMVGTLVVE |
|  | T F EDA G E F R Y A C E P HQ G M K G Alv AlV |

A HAPAHTPAHAQEHAQPERVIEDDAMRFHPDRワPVRPG A HSETQIIE MTPDGFKPQEVSVDPN

AEQEEAAPEGVK LVK IVASNDFTFDQAEYKVKAG


S P TAA AVNSG $\square Q H V A Q E Q \square T F V P F V T A T P K G$
ADETGSDA $\square E \square A V G G F A F G P A A V R V S P T$
ERSTLPPEQKAANDEQVDRELVVIRMGNMRFTPDHFEVVAA G A GQARDAGRT $\downarrow$ TL RMDDMRFTPSHFSVVRG

Y D P DAAVVPSD
ETVGGETDTAVVKMLSKDGGYHESPHVVRVTVGG KATYDFGQPAPAAK ATRSVEVVMADMTFTPKADEDKAG A GAREIVISDFKYTLPGTFAPG DMSTMSSSPNGQPGDPAQVTRTUE』DMMRFTPGEDQVMAGB S G N K VTVVMMGYRYYPD Q $\quad$ MEVNE G EGAALPTPNTVFLARVQTPANEPGATENAMTPTAMRVPAN SAMF GQPGDPAKVTRTDDVVMNDNMRFDPS S DVNVKE G TATATSSPSGSSAPSAATAAAITITNMSFGSP LTVVGG AGEPGDPAKPARTDADAMTEGNGAMAYDPHEVIVKTG TGAPSAE EHVI EMLN K GEKGAMVFVP DVVRAAPG EVAS ASENQLLCTVQSEEKTHVVTNQGYAWSPSSLRVFVG DKKEAAAGGEQAPAAATENAINIEASNWKFNQESFEVKAG

PGKPAEVSRTVAVEMSDDMRFTPAADEVKAG VD A T P TP T T S V VLD Q K S CE Y S P Y VVG A QVG
PADWTTGPEKT VVMQTKGLKFDQEM TVRAG
PAKEFTIHAKPSGYDTKEI RVKQG
A H A K D A T R TVTVTMDSMRFEPPTIAVKKN
A AS GNEAAPAAASSGTVNN EASNWKFNQDTFEVKA G

VT P K A GVA D LIP SNNQKLVIDDQQGKK FTP Y IVTVMQK G

K R T $\square$ LA A VALLTAS GAFA A D H Q V K M G E MVVF E P D F V T A A V G
A A D T L HE V K MLLNMNFEPDFLA A NPG


K A A MPLGAP ASAGAEARAVTVTMGRMDFEPAS L S FAAG DGDGFRFDPAAVWVDYD
$G \square A A K A S R T \square T \square E M S D M R F T P S N I Q V K Q G$
MAEEGSSDNTLNVSATNFKFDQEEYTVQSG
SPARN

| E |  |
| :--- | :--- |
| V | $R$ |
| P | I |

AAEETAGASIKIAASNVKG
GYK WSP Q S IT I E A G
T NPASHSTENTVHMSSMQFVQSSITI KKG
 S P LPVT WA MQA GVQA A D GVFAAA F LP N TI TI DA G NVF EPA I S HVE $\square G$
$K V R V Y M T S V A Y G M T E F K V K E G$
A S S G P V T L E I G S K GL A F D K T E LTV A A G
 $A P \square S P T A N A \square M N Q M E K T F V P K V L V P V T Q G G$ T GSASAEEHVVKMLNMLFEPDFVKASVG
SAGEAGDPNKPARTVKVNMTSIRFTPDNIVVQVG
I $\quad \mathrm{K} L \mathrm{~T} Q \mathrm{Q} D \mathrm{~N} M F \mathrm{~L} P A E V A V N E G$

SAGEPGDPKKPARIVQVTMGETDGKMMFMPMKIDVKK
EVVMT A QV F GF EPNEI R I PR G
S QP S S Q H HEVVK L K E L L G F M P K S L L I K K G
A TVAT QNVEITMMDMRFTPDVIDVQPG
A V VS LD S $\square E$ VG K A


P S R T I E IE M S E M TY E P DRI EVVRRG
AFGYNPDKLEI PAG

PKSETAGLAE GQELLK\TMTNFEFDKSEYRVKAG
PK DHVI TV S DSGF DPRVSTLYP G
P A S WT NGPD QT I TITVVPGLK FD DS EI QVKA G
GK P GDPQKVDRTVA $\square$ AMSDSMRFTPANVSVTKG
AFGMDQFRVKKG

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UniRef90-D1C5T
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UniRef90_Q11G40
UniRef90_M3ZTC0
UniRef90_M8DDW6
UniRef90_C2MIK2
UniRef90_M4X3Z5
UniRef90_H2FWC2
UniRef90_UPI00036297C4
UniRef90_UPI00046FAE80
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UniRef90 H3CIT5
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UniRef90_UPI0003F08C11
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UniRef90_A3X3Q8
UniRef90_H8WE90
UniRef90-B8G2W9
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UniRef90-F4L711
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UniRef90-UPI0004098804 UniRef90_UPI0004098804
UniRef90_UPI00046F66B3 UniRef90_UPI00037E917F
UniRef90_K2QKB2


 E TVRLRNAGRLSHEFVLGKGMPAHHEANALTLEPGRS GEW
 EKVRLVNESGFH DKVRFKNSEEAYHNVMCLNDNPP
 SLID FPNRDK T RHHVYS F S S A TI TWTWT GEGGTHNVVSEDGPLNS GQ P EMGEDVTYEE
 ETLK LVVNEGQLLLHELVLGTAEFPGMEHEEPYMAPGETQTW ETVVRLENRGQVGHEVVLGTPATLDAHAEAMRRHPGMEHEW
 ETVRFVPTGMKPMDHAGMAGMGHAMQHDDPLIEPGKTATW




 A QI SVKNDDSVEHSVTS DAA GKFDVDDEGK




 D TVR LVNTQGMHS $\qquad$
T
ETIHFVNAGKVRHEMTLGSPDMMDHDANSVTVEPGQT GDW

Q NVVFSNKD D DTHHDYSVS GKN RFEFKLKAGDSKMDS
 D TVVT $\quad$ TPT DA GHAETTP GMDPT GGKQRQGKAGKP D TVV WSWEAPPF L NTTPSGTTYEGGPFNSGDTKTKGSFMY


 ETI RF DNAGKVKHELSLLGTEKFPDMEHDEPTVQPGKQGEW
 ESVVWWWEDTEPHRLAAESAELSGERVTGV
STVHFTMTS R R DVVHGFQVAGTNINAMVTPGHDQK




 ATVNFDNDDGVPHNLVYTDSSAAEKDFVGEIITGPATTNY

 E QV R FVT K ENLLA HAVEMKKHPHMEHDDPNGVLAPQKTAEW $M P$ I L K N S D QVAA H D I E DK D L S F K L M S ESSHHSSEPHT TN E $\square$ ETIQFVIVNGGNHTHEMLIGSMAELKK DAKMLEPGEQKEW
 D TVVYF V T N L E Q D F D DP H G F A VGG G A P E M P N L L I M P G Q T F K W

 D K V R WI WK S S TT Q TVVNASTTEAVEGGFSSGMRVKNGVFE H T EVVNLLNS DP MMHNLH SWS IVRNPAFNE GVSGNGKMVK E QI RFI IR NA GREDHTKENLKHGAVMRKHPHMEHDEEIVW SKVRFQLTSS DVVHGFQVNGTTIVMMAVPGEVNHFSY ARVNFVNNDDAFD H HVVRGVPAGAA QFTAKDTAGKPASAEEQV
 QAVL K T DH




