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GRPVLLHALTGFDDAGAAGRDA R MYELEYPAPVVKDSSDKGPTM VAMHGYADAGQAVEAS


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D NL
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HMYELEFPGPAVSDTDGNGPVLVAALDGYADAGHALKGA DHLYELAFPAPQLGSGE SGPVLIHALEGFADAGHAVALA PVLRDPIVVAAFEGWNDAGDAASAA PKLERPVLI AAFEGWNDAGDAASGA
NRMYELE
YPSPEVAT DGPTLIVABG伿 DELYEVDSDVPDLA QMYEMEYPAPAVETN E ELYY EVDSDVP
\(\qquad\) EASG DPMLCAFEGWNDAGDASSTA KMYEDSDVP VAS NLEGAVLVISM E MYELEFPAPDVASDGVDGPTLI TAMQGYADAGLAGVAS

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E पYE\TTDE E \P E EGGQ
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AGFTLED

                                    SVPGLEDSIVI CAF

DREPVLIA QLD

ELYSLTEDASD
ELFSFETDT MVELE RDYELEFPSPHT RMYELEYPSPEVEVSADSTLVLVHGLEGFADAGQAVRLA RMY


GTVLHHF
D SLADAR EVSALVDTVVLVAA

E QLY D LD S GVG \(\qquad\) STEPLVPE DपYRLVQPVPDRSEDGRGPVMVAAEE ELYEVDSDVPDL

NGAVLVAH H L
 ㄴ \(\qquad\)
EDLYTVEADTPDTS \(\qquad\) VPGAEGPTLVVALQ MYELGEGAPFVAN RPLRNPVMITAFE RMYGLEYPSPELPSGEEQSUTLVVAGE


ELYRWA DAP ELLYERLDAVVAAEVD

T GP RDPVLLYHFE GRPVLVAA
ESPDSSRPMVVAA MVVAF
PELDRPELVEPMVAA D TYERRSDRELSE ELYEIVVGDWEPPADSG \(P V M L V S L D G F V D A G A A G K Q A\) QMYEMEYPAPA VDLANLRDPVVIAAFEGWNDAAEAATGA
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140
150
160
ー「「「 \(C\) L Y A A P M T VP HTRPTVVT

A
H G N S T DR LK D
TA HGNSTDRLK

\section*{160}


A H A N D K D L I A S
AHSSSNREDLI E D
\(\begin{array}{lllllllll} & H & S & N & N & R & D & L & 1 \\ A & E \\ A & G & N & S & T & D & L & 1 & D \\ H\end{array}\)
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\(H G N S V E L V G S\)
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 L A E Q L GVRRTI GLSADPMAIP HTRPD GMTAHASDPELIGD LMNELKI ETAVIL GALLADTPHTRPVPVTGSAYSADAAAK


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VERWGVRLGV NYH
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 L V E R W GVVR LTV G G H G DP M A V P H T R E L S V D



















LA D D L G V E E A V V L G A L L A D A P H TAR P V P V T G T A E S T E A T A R

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TS S G P T L I VA MQ G SSDGPVMLHAVRGFADAGHAVEGA SELLRDPVLVAAFEGWNDAGEA A DLA HSPELRRGRVNMVMAGFQGSMDAGHAGALG \(D \square Y E \square Q\) PGFDDRNAVDMLVVFDDGWNDAGSAATGA QPEQASPRQTVLLAAFEGWNDAGSAATTAA
 A AAFEGWNDASDAASGA LYEL L L EPVLLVALDGYIDAGSGVRLA
 \(R M Y E L E Y P A P P V D D E G P T L V V A M H G Y A D A G L A A V E S S\)
\(\qquad\)
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DLVYE LTH P G F D D VV
MYELEFPAPQLSS
P A R GAPL LYYF E

 QLY QV DEAAP RLDE
 L Y S Y E G E R P A LV V \(P P L V V A L S G F D D A G N A V R L S\) \(R M Y E L E F P A P Q L T S S D G E G P V L V H G L D G F A D A G H A V R L A\)
 \(L Y E V V A D A B C D V D G D N V A A L T G F T D A G G A V A Q L\)


 SGGD G A M L A A F E E TGRSPVMV IVLDGYVDAGAVGRQA MYYFEPMQPERRPDGLLRAPALVDAFKGWNDAGDAATTA E E GQPRRKLTVMLAAFEGWNDAGEAATDA \(G E Q L R G L P L L A G F T G F V D A G H V V S Q V\) LD H LEA P A GRHAA \(\qquad\)
REVVD
DLYT TIS GTPPARAPDAA QL Y QL E P E DPAHPWP

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\section*{E L Y E VH G D L P D L}

