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 HS N HP F H L L V E Y S P WP RNPFHLLVEFSPWP HQTHAYHMVNPSPWP
HSNHPY HLVDYSPWP TGALSALLLTS GLTMWFHSNSLLL
HQAHAYHMLNPNPWP G G S GAMTLTS GMVMWFHKNEMYL
HNHPFHLVVDSPWPLLGAFSALTTMMMGMIKWFHQFNSNL
H GH HA Y HLVDDVSPWPLTGS DSAMMLTTGLVKWFHQFTMDL
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HRHPFHLVDPSPWP
$R$ R P M W D P
FHPFHL V E K S
SNHAFHLVVDQSPWPDLLTS SAFSLTTGFVNLFNNKNTNL
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HNHHSYHLVDMSPWPLTGS IAAMMLTS GLIKWFHDFNPDLD

 H GHHAY HLV N MS P WP T T G S HTHPF THM ELSPWP L MASSSA LMMLT GMTNWFHYKSNYC QMHAFHMVNPSPWPLTGAASAFMLTSGLAMWFHKHSNTL

 NKNHSYHLVDPSPWPL LGAFSALS IMDGLIKWFHMYETNL
 N N H P F HL V T K S P WP K NHPYHLVVDTSPWPLLGALGTFSTLMGVI KWFHLHNPNLI HQTHPFHMVDPSPWP L Y N NHPYHLVDYSPWPL

P Y HV M G Y S P WP
HSNHPFHLVDYSPWPL
HQHPYHLVDQSPWPLTGAIGAFMMTSGLI LWWHTSTNHL K N H P Y HL V E $\square$ S P WPI LS A MT A LS MMMGMI K WFH L N N I NL

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K F HP F HMVTES P WP IMSS $\square$ S A M SLLTHSMIMSMQFKSSKP
H TYHP Y H L V D P S P WP YVTAC GAMFTT LGAVIVYFHYS QP WL
KHPFHLVNSSPWP
K N
$\begin{array}{lllllllllll}\text { N H P } & \text { F } & H \\ \text { N H P } & \text { F } & H & \text { V } & \text { L } & V & S & P & W & \text { N P S P } & \text { W P }\end{array}$
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HP F HMVDQSPWPLLAASCALGLAAGLIDNFHHKNMML
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NQ P HLVVAS P WPI LSAMSGFLLLSSLCDFMHSSS YVG
K Y H P F H $I V$ V Q S P WP
QKNHPFHLVDPSPWP L G A L G A F F S V S GLI M WF HQY D N S L
KNHPFHMVTKSP WP
QNHPFHLVDRSPWP
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QHHPFHLVVYSPWPLLGAMGAFSLTVGTASWFHGFSPLP

HP Y HLV V DP S P WP YV C S C GA F F L T L G SV I Y F H Y S F $\square$ W
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HPYHLVDPSLWP
IT S L S L M M L M T Q S I I L M K N S N M K M
K NHPFHLVVDPS PWP T G SMGAFSMAS GMVMWFHMNNPWLL
QQNHPFHLVDYSPWP
QLH P F H TVVGPSPWP
K N H P F H M V TK S P WP
HKNHPFHLVEVSPWP
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F H P Y HL
QTHT
T Y HIV V E S P WP
P F HVL ESSPWP


H Q N H P Y H H L V D N S P WP L T G S L G A M T $\quad$ HP T
HSNHPFH|LVDYSPWPLTGS $\square G A M V L T S G M A K W F H Q F N D N L$

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UniRef90_E1ABU2

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80

 LLFGF I LIL MTMMQWWRDIVRESTFQGFHTFKVSMGMRMG $M S L G L V L L L L T M Y Q S S R D I I R R E T F Q G H H T P P V Q K G L R Y G$ F LI A I LI I SSMCQWWRDVV RE GTYMGHHTSHVVTTGGLRWG
 $L T M G L L L T V I T M L Q W W R D V V R E S T F Q G F H T S N V A S G L R W G$



 $F M M G I L S I I F S M V Q W W R D V V R E G T Y Q G L H T T K V Q V G L Q W G$
 $F I M G L I \quad L \operatorname{SFT} C I Q W W R D I D R E S T F Q G D H T L I V A K G M R W G$ $M I L G L T L T L T T A Y Q W W R D V D R E G T F Q G H H T K S V Q K G L R Y G$






 $F L S M Q M L L T M Y Q W W R D I$ TREGTFQGHHTSLVVQKSLRYG
 YFLGGLITLLMIMYQWWRDIS

 $\frac{L}{F} M L G T T L I T L G M M Y$ Q WWR D I T

 FIIA GTVLLLITII NWWRDVVR



 MKMGMTILLLSTWQWWRDVSREGTMQGLHTVSVSSGLRWG

 LII S FLLMNLILYYQWWRDV I RESTYQQGCHTTAVVMKNMRYGG $L$ KMAF LTTTLLTMLQWWRDIVREATFQGHHTKMVQKNMRYG MTMGTIVVMIFTVVQWWRDII RESTDQGNHTNKVIKGMQWG
 AFMGF LLTAL CSYQWWRDICREGTFQGLHTDKVMNGLRYG





 $F \square Y S S I T T L L I M Y Q W W R D I V R E S T F Q G H H T L K V T M G L R L G$ $M \bar{F} G T L I \quad L L T M L Q W W R D I I R E G T F M G H H T S Y V T K G L G W G$


 $\frac{L}{M} W L G S T I T L L T M Y Q W W R D V C R E G T F Q G H H T K K V V I D N L K L G$ MWVVI L MLTMYQWWRDIIREATFQGKHTIKVINGMKMG M A L A M T S V L L Y S M T L W F K D MMA E S T Y L G D H T L A V K R GLLN Q G
 $L M I G L L T T \ M \square M F Q W W R D V I R E S T L Q G H H T F I V V M G G R W G$

 I V T GL L S LL L TMY Q WWR DI MRE GTF Q GHH TLLFVQK GLRRYG



V C L G V L L IVL TMMFWWWQD V V R E S T F

## QUERY

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140
IT WA H H S ${ }^{150}$
150
160





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 T F N P M E I P L L N TVILLLCSGITTVTWAHHSIMMNGKHTCQTLKA

 PFNPFNI PLLNTAI LLAS GATVTWAHHSLTHAEYSEAVVS
 P F NP P E V P P L L N S TI L I S S GII S V T WA H Y C L L K K K N Y L D A L T S PFNP $\quad$ QVVPLLNTVI LLASGVTVTWAHHGLMENKFTQTYQG $P$ L N P F E V P L L N T I V L L S S GVVTV T WA H H A I M A G N R K E A L Q S
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 P F N P F Q I $\mid$ P L L N T I L L L S S G T S V T W WA H H A I M E A N H T Q A DQ S


 P F N P F K I P L L N TAI LL S S GITVVTWAHHSSLDNKNYSQTDQS
 PFNPMNDPLLNT II LLSS GITVVTWCHHSLMESNKTQAMQS A $\square$ N P S S L PLLNTMILI S S GMTITTLSHYNMLSNKMKSSSNN $P$ F N P L
 PLDPPFAVPLLNTAVLLASGVTVTWAHHSLMEGDRKNADMA

 PFNPLNIPLLNTLILLSSGITVVWAHHSLMENNFKQAFNS S LDD P F K I P L L L N T A V L L G S G V S V T W W H H A V MV G N R M E A L W G A F D P M S I P M L N T T I L L S S G V T V T W W H H S L M E G N H Q Q A M Q G


 PFNPRQVPLLNTMLLASGVSITTWSHNSMMEKNMSEAI QS
 $P L N P F E V P L L N T T V L L A S G Q T V T W A H H S I D E A K H K E A T Q A$ V C N P Y D I P L L N S II LI S S GFTIITWSHYS I L A A N N F N NA K L S
 MFNPMMMPLLNTVVLITSSGI SVTWAHHSLMDVDYKDVFKA
 P FN P F Q I P L L N TVI L L T S GII S V T WA H H S L ME SN Y S Q S L N S
 A F D P L L Q i P L L N T K L L L L V S G I T L T WA H H S I M E N NK Q Q A VQ G




 P F N P L L E P P L L N T L I L L S S G I S V T WA H F S I I E N N Y T Q S F L G PLNP F SVVPLLNTAVLLASSGVTVTWAHHSLI EADRPGATAA
 IL L P P F S V P L L N T AI LLL S S GA TV T WA H HAA I N GKREAA VA G MFNPYQIPRLNTLI LLSSG $\square T V T W C H H S V L N S N Y N N S M F S$


 P F N P M E V V P L L N T I L L I A S G G I TVV T WA H H S I L L L N K L S M S N K S
 ALDP PGVVPLLNTVILLSSGVVTVTWAHHSLLEQNFKEAKES


 P L N A F A V $V$ P L L N T A V L L A S G V T PFNPFQQIPLLNTTILLTS GITTVTWAHHSLMESNHSQATQG TFNPMQIPLLNTMILLCSGLTVVTWAHHSLLNKNFTQTTQA


## QUERY

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口FПTTTLGV170
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190
200
LFT ThV LILTVLLGAYFTKLQVGEYQEAPFTIADSVYGSTFFVATG LLMT TL GVYFSALQALEYYEASFSIADSAYGASFFDATG MTLT LLGGYFTALQAMEYYEAPFSIADGVYGSTFFVATG LTLTVLLGGYFTFLQAGEYMAAPFTIADSVYGTTFFVATGG LFFTSVLGVYFTFLQQGEYQETPFTVSDSAYGSTFFMATGG LSDT IVLGGLYFTMLQAMEYYEASFTMSDGDYGSTFFMSTG Th MLMGYY TALQAMQYYEAPFTTVDGANRSTFKVPFC
 LIMTVTLGMYFTALQAFEYWEAPFTISDSVYGSTFFVATG LFVTIFLGVYFTTLQAFEYMEASFTIADSIYGSTFFVATG LTLTMMLGLYFTLLQANEYYSSSFTIADSUYGTTFFVTTG LKITVMLGVLFTMFQLFEYYEAQFSISDSIFGSTFFLTTG LIMTVALGGYFTLLQAMEYMEASFT:ADSAYGATFFVATG LTM TLGVYFTALQAYEYMEAPFSISEAVYGSTFFVATG LGVTVILGAYFTSLQAYEYMEASFSI ADSVYGATFFVATG LTLTVILGLYFTALQAYEY位EAPFSIADSUYGSSFMATG
LTMTVILGVYFTALQASEYLEAPFADADGYGSTFFVATG LSITVILGLYFTLLQVYEYMEASFTUSDSVGGSTFFVATG ALSITMGLVYFTALQVEYFNSPFSIADSIYGSVFFVATG LSLTHEGLYFTSLQAWEYWEAPFSMADSAYGTTFFVATG
 LLFTVLLGUYFSLQAYEYMEASFSIADSIYGSTFFMATG
 IMITIMLGLCFTSI QUYE LTMTTLLGMYFTALQMME LGMTVCLGVYFSVLQAQE LALTVLLGVYFTALQAWEYFDSPFTIADSVYYGSTFFMATG LLLTI LGI YFSMLQAYEYMESNFTMADSIYGSTFFLTTG LMLTLFLGLYFSMLQGFEYFECSFTVADGVYGSLFYVMTG LTLILLGLYFTFLQAME
 LQVTIILGLMFTFIQVMEYKESPFSTSDSVYGTTFFVATG LFLTVMLGCYFSTLQAYEYKDAPFSISDSVYGASFFMSTG LYMTAALAVVFTFFQAYEYVEAPFTVSDSVYGSTFYMLTG L MFTVMLGUYFSMLQAYE
 MALTVTLGLYFTALQAME LELTLLLGFYFVYLQYGE LIMTVCLGAYFTVLQGYE
 LAMTVMLGGYFTVEQKWE LI LTVLL GAYFTFLQAGE LIITLLLGVYFTCLQGWEYWEASYSFSDSSFGSAFFLATG LASTVLLGVDFTTLQGVEYYEAPFAISDSVYGSTFFMATG LWLTLTLGVLFSLLQVYEYSEAKFSMNDSVYGSTFFMTTG LVLTVLGGMMFTVMQMIEYQEAPFCDSDSVYGSTFFMATG FAYTTMLMALFVYFQY



QUERY
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FHPYH LVDKSPWPLTGALSAFLLTSGMIMWFHSNDMTL KNHPFHMVQVSPWP LGALSAMTMMMGMIKWFHKNNESL LTVGLTFWF HNHETT T
THPFHLVT $\quad$ S P WP L T S S S DMNNFLGLDSWFHNPSNPY HSNHVFHLVNYSPWPLTGAI GAFSMVAGMTMWFHHYNNFL PFHLVDKSPWPLTGS $\quad$ AAMTFMTGLMNFMHFKS $\square Q \perp$

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NHPYH LVERSPWP LTGA LGA LTMTAGLTKWFHQYN $\square$ S $\square$
HYNSMSL
FNPFHLVEKSPWP $\square$ TSS $\square$ SAFS $\quad$ TTLGFVNYFNYFNMNL

TQPFH IVDKSPWPMTGSI AAFSSMUGMINLMHDNNMND HQAHAFHMVNPSPWPLTGAIAALLITSGLATWFHFGYMML NQMHPYHLVNESPWPILGSMALFIIACGLAA WMHTKNDTL YQTHPWHLVEPSPWPFVGGSAAFTLTVGMIMWFHYNSTLL