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| :---: | :---: |
| UniRef90－UP100046FF3E5 |  |
|  | KFTKAGTFEYSCLIHYGMTGHVTVK |
| UniRef90 H2JPA1 | TPSKKGSYAFVCTYHPDMKGTLTVR |
| UniRef90－W8WTZ8 | TFGQPG |
| UniRef90－K2CMQ5 | KPTKKGVWK |
| UniRef90－F8G | RKTGVFPYTCTLHPTMTGTLSV |
| UniR | DKPGKYLIHCSVHDDMKSYLIVE |
| UniRef90 UPIIO0036060D5 | PKDAKGALDIRCVFHGAMKGWI CV |
| UniRef90－UP100046499D8 | APDQAGTFAFHCKYHSSMHGKLTV |
| UniRet90－19NZ19 | D |
| UniRef90－MONA | DSPG |
| UniRef90－UP | G |
| UniRef90－UP | T |
| UniRef90－UPIO UniRef90－K01N | RFNRAGRFDFACLIHAG |
| UniRef90－KOINQ UniRef90 E4NLD | A D S |
| UniRef90－J31910 | K S |
| UniRef90－C1A | TVPQPGTFAFHCTYHPNMVGT |
| UniRef90－UPI00 |  |
| UniRet90－A0A01 | DKAGEYEVVCTVHANMKSK |
| UniR | YCTLHQEM |
| UniRef90－E6V7 | DAPGEYFYNDCHSPRPTGK |
| UniRef90－E8T | KVDFACTLEAGM |
|  | Y |
| UniRet90＿LO11 20 | EPGEYAFHCKYHPSMHGT |
| UniRef90 Q11G40 | EEGTYGVKCAPHMGM |
|  | 右 |
|  | AGEYKIFCNVHGK |
| UniRef90－C2MIK2 | SAGTYEI CRY |
|  |  |
| UniRet90－H2FV | QAGTVDFACLI HAGM |
| UniRef90 UPIO00046 | KAGEYPYMCTYPGM |
|  | DQAGEFE |
|  | AGVFDFACHFEAGM |
| UniRef90－V6M5B9 | KVDEPGEYKDFCNDHGKMVATLVVK |
|  | Es Gr |
|  | AAAEEAMGCNDDWMSGY V |
|  | EVPGEYYYVCTPHEGMA |
| P10004789 | D |
| UniRef90－H3CIT5 | RFTDPGVYYYSSGYDDDMQGVVKVQ |
|  |  |
| 俍ef90－UP100046 |  |
| UniRef90＿C9YBD6 | QFTKAGTVNFACHYEAGM |
| A3PV7 |  |
| 3PRV7 | GDEGVTRYACLPHQGEQGA |
|  |  |
| UniRef90－UPIO00427DD1B | $V$ |
| UniRet90－V5RSD3 |  |
| UniRet90＿U1QRVO |  |
| UP100 |  |
| UniRef90 F5LKE | NFEKPGKYEUKCILHNDMKSVLVVE |
|  | TFAAPGTFYYSCTPELGMNGVVQV |
|  | VADKPGVHWYYCSLHMEMCGRMLVE |
| UniRef90－Q2SH | TFASAGTFEMACNIEAGMHGDVTVK |
| UniRef90－J9HT67 | Q |
| A3X3Q8 |  |
| 8V | VY YCNL |
| UniRef90－B8G | TFTAPGTYLFICTVYPLMQGKLVVN |
| UniRef90－17KD | TFTEPGTYFFRCDVHPQMTGDLIVE |
| UniRet90－14WS |  |
|  |  |
|  | TIEKPGVYGVKCL |
| UniRef90＿UP100036F63 |  |
| UniRef90＿UPI000371E816 | KFSKPGTFEYSCLIHYGMVGHVTVK |
|  | QFTSA |
| Ref90－UPI0004799D62 | ETG |
| UniRef90－D5E | ET |
|  |  |
| 04 |  |
| UniRef90 E6SM52 | P |
| Uni | FSHHLMTV |
| UniRe | RFGKPGTVDFACTMEAGMVGKIL |
| UniRet90－V3ZV |  |
| UniRet90－Q1PZE4 |  |
| Ref90＿A5EH75 |  |
| ef90 |  |
| Ref9 |  |
|  | TFNEKWTWRYHDHLDPSKFWSI TVN |
| 隹 | TFDKPGLYVFTCKVHPYMLGAVVV |
| UniRef90－UP100047EBA2D |  |
|  |  |
| UniRef90＿UPIO004098802 | YFKQPGTYQYVCTFAPGMQGKLKV |
| － | FWY ACSLEMEMAGRMI |
|  |  |

UniRef90 G2DS39 UniRef90 V4XS10 UniRef90-MOAVD8 UniRef90_UPI00047DE785 UniRef90 F8GEN6 UniRef90-D3SZJ2 UniRef90-X1CUZ5 UniRef90 A2TQJ8 UniRef90 W4EAK2 UniRef90-N1MW42 UniRef90-B8G4M7 UniRef90 UPI00047AFF29 UniRef90-UPI00047E6F8F UniRef90_NoGJD7 UniRef90-14EVG6 UniRef90-UPIO003828029 UniRef90-U1QAN6 UniRef90-A8LM18 UniRef90 J3EVNO UniRef90-Q21T87 UniRef90-W4LGN2 UniRef90- UPIO00367154E UniRef90-UPIooo395BB3F UniRef90-UPIO003664478 UniRef90- UPI00035F1637 UniRef90 C1A861 UniRef90-HOHUH9 UniRet90-E6TYW1 UniRef90-N6XQ28 UniRef90-Q2V9F4 UniRef90-K2G0L8 UniRef90 UP10003649033 UniRef90-UPIOOO3EC4297 UniRef90-UPIOOO47D4F69 UniRef90-B6UUX5 UniRef90 F3KM03 UniRef90-E1VXH7 UniRef90-A1 W934 UniRef90-N6Z929 UniRef90 V5RVE9 UniRef90-L9YTZ UniRef90-K6DF61 UniRef90 k7YJ40 UniRef90-K5A7LO
UniRef90-12ERY2 UniRergo-KG4 UniRef90 K60FL1 UniRef90-12BZ91 UniRef90-G0J6J3 UniRef90 UPI0003B7B643 UniRef90- A3QIG8 UniRef90_UPI0003FAB91A UniRef90 UPI00047C2150 UniRef90 KoCL92 UniRef90_UPI00037959DC UniRef90-UPIO0037E5999 UniRef90 W5Y3R0 UniRef90-Q1LQU1 UniRef90-UPI000468D6F2 UniRef90 M0E9B4 UniRef90 S2XEI8 UniRef90-UPI00037D8951 UniRef90-H8GGT8 UniRef90 Q5NZ01 UniRef90-UPIO0041E34DE UniRef90-NobBE9 UniRef90_UPIO003593E97 UniRef90 UPI0002889B94 UniRef90-K2B9G4 UniRef90-10AHV3 UniRef90 UPIO0035FF45C UniRef90-UPIOOO36E9F3D UniRef90_13D533 UniRef90 Q1IUK9 UniRef90-UPI00047D7D3C UniRef90-13ZDH1 UniRef90 UPIo0047E41A2 UniRef90 K7XS94 UniRef90-F2UQE4 UniRef90_Q51705 UniRef90 DOMKI1 UniRef90-W2U3C6 UniRef90_14VI23 UniRef90 H2YQB3 UniRef90 B6UUZ3 UniRef90_UPIOOO363813D UniRef90-C9Y9G1 UniRef90-B9L2D4 UniRef90-J5Y4E1


1
10

 S S K V S R T I K LTT QVD NMF LDP S EIVKV S E G $\square \mathrm{P} V \mathrm{~V} \square \mathrm{Q}$ F F $\square$ A K A T T H T $\square \mathrm{S} \square E$ AKKYGYSPSRLVVNQG GNDQMKYDKSELVKVKAG A A A GSNLTAEEELVITATNYSFDQPEYHLKKG
 ATPPAEIVMTMQAFQFTPGDIDEIPAG

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

A S A A Q A T R SVEVVMGDMTFSPKTDDI KAG

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

 E MITDDS GNYFKPK TVVAKPG
$\square P K$ K QLEDD DGG MV F E P A S L S I K K E G
 SEADEKSESKTYMI STTSTWFS PS TLTTIK S W
$T N Q G F D R V Y G Q G N A W S P A S L T V F V G$


EPDPASSEQN】AASNAPVQRDQVEAKDMAFTPNVIDEVABG A GEVVKGAKRTITLDDMRFTPSHFTVVQG
$G V A G D A E Q V S R N L E V V M T D D M R F T P A A V K V S E G$
T S TAGKAEKGP $\operatorname{CT} \| V Y$ T DNGFQSPTYKVAK G

VE GNKVTDNMTSVRFTPDNIEVQAG DKELVI KATNFKFDKSEYRVKS G
SASEAEEKDAAVI NDK A M K F DK K E F S V V P A G T G QPGTWAQNVNPNSKTYTIKITSAWFDPFKLTIKAW


$K V R V Y M T S V A Y G M S E F K V K L G$

D T GVAS S D Q T S GA A E G GE Q V V V V
VD RVVTVTMNDMRYEPSAVTIVKEG
DAAAPRVIPMRARRFVF $\quad$ PP R V
GEPGDAAH $\quad$ TRTVR VDMTMMRFTPAQUTVQR G PELQLREG
T S S $\square E T$ T G DVAP T GEVEVTVTANDMTYTPNVIVANPG


$T-K$
A P REYKVD L LDRTFSPMILLI QEG QK IEVVMNDDYFNPKAI TI PNG
STGEVVEDHMK I LQ D Q WK WEP D T 1
T S S S A A M A A D $\square \mathrm{P}$ Q V K V S V T D R Q C
V T $\square \mathrm{K} \square \mathrm{L}$ S Q A P A F S L R E FK V K K K
TVP P QAVTLDQHGCRY DKHVTAALHVN
E V V MVL E L Y R F TPA DI E I PA G
 A ASEEPTEEAPAEEIVITVVNFEYEMPDSSVAG T Q S K D P A A P VA G GEKVVRNGNRVFNPEHVE IK K G
 PAATRPGEER $\square E R R G N T V E V W M T A F T P E H V E V R K G$
 VT M A S T S QLT CDT S S S G TH T DT N K GYA WNPS Y LIE I E VG K V TVHMAS IAAFS LPEFTVKRG