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GAAEA GHVVSQL

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\(E \square F E L T S A C L\)
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\(P\)
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UniRef90 H0R675 UniRef90-M3A1H7 UniRef90_UPI00036C47E0 UniRef90_UPI00036D5A32 UniRef90_S2Z0W1 UniRef90_W6JWG0 UniRef90_D6AVV4 UniRef90-E4N2L5 UniRef90-A0A021VSR1 UniRef90_W9GSV9 UniRef90_UPI0001FFEF04 UniRef90_B2GJ81
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 \begin{tabular}{ll|llllllllllllllllllll}
\(T\) & \(E\) & \(H\) \\
\(I\) & \(R\) & \(A\) & \(E\) & \(F\) & \(D\) & \(D\) & \(R\) & \(V\) & \(L\) & \(A\) & \(R\) & \(F\) & \(D\) & \(V\) & \(D\) & \(R\) & \(L\) & \(I\) & \(D\) & \(Y\) & \(R\) \\
\hline
\end{tabular} I E H L D R V WK G E V F A A V DHL MDVWHARVVAE IDDEDFYDYQVNRPVTGTDENGFRT \(V\) D RLLDDGLD HQVVARFDADR LVDYRARRPLMTFRRDHWT D




 A G HLK A AL D S R TVVAT F N N DELI D Y R S R R P M I TM S E HE E T D VEHLDDEFRVERLVTFDVDQLLDYRSKRVTMTFDS DRWAD
 NA ELL DELGGAEVVAMFDAD QLIDDYRSRRP HDSFVVEDHLDQD
 L \(\quad\) T A H L
 \(V\) D H L L A T F E T E L V VARF N V D E L I D Y R A R R P E M R FA D G A F Q D L E H L N A V WE A D PI V E DD D E A Y Y D Y Q V N R P V I R Q V D GV T R E QLID YRARRPI LTYQQNAFTD
 A D HLK A ALLDSRPLATFNADELI DYRSRRPAVTID DD QPVE VEHLLERLEHRVVARFDVDRLI DYRSRRPLMTYATDHWAD







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 \(V \operatorname{E} R \mathrm{~L}\)
 TDHLLETCESEIVASFDVDQVLDYRGRRPVMTFSSDHMSH GTHLVDTSEAEVVATFDVDALLDYRGRRPAMVFDTNRWES VKHLLDASSARVVASFDVDQLLDYRGRRPTMVFEENHWVS LLGHLDETWGGKVFAADDAEDYYDFQVNRPTIWLDGGGVRR VRHLAEVWDAEVI AAFDPEDYYDFQVNRPRVV VEDGARV


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\section*{E}

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\(\square E W P\) VT SMSVVCVLSHDRDVVLVLGPEPNYRWRSFCAR|IVE Y E P P E L A V R L L H D T D G T P F L L L S GP E P D HE WE LIFT T A V RE








\section*{\(->\) \\ 际}
\(Y D\)
\(L Y\)
\(Y Q\) YQQPELQQVRVLTTDTDGTAFLLLSGPEPDTQWERFIAAAVGQ

 YQTPELVVHLLHDLLAGSPFLLLTGPEPDHEWELVVQAVRN




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\section*{UniRef90 L7LHX2} UniRef90-UPIO003674497 UniRef90 UPIOOOO370EO9B UniRef90-E9UYC2 UniRef90-F8JZ13 UniRef90-M3С687 UniRef90 \({ }^{-}\)F5 ХН05 UniRef90-UPIO003B4FCAD UniRef90-UPIOOOO37EF330 UniRef90-UPI0003F7D789 UniRef90-C7QC59 UniRef90-A9WS26 UniRef90-A4ALR1 UniRef90_D7WFG2 UniRef90-UPIO00360E325 UniRef90-G7HOJ3 UniRef90-C5BW76 UniRef90-A1R5K6 UniRef90-D1BS18 UniRef90-UPIOOO3457402 UniRef90_UPI000366192B UniRef90-D1BJ15 UniRef90_UPIOOO478E802 UniRef90-B8ZRE2 UniRef90-C8XА39 UniRef90-D5UDR9 UniRef90_A5CR17 UniRef90-W5XT83 UniRef90-W5W565 UniRef90-UP100046D05CD UniRef90-J7LBC5 UniRef90-A0A039CYw9 UniRef90 UPIOOO364C80A UniRef90-UPIO0045EB60A UniRef90-UPIO001 FFDBD9 UniRef90_UPIo003B54435 UniRef90-A6W858 UniRef90-UPIO0037BE8D5 UniRef90-UPIO0037D59E7 UniRef90-UPIO003B65958 UniRef90-K6V5U8 UniRef90-Q47NW0 UniRef90-E6S891 UniRef90-K6WL49 UniRef90-UPIo0035C1B2A UniRef90-UPIO0034DDA23 UniRef90-UPIOOO3640D81 UniRef90-D3F2U6 UniRef90-N1UVP8 UniRef90 UPIIO0047B4E20 UniRef90-F6FTS2
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UniRefolo-AOAO21VSR1 UniRef90-W9GSV9 UniRef90-UPIO001FFEF04 UniRef90_B2GJ81
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 \(\left.\begin{array}{llll|lll|l|l|ll|lllllllllllllllllll} & A & D & R & F & A & V & R & L & T & V & G & L & M & A & P & M & G & V & P & H & T & R & P & T & G & M & S & S & H\end{array}\right]\)
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 L G D S V G A A E M C V L L G A L L A A D S P P H T R R P