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UniRef90_WWRHAT

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UniRef90_17F2U6 UniRef90 F1BWF1 UniRef90-Q402L0 UniRef90_J9YSF\& UniRef90 A8QZJ1 UniRef90-E6Y167 UniRef90-Q9TC89 UniRef90 E3VT93 UniRef90 M4QA33 UniRef90-17EGI8 UniRef90-17FBC3 UniRef90 X2C3Y8 UniRef90 ${ }^{-}$2C439 UniRef90_D1YUC9
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UniRef90_W5RHA7

<br><br>H F VD V VWLIF $\square \mathrm{Y}$ VS $\square \mathrm{Y}$ Y WG S<br><br>HFVDVVWLF LY LDCVYWWG<br>HFVHVVWLF LYVSLYYWGS $H F V D T V W L F L Y M S I Y L W$<br>HFVDVVWLF<br>HFVDVVWLF LYMC】Y WWG<br>K L VD G VW LIF LIF T F M Y WW<br>HFVD V V<br>HFVDVVWLF LIFVCDYYFG<br>H F<br>HFVD<br>H F VDVVW

UniRef90 W5RS89 UniRef90 E3TAG3 UniRef90_G0Y663 UniRef90_D8WHF3 UniRef90-B5T2Y7 UniRef90-M9N9K2 UniRef90-D2Z1Z9 UniRef90-B3DFF7 UniRef90 Q02654 UniRef90_D8WJ09 UniRef90-W0FHR1 UniRef90 D6RR87 UniRef90-D3W6W1 UniRef90_S4SA13 UniRef90 Q34183 UniRef90- Q8W9R1 UniRef90-A1YWC1 UniRef90-M9MTG7 UniRef90 DOIPA9 UniRef90-A8VRS4 UniRef90-I7DLG7 UniRef90-R4IXA4 UniRef90 A0A023IX83 UniRef90-B3DFD5 UniRef90-M9NAS3 UniRef90 E9P6B6 UniRef90-B2CKY8 UniRef90_E3VT56 UniRef90 V9NJ90 UniRef90 B6E4Y2 UniRef90-D4NVJO UniRef90-Q8HIS2 UniRef90-A9QXI6 UniRef90-A0A023PJX8 UniRef90_Q6GY80 UniRef90_Q95840 UniRef90 Q9G8Z3 UniRef90-G8HSH3 UniRef90-A7BG32 UniRef90-S4V0H6 UniRef90 B2CKF1 UniRef90_S5TF04 UniRef90-G9ISJ0 UniRef90 K2IZ71 UniRef90-Q71S54 UniRef90_Q5VB06 UniRef90-S6BFN9 UniRef90- Q4FCY9 UniRef90-I6NIM7 UniRef90-Q9MNJ9 UniRef90 R4ZBC2 UniRef90-B1A641 UniRef90_LOWIP5 UniRef90-Q9MG87 UniRef90-G9IJH6 UniRef90-Q8HQI6 UniRef90_U1J7F9 UniRef90 UPI000380E4BE UniRef90_C4NCG0 UniRef90-H7CD20 UniRef90-R4XGM6 UniRef90 X5CWV9 UniRef90-Q2HJM4 UniRef90_Q9B1P9 UniRef90-G9IJF9 UniRef90-D8WHA7 UniRef90_Q92J29 UniRef90-I1DZM9 UniRef90 B9KH96 UniRef90-14DF02 UniRef90-B3F5K7 UniRef90 K2JSL2 UniRef90 Q9GBV8 UniRef90_UPIO002F555C2 UniRef90_G1K012 UniRef90-A7RAB6 UniRef90-F4ZGB1 UniRef90-X5MMH2 UniRef90-V5JFX1 UniRef90 F2X293 UniRef90-I6WNS8 UniRef90-Q37374 UniRef90 UPI0003B379EC UniRef90-Q76FC0 UniRef90-D3DKN6 UniRef90_D6MQP9 UniRef90_L7NW50 UniRef90_J7F0B4 UniRef90 S4UQB9 UniRef90_Q9G8T9 UniRef90-Q1AGW8

1


RNPFHLVIEFSPWP|LVGSIVGAFFLTVGMASWFHGYSEG|V NQPFHLVVDQSPWPML GAFGAMILTS G IAQWFHTFNDNL


HQSHAYHMVKPSPWPLTGALSALLMTSGLAMWFHFYSTTL QQKHPFHLVDPSPWPFMASGGAFSATFGGVMYMHMYEGGG
 QPHPYHLVGPSPWPMFTSFSLMALS SGLTSHGYMASH $\mathbb{G}$ FHPFHMVNKSPWPLSSSGSALMLTSGLIMYMHQNSSYL

Q $\square$ H P F H LVDPS P WPFFSAFGAFCLVTGLTMF $\square$ HRFNGGF

K H P Y H L VDPS P WP LVAS $\square$ GAFTTTVGGVMYMHAYSGGG
 QRHPFHLVDPSPWPLVAALGGLSLTFGGVLFMHNYGGEL MYMHSFTGGSTL

HPFH LVNPSPWPFC $\square S \square G \square L Y \square T \square N \square V A Y F H K G Y \square Y P$ QTHPFHLVSESPWPLTSAGGIFLLMSSMIFWFQFHLFFL
H Q LHA YHMVKPSPWPLTGALSALLMMSGLTMWLHFYSTTL QRHGFHLVDPSPWPLASSFSALSAATGAVMYFHCHGETL
 NHQHPFHMVDRSPWPLTGSLGALITTIGLVSWFQGDNTST HSNHPYHLVDYSPWPLTGALAALTTTAGMVKWFHQFDSSL

HYHPYHLVEPSPFPYMASFSALGLTVGAVMYFHSFKYGG QK HPFHLVDPSPWP VVAAFAAFTVTSGGVLYMHNYSGGG


PFHLVEYSPWPLLTS S S LS $\| P \square S T D M F D R F N F F L L$ RNPFHLVEFSPWPLTGSLSAMF TVGLASWFHNYGTTC
 Q LHPFHLVGPSPWPIFTSFSLMNLALGLTSHGYDSNNY I

HQKHPYHLVDPSPWPFVGSVAAFVTA $\square$ GGAMAMHDQGYWV QHQHPFHMVDRSPWP DFSSCRGVAHNS LICWFQGDN LLT

Y H LVDPSPWP $\square M \square$ A GVVNQAAGF $\square S$ VVHGGAFTN RQPYHIVEFSPWPFFTAMGLLGMTCGGAAWLHFHSPLC


FHPFHMVEKSPWPFSSC $\square$ TS $\square$ M $\square$ TMSS $\square$ MT $\square$ HFS FS HM N NQPF H VEMSPWP LIMGTSVTTMDMG ILKMLHSDSFKL QAHPFHLLVEPSPWPLVTSFALLTLTVSGVMTMHGYAFGG



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

F K Y S S Q M
NNHPYHLVDYSPWP LTGS TGAMT LTS GMTSWFHKNDMS L KFHPYHLVTLSPWPLTGALGGMFLLSGMVSTFYKAGGEL

QRHPFH LVDPSPWPFVAS $\square$ SAFSCA $\square$ NGVMY $\square$ HKRGGFA

NQKHSFH $\square$ VTRSPWP $\square$ YSS $\square$ AA $\square$ MFTFG LVMHMHNYFYGN
KHPFH $\square$ V F S P WP $\square$ T G S $\square S$ S $\square$ F TVT G $\square$ A S WK HKY D N S F HQNHMFHLVSPSPWPLI $\quad$ S L S LFNNLISMVMWFHKMN YF FHPFHLVS LSPWPGLAGLNGFMVVSGMVNMFYCNKDSL

## UniRef90 W5RS89

 UniRef90 E3TAG3 UniRef90_G0Y663 UniRef90_D8WHF3 UniRef90_B5T2Y7 UniRef90_M9N9K2 UniRef90-D2Z1Z9 UniRef90-Q02654 UniRef90_-D8WJ09 UniRef90_W0FHR1 UniRef90_D3W6W1 UniRef90_S4SA13 UniRef90_Q34183 UniRef90_Q8W9R1 UniRef90_A1YWC1 UniRef90_M9MTG7 UniRef90-D0IPA9 UniRef90_A8VRS4 UniRef90-I7DLG7 UniRef90-R4IXA4 UniRef90_A0A023IX83 UniRef90_B3DFD5 UniRef90_M9NAS3 UniRef90_E9P6B6 UniRef90_B2CKY8 UniRef90_E3VT56 UniRef90_V9NJ90 UniRef90_B6E4Y2 UniRef90_D4NVJ0 UniRef90-Q8HIS2 UniRef90_A9QXI6 UniRef90_A0A023PJX8 UniRef90_Q6GY80 UniRef90_Q95840 UniRef90_Q9G8Z3 UniRef90-G8HSH3 UniRef90_A7BG32 UniRef90_S4V0H6 UniRef90_B2CKF1UniRef90_S5TF04 UniRef90_G9ISJ0 UniRef90 K2IZ71 UniRef90_Q71S54 UniRef90_Q5VB06 UniRef90_S6BFN9 UniRef90_Q4FCY9
UniRef90 I6NIM7 UniRef90_Q9MNJ9 UniRef90_R4ZBC2 UniRef90_B1A641 UniRef90_LOWIP5 UniRef90-G9IJH6 UniRef90_Q8HQI6 UniRef90_U1J7F9 UniRef90-UPI000380E4BE UniRef90_C4NCG0 UniRef90-H7CD20 UniRef90_R4XGM6 UniRef90_X5CWV9 UniRef90_Q2HJM4 UniRef90_Q9B1P9 UniRef90_G9IJF9 UniRef90-D8WHA7 UniRef90-Q92J29 UniRef90_I1DZM9 UniRef90_B9KH9
UniRef90 UniRef90_I4DF02
UniRef90_B3F5K7 UniRef90_K2JSL2 UniRef90_Q9GBV8 UniRef90_UPI0002F555C2 UniRef90_G1K012 UniRef90 A7RAB6 UniRef90_F4ZGB1 UniRef90-X5MMH2 UniRef90_V5JFX1 UniRef90_F2X293 UniRef90-I6WNS8 UniRef90_Q37374 UniRef90_Q76FC0 UniRef90_D3DKN6 UniRef90_D6MQP9 UniRef90_Q6VPB3 UniRef90_L7NW50 UniRef90_J7F0B4 UniRef90_S4UQB9 UniRef90_Q9G8T9
UniRef90_Q1AGW8
$M|V V| G|L V V L L| T M|V W W R D V V| R E G T Y Q G F H T G K|V| A D G|L| R G$ FLLGILI TAMVMFQWWRDI TREGTFQGHHTYQVTLGL RWG $M L L G G S G G M D L Y T M F D R D V I R E S T H E G H H T K M V Q L G G L R Y G$



 $Y \square F F \square S L I L V I S S M A F R D \square \square R E S T Y Q G H H T T Y V V L G L K N G$ | 1 | $Y$ | $L$ | $L$ |
| :--- | :--- | :--- | :--- | $F L M A \| F L M F L N M F Q W W R D M I R E A T F M G N H T M D V D K G L K W G$



 $L M L S T G F L L I L Y T M F V R D V Y R E S T L E G Y H T S L V Q W G L R Y G$
 $L$ CL G V F Ti L Y VMFTWWR DVV RE GLLFE GQHTSSVQQQGLRMG







$T L L S \square S A \| L L T V A Y \square R D V R E$

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

 LTTGY ITTLMTMFLWWRDVIRREATFQGHHTNKVTMMMRWG
 $L F L G L A L V L A T M F F W W R D V V R E A N S G L Y H T V V V Q L G L R T G$

 GLIFLLYTMFVWWRDVLRESTLEGHHTKAVQLGPRYG
 RDVVAEGTLLGNHTFAVQKGLNLG LTMMNILLLLTTMYQWWRDII REGTVQGHHTPPVQKGGRYG $F M A G L A A L L V T V T L W W R D T I R E S D V G G L H N R V L G G S Y R Q G$ $F L L R F A F I F L L A T M F F R D V V R E A T F E G Q H T L A V S N G L R M G$ WWRDVXREGTMQGFHTKKTARGLRDG FS L A LI I LMLLTLF Q WWRDVSREACFSSPS FSYVLWGLLK G

## $R D V V I E G E Y K G D H T P V V Q \square G L R Y G$

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


 WWRDVXRESSS GHHTI DVTKLI KLG L Y F S $L S A G I I S V G Y C L Y S W W R D I V K E G D V E H Q H T S P V R K G L Q Q G$ VFFPDGVLLTDTVLWWFDVIDDASMSGLYSAQMDRSFRQG
 $R D V M R E S T F Q G \square H T N Q V S \square N L R \square G$ $\square S L A L F T V T M \square S A Q W W R D \square M R E S T L M G F H T \square K V A N G Q R L G$ $\begin{array}{lllllll}Y \\ V & L \\ V & V & L & V M T M\end{array}$


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



$Y$ ITFSFGFLLLLDVFFVWWRVREATFQGHHTKQVQVGLRYG $A L T G L F L I I \quad I T A S A W W R D V I \mid R E G T H Q G H H T Q V V V R G L K L G$