UniRef90_G2DS39 UniRef90_V4XS10
UniRef90_MOAVD8 UniRef90-UPI00047DE785 UniRef90-F8GEN6 UniRef90-D3SZJ2
UniRef90
X1CUZ5 UniRef90-A2TQJ8 UniRef90-W4EAK2 UniRef90-N1MW42 UniRef90-B8G4M7
UniRef90 YPIOOO47AFF29 UniRef90-UPIOOO47E6F8F UniRef90_NoGJD7 UniRef90 ${ }^{-14 \mathrm{EVG}}$ UniRef90-UPIOOO3828029 UniRef90-U1QAN6 UniRef90-A8LM18 UniRef90-J3EVN0 UniRet90_O21T87 UniRef90_W4LGN2 UniRef90-M0EON8 UniRef90-UPI000367154E UniRef90_UPIo00395BB3F UniRef90_UP100036644787 UniRef90-UPI00035F1637 UniRef90-C1A861 UniRef90-НоНUH9 UniRef90-E6TYW1 UniRet90-N6XQ28 UniRef90_Q2V9F4 UniRef90-K2GOL8
UniRef90-UPIOOO3649033 UniRef90-UPIO003EC4297 UniRef90-UPIOOO47D4F69 UniRef90-B6UUX5 UniRef90-F3KMO3 UniRef90 ${ }^{-}$E1VXH7
UniRef90
A1W934 UniRef90-N6Z929 UniRef90_V5RVE9 UniRef90-L9YTZ1 UniRef90-K6DF61
UniRef90-K7YJ40 UniRef90-K5A7LO UniRef90-12ERY2 UniRef90-K2G476 UniRef90-K6QFL1 UniRef90-128231 UniRef90-GGJEJ3 UniRef90-UPI0003B7B643 UniRet90-A3QIG8 UniRef90-UPI0003FAB91A UniRef90-UPIO0047C2150 UniRef90_K0CL92 UniRef90-UPIO0037959DC UniRef90-UPIOOO37E5999 UniRef90_W5Y3R0 UniRef90-Q1LQU1
UniRef90-UPIO00468D6F2 UniRef90-M0E9B4 UniRef90_S2XEI8 UniRef90_UPIO0037D8951 UniRef90-H8GGT8 UniRef90-Q5NZ01 UniRef90-UP100041E34DE UniRef90-NobBE9 UniRef90_UPIO003593E97 UniRef90-UPIIO002889B94 UniRef90-K2B9G4 UniRef90-10AHV3 UniRef90-B2VFF5 UniRef90OUP100035FF45C UniRef90-UPIO0036E9F3D UniRef90_l3D533 UniRef90-Q1IUK9 UniRef90-UPIO0047D7D3C UniRef90-l3ZDH1 UniRef90-UPIOOO47E41A2 UniRef90-K7XS94 UniRef90-F2UQE4 UniRef90-Q51705 UniRef90-DOMKI1 UniRef90-W2U3C6 6
UniRef90 14 VI 23 UniRef90- 14 V 123
UniRet90 UniRef90-B6UUZ3 UniRef90-UPIOOO363813D UniRef90-C9Y9G1 UniRef90-B9L2D4 UniRef90_J5441
UniRef90_K2F6MM


QNVINIIKNNSGRKLLEWETLKGVMVVDERENTAPGLSDKMTV TTVTFEWTGNGGAHNVQTVDGGGPASLDSPVGEEGATYEY

 VPVKFENESGM
 KEVTVTNKGADEHTVGDSFGDEDEENDYWEVVKPGESTTV


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ETVVRLVNKGQLLHEFNMDHGAMDHGMPNSVLVEPGKTATV







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 D RVVVLV $D N V Y F H V T N L E Q D W D \square P H G F V V K G M T N S E L L I M P G Q T K S W$

 QDMKVTNSDPTSHNI HPGAKTNREWNKSQPPGSPADLA




AEI I FK
D TVV ITNDVD S $\quad$ E D
D DV NFIWNAE GMM DGLYTTADAVSMNHNDDGAPSDS
DEVTLTNHDKV EDVTHGFGLEKHDIN NIVNPQ Q Y K M
 A KV R F A N S D P WNH HV R L S TP GAAP GASDGQDGKAASAAVF



| UniRef90 G2DS39 |  |
| :---: | :---: |
| UniR |  |
| UniRef90 Mor |  |
| UniRef90-UPI00047DE785 | CS $\\|$ HagmVGT |
| UniRef90-F8GEN6 | PMRGT |
| UniRef90-- 3 SZJJ2 | EFTEEGMAEYYCAPHPQM |
| UniRef90-X1CUZ5 | VAGKAGKFTFRCTLHPFM |
| UniRef90-A2TQJ8 | TFTEAGTYDFDCSFHSGMK |
| UniRef90-W4EA | \PEEAGTFEMTCADHSGM |
| UniRef90-N1MW42 | KPGLYGIK ${ }^{\text {cm }}$ |
| UniRef90-B8G4M7 | Q |
| UniRef90-UPI00047A | TFDEPGEFLILCNGHQMM |
| UniRef90-UP1000047E6F8F | EFEQPGDYQFVCSFHTGQVGTMTV |
| UniR | TANEPGEYDMTCGLLSNPKGKLIVK |
| UniRef90 14EVG6 PIO003828029 | TAERPGDYQYECSFHVGQI |
| UniRef90-U1QAN6 | SGIWLYHCSTKPGMYGA |
| UniRef90-A8LM | PGVYWYYCALHMEMRGR |
| UniRef90-J3EVN0 | ATNLEFACNIHAGMVGKL |
| UniRef90-Q21T87 | KPGRYAFVEEYHENAQGT |
| UniRef90-W4LGN2 | TPTETGTFRMFCS |
| UniF | VFEEPGDHEY |
| UniRef90-UPIOO | QUDPPGPISLICDIMSQM |
| UniRef90 UPI000395BB3F | HFNRAGNFDFACLIHAGM |
| UniRei90 - UPIO00035F1637 | A G M |
| UniRef90-C1A861 | PVTMPGTYFFQCDPHAGMVGHV |
| UniRef90-HOH | M |
|  | HKGM |
| UniRef90-N6XC | SPGVFWCYCTLHLEMRSRMIVE |
| UniRef90-Q2V9F4 | NSGNTM |
| UniRef90- UPIOOOZ | SSPRGKLRV |
| UniRef90-UP | RFTAPGVYYY |
| 00 |  |
|  |  |
| UniRef90-F3KM | ENAGFYR |
| UniRef90-E1VXH | NRAGRFDFACSI |
| UniRef90-N6Z929 | RAGEFEFAC |
| UniRet90_V5R | TPTKIGTWTFHDHLLHSERTGTLRV |
| UniRef90_L9YTZ1 | Y |
| UniRef90-K6D | DKPGVFPFYCTLHQEMQGYMLVK |
| UniRefo-k5470 | C |
| UniRef90-12ERY2 | GDYP ${ }^{\text {FVVCT }}$ F PGMNGV |
| UniRef90-K2G476 | QKWSWWFHDHWNRELTT WT |
| UniRef90_K60FL1 |  |
|  |  |
|  | E |
| UniRef90 UPIO003B7B643 | DKPGVOWYYCNLHM |
| UniRei90-UPIO003FAB91A | TEPGTYDYDCSFPGMKGKLIVE |
| UniRee90-UP100047C2150 |  |
| , |  |
| P10003 | A G T F M |
| UniRef90 UPIOOO37E5999 | AGTVDFACHEEAGM |
|  | AGA YGY LCDIA GNMSGAI EV |
| UniRef90-UPI000468D6F2 | ACHFEAGMRGAVQVR |
| UniRef90-M0E9B | DVAGYQCTPHAGMSGTVDV |
|  | Q |
| Uni | P G |
| UniReef90-H8 | EVKKEGLYVFKCPPHWGMGAVMLV |
| UniRef90- UPIO0041E | TFDEPGEFWVYCGIHQLMGTTMTVK |
|  |  |
| UniRe | YFYDEAAEY |
| Uni | SGTYELIDCRYHEG |
| UniRef90_K2B9G4 | EFTPPGKFNFYCSV |
| UniRef90-10AHV3 | KPTKPGVYPFYCTL |
| UniRef90-B2 | EP |
| UniRef90-UPIO0036E9F3D | KPGVYWCYCTLHDEMRSRMLVE |
| UniRef90-13D | TLSDAGFYRLYDPDYDWM |
| UniRef90 Q11UK9 | QAEF $\mathrm{l}^{\text {PVKCNDHPWM }}$ |
| UniRef90-UP100047D7D3C | EPGEYLVLCNGHQFMATI 1 VK |
| UniRef90-3ZDH1 | F NKP EDYPVKCNTHDWMHAF GVV |
| iRef90 |  |
| UniRef90-F2UQE4 | G |
| UniRef90-Q51705 | ANPGVYWYYCAL |
| UniRef90_DOMKI | YCT |
| Ref90_W2U3C |  |
| UniRef90_14V123 |  |
| UniR | K |
| UniRef90-B6UU | O |
| UniRef90 UPIO0036 |  |
| UniRet90_C9Y9G1 | TMDKPGAVGLGCF HSRMGGA Y |
| J5Y4E1 | KPTEVGVWPFYCTLHQEMQGYI RV |
|  |  |