 LVVK D F DI K Q T I C L Y S AP M AVVPHTMRPLVI TAH GNEPA L L K D










 \(V L Q R L G V R A A V L L G A L L A D S P H T R P V P V S G S A S G A T V A E Q\)
 I V E R R L R \(\operatorname{R}\) V R L S

 \(L V R M L G V R L V V S A H G D P M A V P H T R P V G M T R Y A S D R T D I P E\)





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UniRef90 S270W1 UniRef90_S2Z0W1 HRAWFDEA QVP GS A ESSLI ELLRDAEA GHDVVLGVAA H V P P H Y L













 \begin{tabular}{cccc|c|c|cccccc|ccccccccccc:c}
\(H\) & \(T\) & \(P\) & \(W\) & \(G\) & \(R\) & \(V\) & \(E\) & \(V\) & \(P\) & \(A\) & \(G\) & \(A\) & \(V\) & \(S\) & \(L\) & \(L\) & \(E\) & \(Y\) & \(R\) & \(L\) & \(G\) & \(E\) & \(L\) \\
\hline
\end{tabular}


 H H R WS G E L Q V P A G V S S L L E Y R M G Q H G H E S



 

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)


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MYELEYPSPELSS
\(\square Y S V E H P \square G E P V A P\)
PFANGVLLYHFD
 NRMYELEYPGPSAQSADGEGLSMV \(\square A D Q G Y A D A G Q G V R Q A\) RMYELEYPAPDVALDEDGRARVLLAAFGGWNDAGDAASAA
 R SVSGRRPVLVAAFEGWNDAGEAATDA \(\square G G G D T S G L V M Y H F E G F D D A G E A G G Q \|\) \(D D V Q G L A M L V C L D G F V D A G Q A G T Q M\) AERFVSGRLLVVAFEGWNDAGEAASGA
DTGELRDPVVIAAFEGWNDAGESASAVV
IVA
\(\square Y E R \nabla A S A P\) \(P V P A D L P L V I V L T G F T D A G G A V S Q M\)
DGDQERVTVLVAAFEGWNDAGDAATDA
LRGRLLLVAFEGWNDAGEAATGA
RMYEMEYPAPQFDRPSLADLPMLVALQGYADAGQAVSSA RMYELEYPAPSVEVDGRDGLAMIIALHGYADAGQGVQQA


ETMYELEYPEPETQSDASNGLSLVVALQGYADAGQADDNA PVLRSPIAI AAFEGWNDAADSATAA HSPFSDGRLLVVAFEGWNDAGEAASGL LIF ERSASAPP \(\square\)

D \(\square P\) P LR D PWLLAAFEGWNDAADAAS GV
SWPNLANPTMIAAYKGWNDAGNAATYA
\(R M Y D L E Y P S P E V V T T P D N G P T D I V A D L Q G Y A D A G H A D V E S S\) LFRLEADA

S R QP QPAP LMLVSL

\(A A A A G T G L V L B Y E\)
ATGADGAGPVLI YFL

SRKPPVVIAAFEGWNDAADAATGV
A GSGERVRVLI GAF
LK F GFDDLD
S LGLRSPAL
RPDLRRPVL, AAFSGWNDAAEAASDV
\(V\) R A T V L L H H L H G A M D A G HA GR GL
APQADTSDSATPTMMVAA
A A A P GE GPVLI HA L D GF LGA G S A TRDA
LAEPSLDRPVVVAAFTGWNDAGDAASSA
\(D L Y E \square R S E L \quad D D L G R P \| L I E A M T G V V D A G G A V G L A\)

 NAMYEMEYPVP LEADSSPDGGDPMLIAALQGYA DAGQAADAVS EAPARPAIMVVAFEGWNDAGDAASQA \(D V L G P R I V I A A F D G W N D A G E A A S S A\)
\(D R G V L G G R I L V V A F E G W N D A G E A A T G A\)
QLF T L E A A GRDLGASAL R G L GML A VF G
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\(V\) V H L M E R E H QVV A T V D \(V \mathrm{~V}\) H L A E A Y A G RMFA A L D GE DYYDY QVHRPMVAAVD DR R Q D H HVLLT TLP H QRVAE FDLDDQLVDYRGQRPPITFDADHFVD TANLIE QLES EVVAEFDHDQLHDYRSRRPAMIYDTNQWRS E E Y L WD R CHPEVVIVRFNADLL LDDYRARRPVITTFDSDHFT D