UniRef90 W5RS89 UniRef90_E3TAG3
UniRef90_G0Y663 UniRef90-D8WHF3 UniRef90-B5T2Y7
UniRef90_M9N9K2 UniRef90-D2Z179 UniRef90_B3DFF7
UniRef90_Q02654 UniRef90_D8WJ09 UniRef90-W0FHR1 UniRef90_D6RR87
UniRef90_D3W6W1 UniRef90_S4SA13 UniRef90-Q34183
UniRef90 Q8W9R1 UniRet90_Q8W9R1 UniRef90-M9MTG7 UniRef90_DOIPA9 UniRef90_A8VRS4 UniRef90-R4IXA4 UniRef90-A0A023IX83 UniRef90-B3DFD5
UniRef90 M9NAS3 UniRef90-E9P6B6 UniRef90-B2CKY8 UniRef90-E3VT56 UniRef90_B6E4Y2 UniRef90_D4NVJO
UniRef90 Q8HIS? UniRef90-Q8HIS2
UniRef90_A9QXI6 UniRef90-A0A023PJX8
UniRef90-Q6GY80 UniRef90_Q6GY80
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UniRef90_S5TF04 UniRef90-G9ISJ0 UniRef90_K2IZ71 UniRef90_Q71S54
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UniRef90_I6NIM7 UniRef90-Q9MNJ9 UniRef90_R4ZBC2 UniRef90_B1A641
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UniRef90 L7NW50 UniRef90-J7FOB4 UniRef90 S4UQB9 Uniref90_Q9G8T9
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130
140
150
160
P LL N P F S V V|P|L L|N T A|V L L|AS G|V|S|V|T WA H H A|LIDEGSRKN GLQ G $P$ FNPFQQ PLLNTAI LLAS GVTITTWAHHGLMENNFTQCKQG



 PI N P F E L P L L N T VI LL LSS GATVVTYA H H S L I H GERK GAL Y G
 TMDP F D I P L L N TMMVLLTS GLLTMTWAHHSSIME GHRKSAIIYA
 PLPT F GVVPLLNTSVLLLSSGVSI TWAHHAVVEGKFNA GLAS VLSAWEVPFLNTIILLSSGASVTWAHHAILASKRSEALDS PL N P F S V P P L N T AV L L A S GVVTVTWA H H SMME G DR S G S I Q G AFD P M S I P L L N TMM L L S S Gll TIT WA H H S LLLK GYYH Q S A Q G AIS P WG L P FLLNTIL LL S S GASVVTWAHHAIVAGFKKEALQG

 PL N P F S Q I P L L








 TLDP WGIIPLLNTII LLSSGASVTWAHHSIVFGSKEEAI QA
 $P$ L N P F Q V P L L N T T I L L A S G I TV T WA H H A I M Y T K Y T Q S I Q A


 TF D P F E L L P FI N T LI L L L L S G C T V T T WA H H A L i E N N R R D L I R G P I N P WS V P LL N T AI L L S S G A S L T WS H HA L RD K E GN DAL NA
 VLDPRREDPFLNTPDLDSSGAAVTWAHHAADLAGKEKRAVYA PVVSP H GAPFFN TMLLDVSGGGVNWAHRABVEHARAAAMLD
 PL N P Y E I P L L N T V L L L S S G A S V T Y A H H S L I E G N R R GT I L G TL D P F E V P L L N T A VLLAA S GVVTVTWAHHSSIME GERKQTI QA



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



 GFNPFHVPLLNTSIL LA S GVVVTWCHHSLLNGDYGQGVLS



 TF D P WHLLP FI N TLL L L L S G V A V T WA H HA WHE GDRKT T $\quad$ D G







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UniRef90_I6WNS8 UniRef90_Q37374 UniRef90_UPI0003B379EC UniRef90_Q76FC0
UniRef90 D3DKN6 UniRef90_D6MQP9 UniRef90_Q6VPB3 UniRef90_L7NW50
UniRef90_J7F0B4 UniRef90_S4UQB9 UniRef90_Q9G8T9
UniRef90 Q1AGW8

LGVTLFLGTYFTVLQAFEYYEAAFSTSDCVYGSTFFMATG LVLTVSLGLYFTILQWGEYQEASFSVADSIYGSTFFVMTG LICTVVLGVLFSALQAYEYSHAAFGFSGNYYGTFYMATG LMITIALGIYFTALQLSEYMETPFTISDSVYGSLFFVATG LFWTVFFGVYFTVLQAAEYYQAPFALSDSVYGA, LAA AVVLGVEFTVWQGYEYYKASFYGYDGVYGSTFYMTTG
 L WLT I L GAYFSALQLIEYKESPFTMSDSIYGSLFFDATG LMVTWML GVYFLCLQGFEYFTCMFDMSDSVFGSVFFMATG VLLTVLLGAYFTVLQGYEYVEASFSIADSVYGSVFFVATG

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UniRef90 -D2Z1Z9 UniRef90- B3DFF7 UniRef90-Q02654 UniRef90-D8WJo9 UniRef90 WoFHR1
UniRet90 D6RR87 UniRef90-D3W6W1 UniRet 90 -S4SA13 UniRef90-Q34183 UniRef90-O8W9R1
UniRef90-A1YWC1 UniRef90-M9MTG7 UniRef90-DOIPA9 UniRef90-A8VRS4
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UniRef90 M9NAS3 UniRef90-E9PGB6 UniRet90-B2CKY8 UniRefofo-E3VT56 UniRef90-B6E4Y2 UniRef90-D4NVJO UniRef90-Q8HIS2 UniRef90-AOAO23PJX8 UniReffo-Q6GY80 UniRef90-Q95840
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UniRef90 S5TF04 UniRef90-G91SJo UniRef90 K21Z71 UniRef90-Q71S54
UniRef90 Q5VB06 UniRef90-S6BFN9 UniRef90-Q4FCY9
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UniRef90_LOWIP5 UniRef90-Q9MG87 UniRef90-G91JH6
UniRef90 $\mathrm{OBHOl6}$ UniRef90-Q8HO16
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UniRef90 I1DZM9 UniRef90-В99КН96 UniRef90 $14 \mathrm{DFO2}$
UniRef90
B3F5K7 UniRef90-K2JSL2 UniRef90-Q9GBV8
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FHGLLHVLIGSSFLLVICLIFRCFLQQFSGTRHFGFEAAA
FHGLHVLI GTSFLLVCLVRHLSHHFSSEHHFGFE
FHGFHVI: GTFFLIICGIRQFLGHLTEKHHFGFEAS
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XXXXXXXXXXXXLVCLTRQLLYHFTSSHHFGFE
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FHGAHVT $\square$ GT $\square$ FLI ITLTRVIRGHFSADNCFAWEASAWYW
FHGFHVFVGTCFLIVCLIRVYLNHFTREHHFGFE
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FHG HVI GTMFIMHTTNRMNMNFSSNHHFGFE
FHGLHVII GT DF A TMFWRGLA YQLT DHHHVGFESS ILYW
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$\square G A D A S T L G G V M Y M H S F T G G G$
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FHNYH LLSLSSYPDMVFMVMSCLTTSLVIMFKYGVVSG QQHPYHLVDASPWPMFMGLSSLFLTTGFVLYMHGYNIGG YY $\square P H K A T W P \square V G S \bigsqcup G L T L L A G F A N Y L N G L S U G P$

Y F VP GPSRHP $\square$ T A A F G L L M T G A G A A G WVN G QP WY L NHEYH LLEPD DWPLIGS LSALTFTSGMVLYMHEMASAH
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HK HPYH LVD P S P WP M $\square$ AS FSAGTMLLG I ILFAHSN $\square$ HWV

H L VD Y S P WP LT GA $\square$ GAMTTVS GM $\square$ K WF H Q Y D T S L KHHDYHVVDPSPWP $\square$ GA $\square$ AAFVGASGAVLWMHGGSA $\square$ P HRHPFHLVDPSPWP LVAS $\square$ GG $\square S \square T F G G V M F M H N Y S G Q L$ FHLVTDSPWPLFMSANSYFFMMGMMKMVMLKKVDL

R QP F H L VE Y S P WP $\square$ T S S $L$ GAF T $\square$ A $\square G L A S$ WF H N H G Y Y C

GA L S A LLLTS GMDMWF HYNSSTL


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LS L GLLTF\|LYTMFVWWRDVLIRESTLEGHHTKIVV|QLGPRYG L TLGVI GTLTTMGLWWRDCI AEGTFQGHHTKPVQRGLSLG $\underline{V} Y L A L F V L T C S A S F W F R D M I A E A T Y Q G N H T M A V R K G U N T G A$

LILGGDPA $\square I$ TMMVWWRNVIREGTFQGYHT RARVSRGLRWG YQGHTIVQGLKG RGGHTTYVVKGLKLG $R D V I R E G M F Q G Y H T Y N V S L G L R Y G$ T LLSSLGLIVILYTMFVWDVVRESTYGGHHTKMVQLGLRYG MMMATTLSMITFFSWSKDILTESSMEGQHSKKTSSTLKDG SFLTFGUFFLLFS $\square G \square W D I I R E G T F E G Q H T S Q V Q L G L R F G$ F LMGFAGVLYCMYAWWRDVXREATYQGYHTSTTTSGLRDG RDVI CEFTYEGHHTFMVQLGLRYG $\square F \square A \square S L V L S S \square F \square W \square R D V V \square E G T Y L G D H T \square A V R K G L N \square G$

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 RDVSREATLMGYHTLKVTNGMRLG F G LGLDPS LS $\quad V L Y K W W K D I V T E A \square R D N C H T E I V K K G L R L A$ MFMGLFSILLSSVQWWRDVSREATLQG|LYSAQMDRSFKQG HEHEHGQDGHAHGSAKVLG

RD I RESKQPGVHAYNGLRWG ADHHEHHDDGSGRRYG DVIKESVQHKAHTGVVQDGLRMG $\square F \square S F L I A G M V A F G W W R D V V R E S T F Q G Y H S S N V L S G L M L G$ HHDHDAGSVKVLG HAEHGHHDAGATKVFG LMLSFTSLIFVVCNWAKDTSFEGTFQGWHTSGVVSGLQAG TFALVGLLAVLLTLFLWWRDREATFEGKHTSAVQQGLKYG TMMILGAGILVTMLVGWFGTVIESVAGDYSDQVDHSFRWG

C GF GLLWF LIFVLKSWF GDA $\square$ RESE GGMYGKNDDTSFRWS WWRDVXREGSYQGYHTASVVGGLRWG $L V L G \square G \square A G L \square A T F F S W F S N \square V K E A E G D H T P \| V Q L H M R Y G$ DESMAGDYSDQL GRSYRQG

GKYSEQI ARSFRQG T $\square T \square Y$ QWWRD $\square V R E S T Y Q G H H T Y P V Q K S Q R Y G$ $R D V S R E G T \square Q G L H T L K V S T G L R V G$ $R D V V R E S S L L G F H T P A V Q N L L L G$

VS F T LIF N L S M VFA L WNRD I IRESTFMGGHTLVVKMMDKFS SMS GLYSEQI TRSFRQG AF $\square G L L L V L M T S V V W W T D V V T E G T M M G C H T S L V A R G L R \square G$
$D \square 1$ REATYLGFHTSSVVSFKMG GLLYSDQI TRSFRQG DVIREA HAGDHTPVVSLHLRYG $\square G \square G \square L G V L F S M A G W W R D V I R E S R T P G V Y T P I V Q Q G L R Y G$ RDIIREASFEGQHTSAVQEGLRMG
 DVIREA $\square Y D K C H T A I V K H G L K D A$


TFFSWFSKVVNEAQSGDH TPVVQLHNRYG LS $\square G V F T V L Y V M V T W W R D I V R E A S E E G Q H T E A V Q E G L R G G$ L I LS S $\square M M M F V F F M W M R D \| I R E S T Y S G E H T N K V V E G L K L G G$ HGDYGKQVDYSFRWG
HADHAHHDSGATTTMG
LI LIA YALI I I S MDQ WWRDVVREGTYMGHHTSHVTSGLRWG DVI REAQYQHDHTRVVQLSHRYG RDI I REAEHQHAHTPVVQLHYRYG LLIGGVTNLLTMDQWWRDVIREGTFQGHHTPVVQKGLRYG AHGGHEEHHDMTGLKMYG


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> PTWPLEKTPGGDETT MFMF LSEEDFFF DSFFWTFFHSSDSPS IVEVNMVWPPKMVQ MSWFI FSEVMFFGAFFGALLFYARIIDVPWLGGTPGGETTE MGLF ILSEAAFFLSFFWAFFHCSFGALMQMETWPPVGVK
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 MILFI I SEELMFFFSFFWGADYVGSHPSDFI GALWPSWGUS $M$ SWF I FSEVMFFSAFFGALFYMRVLSVPELGFGVGYHAEE
 MPGFT
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 MILFI $\operatorname{ZSEVFFFAGFFWAFYHSSLAPTPDXGGCWPPTGIN}$ FWIY L MS DLI IF GS LIF A TY

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F W $\square \mathrm{Y} \square \mathrm{MS} \mathrm{DC} \mathrm{\square LFATLFATY}$
$H S S L A P T P H L G G H W P P T G G I$
$A V L E T G S I S G P T G K$
MA LF I LSEVFFFVSFFWAFFH $\square$ S $\square G$ S $L$ SEGGSWPPMG Q F WIYLMSDCVLFATLFATY AVLESSSDAGPTGQ FVSFFWAFFWLSSSPSVELGSYWAPCNDN