UniRef90 U2EOM3 UniRef90-LoJMX2 UniRef90-UP100041CA4FD UniRef90-UPI0003764B41
UniRef90 B8R093 UniRef90-B6JJY5 UniRef90_14W6X4 UniRef90 A0A024FGW1 UniRef90-A8BFS3 UniRef90-K7XRW8 UniRet90_W4LIG2 UniRef90 ${ }^{-}$K5UZU8 UniRef90-F4L633 UniRef90-ALIP4 UniRef90-J0X174 UniRef90-F4B138 UniRef90-U1VOV4 UniRef90_L8JTE8 UniRef90 L9WHW1 UniRef90-JOU9G2 UniRef90-LODRQ5 UniRef90_E4NU60 UniRef90_A6GP86 UniRef90-W6GTJ5 UniRef90-M4ZF49 UniRef90-Q9L912 UniRef90 ${ }^{\text {Q2IN61 }}$ UniRef90-UPIo0046958BC UniRef90 K7XLU7 UniRef90-UPI000468282F UniRef90-K7XLR4 UniRef90 W7LB99 UniRef90-F8D541 UniRef90-UP100047EDB7E UniRef90 E8WZ59 UniRef90-HOBSG1 UniRef90-LODUNO UniRef90-A0A011 U8B1 UniRef90_UP100034DB18F UniRef90 Q30R05 UniRef90 A4IN13 UniRef90-V5SCW2 UniRef90-UPIO00365C8E7 UniRef90 L1PMT4 UniRef90_UPI00045E7A5A UniRef90-S3B2R0 UniRef90_A0A021XFG2 UniRef90-G1Q2W2 UniRef90-UPIo003FDCD6D UniRef90-TOJU37 UniRef90-UPIO003B2E26D UniRef90-UPI00047CB067 UniRef90-DoCP66 UniRef90 ${ }^{\text {W }}$ WKKUJ5 UniRef90-BOUVU9 UniRef90-G7ZD37 UniRef90-UP100037A1CFA UniRef90-UPI0002EED6B9 UniRef90-A3QPG9 UniRef90-M1Z1G0 UniRet90_WoSHM3 UniRet90_B8GM53 UniRef90-K9A1D4
UniRef90 K9T3H2
UniRef90_C2FZB2
UniRef90 MoDW59 UniRef90-UP10003B4CD97 UniRet90_A5W6E7 UniRef90 C4L7G9 UniRef90-Q6VV04
UniRef90-K7X755
UniRef90-S5UJ82
UniRef90_C6W4B2 UniRef90-UPI0003640AC9 UniRef90_B3QDW5 UniRet90_A3VEH5 UniReffo-A9Y304 UniRef90-M0M5K8 UniRef90-G2MJ29 UniRef90_Q67JL3 UniRef90-S8A7U6 UniRef90_UPIOOO328D949 UniRef90_F9ZKR3 DD GQPPENAGELGTPAEAVT DTANSRPYEFDPQUVHVVPG

EAVMTAFVFGFNPPQIVVPAG K V T I N M T A I R F T P E HVVVQE G $P A R \| V Q V T M G E S D G K M T F T P D K V E V R K D$




VTMTVTEAK $\square$ TVAE GFTQTVMRYNGTDPPVLRGKDG KEAVK $\square$ GSKKAATKADENTVNLALAGMKYDKSELKAKAG

A A P A S K A T R TVVVVTLQD $V$ S F S P K S L D V FYFEPVGLAVESG
PPAGSGAAPTLVAPSPVIEQEKMRFVPAVTVVVPG E Q MLLF DKAE RLLA V K A G D S TVEVNMSSKRFGLREFTVKEG A G T P T K I
 MA GSPGVAK DVSRTMDLSSMDDTMMRFTPK SMSVKGQG

 APAAKATRSIEVVMGDMTFRPESLEVKAG NVTVVMTA DR S H FTP E H V E I K A G ANEIVLTVVHPSKFSYDPSEITTLKKD EDGRAHVKMYSTRNEFGLHEVTVQEG
 GTAAKVTHKI TVNMDDMRFTPSALQVDKN $K \bigvee R V Y M T S L A F G L T E F S V M Q G$

E Q G QLIFSSPNEL K FSAG $P T V V Q V E A R Q R E R G T V N K G$
P F ER P A H A A D
PTVVQVEARQF AF GLL A F GLL E T F S V $V$ K Q G
P S K P F R VQE $\square$ T $\square$ S EK D GAMLY EPA


 NPERワTVNKG A A GSSSPAATASEE IVI KASSWEF DQAE YVI P K D Q THTVTNQGYAWS P S T TVMASVGG A N A S S QA GVF QA A $\square$ T A A P VK IT MA GWA YNPP QIEVYE G $A F G \square E E F T V K Q G$
ETPKKSAVIDQ $\square$ GCMYSPHVFGIMKG A VLPAVSVVSSDAAAPRVIPMRARRFVFDPDRLKLKAG AVQAGTESVVRTATDAVTVNMTVDRSAYTPDSFEVKAG AS GEFVLDQTKCRYAP HVVAMPRG $K$ VRVY M T S VA F G L D H FR V K L G QEAVI MVEP FGYTP ENVKVKA G


ATTSND TTDESNDAMQYSTGELRAKAG A P A A QATRTVNVVLKD $\square$ AFEP K S L Q VK A G TAAPTETEFVAGKKTTVWAYNGSVPGSLIVVNEG
 Q F S MPVIKVKKG ETATNTAASPASWTKGPDQVVT ITVPGLKFDVSEIVVKAG K AF GEPGDPKKPSRTVEVVMETDDGKMLFEPDSDTANRGB VNRT $\quad$ TEVAMKEMKFDPKT IVVEPG $K A T V Y M T S M A F S$ LTEFKVKQG VT A S S GMT QT $\square$ T ND GRHETY G $\square$ G YA WN P S N VE I E V G ASTVERDDDSTVEVKTSVKRSEFGDRDFTVQEG TVEMGIGEMKFTPDVLEATKG APEAELVIKGSNFQFDQAEYHLKKG VAPAATTSSPMSQATHTVVVGAGGDVFSPDTDTADMG $T N N G K D S V G L G Y A W S P S V L V S V G$

S GHIT V VGKEFQYSPSR\|HVEKG
 NSAS $\square T$ QEEVDVSNEQTP K $\quad$ VQMK VTEHGYSPNVI TVVKK G MRFTPAASVK Q G
$K V R V Y M T S V A F G M E K F E V N Q G$

## UniRef90_U2EOM3 UniRef90-LOJMX2 UniRef90_UPI00041CA4FD UniRef90_UPI0003764B41

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UniRef90_UPI00047CC458
 GTVEWL VETGRHDVTGYHEDSHGPHRTPGSVEPGSEYEH DTVTLVNDGAMGHSVDFHAGAFPDEPMRTMPPGEQSTYTF SKVTFISTSKESDVVHGFEDPGTNVNMMVEPGHVNKVTQ EQTKFVLRNNGEDDHEFILATTADNVKHAEAMKKNPDMEH DEVVFRNSDSTRHHVYSFAAD RTFEFVLRPGESSPAL QRVKLTMHNGKDDVAKDNGY1PEGTDETKMIGGGQDTTI
 AQATFQNSDTVDHNTFVHDEDAGVKFDIGLMSPGGSVQQ TVVTFVFGSSIGHSVTQTSFANPEGGFSSGIVNAGNSFSV KTVEFENPDAMQHNLVIGKPDVADVLFSSVLVNPDQTIILL DVVTLVNKGSMDHSLDFHAGDDAAPDKAMRSVKPGKSLAY QEVTLTFRHTMGHNFVLLKQGTSDPEFHTKMIGGGQTTSV ETVRFVNKGGKMDHAAMGHGAMKHDDPNSVLVEPGKTATW DVVQF NFNSPDHAVTTFHEAFGAEALSSPMMAVGTNWLA TTVRFTNQDRWDHHVPAASAAPGTGGFELRLGKPSNFADV KPVEFENNDLMPHNVVVAQPGTGEEVLASRLLQPRETQTL胃 DTVILTNGDKVED VETHGFADPKYNVNFICNPQETKSV ETI RFKNNGKLPHEFVLGTMQHSMPNMUSDAPNQKSAVLW ATVTVVNDDSMAHSVTYTPGGVDGVTFDTHAFNGVRTFTV DHVVW HDSSIETSDDAIHGYTLGGYNVSLSIEPGETTTF ETVRFVNKGSGMLTPTAVKDMAAGGMDHSAMVEPGKQATW

 DTVTVTNLDQUKEEVAHGFAQDPDMEHDEPTLAPGKQGEW DTVEVHSDSVMPHSVDFHAATGPGGGADFTQUAPGEEAVV KKYKLVLDNPSPEKHYFTAKDFADASWTQKVLKPEGLAEW DEVVTFTNLERAQDEAH
 DTITLKNEGTMGHSLDFHAGDIAPNE AMKTIDPGQTLEY EQVKFVITNGGSLKHEFHLASVEQNANHRIEMQKNPEMEH

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TNLE AQDETHAFTVSQHDVHVS MVN LEPGKTGSIV

## PV

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 ETVVRFVNTGQQFIWHEFNDGTDDTWDGHPNSVLLLAPNASTASEW









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T A HRPGVHWYY CALHMEMRGRMLVE TFDTEGVYDYVCTSHAGNVGRIVV
TATRA GUWMYHCSTAPGMYGAVVI E T F NKPGEY L I LCN GHHMMMGKV I V K TFTKPGTYPYYCT
K F T K R GTF EYS C LI H A GMMG T VVVK


E IT E NQUVRCGCKIHPKMRDWI

 TFSSRA G $\square W M Y H C S T A P G M Y G A V V I D$
 EPQRPGITYPFYCTQHQEMQGY I R V

 TFNRS GEFEFACLIHAGMRGPLRV TFDKPGVFWCYCT
KA QKPGRYEFFDDFHQGNKGTLIIEE
KF DKS GTVSFACLVHAGMVGEVVVK $P$ A A A A GTVV Y Y C S TH L G
KFANE GTFEFACD LHSSGMHGP $\square$ TV
EFDATGTFPFYCT
TFSK G G S L E FACN $\square H$ A GMVGK LTV

T F TE P G V Y WMY C A F H L L E M R S R L I V E GP LDD P GTYDFFGEFHEEAKGRII AK



 T F E KP GTY QVYC GI H HVVMTAT ITVV
 T F T A A G I WM Y H C S TH P G M T GA VI I RFSKM GEFEFAC LIHAGMHGKAVVK TPEK A GTY N I L C S I H S T M T A K L V V E TF DKPGVYWYYCSMHMEMKGRMFVE QF T S PGIN Y Y
TP DKA GEFEMSCSVVGSMDSKDIVE KFTAE GVFP YYCTLHLEMMGYL MV K VF VIE P G E Y EF I GEFHD T A K G KLIV E