 RE HLLLETLEHRVIARRFDVDS LIDDYRARRPMMTYDRDHWAS LSALLGNAWGVRRFGREDPE EFFDYQSTRPQVKLVDGVTRK
 \(V\) G G I A T A WEA RTTHELDP E DYYDF QVNRPVISVEGPGARG


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 \(V G H L A S L W D A E D V A A D D P E D Y Y D F Q V N R P R V T M N Q G Q R G\) \(V E Y F R G E L D P T P I V A F D N D V L F D Y R A R R P D V T F D E D H L T D\) GTF LLDNNLKHVAI AEFDSDQLHDYRARRPHIVFNRDHFED A Q HL EA L GE GRVVATA DVDSLHDYRARRPPVSFVRDHYAD
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 V A QML D GRP Y T TVVAR F D H D R L I D Y R A R R P V MTFRR DRWTA \(V\) R HLLA D T Y P T E P R Y CLLD S E D YY D F Q A T R P R VEELAA D GEPR



 A EALH S S GE GEVL HSF DIDETMYDYRARRPLVRFSQBRYLDD
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保 YDDPVLAVYRLRDDEGRPFLLLAGPEPDFQWERFVEAVRR VIWPTTRFSVVRAPARRDLVLVAGVEPNMRWRSFCEEVLG YEPGRMLLHHLLDEQGAPWLLLSGPEPDLQWERLARSIVAQ YTPEELTHSLARDELGNPFLLLSGYEPDFRWDQFIDDTVLM
 HE E L S L S L H A L|R D T E D A P F|LLLTGPEPDLDWNAFAAAAVAD
 Y Epemelhivromokpaltlsgredyowdrama avm









 AQMPELVLDLLQDDEGEDVLLLHGAEPDYRWQEFDGAVTH


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 V R V P E I V L D L V E D D M GHP ILLVLHGAEPDAR WE S FA RAVGH I SWP S T D I S L C H LIP H R R DALLI A GP E P N L R R WR A Y C S A L V Q










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 \(M S \square E T P Q Y E G P D G \square V G V L G D A A M Q E G \square P T L S G W A A V P H Y V\)

 \(P\) S T WF D K V Q V P G S A S GL L E L R R L G E A GH D A L G FALI H V P H Y L




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 F DLE PARYEGPT GITGVVADGARQAEMASIAVWAEI PHYA


 Y NVVP T RYDGPT GIVVGVLQEAATRADVDALSFWVHVPHYA H DLEAS TYEGP T GIVVGVI S DAA IVQGISSISVWAAVPHYA




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 LGGDANTYEGPTGIVGVLQAEAQRRGMSALSDWSAVMHVV
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 YKVAP TRYEGPTGGVGVLQEAAGRADLEALSSWVHVPGYA



 H G L E R S L Y E G P V G L L T V F E H F A E N A G I P T A S L W A S V P H Y V YS NWLGGTVQVVPA S A GHLLI EFR MA ET DV A S M GFAAV N V P H Y V