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130
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 VINPYQLPLLNTMLLLSSGVTLTWSHHALLHLNLKEAMMG FLSPFSVPLLNTAVLLASGVSVTWSHHSLMLGSRVSSLHG PAGYEEVPMLNTLLLVSSGGTLTMSHHLLLKKSIKMSAQM TLSAWEIPFGNTALLLTSGASVTFAHHAIIVGSKRKASDA PLSPWALPLFNTVILLSSGSAVTWAHHSLIVNYYENADTA VLDPWG| PFLNTLILLLSGAADTWAHHALLAGLKEEAVYA SLKPTELPLLNTIILLASGATVTWAHHSILYKDRQGTLVG PLNPFQVPLLNTAVLLASGVTVTWAHHALMEGDKAGGLQG PLNPLEVPLDTSVLLASGVTXTWAHHSLMXSXRKQTDQA
 SMGLLGVPL NSFLLLSSGVSVTWSHYELLRGDVPKSLLA PLNPFSVPLLNTAVLLSSGATVTWAHHALISGKKTEAING DGFELPFVLVETFFLLFSSDTYGMAILAMYRGYKSRVNVW
 KLDPWSUPELNTVILLASGCTLTWSHYSLMNNDNRTTDRM AMGWQGLPLITILLVSSVTLQFAHTAIEKDNRKQLTVF PFNPFQIPLLNTAILLASGVTVTWAHHSVTENYHSQAI HS DLFELPFVLAETFVLLFSSITYGYAMLAVHRRDKAGVLRW TFDPWHLPLINTLILLCSGAAATWAHHALHENNRKDMKNG PLNPFQ1PL NTALLGSGVSVT WAHHSLMNKNLKSSTHS TEDPGGLPLNTMILLDSGCTVTWAHHALLENDRKGLLQG D TFELPFVLVETFLLLFSSFTYGMGVLAMNDNRVGRVKAW TFDPWHLPLMNTTVLLLSGTTVTWAHHALREGDNRTTVQM AFSPFQVPLLNTVILLASGVSVTWAHQSLLNENWKMANYS

$0<$
$3<$

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 $P$ P D P V G V P L L N T VVL L G S G F T V T W W HY S L L L G K K G GA K V G

 A MP WQ G I P L F N TVVIL L M S S IT L QMA H I S L E K N K V P WL G G A A F K V V Y G


 $S F N P$ L $Q$ D P L L N T A L L A S G

 A M N P F D
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E L F E LD F V L I E T F L L L F S S FT Y G M A V L A M N K D R L A QV K G W P L N P L E V P L L N T S VL L A S G I T IT WA HHSLLLNKNRK QMT QA D I F ELLP FVVFV E TMLLLESSSITFGFGMDAMKRNDDAGLKRW A M G WQ G L P L L N T II L L A S S V T L S F A HVVA L E K E Q R A K V K A F



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LCTVLLGATFSCVQVYEYSHATFSFAGNTYGATFFMATG LWLTVGLGVMFSMLQAYEYSHAEFAFSGNUYGATFFMATG

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HFVD|VWLCLLFFFVY
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HFVD
H F LDVVW■CVFTVVY $\square$ M GA
HFVDVVWLCDFVFVY


HFTDDVWTCVFTIVYLLG
HFLDVVWICVFTVVYLLGA
HSVDVVRSFPFVP
HFVDVVWLCLFVFVY
HFVDVVW $\square G \square F A T \square Y F$
HFVD
HFVDVVW■CLFVFVY
HFVDVVWLCLFVFVY

HFVDVVWIVVYVSFYHWG
HFVDVVWLCLFVFVY
HFVDVVWVGLFAT V Y L
HFLDLVWDCVFTFVYL
HFLDIVWICVFTVVYLMGA
HFVVVVW

$H F \backslash D \overparen{V} W\|C / F T\| V Y \square M G$
HFVDVVWLCLFVFVY
$H F \square D \square V W \square C V F T \square V Y \square M G$

Q G H P F H L V S P S P WP L LTCVS LLDLT T S GVLSMHGFTYAA


PS S WP LTGGAS LTLLT GFLLCLSPYNPSTK PYHVVDPS PWPMDMGANLWGVAAMFICWVNE\|SLDS

H GY $\square$ GNMNL
N M M H P F H L VS F S P WP $\square$ MVS $\square$ N $\square$ M N $\square$ A $\square$ S A S W $L$ F T MN N WS P
$\square$ F T S F S L M N L A T S M A LT S H G Y M G N N
SNHFFHLVEFSPWP\IMSFNLIS LGSS\|I IMDMYKKTMD

MS LS S YPF LVF L N LT G LM S S LVIF F K Y GMF $\square \mathrm{G}$


YQHFSFH LVDPSPWP $\square L T$ SFS LLN $\square T \square G A V S Y M H G Y G G Y \square$


KFRKFHKMEYSYYPMMF CMG LLGFDFGLVLFMNMGLFYP HRTTPFHLVDNSPW PLFTAFVFF DSFSNFVFFFKK\|FYS NQMFHLVNDSPWP $\quad \mathrm{L}$ S S $\square \mathrm{NLLLNMS} \mathrm{\square SF} \mathrm{\| LS} \mathrm{IIYSNPLI}$

NYNHNFH LVNNSPWPLMSALSVM■ILMGSVNMFQKKMLML
 Y F VP GPSRHP $\square$ TAS $\square G L L L T$ A A GAA G WVNGQP WAP

M N S S P WP $\square$ L G F GVF SVGES I $\quad$ GF FHGNSSFY Y QLHPFHLVENSPWPFFSSFSLFGLAMNLTSHGYMQSS $\quad$ SW QP F H L LT $\square$ S P WP $\square$ T $\square$ S MS L LS T T LS M $\square$ I WM H Q T NP HP

HQS HAYHMVKPSPWPLTGA $\square$ S A LLMTXXXXXXXXXXXXXX

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 Y WLP LAALILLMSSMFWDVISEGTYDGNHTLAVQKGLNMG DVVREATYLGHHTKMVQLGL RYG LLLS $\square \mathrm{F} \square \mathrm{IL}$ M $\square \mathrm{MY}$ YWWRDVTRESAFQGDHSMNVFKGMKLG TGHAHGAVNRPNLVSVG

TRAEHGHQGTGTSKVFG
D DVP P G GYQFHVT P HVPNGTLLG
LILGLLAVGDTSSFWLHDLLSESCWEGYTTRFLSSCDRYG $L Y W G I P L F V L T F Y S W V R D I I N E A T F Q G F H T E K V Q S G L T L G$


TYKGLHTKDLLFCDRMG WWRDVXREATFQGFXXTPLSKGIRLG WWRDVXREGSHQGYHTSSVVNGLRWG
 FM $\square \mathrm{S} \square \mathrm{T}$ S $\square \square \mathrm{M} \square \mathrm{GQWWRDV} \mathrm{\square RESSFQGFHSHPEGSSTA}$ G WWRDVIREGTFQGCHVSLVVKGLMVG

YMMMMCAM $\square$ YSMS $\square W F K D M M A E S T Y G G D T \square A V K K G \square M Q G$
$M \square M S V F M \square I D V K F Q W W R D \| V R E A L Y N G C H S K M V K Q G \square S M G$ GQYKKWEDKSFRDGG
THATAHAHEHGHHDAGGTK 1 F G FNLLMLIT ILVILNWFKDVSRESDLLMEHSFLNNVFFKTG
 EFLVKGDHHPQNGTLLG $S K T V V G$ MKVFG FFFFFF $\square F G V F Y S W M R D V S R E G F F Q G V H S Y Y V I F G L S L G G$ S LIF SFFY IVMMSYLWDSDVMME DMSGQYS $\square Q D Y R S F R Q G$

RD $\$ VREATFEDQHT $\square A D Q K G L R \square G$ HEHHDTGGNTVFG LTSGLLLTVLGM】LWFRD\IIEGTYLGHHTQEVKNGLMLG FHITDEHHPQNDTLLE
DVIHESR GGLYDAQMDRSFRWG $\square F W G V L I \quad 1 \quad A T V Y G W T R D I V N E A T F Q G F H T K K V Q A G \square S G G$
$D V V K E G M E D K A H T A K V R \square G \square R M G$ $L L F C D F S \square F L V S F A W G K D I V M E G$ V $\quad$ S GYHNFFVMDGFKFG MS MMMGCMILSMFSWWRDLI REGDIGGLYTRFADKSFRDG

D $\square$ GGHGDSHDHEHHDTSGDT $\square \mathrm{FG}$
 FFIC FFLFFLCGFFWWKDI RESSYLGFHNDMVQKNLLKG Y LS WG $\square \mathrm{L} \square \mathrm{M} \square \mathrm{MFQWWGDMTKENLFKGEHTFKVMSGFSMG}$

HHDAHAEHGHHDAGANKVFG EYHLAEEPHPENGTSLG
 RDITTEATYQGDHTLEVQKGLT $\square G$


RDVLHESTLEGHHTKVVIRTS $Y$ VCVLG $\|L W F L F V L W F G D A\| G E S E \quad G G M Y G R R\|D\| S Y R W S$

CLTTIIALSMAVSMWWRDVVREGTFLGEHTQVERKAFWVG VI LGIVCVAYSMF LDFFRDMVAEGTYLGNHTGAVRNGINLG $\square$ MYS LMMTTLTDY LDTK K MSRESS\|LGF LT DPMDTMVSVG HGHHDTGETKVFG WWRDVXRESN GFHTSKVVAGIRWG

HGHAVEEHGDFRMFG


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| :--- |
| UniRef90 Y1B4R4 | UniRef90-C6XR90 UniRef90-B2UFRO UniRef90-A8FPN5 UniRef90-LOHRC7 UniRef90_C3S780 UniRef90-G9IJF2 UniRef90-M1FRL4 UniRef90-A0A037ZK55 UniRef90-C4NTY7 UniRef90-G91JG9 UniRef90-G91JE5 UniRef90_Q5P2E8 UniRef90 -99XLXO UniRef90_UPIo003082B48 UniRef90 C4NCE8 UniRef90-UPIO0036B1C15 UniRef90_LTNWG4 UniRef90-A1SBD2 UniRef90-G8ADQ3 UniRef90-131514 UniRef90-G5EIFT UniRef90-Q6JCP5 UniRef90-C6WU62 UniRef90-POABJ4 UniRef90_Q1YGM9 UniRef90 J7KEE7 UniRef90-W9GX82 UniRef90-S4UEH1 UniRef90_UPI00041F4DD3 UniRef90_Q0VMW5 UniRef90-UPIOOO465F783 UniRef90-A0А023Ү351 UniRef90 L8BH57 UniRef90-G3D5N3 UniRef 90 -G4V230 UniRef90_D3X981 UniRef90-F1DGM5 UniRef90-АОАо23Y609 UniRef90-S4SQC0 UniRef90-X4Z2V3 UniRef90-UP10002FC3C23 UniRef90-D5FRW8 UniRef90-D3VOU2 UniRef90-K9HM93 UniRef90-P24879

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FWПY पMSDC\| IFATQFATY F W■Y LMS DC LDFACDFAAY

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 F
 AVLGGNYAAGPGPR
SMEIGCLWPPNNIL
 M पL $\square I S E V F F F \square S F F W T F F H S S G S P T \square E G S E W P P V G V T$
 GGVWPPAGLE MLAFTTSELCFFDSFFWMYFYपSLSPDTSLSSTWPPKGi E MIVFICSEVFTPYKDFLGTWPSAGPGGTVLGTEYKPGTLT FWUYLMSDCILFSILDATY MILFTTSETMFFVSFFWCYFDFAARTEVLGGQWPPQG VE VLVF $\square$ FSEFMFFFGDFWTFFDASALEKEALGGVWPPTNHE ATSMAPGVT FWПY पMSDCLIFACLFATYGVLSRSYAGGPTGME
FWMY LMGDCLIFAVLFATF
GVLLNGTADGPSGK FWIY MSDCIDFA TLEATY MFLFIVSEIFFFFSFFWSYFHSSLVVSFSVGGVAPPVAGK

 FWVYLMSDCLIFASLEATYVVLS MGWFIFSDCMFACLFATYFYVRSWPLGVLGRNYAGGPT MGWF FSEVMFFAAFFGTLFYVRSWPLEPPGEGDEGPRD MGMFTASEVMFFVAFFWAYFNNAFLVSPGNNGAGGPSK VLVF FSEFMFFFGDFWTFFDAALVPAHDVGGVWSPDGMH $V A L G L S E V M F F F S F F W A F F H N A L S P S C E L G M R W P P P G \square R$
FWDY DMTDCLLFASFFATY AVLFMNTAGGVSGK
 M $\triangle$ MF LSE $\triangle M F F F S F F W M F F Y L S L S P D V E L M M K W P P L G U S$

 VILFUVSEVFAF DSVFWAFFHSSGPAGEGGVWPPQGUT $M V M F$ VSELMFFFSFFWMYFYDSLSPDVELMMNWPPYGVE
FWLYLMSDCLIFATLFATY

AVVGRNYAAGPGA
TWFYFVRRTGGHVPFCSFSSFFSFFFSTNGRDRRYL MGWF $\square F S E V M F F G A F F G A L F Y A R V Y T M P W A G P A G T V E P Y E ~$ VARTTFTGGVWPPKGME F LivCTEVMFFVSDFWAFFHSALAPAVELGCVYPPVGL FILFVVSEALFFIGMFWAFGHSAISPTVEMGAVWPPVGIEE Ti VWLSSEALMFFAAMFAMYFTIGRST VEMGADENWPPES MLLFTTSEVLEFSAFFWMLIFHTSLSPNTFLGLH WPPLGIK FWI YLMSDCl LF ASDFATY MILFIVSEVMFFFSFFWSYFSSSLCPTVECGSHWPPAG LATFLVADAMTFAGFFAAYLTFKAVPTPHGGGPLPSGA! MVLFLVSEDFFFTGFFWAFYHSSGAPTPHLGGHWPPTGIV STVEAVGGTWPPKGME
TVVWLGSELMFFAGLFAMYFTLRAVAPQLWDLH
FILFI ISEVFAFISVFWAYFHSALSPAVELGSTWPPVGIT VLLFIFSEVMFFFSVFWVFFDAALVPVHELGGDWSSFGLL FWIYLMSDCLIFSVLFATF