 RF GSAGTYWYHPHPHK GLAGTLIV K T A DRPGVHWYYCA LHMEMGGRMLVE T F K K $\square E D F Y \square K C D V H P W M K A$
TA GKPGSYGFLCDIHENMS GLIEV T F GKP GVVYWYCT

K F D K E G V Y P Y Y C T L H L E M M G Y ML V K

 THETEK GVVYS F ICCSFHFGMQQGKIVVAE
 AMNHEG
RFTSAGTYWYHPHPHEY
K A SRPGVY WY Y C S
K F DK P GTY Y S Y C T
T F DK P GVY WF Y C S
A P K QP GTYQYVCTFHYSMQGKLKV
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TFDKPGVYWYYCT
TFNKAGDYFFACS I FMRGK VVVK
T F T TP K T G S Y VCEV HPSMR G
TFTKP GVY WI YC T Y H L E M R S RMIV E $K$ VT Q S GEH DI DC DVHA GMVGKLI V N TPD K A GEFEVSCSIHSKMIVSKLIVE $\frac{1}{\mathrm{I}} \mathrm{V} T \mathrm{~T}$ S DPQY FYCAGHLGMVGVI QFT S P G I H Y Y
TLT T P GL Y VF T C S I H P F MF GAVI V
$E F T K A A T Y P F W C T V Q A G M T G G V E V$
AFTKAGKVDFACHYDAGMKGSVNV
TP TK T GEYTFSCG MGMKGTVVVK QF T K A GEVVK ACHYDAGMKGQVTV


UniRef90 F2U924 UniRef90-A7HOS? UniRef90-UPI0003B4D8C8 UniRef90-Q5LLH7 UniRef90 G9AF91 UniRef90-Q67RG7 UniRef90-K7YIV9 UniRef90 L1M7E4 UniRef90 UPIO00382C0E UniRef90-F8A0ZC UniRef90_Q3ISJ6 UniRef90 D2S687 UniRef90-UPIO00478B9B5 UniRef90-N4WM31 UniRef90 D4GV39 UniRef90 ${ }^{-}$RocJI7 UniRef90-A0A011 ACM0 UniRef90-M5APP9 UniRef90 14C1E2 UniRef90-F1QXX9 UniRef90-MOMZ26 UniRef90 S3X963 UniRef90- UPIO0037E2628 UniRef90-J4WYH9 UniRef90-UPIOOO33460E2 UniRef90 F9NY04 UniRef90_UPI00046AC9E0 UniRef90_A4EUR9 UniRef90-A0A011V877 UniRef90 D3POZ6 UniRef90-UPIO00479964B UniRef90-V4Y5E9 UniRef90- 55 S5J3 UniRef90-13D451 UniRef90-F3KLD7 UniRef90-K9GNS5 UniRef90 Q6VUVO UniRef90-H1ZDL5 UniRef90-UPIOOO30A854C UniRef90 B7AAE2 UniRef90 A7SHH7 UniRef90-A6F8B5 UniRef90-UPIO00479006E UniRef90 S9PHX8 UniRef90-UPI000288E2D9 UniRef90_D3PT01 UniRef90 UPIO002891C01 UniRef90-A4QHY7 UniRef90-A0A022L421 UniRef90_UPIO0036B5A35 UniRef90 F9U858 UniRef90_UPI0002EAD764 UniRef90-A9WFS1 UniRef90_UPI0001E892D6 UniRef90 U4KBD9 UniRef90-M5A6F4 UniRef90_C7MAK2 UniRet90 UPI00036F6084 UniRef90 ${ }^{-}$K7XLN5 UniRef90-O8FLUO UniRef90 M7X0C6 UniRef90 J8IQ85 UniRef90-M4K864 UniRef90_S7XDK7 UniRef90 A7HPY8 UniRef90-D5WT89 UniRef90-K7XSI3
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UniRef90-A0AO23JCH6 UniRef90-G8MEY3 UniRef90-UPIOO037C2A26 UniRef90-UPIo0016A53BE UniRef90 W4B604 UniRef90 Q0CTI9 UniRef90-B6VAQ8 UniRef90-UPIO004798D88 UniRef90-UPI0004195C46 UniRef90- UPIO003804A1F UniRef90-H6VUE8 UniRet90_R9AE96 UniRef90 L9P9Q4 UniRef90-10WBY2 UniRef90-V6AV58
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UniRef90 A0A015KJGO UniRef90 ${ }^{-}$E1VFI9 UniRef90-EOYM99
UniRef90_V6ATX6 A DSAAVAATGETTTVVQSAQDMRFVPDTVTVMAG
$K \bigvee R \vee Y M T S V A F S L E K F T V K$ Q G PAAGKTPELDNEKCRFVPEVQVIAPG AAGKTPELDNEKCRFVPEXVIVRVARG


TLI L H G Q A F QPA S I
$A T T E E \square A E V E P G V T F Q Y M T F V P P M V R V R E G$ AAPSSGPALGTVTTAPDGVQETQDDYVFTPSTFTVAPG SASNNGT IDDTASNWKFDQEEYTVVAC G $D V Y \vee V A R Q F V F E P G T L R V P A G$ PTVI RVVARKFTFTPDKITLKRG
 TGGAE QPTFSFVIDPAGA GVD $\quad$ GENLD LDPA QI TA Q L N

T NQGSHSVYGQGYAWSPSALITSVGG
$L$ E V G V
 A ATEAPATNQDAEAANVTLEATAMTNNDKEIVKVKAG

A P TGHT TKVTVTAKAMRYHPS TI TVVAG



| $T$ | $V$ | $P$ | $\square$ | $E$ | $L$ | $R$ | $V$ | $V$ | $T$ | $E$ | $F$ | $K$ | $Y$ | $E$ | $P$ | $N$ | $V$ | $L$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $P$ | $P$ | $A$ | $G$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

T G G TAAVAP T GTEEVVTVRAVGMAFDPAVVVEVAG P ELVVVK S G PD FTVK S G
PEAAADVIREGNKVTS QAPMFSLDEFEVNQG VTVHLAA GAPQFSLPEFKVKRG
 RSEGPWADPAAVVQTGPNQYTVYVLAFSYQPNPIVVPKG RVT A A SETSVT CVVTPDSKTVTVDNSGYGWSPKLVLITGQG
 T R S AVVDQK QCSYTPRVQGVASG A ENVTIVATNYQF DQTEYRUKK G
$E Q V G N E Y V A Y V Q A F A F G P A E M R F K V G$

A F G L E N F R V
QT VIE T A GMKY S P B A A V E R S IVEV TA TEMR F D P D R V EAR T G

TAESATYEYT $\square P$ V G A G VA LDEGT P L

 APMPSGAGTGSLVGGPGQVVVKKGDLRFVPFNTVASPG FAESDAVRQPI EVE $\quad$ DNDDYFNPSTFTVKK




VTYQYMTFEPPLI RVRRG


TS GADFPS DAK YE I D QK GCHFNP H V R R L $L$
APEAE LVIKGSNFQFDQEEYHLKKG
TSSSMGTSTPSAVQTVDVGEHGFSFDPDTLQVAPG
 A QIR I K Q G
S GPAADAQVLTWTANDDMTKYASAPSTVAVAGK A GATRQSNKVVVRMVAVRLTPTSFEDKNG T A P S P T T K YVVS Q GVLRFVP FAMQADVG

A GDTAKVTRTVTVDMNDMRFTPASISVKEG | $S$ | $F$ | $I$ | $R$ | $T$ | $R$ | $V$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $D$ | $V$ | $T$ | $V$ | $K$ | $S$ | $G$ |

ATVSEEEAKVVRNGKDVHVNMAS DRSHFSPDNIEIVNG LTS DSEVIVRDSADPSKVRVYMTSTAFGLDSFTVKQG D K V $V$ R $V$ V M S S Q A F S S L DAGNKVFEPPNFDANVG
$K \boxtimes T \boxtimes R \square T S M A F E P R E F R L K K G$ $P \| \cap A R Q G$

## UniRef90_F2U924 UniRef90-A7H0S2 UniRef90_UPI0003B4D8C8 UniRef90-Q5LLH7 <br> UniRef90_G9AF91

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UniRef90-UPI000478B9B5
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UniRef90-D4GV39
UniRef90-ROCJI7
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UniRef90-14C1E2
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UniRef90-MOMZ26
UniRef90_S3X963
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UniRef90_J4WYH9
UniRef90_UPI00033460E2
UniRef90-F9NY04
UniRef90_UPI00046AC9E0
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UniRef90-D3PQZ6
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UniRef90- S7XDK7
UniRef90_A7HPYY8
UniRef90-D5WT89
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UniRef90_MOBCP6
UniRef90_A0A023JCH6
UniRef90_G8MEY3
UniRef90_UPI00037C2A26
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UniRef90-W4B604
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UniRef90-IOWBY2
UniRef90-V6AV58
UniRef90-K7XU47
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UniRef90_E1VFI9
UniRef90-EOYM99
UniRef90_V6ATX6