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AQASFPQATLAVLERLISTATGLRIVPMEPLAEASRANLAT AQSDYAPAAVTALNCVLSQTGLVIDGQALESAAQETLAVV AHPPVPKATLALLRRLEDVLDLSVPTKRLAEEAQSWEAGV AQAEYPDATIALIRALSETTGHIIPTTALAVTAEQTQAQV AQAAFPEAGLALTRLLNSATGLAVPVESLGEASATNMADI ANTEYPEALYAALDGLMAATGLIFATDDVRNRARTFDAQVV AQSPSPKAQLALLHQLEEMLAAPLDTTELTEEAEAWERGV AHPPSPKATVADLSRLEAFLAEPVDLKDLPDDAEAWQNGV GAHNSPKASLALLSCGEGLEDLALPHGDLEELAFAWERGV PAVPSAPGALALVESLAGLLGTEVETGDLEAGAERYQEQV AQSPSPKAELALLRQLEELLGTSLPVDPIVEDSEAWERGV TQVEFADAALAALEAVCGLTGLADABELAADAGAHRADVG SDTEFPDAAVAALSGIAAATGLIFPTDALRESGREFLTTRV ANPPCPKATLALLRRVEDLLDLEDPLGDLPERARQWERQV ADATYPQAAVAALEYVGAAMELMLPSEELAESGRDVEQQI ADNEVPNAAITGLELISAATGLVFPSDQLRHDAGKFETKV ADTEYPAATLAALDSLTVATGLVFSGEVLREENREFLAKV AQVPCPKATLAMLVRLEDLLDTVIDHDDLEDEAQAWERGV GDTEYPAAA AGLDSLSVATGLVFDSDTLRNENRDYLEKV SDADLPQGTLAALEYVTMATRLSDPTDQLREAARTVHGQL AASDYPEATHALLSAFADVADRSI PVRALEGDMERVQQQL GHTPSPKATAALLTAAETLLDAP DHGDLDEDGRAWQRGV NNPPCPKATLALLSRIEDVLDLPVPDVLDLPVPMADLAEQ HHTPSPKATRAVVRLEELLDGTIDHEGLDDDARAWENGL
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UniRef90 S2VSZ7 UniRef90-L1PM76 UniRef90_UPIO003B4FE1F UniRet90_WOZD62 UniRef90 S3Y358 UniRef90_UPIO003B415BA UniRef90_UPIOOO36545E0 UniRef90 UPIO002F76675 UniRef90_UPI0004782AD9 UniRef90-UPIO0047998A1 UniRef90_C7R3Z5 UniRef90 W4L146 UniRef90-UPIO003B5CA27 UniRef90-UPI0003C7F706 UniRef90 A0A010NQ41 UniRef90-U2RNQ4 UniRef90-H5UPU9 UniRef90- XoRW97 UniRef90 W6ELN4 UniRef90-UPIOOO4278891 UniRef90-C7NIQO UniRef90 KOYWF7 UniRef90-UPI0003B636AD UniRef90-U1Q1T1
UniRef90-UPI0003B517C8
UniRef90_K7RNJO UniRef90-X8D2B9
UniRef90-D5YGV4 UniRef90-U3PDD4 UniRef90-D2QAE4 UniRef90-14EVV4 UniRef90-10R089 UniRef90-A0A010PE03 UniRef90-UPIO0040E2E67 UniRef90-UPIO00479F18E UniRef90-C4FEU8 UniRef90 \({ }^{-}\)W4LZ06 UniRef90-U1LSE9 UniRef90_UPIOO042588BD UniRef90 Z9JWX9 UniRef90 N6X7F1 UniRef90-UPI00026C7186 UniRef90-UPIO003B4FD83 UniRef90 UPI00047AB13B UniRef90-UPI000367858A UniRef90_UPIO003B70FA9 UniRef90 \({ }^{-}\)АоАог2LЗ 3 B9 UniRef90 Z9JU00 UniRef90_UPI0003F57AD1 UniRef90-UPI0002629931 UniRef90 W4M593 UniRef90-UOFG94 UniRef90-I3WI26 UniRef90-UPI0004175B00 UniRet90 wozau3 UniRef90-Cowog1 UniRef90-R6NVK2 UniRef90-UPIO004793954 UniRef90 E6JYD6 UniRef90_UPI0003462F4C UniRef90_16X874 UniRef90 D6ZGY1 UniRef90-UPIO0037796D1 UniRef90-K1E547 UniRef90-K6ULD0 UniRet90_S5DVT8 UniRet90-B8DUF8 UniRef90_UPIO003B4940B UniRet90 U7JHR4 UniRef90-W4LMU5 UniRef90-COW7E7 UniRef90-UPI0003B2F4B5 UniRef90_Z9JY89
UniRef90-s33Y313
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UniRef90_M9Vнто MTETQTHGDNHQAPPTRARLLVVYFDGAMDAGASGRMA
 QRSARGPAMLVS \(\ A\) GHTDAGRLSEQL
LY A T S P D A PE V \(P R G L P L V I A M T G F T D A G S A V A Q S\) QYPGNS DEDPQDEKPTLVITMAGYGDAGQAQQLI

\(K \boxed{L V} H \square V E V A E L D\) AEAVP
MYEMEFPSPEVGSS D
DEEDAVWALSHDTVVLVAAF EGWNDAGDAATDS
\(P \mathrm{~T} L \mathrm{~L}\) R P P L L L A AF TGGWNDAGGAA TGA


LY R L E T D T



PPLRNPVLVMAFGGWNDAGQAATSA

E LIFR \(\square E D P A\) S DVV V R S R VMLHH M Y G A I D A G H A G R LT \(D G H I L V V A F E G W N D A G E A A S G A\)
\(H P R V L L H Q F D G A D D A G N A A N L A\)
 ME RPWVV \(\operatorname{D} G G Y S G W N D A G G A A S E A\)