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 UniRef90-A9Y5G8UniRet90-B1NFQ2 UniRef90-B7U388 UniRef90-C7FIK9 UniRef90-C7BJJ2
UniRef90 E4N9X6 UniRef90-B4SM47 UniRef90_C6DB48 UniRef90-A1RE888 UniRef90-C6XR90 UniRef90-B2UFRO UniRef90-A8FPN5 UniRef90 LOHRC7 UniRet90-C3S780 UniRef90-M1FRL4 UniRef90-A0A037ZK55 UniRef90-C4NTY7 UniRef90-G9IJG9 UniRef90-G91JE5 UniRet90-Q5P2E8 UniRef90-Q9XLX0 UniRef90-UPI0003082B48 UniRef90-C4NCE8 UniRef90 UPIOOO36B1C15 UniRef90-LTNWG4 UniRef90-A1SBD2 UniRef90_G8ADC
UniRefotol 131514 UniRef90-G5EIF7 UniRet90-Q6JCP5 UniRef90-C6WU62 UniRef90-POABJ4 UniRef90-Q1YGM9 UniRef90_J7KEET UniRef90- W9GX82
UniRef90 S4UEH1 UniRef90-S4UEH1
UniRef90-UPIO0041F4DD3 UniRef90-Q0VMW5 UniRef90_UPIOOO465F783 UniRef90-A0A023Ү351 UniRef90-L8BH57 UniRef90-G3D5N3 UniRef $90-G 4 V 230$ UniRef90-D3X981 UniRef90-F1DGM5
UniRef9O_AOAO23Y609 UniRef90-S4SQC0 UniRef90-X4Z2V3 UniRef90-UPIO002FC3C23 UniRef90-D5FRW8 UniRef90-D3VOU2 UniRef90-K9HM93 UniRef90-P24879
UniRef90 D4PBU4 UniRef90-UPI00036E9F17 UniRef90-UP100036D7F2C UniRef90-E1AK28 UniRef90-A0A024GX59 UniRef90_Q697F5 UniRef90-GOA305 UniRef90_D8MNX5 UniRef90-UPIO003FF7C78 UniRef9-D2JP96 UniRef90-O79622 UniRef90-UP10003B52CD8 UniRet90-Q68P17
UniRef90 FOL3Q0

UniRef90-M1SJF1 UniRef90-W1NPH3 | UniRef90-V2IUU6 |
| :--- |
| UniRef90- $33 H 00$ | UniRef90-U2ZCT4 UniRef90-M4ZUXO UniRef90-A0AO23UPR3 UniRef90-UP10003796C2E UniRef90_V6SL39 UniRef90-G91JF6 UniRef90-Q3AWK7 UniRet90-M9NA26 UniRef90-UPIOOO46CFOBE UniRef90-UPIOOO2631063 UniRet90_C7NIC6 UniRef90-P14058

UniRef90 C7FNH0 UniRef90-NoA383 UniRef90_UPIO003610A19 UniRef90_UPIO004762C40

TENPYNJPLIN
140
150
160 NLILSSGILTXSHNCLLNKKYLITNII AA NAFELTPLLNTVLLLASGVTITYSHHSLIQGNRNGALYG PIKPLGLPLLNTFILLTSGATVTCCHHSLVGGLRKRALLS VFDPFLIPMLNTIILLTSGITITWAHNSMIYNNYKQFMMS EIFGLSFVLVETFLLLFSSHTYGFAMLGMNKGKVGQVNAW D AMP WTGLPLIN TFDPFHLPLINT GAELGELPLLNTSFLLLS
AMGWTGLPLYNT
CLDWSKVPLHNTALLVASSASITGSHNYLGWGDGWVATAT VI NPFQVPLLNTLVLLTSGMTVTWSHHCLLNKNFKEGLFS AINPWELPLLNTVILLSSGSTVTYAHYSFIGGNRKGTFVG TFDPWHLPLINTLILLCSGCAATWAHHALVHDNNKDMKNG P DPFSVPLLNTAVLLASGATVTWAHHSIKEKSGKDTKTA PLSPWGIPLLNTVVLLSSGVTVTWAHHSLDAQNSYESVID PLNPFDVPLLNTVVLLSSGVSVTWAHHGLMEGLRQTSLYG AVGAWGLPALNTILLLASGATVTYSHHALLQGNRKDALSG DLFDUNLVAL NTAMLLFSSTTYGFAMLAMEKDKVGATQAW TFNPYSVPLLNTSTLISSGLSVTWSHHSMLNSLKYESVVS TVDPWNLPLMNTLVLLLSGTTVTWAHHALIHGKRNEAKWG PFNPFQVPLLNTVILLSSGVSVTWAHQSILGGNDKDMWWS AMGWTGLPLINTILLLTSSFTLHFAHMGLEKGKRHQLKSG AMSAAELPLLNTMMLLASGVTITFAHHALINGNRKNTLYG PMPWEG1PRLYNTMILLASSUTLQFAHDG|EKNKHNDLAKD PTNYLDIPRLNTLILLTSGFLITWAHYSMMINLIPNDMKTG PMAAWGLPA NTALLLSSGATLTWAHWGLLKDNRKQLIFG D ${ }^{\text {V }}$ FELPFVLVET
 TLDAFHLPLMMTMLLSSGVLITWSHFSILNNDWYFSVVT LVNPFGVPLLNTGULLSSGVTVTWAHYSLLSGDNKTASVA


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WTWLPFWN










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| UniRef90_UPI000258F6B8 | $\text { H F VDV V I } \times \boxed{L} \stackrel{250}{L} \mathrm{Y} \text { LS } \square$ |
| :---: | :---: |
| UniRef90-A9Y5G8 |  |
| UniRef90-B1NFQ2 |  |
| UniRef90-B7U388 |  |
| UniRef90_C7FIK9 |  |
| UniRef90_C7BJJ2 | HF LDVVW C CVFTVVYLLGA |
| UniRef90_E4N9X6 | H F V DVV V Wi G L F A T I Y L |
| UniRef90_B4SM47 | HFLDLVVWI CVVFTFVYLIGA |
| UniRef90_C6DB48 | HFLDVVVWICVFTVVYLLGA |
| UniRef90_A1RE88 | HFVDVVWLCLF I FVV |
| UniRef90_Y1B4R4 | HFLDVVIWICVFS I V Y L M G A |
| UniRef90_C6XR90 |  |
| UniRef90_B2UFR0 | $H F L D V V W \square G V F T F V Y L M G T$ |
| UniRef90_A8FPN5 | HFVDVVWLLCLF $\square \mathrm{F} V \mathrm{~V}$ |
| UniRef90_L0HRC7 |  |
| UniRef90-C3S780 |  |
| UniRef90_G91JF2 |  |
| UniRef90-M1FRL4 |  |
| UniRef90_A0A037ZK55 |  |
| UniRef90- C4NTY7 |  |
| UniRef90-G9IJG9 |  |
| UniRef90-G9IJE5 |  |
| UniRef90_Q5P2E8 |  |
| UniRef90_Q9XLX0 |  |
| UniRef90_UPI0003082B48 | H F LD V I W $\square$ GVF T F VYY LM G |
| UniRef90 C4NCE8 |  |
| UniRef90_UPI00036B1C15 |  |
| UniRef90_L7NWG4 |  |
| UniRef90-A1SBD2 | HFVDVVWLCLFVFVY |
| UniRef90_G8ADQ3 |  |
| UniRef90-131514 |  |
| UniRef90_G5EIF7 | H |
| UniRef90-Q6JCP5 |  |
| UniRef90_C6WU62 |  |
| UniRef90_P0ABJ4 |  |
| UniRef90_Q1YGM9 |  |
| UniRef90_J7KEE7 |  |
| UniRef90_W9GX82 |  |
| UniRef90-S4UEH1 |  |
| UniRef90_UPI00041F4DD3 |  |
| UniRef90-Q0VMW5 | HFLDVVWWVGVFTYVYLM |
| UniRef90_UPI000465F783 | H F V DVV WVVGL F F TVVYI F G |
| UniRef90-A0A023Y351 | H F L D L I W I C V F T F V Y L |
| UniRef90_L8BH57 | HFLDVVWUCVFSVVYLMGG |
| UniRef90_G3D5N3 |  |
| UniRef90_G4V230 | $R \mathrm{~F}$ LE WM WG $\square$ M F S LIF Y $\square \mathrm{WGG}$ |
| UniRef90-D3X981 | HFVV |
| UniRef90-F1DGM5 |  |
| UniRef90_A0A023Y609 | H F LD L I W $\square$ G VF S V VY L K G A |
| UniRef90_S4SQC0 |  |
| UniRef90-X4Z2V3 | HF LD L I CVGVF T F VY LM G |
| UniRef90_UPI0002FC3C23 |  |
| UniRef90_D5FRW8 |  |
| UniRef90-D3V0U2 | H F LD V V W $\square$ C VF T V VY $\quad$ LM G A |
| UniRef90-K9HM93 |  |
| UniRef90-P24879 |  |
| UniRef90-D4PBU4 |  |
| UniRef90_UPI00036E9F17 | HFVDVVWLCLY LFVVY |
| UniRef90_UPI00036D7F2C |  |
| UniRef90_E1AK28 | R F L E WM WG F M F CLLYVVWG |
| UniRef90_A0A024GX59 |  |
| UniRef90_Q697F5 |  |
| UniRef90_G0A3Q5 |  |
| UniRef90_D8MNX5 | HFLDVVWWCVFT IVY LM G A |
| UniRef90_UPI0003FF7C78 | HFLDVIWUGVFTFVYL M G |
| UniRef90-D2JP96 |  |
| UniRef90-C7FIJ6 |  |
| UniRef90-O79622 |  |
| UniRef90 UPI0003B52CD8 |  |
| UniRef90-Q68PI7 |  |
| UniRef90_F0L3Q0 | HF LD V I W $\square$ G VFS F VY $\square$ M G |
| UniRef90-M1SJF1 |  |
| UniRef90_W1NPH3 |  |
| UniRef90_V2IUU6 |  |
| UniRef90-J3HLO0 |  |
| UniRef90-U2ZCT4 |  |
| UniRef90-M4ZUX0 |  |
| UniRef90_A0A023UPR3 |  |
| UniRef90_UPI0003796C2E |  |
| UniRef90_Q6SL39 |  |
| UniRef90_V5CG33 |  |
| UniRef90-G9IJF6 |  |
| UniRef90_Q3AWK7 |  |
| UniRef90-M9NA26 |  |
| UniRef90_UPI00046CF0BE | H F VD F V W $\square$ A LIF Y M $\square \mathrm{Y}$ F |
| UniRef90_UPI0002631063 |  |
| UniRef90-C7NIC6 |  |
| UniRef90-P14058 |  |
| UniRef90- C7FNH0 |  |
| UniRef90-N0A383 |  |
| UniRef90-UPI0003610A19 UniRef90-UPI0004762C40 | HF LD L I W $\square$ C VF T F VY L |

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UniRef90_C6GCS2 UniRef90-M9NAX6 UniRef90-UPIOO03650552
UniRef90_K9STZ2 UniRef90-E9P6D5 UniRef90_UPI0004698202 UniRef90 H0JOP6 UniRef90-G8A433 UniRef90-B4WI08 UniRef90-A3ZOL4 UniRef90 C9V3L2 UniRef90-A9BE62 UniRef90-P80441 UniRef90_D4HLB8 UniRef90-A2BPS6 UniRef90-E1VCN4 UniRef90_UPI00031E464D UniRef90 Q01UX6 UniRef90-K2BJT3 UniRef90-B2CKU9 UniRef90-Q3C213 UniRef90- ВОТОХ3 UniRef90-A9IQD UniRef90-D0JFX4 UniRef90 K8ZC82 UniRef90-UPI0003709A5C UniRef90-V6J9H8 UniRef90_A7K1X8 UniRef90 L1 Q9R8 UniRef90-U1JR03 UniRef90_E5DH16 UniRef90 UPI00036FDFEE UniRef90-T2L564 UniRef90-A6VRF4 UniRef90_Q2J8C7 UniRef90 C5CJU7 UniRef90-D7WEJ6 UniRef90-A9VYFO UniRef90-F6E7C1 UniRef90 SODF56 UniRef90_UPIO00345A41B UniRef90-F7SRC5 UniRef90 W8WTM3 UniRef90-M5CIF UniRef90-B6Z5U8 UniRef90 UPI00037EFB00 UniRef90-M1XFD1 UniRef90-H8KZM3 UniRef90_F3X1P6 UniRef90 Q8WF35 UniRef90_C6XD33 UniRef90-G7Z535 UniRef90_T214T6 UniRef90 Z9JYN2 UniRef90-Q0FH6 UniRef90-10QN88 UniRef90 UPI000362BE52 UniRef90-D7E5Q8 UniRef90-B8XGH5 UniRef90-D3J8D6 UniRef90 F1ZDX3 UniRef90-UPI0002001D98 UniRef90_S5TNQ4 UniRef90-UPIO004779E81 UniRef90-L8XIB0 UniRef90_D4ZFD2 UniRef90 L1LVY3 UniRef90-UPI0003FB4D71 UniRef90-V5R2P7 UniRef90 G2DD80 UniRef90 S4UGP9 UniRef90_Q4KRY0 UniRef90-C7FEV7
UniRef90 E4PI52 UniRef90_C7MZ02 UniRef90-W5WPWC UniRef90-A4SPZ0 UniRef90 C0E4J4 UniRef90-A0A031HUF6 UniRef90_B1MP00 UniRef90 K2JQG0 UniRef90-Q2JID8 UniRef90-Q8FNQ9 UniRef90_K9RUL6 UniRef90- J4PHU6 UniRef90_UPI000421C450 UniRef90_I9WE69 UniRef90 UPI00040AF44B UniRef90-Q85UH4
UniRef90_B3IWK2