50
60
70
80
DTVVWQNTGTRPESVTEVRGTDYEG\|IDGYDPPGDRFRY
 DEVVI TNLDDV DDVTHGLCMANFGGA MEVAPQATASV TVVLVNNSANVHS $D T V E L T G N S A N V H S D D L H A V T G P G G G A A S T Q V A P G E S R T F$
$D K V V F T N N D M$
$D$ ETVRFINKDTAMHAAHQKEMLAMAQMDHSKMGHGDMNHTW QRVKTVNQDALP DTVTLVNDGSUGHSDDFHAGAAPDDVMRTDAPGQEGTYRF


$\checkmark$
. E TI Q IVVN NDD D R A H L L
 DTVVWRWDAPAFFSVVNPSSTVYDGSFSSGDRQTKGFFAY






 NQVTLTNDDAQAHDLKMASG



## 

## A


 QPVVVFENPDAMQHNLVIGKPTAKDGAEKTPDVNPDESSYG











| UniRef90_F2U924 | F NRPGDVVVFVSDPEYMRGT |
| :---: | :---: |
| UniRef90 A7H0S2 | NFDMEGIFFPYCTLHLEMMGY |
| UniRef90-UPI0003B4D8C8 | DVGVVGELD GWCTV |
| UniRef90_Q5LLH7 | RPGVHWFYCALHMEMRGRM |
| UniRef90-G9AF91 | ELPRPGTVR |
| UniRef90-Q67RG7 | T FKAPGLYI Y H C S P HQGMYGLILVE |
| UniRef90-K7YIV9 | T L S K P GVFV |
| UniRef90-L1M7E4 | TFSNSAP\\|EFACN |
| UniRef90-UPI000382C0E1 | PP L K P GRYK F F N F HP S STGT |
| UniRef90-F8AOZ0 | RS GVWMYHCSTMPGMLGAVVIE |
| UniRef90-Q3ISJ6 | QAPGIHVYHCA $\square$ S A GMFGAILVE |
| UniRef90_D2S687 | TPGEYGFECS |
| UniRef90_UPI000478B9B5 | EFTKAGTFPIYCTLHQEMTGYFLVK |
| UniRef90-N4WM31 | EPGEYTI RCSIHSDMVATLIVQ |
| UniRef90-D4GV39 | QFEEAGEYGILCSGHHVMEGK |
| UniRef90-ROCJI7 | GT F DFLCD |
| UniRef90-A0A011AC | GEYPFPC |
| UniRef90-M5A | G V |
| UniRef90-14C1E2 | K P GV WP Y Y C T L H Q M M GYL IV N |
| UniRef90-F1QXX9 | SPGVYYYSSGYE |
| UniRef90-M0MZ26 | E EMEY |
| UniRef90-S3X963 | TFTEAGTYDFLCTFPAHMQGKL $\mathrm{T}_{\text {PAE }}$ |
| UniRef90_UPI00037E | VF $\square$ K P GRYPFFGEF |
| UniRef90-J4WYH9 | SFKEAGTYDF $\square$ CSFPGMKGTFIVE |
| UniRef90-UPI00033460E2 | G |
| UniRef90-F9NY04 | K A GVT GPTEGWCT】HKSMGM |
| UniRef90-UPIO0046AC9E0 | TP SAPGRYAFYCKSHHGM |
| UniRef90_A4EUR9 | GVH WY Y C A L |
| UniRef90-A0A011V877 | TAKTPGEYQITCG |
| UniRef90-D3PQZ6 | VFNDAGEYEYICSLHATMYGKI TVVR |
| UniRef90-UPIO00479964B | VFDRS GEYEFICDLHAGMKGKLLVK |
| UniRef90-V4Y5E9 | AFTNSGIVDFACHFDA |
| UniRef90-S5T5J3 | D L GVVSAWC |
| UniRef90-I3D451 | TAPGTYYYICTVHAGMQGSFIVE |
| UniRef90-F3KLD7 | T F T A P GTYYY ${ }^{\text {C }}$ |
| UniRef90-K9GNS5 | TADRPGVHWFYCALHMEMRGRMMV |
| UniRef90-Q6VUV0 | T F DKPGVYWCYC |
| UniRef90-H1ZDL5 | EPKQVGVWP F Y C T L H QE |
| UniRef90-UPI00030A854C | DPGEYLI Y C Gl H QVMA T RIVVK |
| UniRef90-B7AAE2 | TFQKAGEYRI DCNGHHLMFGKIVVE |
| UniRef90_A7SHH7 | KFSRTGAYSYTSGPVDVMNGKV |
| UniRef90-A6F8B5 | GVQ WY Y C NLHMEMRGRM |
| UniRef90-UPI000479006E | KFTAPGDYPYDCTF PGMA |
| UniRef90_S9PHX8 |  |
| UniRef90-UPI000288E2D9 | KADKVGEYEI ICNIHASMVAKLIVE |
| UniRef90_D3PT01 | SKPGEYPI I CNGHANMI SKLI VE |
| UniRef90_UPI0002891 | KEPGEYLVLCNAHEMMKTTIIVK |
| UniRef90-A4QHY7 | D $\square$ S EVMDGWCT\HQGMDLEVKVV |
| UniRef90_A0A022 | A GVIGHWCS |
| UniRef90_UPI00036E | G V H Y Y Y C A |
| UniRef90-F9U858 | SFDEEGVFPYYCTLHDEMQGYLLVR |
| UniRef90-UPI0002EAD764 | T L N EVGTYTFYCTLHNGMVGQLVVK |
| UniRef90-A9WFS1 | RAPAPGEYRFYCRIHEAQQGVLVV |
| UniRef90_UPI0001E892D6 | T FKEAGSYLVYCGIH QNM |
| UniRef90-U4KBD9 | TFTPPGTFWYH PHKG |
| UniRef90-M5A6F4 | AFTSEGEFEGS |
| UniRef90-C7MAK2 | GVWLY HCS |
| UniRef90-UPI00036Fe | D FKKPGEYPF $\square$ C |
| UniRef90-K7XLN5 | K |
| UniRef90-Q8FLU0 |  |
| UniRef90-M7X0C6 | TVNDSSTDF Y Y C A |
| UniRef90-J8IQ85 | ETPGTYELICRFHK GMVGKVIV |
| UniRef90-M4K864 | GVVEGWCT $\mathrm{T}^{\text {V }} \mathrm{H}$ R M |
| UniRef90-S7XDK7 | TRS GI WLY H C S |
| UniRef90-A7HPY8 | GTFEFSCNIHSGMKGTI AVN |
| UniRef90-D5WT89 | TFTKPGDYLI LCT G H QLMAA HLIVK |
| UniRef90-K7XSI3 | A |
| UniRef90-A8U181 | EFTARGCHFYHCHTHKGLYGAF |
| UniRef90-M0BCP6 | RAEYPG】FDYHCAISSGMFGAILVE |
| UniRef90-UPI00035E52A5 | TFPKAATLQMACLI HAGMRGSLTTV |
| UniRef90-A0A023JCH6 | T FEKPGVYWY Y C |
| UniRef90_G8MEY3 | TFAKPGEHLMPCTGHQNMWAHVKV |
| UniRef90-UPI00037C2A26 | \KKAEGPVPVKCDVH GWMK |
| UniRef90_UPI00016A53BE | RFTSAGTYWYH |
| UniRef90-W4B604 | TPDKAGEFEVSCS ${ }^{\text {P }}$ S K M I S |
| UniRef90-Q0CTI9 | TVNDT T P DWYYCGGHA G M |
| UniRef90-B6VAQ8 | T FERPGVHWYYCALHMEMGGRM |
| UniRef90-UPI0004798D88 | TATRAGIWMYHCSTMPGMYGAVV |
| UniRef90-UPI0004195C46 | EFTAPGTYWYHSHVDKGLYGTLIVE |
| UniRef90-UPI0003804A1F | EVTTPGTYKYHCTIHQQMTGTLVV |
| UniRef90-H6VUE8 | T FDK S GVFP Y Y C |
| UniRef90-R9AE96 | TVDT T DPMFYYCPVHS G M |
| UniRef90_L9P9Q4 | FGKTGKVDFACHFEAGMKGQVVV |
| UniRef90-IOWBY2 | NFKNPGLYVYHCATAPGMYGLILVE |
| UniRef90-V6AV58 |  |
| UniRef90-K7XU47 | KPTEPGVYPFYC |
| UniRef90-B8XLG0 | K A D R P GVY WY Y C |
| UniRef90-V9VSS8 | T FERPGVHWYYCALHMEMRGRMLV |
| UniRef90-A0A015KJG0 | K A GPLYY Y C D PKHMMYAT 1 |
| UniRef90-E1VFI9 |  |
| UniRef90-E0YM99 | T F DQPGVF |
|  |  |