PELHNTVVVAAFEGWNDAGDAASDA LGGRI LVVAFE GWNDAGEAASGA VKEPTMPKTVMLAA FEGWN DACQAA TNV EDLVEVLPD A EPLSSPE ERAGLVLVHDDLGEFDAAHA GA LAA \(L T G R I L I V A F E G W N D A T E A A T G A\) ETDAPRSRPTVMVMAFEGWNDAGAAASSA AGQPVSPRVLI HHFDGAMDAGNAGALA

 \(M A R G P \square E G R \square M V V A F E G W T D A G B A A S T A\) EPVEPNRRATVVMLAAFEGWNDAGEAAASDA DVED TKARILVAQFNGAFDAGGAAR LA
 QLFAFEDH VDDQRTVRADTVVVTLGSFSDAGAAQRII LATHTPTLSGRTSRARVMVAAFEGWSDAGAAATD A
\(V\) DSRGLRGRTLLITLGAFTDAGNAQAVI \begin{tabular}{rl}
\(A\) & \(D V V\) \\
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\end{tabular} EPPSN \(\square T \mathrm{~T} L V L G F G G W \square D A G E A A S G T\)

EGDGRRVMVCAFEGWNDACQAATNV EGLGRRVLVVAFDGWNDAGEAASAA
LY S F E

E RLY R Y E VD T
A DFSGHADVMLH H DNGAMDAGHSGRGM R P I APRVLLHYFDGAMDAGHAGALA \(D P A M L D P G P L V V A F D G F F D A G M A Q R L L\)

 ERRS GATLIVAFEGWNDACQTATNV MPSSQSSGPWIVVGFSGWNDAGGASFDA

EPPANDT TMMMAFGGWQNAGRAATGA
\(\begin{array}{llll}L & Y & S & F \\ L & E & R & P A \\ L & E & A & D A\end{array}\)
QAPVA P R V L LY H L D


\(L R N P A V V V A F E G W N D A A G A A S A A\)
\(P G \square V G P D Q E V S A L I T L V Q S F N D T G R V Q A R V\) MVAAFD GWNDACQSATNV \(D L F T W N P G M P D S V E P A A T V V V A D T G F S D V G H V Q H V L L\) \(Y R V G E A\)