KDVSEVLSHHIFFVVSEGKLG HQWWRDLVRESTYGGGHHTTPVQSNNXXXX

HGHHEHPD LRVFG
DVIREATFEGQHTK』VKHGLRYG

NWWS DVVKESTYLGEWSSYVVRTYAWG EENAAVSHHEEHPDHRLFG HGSAEEGHPDHRMFG EATFLGGHTSGVYRGLRVG
$K D \square S R E G T F Q G H H T F A V Q K G L S L G$ RDVI REALLFEGQHTVAVQQGLRMG

HEDFRMFG

SHWGGGHSPYATNSKKFG
 $R D V I R E S T Y E G S H V S V V V S G L M V G$

DESMS GLLYSAQMDRSFRQG AREQEHGHEDAGS LS LFG GKYSSQ FFVGLAGVLFTMFSWWSDVVKESR KGDHTPVVGDGLRYG $R D V V R E A T Y E G Q H T A V V S S G L R M G$

VG
$H N V F G$
HPTANRPSMVSVG
$M$ V V G
HHPEGGTMLG HHPEGSTMLG
$D V V R E G A Y \square G F H \square S M V Q K G \square R I V_{L}^{G}$
$M L I G V V S V I A V M G L W F R D V I H E S \quad M S G L Y D A Q M D R S F R W G$ $\square R E S E G G L N S Q R \square D H S Y R W S$
MFCSYVWWRDVDRESSFLGSHSLKVKYGLKFG DVIRESRIDRAHTGPVRTGLRMG RDVVTEGTFLGDHTLAVQKGLHMGG

MGLSFLTLLHGVVRWWMDMVFESTFKGQYTSFVILNDRWG
FRWFAKIIAESQSGMYRTWE DKSFRWG
 $F \square V G L A S T G L G M L L W F R D \| I L E A T Y L G C H T T Q V Q K G L T \prod G$

HAHSSPTPVG
EDHGHHDAGETKVFG A VC $\square$ A G $\square$ A A M $\square$ A VLYF WF G DA $\square G E S E G L Y S K R \square D S S F R W S$
$A T F Q G K H T M E V I T G L R L G$ $V L L S L F V V L F \square S F A W G K D \square S M E G L S G Y H N F F V M D G F K F G V$

DHGHTDGHADHRDFG
D V V IEGTYLGDHTlAVRRGLNIG FFFFFFFTT\MDMFQWRDI IVRESLYEGSRSVKINYMISSG GGERTRERRGNGMFG
VVQADEHHDEHHDTSGNTLF G

LGMLVLTSFGWDRDI DMESTFQGFHTEKVQSGLTLG $D \vee \vee \square E G T Y \square G A H T \square A V R R G L N \square G$ APS $\square$ S QRVHSLNRPNMVSVG QRVATLNRPNMVSVG HDHGHHDAGANKVFG $\square N R P N \| V$ V G $H H H D A G G S T M L G$
$H S G N R P N M V S V G$
$A \square T Q R \nabla H S \square N R P N M V S V G$
HTAHAEHPDHRVFG $\square$ NRPNMVSVG QHHEHEDYRVFG HEEHHDDGSKTTMG


ATPQRDAADNRPNMVSVG $\square E L G F \| L T \square G G M T F W F R D V G N E A T L G G Y H T K Q V K K G L E D G$

|  |  |
| :---: | :---: |
| UniRef90 LTNB55 | VWF SSEMFFFGFFWSFFHSSL |
| UniRef90-M9NAX | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| UniRef90-UPIOOO3650552 | FWMYLMSDCLIFAVLFACY |
| UniRef90-K9STZ2 | LTVFLCSEGMLFLGLFAAYDTFRAVST |
| UniRef90-E9P6D5 | EVMFFFGFFWAFFHSSLSPADEDGGKWPPVGGT |
| UniRef90 UPIOOO4698202 | FTASWPLMNPPDAS SGPKE |
| UniRef90_G8A433 | FRFFIISEAFFFAGLLGSFFYGVGESSUHGVGFWPPR |
| UniRef90-84W108 | $L C A E S M D F D G L F A Y T T$ RLVA |
| UniRef90_A3ZOL4 | LATFLVADGMTFAGFFAAYLTFRAVNPLPDGAVYELELLI |
| UniRef90_c9V3L2 | CFM MSEVFFFFTFFWSY YYSKV M M |
| UniRef90 A9BE62 | AFLVADGMTFAGFFAAYLTFKAVNPLLPDADYELL |
| eef90-P8044 | WP |
| UniRef90-D4HLB8 | MVIF |
| UniRet90-E1VCN4 | A ALLWPDFTAS WPLLEPPDAALQGPHQ |
| UniRef90-UPI00031E464D | FWLYLMTDCLDFASFFAT |
| UniRef90-001UX6 | MWLFITSDALTFSALLFAY |
| UniRef90-K2BJT3 | MCWFIFSEVIVSHLLLWPSFKATWPLIANPDPATYMA |
| UniRef90-B2CKU9 | MVLFIVSEVFFFVSFFWTFFHSSLVPVMDLGGVWPPSGVE |
| UniRef90_Q3C213 <br> UniRef90-B0TOX3 | $\begin{aligned} & L G S I W P P Q K V D \\ & W A T W P A B G V E \end{aligned}$ |
| UniRef90-A91QDO |  |
| IRet90_DOJFX4 |  |
| UniRe990_K8zC82 |  |
| UniRef90_UP10003709A5C | MSWF |
| Ret90_V6J |  |
| UniRef90-AK1X88 | S |
| UniRef90-LiQ9R8 |  |
| UniRet90_UJR03 |  |
| UniRef90_E5DH16 | M |
| UniRef90 UP100036 | TMVWLASELMFFAGLFAMYFTURGAAPDLWTEN |
| UniRef90-T2L5 | FWVYLMSDLVIFGSLFATYY A A M M |
| UniRef90-Q2J8C7 | TVVWLS SELMFFASLFAMYFTDRSVNSGNWPPVTGDPAGS |
| UniRef90-C5CJU7 | Adiverfo |
| UniRet90_D7WEJ6 | V |
| UniRet90_A9VYFO | FWIYLMSDCLIFAVLFATY AVLGRSYAAGPSPK |
| UniRet90-F6E7 | FWLYLMSDCLIFAVLFA |
| UniRef90 SodF56 | MMLF LSEVLFFFGFFWAFFHSGLTIIPDVGENWPPMGVV |
| UniRef90 UPIO00345A | WFA |
| UniRef90-W8WTM3 | MTWFIFSEVMFFSAFFGSLWYTREVTTPWQGPAGTIJAPFQ |
| UniRef90-M5CIF7 |  |
| UniRe990_B6Z5U8 | MILF VSEVMFFFSFFWSFITHSSSSDVTMGASWPPEQVF |
| UniRef90_UPIO0037EFB00 | MGLF GSEVMFFVAFFWAYFHNALHIGPVTQGVWPPAG |
| UniRef90M1XFD1 |  |
| UniRef90- F3X1P6 | Vr |
| UniRef90-Q8WF35 |  |
| UniRe990_C6XD33 |  |
| iRef90_G7Z5 | FI ASEVMFFSAFFWA |
| UniRef90-T21 | VILFIVSEVFAFLSVFWAFFHSSLSPSVEDGGVW |
| UniRet90_Z9JYN2 | WLSSELMFFAGLFAMFFTLRAMAPETFYEGEGHFTHG |
| UniRet90-90F | M DCo |
| UniRef90 100 N 88 | WW |
| UniRet90- D7E5Q8 |  |
| UniRef90-B8XGH5 | MFIASEVMFFFSFFYALFFLSLSPDVSVGLLYPPAGI N |
| UniRef90-D3J8D | LFIXLENLYFFLVIF WVFFDAALVPVHELGESWSPMGLH |
|  |  |
| UniRef9-UP10002001D98 | LATFLVADGMTFAGFFAAYLTFRAV NPLPSGHN |
| Ref | S |
| UniRef90 Q67401 | VSEIWLF SFFWMYFYYSLSPDMTTGSUWPPYLID |
| UniRef90 L8XIB0 | I Y L S C CLLFGTLFAVFAVFSSS PAGQ |
| UniRef90-D4ZFD2 | LLYLMTDCILFASVFATY AVLYMNTDGGVSGKDIF |
|  | DCILFASIFATYAVLS |
| UniRef90 UPIOOO3FB4D71 |  |
| UniRef90-V5R | HLS LT QMUELGMKWPPTG■K |
| $\begin{aligned} & \text { UniRef90_G2DD80 } \\ & \text { UniRef90-S4UGGP9 } \end{aligned}$ |  |
| UniRet90-Q4KRYO | ELMLFSFFWAFFHMALSPSTETGGCWPPAGL |
| UniRee90-C7 | VFTELMVFVSLFWGYFHSALNPSVVLGCAWP |
|  |  |
| UniRef90 C7MZO2 | VWLSSELMFFAGLFAMFFTVAQNDTGMWPPPNPVTGEQ |
| UniRef90-W5WPW0 | TIVFLSQELMFFAGLFAMYFVSKAN AVLVGGNWPSEPTE |
| UniRef90_A4SPZO UniRef90 COE4J4 | FWVYMSDCLLFACLFATYY |
| UniRef90-A0A031HUF6 | $F W \mathrm{~W}$ YLMSDCLIFAMLFAAY |
| UniRef90-B1MP | VWLS SELMFFAGLFAFYFTARA |
| UniRef90 K2JQGO | T |
| UniRef90-Q8FNQ9 | LSAELMFFAGLFAMYFVSRANGLANGSWAEQTDY的N |
| UniRet90-K9RUL6 | G |
| UniRef90_J4PHU6 |  |
| UniRef90-UPIO0002121C450 | MFFGAFFGALIFYARQYALP WLGGAGDGV |
| UniRee90-19WE69 | T V V L S |
| iRef90-Q85UH4 |  |
|  |  |




UniRef90-UPI0003650552 HF LD L VWVGVFSFVY LVG
UniRef90 K9STZ2
UniRef90-E9P6D
UniRef90-UPI0004698202
UniRef90 HOJOP6
UniRef90- G8A433
UniRef90-B4WI08
UniRef90 A3Z0L4
UniRef90 C9V3L
UniRef90-A9BE62
UniRef90-P80441
UniRef90 D4HLB8
UniRef90-A2BPS
UniRef90-E1VCN
UniRef90-UPI00031E464D
UniRef90 Q01UX
UniRef90-K2BJT3
UniRef90-B2CKU9
UniRef90 Q3C2I3
UniRef90 В ВОТоХ
UniRef90-A9IQD
UniRef90-D0JFX
UniRef90 K8ZC8?
UniRef90_UPI0003709A5C
UniRef90_V6J9H8
UniRef90_A7K1X
UniRef90-L1 Q9R8
UniRef90_U1JR0
UniRef90-E5DH16
UniRef90 UPIO0036FDFEE
UniRef90 ${ }^{-}$T2L564
UniRef90-A6VRF
UniRef90 Q2J8C
UniRef90 C5CJU7
UniRef90_D7WEJ6
UniRef90-A9VYF0
UniRef90 F6E7C
UniRef90-S0DF56
UniRef90-UPI000345A41B
UniRef90- F7SRC5
UniRef90 W8WTM
UniRef90 ${ }^{-}$M5CIF
UniRef90-B6Z5U8
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UniRef90-M1XFD1
UniRef90_H8KZM3
UniRef90 F3X1P6
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UniRef90_C6XD33
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UniRef90 T214T6
UniRef90-Z9JYN2
UniRef90-Q0FH6
UniRef90-I0QN88
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UniRef90-D7E5Q8
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UniRef90 D3J8D
UniRef90 F1ZDX
UniRef90-UPI0002001D98
UniRef90_S5TNQ4
UniRef90 Q674Q
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UniRef90 D4ZFD
UniRef90 L1LVY3
UniRef90_UPI0003FB4D71
UniRef90-V5R2P7
UniRef90 G2DD80
UniRef90- S4UGP9
UniRef90_Q4KRY0
UniRef90 C7FEV
UniRef90 E4PI52
UniRef90- C7MZ02
UniRef90-W5WPWC
UniRef90 ${ }^{-}$A4SPZ
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UniRef90-A0A031HUF6
UniRef90 B1MP00
UniRef90-K2JQG0
UniRef90-Q2JID8
UniRef90-Q8FNQ9
UniRef90 K9RUL
UniRef90- J4PHU6
UniRef90-UPI000421C450
UniRef90-19WE69
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UniRef90 A8UU9 UniRef90 ${ }^{-}$X1H6S0 UniRef90_A0A031K167 UniRef90-B2J2L8 UniRef90 M4NAF9 UniRef90-W9BV75 UniRef90-Q0WY26 UniRef90-H8XZ93 UniRef90 U3AVC7 UniRef90-I3SVX3 UniRef90-LOWD28 UniRef90 UPI0004185D10 UniRef90-D4TL08 UniRef90_F9DPN5 UniRef90_G7Q6G3 UniRef90- F4GW95 UniRef90-TOZYM5 UniRef90-M1N5T3 UniRef90_C7QBM1 UniRef90_Q67ML0 UniRef90-C4LI17 UniRef90_UPI00036D4CE5 UniRef90 UPI00031028F1 UniRef90-B4ED65 UniRef90_UPI0003B53D0F UniRef90_Q03439 UniRef90-L8AZ99 UniRef90_Q1HBC1 UniRef90_UPIO001104449 UniRef90 L1Q622 UniRef90_Q473S0 UniRef90-M0M117 UniRef90 G4HYV0 UniRef90_UPI0003613141 UniRef90-B1GYK1 UniRef90 UPI00045EAB7F UniRef90-I5CVW2 UniRef90-D5VNS6 UniRef90_D4HLF2 UniRef90_Q3SHG3 UniRef90-S6BDE7 UniRef90_UPI00034D7203 UniRef90 UPI00037DDEF3 UniRef90-A4YDJ9 UniRef90-D7B287 UniRef90-R9BWL4 UniRef90_D2ALD7 UniRef90-TOYMB3 UniRef90-A0A023VW39 UniRef90 Q0FXJ7 UniRef90-T1CA42 UniRef90-R4Z5U1 UniRef90_X4YXW1 UniRef90_M0JOS9 UniRef90-D3YLS4 UniRef90-A3JBU2 UniRef90 WOSI30 UniRef90_A3YZK5 UniRef90-V4QXC7 UniRef90_G0LC01 UniRef90 Q46SU6 UniRef90_UPI00036A046F UniRef90-F815S7 UniRef90-E8RVP4 UniRef90_F6GPJ6 UniRef90-W7DXS6 UniRef90_I1Z196 UniRef90 C1A5N8 UniRef90-A6WUX7 UniRef90_UPIO002629CCO UniRef90_C6XEZ3 UniRef90_A4PB94 UniRef90-H1S548 UniRef90-LODEW6 UniRef90_Q1N713 UniRef90_Q1GE98
UniRef90_E6B7B4