UniRef90 D5MG45 UniRef90-UPIO0047BE27A UniRef90-UPIOOO37EA3E6 UniRef90_U2Z6Y4
UniRef90 Q6A1T3 UniRef90-K7XTI6 UniRef90_UPI0003EA8D12 UniRef90 A4WXT8 UniRef90 W5YT83 UniRef90_UPI00047AC517 UniRef90_T2K102 UniRef90 EORE74 UniRef90_UPIO0047DB292 UniRef90-MOM7G9 UniRef90 UPI000363823A UniRef90-UPI000477B013 UniRef90_W1SJ73 UniRet90_R4YUQ5 UniRef90 D5JAK6 UniRef90-14WK83 UniRef90-MOLUS7 UniRef90 A0A023DJR3 UniRef90 S7JCX7 UniRef90-LolGW4 UniRef90-F1QEG5 UniRef90 K2PT89 UniRef90 W4EM59 UniRef90-UPIOOO3B44363 UniRef90 A3SSE6 UniRef90- UPI000463903D UniRef90-A0A059IRD9 UniRef90-E9MX26 UniRef90 C3YHz9 UniRee90-UPI00038C36EB UniRef90_C6W135 UniRet90_G3TOR4 UniRef90 K6DQV3 UniRef90-V8QUA2 UniRef90-UPI0003337A12 UniRef90 U3A6N4 UniRef90-N1WM75 UniRef90-DomHZO UniRef90-A6CHR1 UniRef90 UPI0002654FD4 UniRef90-UPIO004414076 UniRef90-UPI00045EA96A UniRef90- B1ZXT9 UniRef90_UPIO003A59585 UniRef90-A0A015JXA8
UniRef90 10JY84 UniRef90-L9XK90 UniRef90-K7YIV1 UniRef90 E6TV33 UniRef90-UPI0003F09C4C UniRef90-B1WYN4 UniRef90-EOWGT3 UniRef90 K9SAM9 UniRef90-V9H5Y2 UniRef90-UP10003B5CC5D UniRef90 D3A395 UniRef90 UPI00041CFFF9 UniRef90-G3FAU8 UniRef90-UPIO003163962 UniRef90 MOLDH8 UniRef90_UPI0003B5F0A6 UniRef90-D6Y3V7 UniRet90_F1VVU1 UniRef90 LoKWH7 UniRef90-G8R200 UniRef90_UPI00034759BD UniRef90 A7MFY8 UniRef90 $\mathrm{K} 7 \times 652$ UniRef90_UP1000467D66C UniRef90_C1A867 UniRef90 HoF5S4 UniRef90-K7XS80 UniRef90-B4FTDO UniRef90-14VHZ8 UniRef90 K7XRV5 UniRef90-H6VUF5 UniRet90_G7UA38 UniRef90 K6VPX4 UniRef90-UPIO0030D25AE UniRet90 M3HXC7 UniRef90 D3SN72 UniRef90 K5BJP5 UniRef90_UPIOO0464A54B UniRef90_B1YJP8 UniRef90-A9Y320 UniRef90-F4KSA9 UniRef90I7BNPO

A S VG GP GTAS A V S Q T DR $\quad$ L L A D D K M R F T P D V V V NSEAT QS QS LQ A S S N L E V G K T E V V D V T N K GYY T P N E V I R V K K G $V G E K$ GII I T V E N G T Y S P S RI T I A A G | $S$ | $R$ | $I$ |  | $A$ | $A$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $F$ | $R$ | $R$ | $R$ | $Q$ | $G$ |
| $P$ | $V$ | $I$ | $H$ | $V$ | $R$ | $Q$ |
| $P$ | $G$ |  |  |  |  |  |
| $P$ | $T$ | $L$ | $H$ | $L$ | $E$ | $A$ |

TAESAQAS LVPGYSTSVLGFNGSDPATVRCREG
T T T E R A E IDEP GVTFKYMTFD D QVI RVRR G

 HDVVI F D DAFFPAVI YV DAG

VT VK M T S Q A P A F S L R EF K V K K G R G Y A WN P A L L NI HEG
TNNGSHLEHGLGYAWSPPVLNVTVG
E EVVAADPNVQVVT DKA $\square R E E M K F N V T E F T A V A G$ STPKVKMLVTEKGYTPNVIRVKKG


## TAQPASAELVPGFTMEVLAFNGQD

TGEFSSETEDGK EDEAYRWDPGTVRVVDRG SVA A A T A E TVTH QVRIE GMAFDPAAVDVPA G $T$ TSSSSSVDHQVDNMGKHSKYGLGYKWNPQLVTAAAA



E T GVTTHVG G NE Y E

GFAWFPAVLNVSVG
 K VTV H MA SVAFSMNDFTVKK G A A A TPGVQEMT IVVDG GYSPSR VVTAG




EAPKEPVAFNQQGCQYHPKVFGI QVG

ATASASGKAGDPAKVSRT VVMSMNDMQFTPNNIVVKED
T P E SVEVEVG
A Q T S H T $\square$ A A VGVE Y T P D TVVI V
S S AFAARAADPQVKVTVNDKQCEPMTLTVNAG
 TAATAAD LGLS IASAQAAEHEIAAVAEGFFPEITYVQPG P QVTKA EREAGVSRN GKVVHVRMAADRFAP DNIEVQVG DS S T QPFATQLLGEER DVRDGNQVEDFMTSMTPEHVVEIKKG $S N M F W S P D C E E K V V I G I N G Q F P G P T I R A R A G$ FAPDNLEVTVG
 $P$ TL H GRLG
T A NGGRA $\square$ A A P D VSS LTVHAGD LR FEPA QVK FM A G
 D P A A LG $\square$ GEPP TA A VT A T GEVE VR $\square$ D GMR Y L P D T I EAVMVSQAFQFTPQDMVIMKG $E \square T \square K \square A S ~ D A P A F E P R E D I R L K R G$ F A P D NIIEVKVG

UniRef90 D5MG45 UniRef90＿UP100047BE27A UniRef90＿UPIO0037EA3E6 UniRef90＿U2Z6Y4
UniRef90＿Q6A1T3
UniRef90－K7XT16
UniRef90－UPIO003EA8D12 UniRef90＿A4WXT8 UniRef90－W5YT83
UniRef90＿UPI00047AC517 UniRef90－T2K102
UniRef90－EORE74
UniRef90＿UPIO0047DB292
UniRef90－M0M7G9
UniRef90＿UPIO00363823A UniRef90－UPIO00477B013 UniRef90－W1SJ73 UniRef90－R4YUQ5
UniRef90－D5JAK6 UniRet90＿14WK83 UniRef90－MOLUS7 UniRef90－A0A023DJR3 UniRef90－S7JCX7 UniRef90－LOIGW4 UniRef90－F1QEG5 UniRef90－K2PT89 UniRef90－W4EM59 UniRef90－UPIO003B44363 UniRef90－A3SSE6 UniRef90＿UPIOOO463903D UniRef90 A0A0591RD9 UniRef90－E9M×26 UniRef90－С3YHZ9 UniRef90－UP100038C36EB UniRef90－C6W135 UniRet90－G3TOR4 UniRef90－K6DQV3
UniRef90 V8QUA2 UniRet90－UPI0003337A12 UniRef90－U3A6N4 UniRef90－N1WM75 UniRef90－DOMHZO UniRef90－A6CHR1 UniRef90－M1P6C3 UniRef90＿UPI0002654FD4 UniRef90 UPIOOOO4414076 UniRef90－UPIO0045EA96A UniRet90－B1ZXT9 UniRef90＿UPI0003A59585 UniRef90－A0A015JXA8 UniRef90－10JY84 UniRef90－L9XK90 UniRef90－K7YIV1 UniRef90＿E6TV33 UniRef90－UPIO003F09C4C UniRef90－B1WYN4
UniRef90－EOWGT3 UniRef90－K9SAM9 UniRef90－V9H5Y2 UniRef90－UP10003B5CC5D UniRef90－D3A395 UniRef90－UPIo0041CFFF9 UniRef90－G3FAU8 UniRef90＿UPIOOO3163962 UniRef90－MOLDH8 UniRef90－UPIOOO3B5FOA6 UniRef90－D6Y3V7 UniRef90－F1VVU1 UniRef90－LOKWH7 UniRef90－G8R200 UniRef90＿UPIO0034759BD UniRef90－A7MFY8 UniRef90－K7X652 UniRef90－UP1000467D66C UniRef90－C1A867 UniRef90＿HOF5S4 UniRef90＿K7XS80
UniRef90 B4FTD0 UniRef90－14VHZ8 UniRef90－K7XRV5 UniRef90－H6VUF5 UniRef90－G7UA38 UniRef90－K6VPX4 UniRef90－UP100030D25AE
UniRefo－M3HX7 UniRef90－M3HXC7 UniRef90－D3SN72 UniRef90－K5BJP5 UniRef90－UPIO00464A54B UniRef90－B1YJP8 UniRef90－A9Y320 UniRef90－F4KSA9
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GE｜L｜E｜LLNND G I L H NIIH T Y S K A NS SIINKAQPKFKKVLT

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 ETVVRGVNED DVVDDLTMGFTMGNHGVAMEVGPMA
E NVT IVVNT GQQQVHNDV

 ETVRIVVVNQGRTRHELT IGGQSELEEHAKMMQGQGELIDW K Q YKI L L D NPSPDKHYFTAKDFADGADHELELLKPGATAEW


 D TLLHFTNMDPAMPHSMDFHAVHPSKDFVDVMPNKSGTFTY



DELRFVNNASAARNV
 DTVVWHWRASSPGSVTYDGKGFTNGKQKS


## V

 R K I N L VDTVIWQWRSGVGYRVFSVPSPNGE
EKVTTFTNKLDEPT T I HWHGAMDGVA

 T RLVLT NDDELRHDLA I
D S V T WS WN S GI GY AVVQQTA GY D G S GFY S G GR ST S S G S Y K Y E T I T F D D L S S I M T V T Q S Q S L A D P C T K A G F G T N F G D T S F S

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\begin{aligned}
& \text { TFF } \\
& \text { SF } \\
& \text { VI }
\end{aligned}
$$

## a

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## D

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

| $D$ | $T$ | $H$ | $V$ | $H$ | $T$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $D$ | $T$ | $V$ | $E$ | $L$ | $R$ | $N$ |
| $D$ | $P$ |  |  |  |  |  |