PASETHSRILVMHFYGSMDAGGAGRMA
\(D L Y S F E S M D V L A A V P R D G L M L V H A D P G L V D A G N A C R \square A\) EGESP QPRRRVMLSAFD GWNDA GQVATHA \(R L V H I V D D L P E \| M L A G G E R L P L V V V L D G F L D A G K A S E R A\) MYELEFPAPQLSSSDGRGPVLVHALEGFSDAGHADRLA HLTATVDALEAGRRAPTVLLLAFEGWNDAGEAATGA \(V\) S E P M L H E P V L V V M LQ G W \(\square D A A G S A A V A\)
\(M \square E \square E\)
\(D \square P P L N D P \square M \backslash V A C E G W N D A G E A A T G A\)
\begin{tabular}{|c|c|}
\hline & \\
\hline UniRef90_S2VSZ7
UniRef90-L1PM76 & \\
\hline UniRef90-UPIO003B4FE1F & Lat \({ }^{\text {PNRQVASFDVDAl }}\) \\
\hline UniRef90-WozD62 & VLRDGVDNVPVATFSNDALLDYRARRPVISFDQDHLTD \\
\hline UniRef90-s3 & NKRLLEGFTNHRIGSFDVDQLVDYAGSRPPVIFDHDHFRQ \\
\hline niRe & \(V G Q F V D M Y D A E E V A D L D D E A Y W D Y T E Q R P E I R K E E S G E R F\) \\
\hline UniR & ARHLVEVSDAPVVATFDVDAFHDYRARRPA SFVRDHYES \\
\hline UniRef90 & RTALREHLEHRTVASFDVDSMFDYRARRPRLRFDRDRYRD \\
\hline UniRef90-UP10004782AL & AQHL LDALDSRPIATFNNDELMDYRSRRPAVTDADSKVVD \\
\hline UniRef90-UPIO0047998A & LRAIRDQWPHETLDIVESDDFYDFQFTRPSIMFSTDGSRR \\
\hline UniRef90-C7R3Z5 & TEHIAEVFGCDVVADVDPDEFVDFQVNRPVVDGV GVDR \\
\hline UniRef90-W4L146 & TKFLLQRLAGR \\
\hline UniRef90-UPI0003B5CA27 & AKLLVERLG \\
\hline UniRef90-UP100033C7F706 & VEHLTSGHG EVLHSFDIDATYDYRARRPPLRFVQDHYDD \\
\hline UniRef90-A0AO10NQ41 & \\
\hline UniRef90-U2RN & DEHLLNTLAHRRLGSFDVDQITDYREHRPTIDLDLDDYAN \\
\hline UniRet90-H5UPU9 & VEHLLRTLDHTVVATFDLDQLDDYRARRPVMTFSRDHYSE \\
\hline UniRet90-XORW97 & VRFLIEAWS \\
\hline Un & VRYLVKHYESRETRHIDCDAFYDY \\
\hline UniRe & \(\checkmark \mathrm{V}\) QMM \\
\hline UniRef90 & VA HVLSTMESRVVASFDVDALLDYRARRPLLTEQRDRYIS \\
\hline UniRef90-KOYWF & RVVTFDTDKLVDYRARRPLATLSQWTVTD \\
\hline UniRef90-UP10003B & KDALDVVPVAGVDPELYYDFQFNRPT\ASDDEGQRR \\
\hline UniRef90 U10 & \\
\hline UP1000 & \\
\hline UniRef90 K7RNJO & TTRLI RFSDATEWRVIDREDYYDFQTSRPVVSAMAG VELL \\
\hline iRef90-D5YGV4 & \\
\hline UniRef90-U3PDD4 4 & VKTLKDQLDVVPVAEVDPELVYFDFQFNRPVVA DDDGRRR \\
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\hline UniRef90 UPIO0040 & VEQLLMTLPNERLATFADDSLIDYRARRP \\
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\hline UniRef90 \({ }^{\text {W }}\) - 4 LZ Z 0 & MRHLVRHILSAPRLASI DPETFFIFTQERPEARMTADGNRA \\
\hline UniRef90-U1LSE9 & VRRLVEACELEPFDEI EPDEYVDFAMHRPVVRTDDDGTRA \\
\hline UniRet90-UPIOOO42 & \\
\hline & E \\
\hline UniRef90-N6X7F & VEEMLRSLPTERVATFDTDAFLDYRSHRPFATVSDWVLES \\
\hline UniRef90 UPI00026C7 & ADYLRDERRHLRLVSFETDELLDYRGSRPQATFDGTSFSE \\
\hline UniRef90 UPIO0047AB13B & NTHLIDTLPSHLLGHFDTDQLLDYRAQRPMIDFDHDHFQN \\
\hline UniRee90-UPI000367858A & VDHLVERYDAGLAFATDPEDYYDFQVNRPLTKLVDGR RE \\
\hline UniRef90_UPIOOO3B70FA9 & \\
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\hline Ref90_UPI000479 & \\
\hline UniRef90-E6JYD6 & \\
\hline Uni & NTWTE \\
\hline UniR & Frshrpwlsfs whete \\
\hline UniRef90-D2Zay & QLLALQHERLATFDVDG1 PDYARRPVARFESRQFTN \\
\hline UniRee90-K1E547 & QLLEAGDATVVASFDVDSLI DYRSRRPVITFDANRYVD \\
\hline UniRef90-K6ULD0 & \\
\hline S5DV8 & \\
\hline UniRef90 B8DUF8 & \\
\hline UniRet90 & VRRMV \\
\hline UniRef90-UJF &  \\
\hline UniRef90-W4LMU5 & V \\
\hline UniRef90- UPIOOO3B2F & \\
\hline UniRef90-Z9JY89 & DDHLLNSLPSRVVGRIDMDQUYDYAGRRPEVTLELDHFQD \\
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\hline UniRef90-UPI0003B3EEE2 & R \\
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\hline UniRet90_UPI0003B56F22 & \\
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\hline Ref90 A0A022L2Y0 & S \\
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\hline UniRef90_E9UWE7 & \\
\hline ef9 & \\
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\hline UniRet90-W4L6E4 & E \\
\hline & VDHLAELWDAEPVAALDPEDYYDFQVNRPRVLLDKGR RA \\
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UniRef90_S2VSZ7 UniRef90-L1PM76 UniRef90-UPIO003B4FE1F UniRef90_W0ZD62 UniRef90_S3Y358 UniRef90_UPIO003B415BA UniRef90-UPIO0036545E0 UniRef90_UPIO002F76675 UniRef90-UPI0004782AD9 UniRef90_UPI00047998A1 UniRef90_C7R3Z5 UniRef90-W4LI46 UniRef90_UPI0003B5CA27 UniRef90_UPI0003C7F706 UniRef90-A0A010NQ41 UniRef90-U2RNQ4 UniRef90-H5UPU9 UniRef90-XORW97 UniRef90-W6ELN4 UniRef90-UPIO004278891 UniRef90-C7NIQ0 UniRef90_KOYWF7 UniRef90_UPI0003B636AD UniRef90-U1Q1T1 UniRef90_UPI0003B517C8 UniRef90-K7RNJO UniRef90-X8D2B9 UniRef90-D5YGV4 UniRef90-U3PDD4 UniRef90-D2QAE4 UniRef90-14EVV4 UniRef90-IOR089
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UniRef90_M9VHT0