FWLYLIMTDCVLFASLFAVF ${ }^{90} \quad$ VVIMAHQFAGGASGR ${ }^{120}$ VILFI DSEVMFFVAD FWAFFHSADAPTVELGASWPP LGVE
 F WL F G G E TV L F A S L F A T Y L FWLYLMSDCLI FASLEAGYL ALK
 ALKNKGPEGMEFTTK GVLGRSYAGGPT NSTNDGPGAE GDWNELLVGV

 HFALWSPS EAP NAGV YSEGIV LLWPHFQSSWPLLQTPD】THYKK HHS T WVF LIF GDMTVFAVLFGVY LYYRGADPVLFD GSQ
 MMWF IFSEVMLTHEFLWSDYTAAWGANGGNGPEQAGGAFR AVLGGNFAAGPGPK

## HFS L S P Y P LY <br> NDGLI

 MS WF TFSEVMFFGAFFGALFYARMSVPWLGGTPDGTTTE F L L F VSEVMFFFAFF WAFFHSSLAPTVEIGG $\square W P$ PKRDW F WI Y L M S D CLI I A S L F A T YGVLGRNYAGGPS

K GTTPVWPPEG
A LKNKGPSGFGFTTQ HNYAGGPT WPNFGPAGVVPEFK MMFFTTSEVMFFDAFFWAFFNFALFPEHVAGMMWPPEGDH FWVYILS DLILFSTLFSSFAVFSASYGGGKAGNE TIVWLSSELMFFAALFAMYFTIRRSVHGSQYFVQQAKH FWLFI ASESIFFACLLVGYLVFR GGYQPGVGPR $T V V F L S Q E L M F F A G L F A M Y F V S R A N S G G D W P P A D V E L N V P$ FWI FLDT DCILFGTLFATFAVLRENTAAGPTGSE LLI FLASESLMFGGLFASYLIYRASTT TWPPEGTE FWLYLMTDCVIFAALFATF A AVLGHQYAGGQTAK
 $F W L F V F S E V M V F G S F L D \quad L C C D I F D S W S Y S N$ MVMF IVSELMFF ITFFWSYTHFMLLVMGEVGLMWPPMGDN FWMYLMSDCLIFA $\quad \square$ FAVYAVLGGNYAAGPAPK
 PGEL

MS WF $\square F S E V M F F S N M \square W Q G F K A T W P \square M S T P D M K A F P G P K G$ ( MWTLIVTEGSLFGYLLFTYFYLASS QTEQYWPPE $M M A T V A T E A S L F G Y L I F S Y L Y L A G S Q E D H W P P E$
 MWAGUTCEFVEF VVLFAVYFVARAHFPDAFEQGAQRLSLA
$F W \square Y L M T D C V D F A S L F A V F A V S S \quad Q Q F A G G P S G K$ $M W F F L L S D A F T F S S L L I G Y G Y V R F S L P A Y E G S L D N Y A A S Q$ T $\square V W \square A N E L M F F A A L F A M Y F T \square R \quad S \square T N G N P D \square G Q W P D$

FWlY TMSDCVLFATLFATFADEHKHTFGGPGAQ $F W L Y L M S D C L L F S G L F A T Y \quad A V L H G H T A G G P T P S$ $F W \square Y \square M S D C L D F A V L F A T Y \quad S L I P M E E V G E F W D P K G V E$ M WVF LGSDCMLFGGLISTY $L$ HFYLLWPSYQATWPTNGPGFS

$$
\begin{aligned}
& M L L F L V S D V A T F A A G F V Y Y A F \square R A G A W P \quad P A H L \\
& M L L F L V S D V A T F A A G F V Y Y A F \square R A G A W P
\end{aligned}
$$

CLIF F DS WS YEN FHAGRE
 HSALIEVRTAWSTWPPAGVE

 FWFFLT TDMLLFASLFATFAVMR FDFAHGPT FWDYLMSDCLIFATLFATY A AVLKDATAGGPNGR FWLY $\square$ MS DC L LFGCDFASY SSGAPTVEVGSCWPPVG\|E WSYFHNCLNPSVFVGWPPYLKNGI $\square W T F \square G S E C M L F A S L I S T Y$ YRSPEGPYPHEVWTNPATGQV FWlYLMSDCVLFSGLFATYAVLAHQFAGGPTGRE
$T$ VVWLS SELMFFGGLFAMFFTLRSMVPEVFADGESNFTHG FWI YLMSDCLMFAVFFVTYAVL GKNYAAGPA FWLFVFSEVAIFGSFL
FWVYLMSDCII FAGLLFAAFAVLR
MWTF LATEVMFFGGLFGGFCVYRF
FWMYLMSDCLIFAI LIFATY
F W $\square \mathrm{Y}$ L M S D C L I F GI LIF A

VCCDF FDCWS YS S
GEVAGGPSGK
TASHALLAS
$A V L G G S Y A G G P G P K$
VHAVVGTSYAAGPS

|  |  |
| :---: | :---: |
|  |  |
| UniRef90-K2 | NLFGLELVFIMTMLLLTSSLTSVYAMYHMKNHNFKKMQLW |
| UniRef90-UP10002EF32C1 | DLFEIPLAFLMTMLLLTSSLTSVYAMYHMKNFEFKKMQLW |
| UniRef90-UP10003FDBE64 | ELYQLPLVFIMTMLLLTSSLTSVYAMYH |
|  | GAELFDLPLVNTALLL ${ }^{\text {d }}$ S |
| UniRef90-UP100047B0506 | ELIFGLKLVFVM |
|  |  |
| UniRet90-Q018U0 |  |
| P100035E |  |
| $\mathrm{IOH}$ | PLPTLNTALLLSSGL |
| B8 | RMLILTIT L A S A S C |
|  | ML |
| UniRef90 K2BV | VMETWGIPAINTFILLSSGVT TIA A WGITKKNRAHSIFF |
| UniRef90_A8UU90 | M |
| UniRef90-x1H6 | ARLINPTFGVANTLILLT GSLLVVTAVRAVRQRANALLAGRL |
| UniRefo- B2J2l 8 | -Ravearego |
| UniRef90-M4NAF9 | AWGLPLLN |
| UniRe990-W9E | DLLLIALNTAN |
| UniRef90_Q0wY26 |  |
| UniRef90-U3AVC7 | AMPWNGIPLMNTILLLLSSTTLHMAHVSLEKNKRTALLVW |
| Re |  |
| iRet90_LowD28 |  |
| Ref90-UP1000 |  |
| UniRef90-D4TL | T P VFVMT |
| G70 | CKY |
| G7G | EL |
| UniRef90-TOZYM | PFHIPFLNTMILLLSGTTVTWAHHSLLENDRKGL |
| UniRef90-M1 N5T3 | DLKFVLVETAILLLSSTTYGFAMVQAHKSNLSGV |
| iRef90-C76 | LNMWLAGP NTTILVLSSVTCQMGVFAAERGDVRRLRFW |
| 66 | NIELTTVSTFV |
| UniRef90_C4L117 | , |
| e990_UP100036 |  |
| UniRet9o-UP10003 |  |
|  | ELFD PGVAVETAALLLSS |
| UniRef90 ${ }^{\text {Q03439 }}$ | ELFQMPVVFMATMLLLTSSUTSUVAMYHMKNFDFKK |
| 8A |  |
|  | KVDFMTLA |
| UniRef90_UP10001 | LVDTWGL |
| -10 | DLPVAVN |
| Q47350 | SYVLINTGLLVASSFTVGFAE |
| Ref90_M0M117 |  |
| 33L |  |
|  |  |
| Ref90_UPIOOO3 | $\text { Li }{\underset{N}{N}}_{N}$ |
| Reef90 B1GYK1 | SVP |
| UniRef90 15 CVW 2 | GLPKKIGMGALN |
| UniRef90-D5VNS6 | GADLFDLPLVNTALLLLSSUTYGFAMDSAQAKKV |
| e990_D4HL |  |
|  |  |
| UniRef90 S6BDE7 |  |
|  | EVWPVAFVGMTAAL |
| UniRef90- A4YD | G |
| UniRef90-D7B287 | SAlTVVLVASSFTAQAGVWAAERGD |
| R9 |  |
| 2A |  |
|  | QLFDLPYTLTETMFLLCSSFTCTLAMNADKKNATLGWLAV |
| UniRef90-A0AO23VW39 | MVQPFSTPFLNSLILLSSADTLTWVHYGFLLSFKKKMLFYF |
| UniRef90-Q0F | PEDDFELPLLNTAMLLESSITYGFAMDAMQARQVLLWLAV |
| ef90-T1CA42 | AMSPIGAA |
|  |  |
|  |  |
|  |  |
| UniRef90-A3JBU2 | GLLNTFALISSSYLVATAVHQF |
| Ref90_W0S330 |  |
|  | GL EWRSPLLYTLVLVSSSGTVALLAERCLSKGQLWGFRAF |
| Ref90_V4QXC7 |  |
| UiRet90_GOLC01 |  |
|  |  |
| UniRef90-UP |  |
| UniRe90-F815S7 |  |
| UniRet90-E8RVF | V1 NPFQVPALNTLTEL |
| UniRef90-W7DXS6 | GDIEFTTVAYETALLLDSSLAFGFAMDSARKSNKSGT |
| UniRee90 ${ }^{-1112196}$ |  |
| UniRef90 C1 |  |
|  |  |
|  | FAMLNTAILVASSFTCQMGVFMAEGRGSLLNVGGWGTVEW |
| iRef90-C6XEZ3 | P TDVFDTSGIFVSTIVLLLFAMLASATKRLTHKTVSWLLV |
| ef90-A4 |  |
| ef90_H1S |  |
| iRef90_LODEW6 |  |
|  |  |
| UniRef90 Q1GE98 |  |
|  |  |