D TVVYFVT
DEVTVT NDNIE QDWDULHGFAGLGARNSELLNPGETRTVW
 DVITLVNKGSMGHSLDFHAGDIAPD RPMRTAAPGESYRF
 DRITTLRNTGSDRHDLVLANGA

 | $A$ | $T$ | $V$ | $D$ | $F$ | $L$ | $V$ | $T$ | $S$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | D K


 GVV DHWH GDPWAD GTAADSQCADN PEETETYY

|  |  |
| :---: | :---: |
| UniRef90_D5MG45 | K F A K P E I VKVT C D A H S WMLLG WVVV |
| UniRef90_UPI00047BE27A | YFEKPGNYTYECSV P GMQGTMKV |
| UniRef90_UPI00037EA3E6 | Y F T T P G N Y F V C S F P GMQGT LVVK |
| UniRef90_U2Z6Y4 | T F A Q A T GLE F A C N $\square$ H A G M VG NVEVQ |
| UniRef90-Q6A1T3 | T F D K P GLH WY Y C S |
| UniRef90_K7XTI6 | EF DQAGTYTYYC |
| UniRef90_UPI0003EA8D12 |  |
| UniRef90-A4WXT8 | VA GQPGVY WY Y C A LHMEMRGRMFVE |
| UniRef90 W5YT83 |  |
| UniRef90-UPI00047AC517 | QF DKVGRFRYYSAPEPGMTGTLVVQ |
| UniRef90_T2KI02 | EFDEAGTY DF LCS FY A LMKGKFIV E |
| UniRef90-E0RE74 | K D L K P GVY E Y N C G M Y M Y Y G T I TVVK |
| UniRef90_UPI00047DB | VTLAA GTYEMKCS $\square$ H L N M T A KLIV Q |
| UniRef90_M0M7G9 | $V \mathrm{~V}$ D GE GVYD YVSTPNDGAAGSV |
| UniRef90-UPI000363823A | RFGGKPGTVPFACTMHMGM\GRFIV |
| UniRef90-UPI000477B013 | V LT K P G Q Y ELHHCS $\square$ H A G M $~$ G K I TV |
| UniRef90_W1SJ73 | TPDKTGEYTFSC GMKGTI IVE |
| UniRef90_R4YUQ5 | P A MKAGTYNFHCQ M M M G Q I V Q |
| UniRef90_D5JAK6 | T F K A Q G $\square$ Y V Y H CA T A P G M Y GLI L V E |
| UniRef90-14WK83 | VA K V P G A F L Y HC GTP P G M Y G A I I V |
| UniRef90-M0LUS7 | EF T A T E EMTY LCEVVHP T MVVGV |
| UniRef90_A0A023DJR3 | P A N NPGVFMYHCGTKPGMHGMIIVK |
| UniRef90_S7JCX7 | EF T P P GTF WY H P HMGLVGLI I V E |
| UniRef90_LOIGW4 | EFKAPGVHVYHCADS A G M F G Al L V E |
| UniRef90-F1QEG5 | R F T S P GV |
| UniRef90-K2PT89 | SFKTPGLFVYHCATAPGMYGLILVE |
| UniRef90_W4EM59 | TVDKVGEYLIVCNGHAQMHSMLVV |
| UniRef90_UPI0003B44363 | T P T T D G F H GQCS G H G G M F V VIHVK |
| UniRef90_A3SSE6 | T V E |
| UniRef90_UPI000463903D | T A T R A G $\square$ WMY HCSTMPGMFGAVIV |
| UniRef90_A0A059IRD9 | K F K A A GLYVYY C A V S P G M Y GLI L V E |
| UniRef90-E9MX26 | T F T D P GVVY WC Y C |
| UniRef90-C3YHZ9 | T F T SEGQYFFSSGPVD H M K G V V NV |
| UniRef90-UPI00038C36EB | Q F T S P G 1 |
| UniRef90_C6W135 | K F D Q VG DYP Y VC T F P GM T G VMK V |
| UniRef90_G3T0R4 | QF T S PGV V Y Y |
| UniRef90-K6DQV3 |  |
| UniRef90-V8QUA2 | VFSKPGEYPFFDDFHQSVKGTLVVK |
| UniRef90-UPI0003337A12 | Q F T S P G $\square$ H Y Y |
| UniRef90_U3A6N4 | EFTPPGTFWYH PHMGLVGLIIVE |
| UniRef90_N1WM75 | EPKREGVWP F Y C T L H Q E M Q G Y VRV |
| UniRef90-D0MHZ0 | RFRYPGAYVYHCAYHS GMFGMILVE |
| UniRef90-A6CHR1 | T F DEKGTYRLVCQAHE T M $\square$ G Y I V V K |
| UniRef90-M1P6C3 | T F D A G VF E G WC T $\square$ H K A M G M T F R V |
| UniRef90-UPI0002654FD4 | QFD ${ }^{\text {P P G T Y Y Y }}$ |
| UniRef90-UPI0004414076 | TVNDTKPVLVHCEAHS G MV |
| UniRef90_UPI00045EA96A | TPQEPGRLYY S C A M M M T GVI DV |
| UniRef90-B1ZXT9 | LARTA GAFVYHCGTPPGMYGVI IV |
| UniRef90_UPI0003A59585 |  |
| UniRef90-A0A015JXA8 |  |
| UniRef90_10JY84 | KFKKA GSYR\ICNLHHAMTGII LVK |
| UniRef90-L9XK90 | EF DEPGEYGI L C N Y H H T M E G TLSV |
| UniRef90-K7YIV1 | Q F N K P GVF A Y Y C T |
| UniRef90-E6TV33 |  |
| UniRef90_UPI0003F09C4C | QF TS PGFHYYSSGYHSFLQGVINVR |
| UniRef90_B1WYN4 | T P NQAGDYTFHCG MNMRGVLEVQ |
| UniRef90_E0WGT3 | T F N N P G V ${ }^{\text {V W W Y C T }}$ |
| UniRef90-K9SAM9 |  |
| UniRef90_V9H5Y2 | TANRLGVY WYY CALLHMEMSGRMIV |
| UniRef90_UPI0003B5CC5D | $\square \mathrm{C}$ \SPGSYDFFGEFNPTAVGR\V |
| UniRef90_D3A395 | SFKQA GLYY I Y HCAVAPGMYGLI LVE |
| UniRef90_UPI00041CFFF9 |  |
| UniRef90_G3FAU8 | T F DK P GVY WY Y C |
| UniRef90_UPI0003163962 | T F VIKPGTYKVYC G L H H VMQAE $\square$ TTVK |
| UniRef90-M0LDH8 |  |
| UniRef90_UPI0003B5F0A6 | TFTAPEVVK】KCDVVHPWM |
| UniRef90_D6Y3V7 |  |
| UniRef90_F1VVU1 | T F GKA GVVDFACHMEA G M T GKVTVE |
| UniRef90-LOKWH7 | TFQNTGTYT F |
| UniRef90-G8R200 | VA S T L G A K Y Y $\square$ C D N H Q G M K G M $\square$ M ${ }^{\text {V }}$ N |
| UniRef90_UPI00034759BD |  |
| UniRef90-A7MFY8 | TANEPGEYDMTC GLLSNPKGKLIV |
| UniRef90_K7X652 | V A K F P G V Y P F Y C T |
| UniRef90-UPI000467D66C |  |
| UniRef90-C1A867 | VPK Q $\square$ G VY P M Y C T L H Q E M S G Y VRV |
| UniRef90-H0F5S4 | T $\square$ S R P GEYP F F D D F H Q S VK G T L VVK |
| UniRef90_K7XS80 | D A D K G TY A Y Y C T |
| UniRef90-B4FTD0 | RFDKPGTYFYHG HYGMQGSLVV |
| UniRef90-14VHZ8 | TFKRS GVVVY H C A T P P GMY GMIVVE |
| UniRef90-K7XRV5 | VP D T P GV Y P F Y C T |
| UniRef90-H6VUF5 | TA D K A GVYY WY Y C |
| UniRef90_G7UA38 | TLLHRAGI WLYY C C I A A GMFGAVIV |
| UniRef90-K6VPX4 | TANRAGI WMYHCSI A A GMHGAVVI E |
| UniRef90_UPI00030D25AE | VFQR P GVYELHCAI HA G MVGGQLEI |
| UniRef90_M3HXC7 | KLS P GEYQI T C GL L S P PRGKLIV |
| UniRef90-D3SN72 | K F D K P GVYY li Y C Gi H Q D M A K I V V K |
| UniRef90_K5BJP5 | D A GVIG DLD G WCSVHRQMGMTLKVK |
| UniRef90_UPI000464A54B | TA TKS G l WMY HCS TMPGMF GAVII |
| UniRef90-B1YJP8 | T FKKA G DY L I VCS GHHMMS TKLKV |
| UniRef90_A9Y320 | SF DKP GVFWCYC T |
| UniRef90-F4KSA9 | $\square \mathrm{D}$ S K A GIVPM Y C T L H Q E M Q G Y VR V |
| UniRef90-17BNP0 |  |

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lupas_21
lupas_14
lupas_28
jnet
conf
lol25
sol0
jhmm
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#  UniRef90_UPI000378352D  

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UniRef90_X0UXQ1 T F P E P T P VVVKVN C D ${ }^{90}$ H P WM T A 100
UniRef90_UPI000378352D TFDAPGTYDFMCSFYA $\square$ MKGKF $\square \mathrm{V}$ E



[^0]:    

[^1]:    lupas 21
    lupas_14
    lupas_28
    jnet conf sol25
    sol5 50 sol jhmm