|  |  |
| :---: | :---: |
| UniRef90 I7IJP8 |  |
| UniRef90 ${ }^{\text {K }}$ K | LGVTVLLGLGFLGCEYHY冋HEYGFTFRSSAFGS |
| UniRef90 UPI0002EF32C1 | LGVTVLLGLGFLGCEYHYVHHYEHTFTSSAFGSAFYTLVG |
| UniRef90－UPIO003FDBE64 | LMI TVLLGAAFLGFEFYHYVHEGFTYNQSAFSSAFFTLVG |
| UniRef90 K0CCM2 | L T GLFG GFLSLELYEFAHLDHGPQTSAFLTS SFALVG |
| UniRef90－UP100047B0506 | LGIVLLGLGFLGCELYEFYHYIFTLRSSAFGSAFYTLVG |
| UniRef90＿E4NPJ7 | GGQVYEYY HSDFT T S GLF |
| UniRet90＿Q018U0 |  |
| UniRef90＿UPIO0035EE187 |  |
|  | GVQATEYHHAYTELNSGI |
| UniRef90－B8＞ | SLQTSEYLHLEYCI NDALI |
| UniRef90－B8X4H6 | YNINDSML |
| UniRet90＿K2BVS9 | O |
| UniRet90－A8UU90 | GGTISSNYGT |
|  |  |
| UniRef90＿AOAO31 | VLAAMLF GSAFAGYEYYAKVSAGDTLT S S |
|  | WLIT A MGSYFLVGLLIE WKNLDFKIT TGLVGSTFYLLT G |
| UniRet90－M4NAF9 | GLTVLLGATFLYFQAHEY品EAYLTLHSGV |
| UniRet90 W9BV | G |
| Q0 |  |
| UniRet90－H8XZ933 | CFA |
| UniRef90－U3AVC7 | FFLVEYAHAYQEMGLTLQS GLYGN |
| Un |  |
| UniRef90－UPIO004185D10 | FLGVEFFTYVHEGATTQSSGAL |
| UniRef90－D4TL08 | TALMGAVFLVGQTYEYMNLGYGLTSNVFANCFYL |
| UniRef90－F9DPN5 | A |
| UniRet90－G7Q6G3 |  |
| UniRet90－F4GW95 |  |
| UniRef90－－${ }^{\text {URMM5 }}$ |  |
| UniRef90－C7QBM1 | MITFVMGSIFVAGQVWEYSALNLSIGANAWTSVFYLTTG |
| UniRef90－Q67MLO | ALMGLTFLGFQFTHFYHAGLSLSSSVFGTAFYT |
| UniRef90－C4L117 | ALSAVMGLVFLAGQVNEYTHLVLTIQHS |
| UniRee90－UP100036 |  |
| UniRet90＿UP100031028F1 | YVATALMGIIFLGGQVYEYLNLGYGLSTNVFSGCFYVMTG |
| Uni | A M |
| UniRef90 UPIO003B5： | TVLLGASFLGLEI Y HYVHEG |
| UniRef90－Q0 | G1 TVLLGAGFLGLEIYEFNHEGHKFTTSAFASAFYT |
| UniRef90 L8AZ39 | L T L GLFFVCLQVFEFCEID |
| UniRet90－Q1HBC1 |  |
| UniRet90＿UP1000110， | MMFGWLGTVVAESVGGMEYGHAYHDLTSGIYGSTFYLLTG |
| UniRe990＿L10622 | LAITGLFGLCFLGLELYEFAHMIHTPQRSGFLSAFFIVG |
| UniRef90＿Q473 | GIFLGAAFMYMENEFHHLIAGPSRSAFLSSFFTLVG |
| UniRet90＿M0M117 | LT ${ }^{\text {d }}$ |
| UniRef90－G3LGU2 | LL WALAAATAFAVIKVFEYGMEGKGLTSSPFFMY |
| UniRet90－G4HYV0 | AGAFLCGLGFSVLEYTNKVN |
| UniRef90 UPIOOO3613141 | LLLTVVGCAF VFQALEYUEAYHTLQAGIYGA |
| UniRef90 B1GYK1 | MAL |
| UniRef90－UPPOOO45EAB7F | M A |
| UniRef90－5CV | MAFAGLGVFVGIQMKEWHDHPYGIATHQYGSLYFT |
| UniRe90－D4HF？ | V |
| UniRef90－Q3SHG3 | NLAQGTNGEAGIFFTVYYYLTT |
| UniRef90 S6BDE7 | LWAAVGMGGLFLLVKGMEYAHHGIIRLSTNTFYMFYLLSLTF |
| UniRef90－UPIO0034D7203 | G |
| Ref90＿UPlooo37DDEF3 |  |
| UniRef90＿A4YDJ9 | MGFSFLMGQVYEFTHIKFTPQQDV |
|  | MGLFFVLGQAYEYYELIJFTLQSSAYGSMF |
| UniRet90＿R9BWL4 | FAATLVLGLAFLGVDFVVYUHEGATLQTSGFTAILITLLG |
| UniRet90＿D2ALD7 | ELGHTWSSSAF |
| UniRef90－TOYMB3 |  |
| UniRef90 A0A023VW39 | D ${ }^{\text {a }}$ |
| UniRef90 QOF |  |
| UniRef90－T1CA42 |  |
| UniRef90 R4Z5U1 | GYTTNVSSSAF |
| UniRef90－X4YXW1 | EGAGPDRSAYMSAFFFL |
| UniRef90－MOJOS9 | YEFVFGIGSG |
| UniRef90 D3YLS4 | LWLTVALGSCLYVYLGKLYEYVDLDVNLSDS |
| UniRef90 A3JBU2 |  |
| UniRet90＿wasiz |  |
| UniRet90＿A3YZK5 |  |
| UniRe | ，AHTGAANLYGSAFFMATG |
| UniRet90＿GoLC01 | LVILGLGMAFVVQFKGFSEMFTGPTSN |
| UniRef90＿Q46SU6 | WATSALGLVFLTKGWEYAKDIAGPTGQMFRLLYFAMTG |
| UniRef90＿P100036AC |  |
| UniRef90－F815S7 | LVLT LLGAGFVSTELHEFVSNIVGWHASGFLSAFYALVG |
| UniRet90－E8RVP4 |  |
| UniRet90＿F6GP |  |
| W7 | AV |
| UniRef90－112196 | VYGSVFFLLTG |
| UniRet90－C1A5N8 | WMTCLLGIVF |
| UniRef90－A6WUX7 | FLAMEVYEFNH |
| niRef90＿UP10002629CC0 | TVVMGAT |
| UniRet90＿C6XEZ3 |  |
|  | VCCLFFDCWSYSEEISFNIVDGGFYSSSFCTVG |
|  | A |
| UniRet90－LODEW6 | VMATLILLGIKANEYYEEYEKHHSQLFFVFYFFMTG |
| 㖪ef90－Q1N73 | AF |
| Ref90 Q1GE98 | AF |
| Ref90＿E6B |  |

UniRef90_UPIO003A97368
UniRef90-17IJP8 UniRef90-K2G9R3 UniRef90-UPIO002EF32C1 UniRet90_UPIO003FDBE64 UniRef90-KOCCM2 UniRef90-UPIO0047B0506 UniRef90-E4NPJ7 UniRef90-Q018U0 UniRef90-UPIOOO35EE187 UniRef90-10HWY2 UniRef90-88X4H3 UniRef90 B8X4H6
UniRef90 K2BVS9 UniRef90-A8UU90 UniRef90-X1H6S0 UniRef90-АоАо31K167 UniRef90-B2J2L8 UniRef90-M4NAF9 UniRet90-W9BV75 UniRef90-QOWY26 UniRef90-H8XZ93 UniRef90_U3AVC7
UniRef90 $13 S V X 3$ UniRef90-LoWD28 UniRef90-UPI0004185D10 UniRef90-D4TL08 UniRefofo-F9DPN5 UniRef90 F4GW95 UniRef90-T0ZYM5 UniRef90-M1NST3 UniRef90-C7QBM1 UniRef90-Q67MLO
UniRef90-C4LI17 UniRef90-UPI00036D4CE5 UniRef90- UPI00031028F1 UniRef90-B4ED65 UniRef90-UPI0003B53DOF UniRef90_Q03439 UniRef90-L8AZ99 UniRef90-Q1HBC1 UniRef90-UPIO001104449
UniRef90_L1Q622
UniRef90-Q473S0
UniRef90-M0M117
UniRef90-G3LGU2
UniRef90-G4HYVO
UniRef90-UPIOOO3613141
UniRef90-B1GYK1
UniRef90 UPI00045EAB7F
UniRef90-15CVW2
UniRef90-D5VNS6
UniRef90-D4HLF2
UniRef90-Q3SHG3
UniRef90-S6BDE7
UniRef90-UPIO0034D7203
UniRef90-UPI00037DDEF3
UniRef90-A4YDJ9
UniRefofo-D7B287
UniRef90-R9BWL4
UniRef90-D2ALD7
UniRef90-TOYMB3
UniRef90-A0AO23VW39
UniRef90-Q0FXJ7
UniRef90-T1CA42
UniRef90-R4Z5U1
UniRef90-X4YXW1
UniRef90-MOJOS9
UniRef90-D3YLS4
UniRef90-A3JBU2
UniRef90-W0SI30
UniRef90 A3YZK5
UniRef90-V4QXC7
UniRef90-GoLC01
UniRef90-Q46SU6
UniRef90-UPI00036A046F
UniRef90-F815S7
UniRef90-E8RVP4
UniRef90-F6GPJ6
UniRef90_W7DXS6
UniRef90-_11Z196
UniRet90_C1A5N8
UniRef90-A6WUX7
UniRef90-UP10002629CC0
UniRef90-C6XEZ3
UniRef90-A4PB94
UniRef90-H1S548
UniRef90-LODEW6
UniRef90-Q1N713
UniRef90-Q1GE98
UniRef90_E6B7B4

GHGF
GHGGHVLFGLFWTIS $\square M T R N Q K R G L N \square Y N A P K F Y \square S S$
FHGGHVVFGLAWITTLMVRNANRGLS
THGGHVLIGLGWFILLMLRNSKRGLN
THGLHVFFGUVWLVTLCFQLRKHGLDPENKRRVACLSMFW
FHGGHVTFGLLWIIALMVRNAKRGLN
LHGLHVSLGAVLLGIVFIRALAGQYSAERHVSV
FHGLHV TTGVLLMGLMLLRSFRPNNYEKGDMGV
FHGFHVFLGLLMLGSITRRLKAGFTPERHFGFQ
LHFTHVIVGLVLLC:YF:REDEEYDTSSSLFGLQLVLLYW
LHFMHVVVGLLFLSVYFIRLIDVYNVYNNVQSVQUALLYW
THTSHVLVGLILQAYVLVFTLMGKDGPDRMTIFRTTSAYW
LHLVHVAAG GLLWWMVTLTRRSELTEWQHSYLDGAACFW
FHGLHVLAGVVLQIIMLGRSFDPGNYNKTHFG
FHGLHVTLGTIMLAVIWLRVLKGHFNKEHHFGFE
THGLHVTFGLVWLVTLIVQLGRHGLNPANQRRVACDS LHFSHVIVGLFLLLIYFIRGVDAYDTNSEWISDQUTVLYW
THGLHVTFGLVWMVTLLLQLKKHGLIHENKRRVFCLSMFW
THGAHVSFGMLWGIALLQVSREGITETTANKTF IYSLYW
FHGLHVFVGLLLILGVLWRSLKNHYSADKHTG $\square E M A$
THGFHVAIGLVWVTLLIFRNSKRGLN
THGAHVACGLVWLVVMMGQVAAKGLT
FHGFHVILGATFLTVILFRLIRGHFSADHHFGFEGA
THGLHVSVGLLWMIVMFFHLRRNGLDQDNKTRLTCLS
FHGMHVTGGLLFLLVLGRTYLAKRFTHDQATSAIVVS
FHGAHVAVGVI WLLTLLYHGRGKGLT
FHAVHVFAGILAFGIVLLRTYKAKFTPAQ
THGIHVTIGLFWMIAIMIQLGRHGDTP
FHGLHVLVGVLLILGGVVWRSRRGHYNESKHTGVEMA
THGLHVTAGLLWMLVLAAQUVFRGLTDRDLRRLTCLSLFW
THGAHVTFGII WISTLMMQAAKRGITKE
THGSHVAFGLLWLLTLMI RNAKRGLN

FHAFHVMVGLFMLSSVL
FHGFHVTIGV IMLTVILYRDQKGHFNDENHFAFE
THGLHVTEGII WLVTLMDQVGHKGLIQANKRRLMCLS
THGL HVASGMVWMLVLMWQVSKKGLTPTMSKRLNCLS
LH GLL HVTLGAALLLGIVVVRGLA GQYTAERHTSV
LHLLHVAF GSLDLLVVWRRSLNDRSAAHSANRVESVAGYW

FHGMHVLVGTTFLFYVWLNLVECKLFYNHHFSFE



NHLVHSFWG LGTFWVLARHDGGAYSSDDYSGLEALASYW
FHFMHVILGGLVMVLAMRTAAGHYSAQSHTDIESGASYW
THGLHVFMGLVWMVVLAVQVARPTGNEREDRRLTCLSLEW
F
GFANYLV
FHGLHVIGGLI AFLIMLGRTY
$T H G A H V A F G G L W G T L I L L Q D K R D G \square N E R T A N K A F \square F S L Y W$
THGLLVVSMGLIWWVSMIFQLKKYGMNP

FHGLHVFLGLLFLLMNF LLKKNNFVMNHHDSFE
THGLHVTFGIVWLVTLMVQQQKYGLISANRRRDMCLS
FHGLHVTGGAIMLLVIWIRVLRGHFTPERHFAFE
FHGVHVSFGI
THGLHVTAGL LWIIDMDDMVRRHGDDSVNKRRDSCLS LIFW
LHGLHVALGVVLLALAFGRALRGHYTPER
LHAFHHLEGWKYCDFFLLLTVILGLC
LHGSHVVVGLAIFLAGLPSVMRGGDDDEGFMR TAGLYW
FHGLHVLSGILLMALMLQRSFR
FHGFHVLIGTIFLIVCLIRADNGDFTPKKHFGFE

LHA』HLCDGI GLVVV
LHGTHVIMGLAFMLVLLAMAFKMKDSKERY
THGAHVTFGI FWAVTLIVQLLRRGFTPR
THGLHVTSGLTWMGVMFVHLFRRGLTPANRDRMM
FHGLHVIIGSIFMAIGLIRITDQHFSSSHHTGFE

FHGAHVTAGV WL F TLLA I DYKRGLFP K QHLGLE C S
THGLLHI TS GLI WI LVLSAQLLRDGLTEKNQTRVMC

$\stackrel{F}{L}$
LHGLHVLFGLIWLEVLVIQILKKGLISGNQRRLICLSMFW
TH GL LHV A S G L L



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HF $\square \mathrm{DVV} \mathrm{V} \square \mathrm{F} \square \mathrm{Y}$ S F VF L K G

$H F \backslash D L I W D C V F S F V Y \square M G$ $H F V D Y i W L L V Y T V V Y$
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$T H G L H V S F G \mid V W L V L L T Q L G R W G L T A A N R R R L A C L L S$ $V H G L H I V S A V I F L F V V L Y S A F R Y R V H S Q N L A R I E M C A T Y W$ FHGMHVTGGVIYLIIILDKGWNG $\square$ STGFANYLIPRMI GAKDRTDPFQLS FHMFHVILGMLVLIVLADKVAKGVYHAERMNEFESGACYW VHAAHVLGGCALLALLWRKTRAGRYRHDMTGLETGASYW NHFLHVGWAACAILWVIFRLRKGAYSAKQHSGLE NHFI HVGWASCAILWVI YRLRSGAYSSTEHSGLE THGLHVASGLLWMTVLVIQQAKNGLTPRTTTRLAC FHGAHVAFGICWIIALQLQTVKKGLT FHGAHVLFGLLWI STLLI RNWNRGIT FHGTHVTFGVIVL I IVMAKVLRGDF FHG GF VI I GMIVLAWVGFKANRNEFSARNYTAVELGS $L H G F H V I I G M I V L A W V G F K A N R N E F S A R N Y T A V E L G S$
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