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QD DKGTP L L H GPEPDTKWQAFANEVAE




 L L P T L EVVQLVEDLIGHPFLLLAGPEPDFRWQAVVEAVLD
 L VWP GT Q IVSMA Y S WN S R R LIVVVA H G VV I SWPK NEFSYAKD GLVQDI IL GLGGVEPHLRWRSYMDAVVM \(L\) E WP GA A DERVT GPGADTLDVVLI GAE PARSWKGFAAAEDD Y E E P R L Q V V E E H D LAA GN P F L V L SGP EP DF GWE WFA R E V RD Y A A P A MELLHELTDKSGAP FLLLTGPEPS LQWERVAGS I ER
 I WP QTTFYE VVLDEGHRQFAQIAPEPNYRWKEYCS QSLAA


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LT GMPAAVPHTRPTMVHLQSTDADLVGG V V DA GVVVVFGMTGVPSGVPHTRPTPVHVHTTDASLVPA
 \(V M N D L G A N R A V F L Q S M P A P A P H T R P V F V S G Y A S D P S L L T E\) LIKGFEPAMVITVGCMVTDDPHSRPLPVSGHASTPELASA
 LADRFDVAEA!SLYAAPMTVPHTRPMVITAHGTDRKSVQN
 \(V V K E C N V E L V V T L G A L L A D V A Y S R P V P I V G V A S D P V L A R R\) A ALLA ADI EGIVLLGAMLADAPHTRPLSVFASSENPEVRSA


 I AEELDVDGVI TLGSMFSDCPHTRPLPISVSDGNC

 VAQEHNAQAVLTLGALLADDVPHTRPVQTSLSSSDDPRDQEH
 V ALLA SDI GAIVFLGAMLADVPHTRPI SVFASSENAAVRAE I AEDYDVNEIVTLGSMFADCPHTRPLPLDDSKGDCE


 I A E D Y D D V S GI V T T LGGSMF D D C P H T R P L P L L D I S R N D C E


 LGMAFGVRRMVSAHG■PMAVPHTRPVGTTRFASDNSVLGB



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FVVK A GVVESVSFHG\PS SVPHTRATPVHVQATDASIIPP





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UniRef90_W4LI46
 QPHMAATMQFPGS V VFL QWKLKQAGID GMTLLA VVPYYM

 \(L G D D P E T Y V G P T G M T G L V H R A C S D L G Q P T A S L W G S S P H Y S\)
\(E S H W T G E I V V P S S A Q A L V E L R L G E W G H D A Q G F V V H D P H Y V\) ESHWTGEVRVPSSAQALVELRLGEWGHDAQGFVVHMDPHYV FHSWPDQMQVPGAASLQQESADGARGRNTAGYTVAHVPHYV

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 A S PPN P K A T L A L L S R I E D L L D D GNDLCP Q GT LQ L METL N Q Q D D FK L D L G DL PRKA E Q WRARA ADLD YPESARALVEALRGATGLALPINALAMAAKTVRAE \(\square\)
 GS D S C P Q A T L Q L L L


 AQSDFPAAAVVLIE ALERAARLTIPVSDLEAEARRREEED

A QAPSPKT LLLGLVEAVED LLHVSVSTRGLEDDARAWQRGV
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DQFIADSPEAAAVRALEAHYDA \\
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\(D \| V V R N N A D A Q Y V D Q L E\) HDADMRQH
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10
K MYELEFPAPDVASDGVDGPTLI IAMQGYADAGLAVEAS E Y HAP T LT QHE

HGLS QHRTVLVAAFEGWNDAGQAAS GT
 LD F S A DEVGP \(L D R P V M L V G L E G W F D V G T A A T Q A\)

PLPNFDRPNASGNTLVVALQGWNDAGESASAA A GRTLVLAMLGWSDAGEAASEA ASPQPRVLIVAFQGWSDAGDATTEV DGTTARPTVMVLAFEGWNDAGGAATAA RPK K S T P RLLL G LS GWMNGGEVV T GT DE LGNRVLIVAFD GWNDAGEAASAA

\section*{MQHPRPE}

D \(\square\) DLKNPAVVIAAGSGWNDAANAASDA A A E GPADTHHRTVLVSAFEGWNDAAQAATGA \(D L Y\) TFE DAEVLAAVPRED LTLVHADPGMVDAGNACR DA D QASKH R VAMVVCAFDGWNDACHCAT DV DSPRPTPRVLLAAFQGWGDAGEAATDT
 A A SPGYPRVGI A AFGGWSDAGDAASEVV SNP I MVVNLDP TND \(\quad\) VGH \(\square\) S A L RPELAEPTLI IALDGWIDAGGAADTA QLFELAFPAPQVSDATGTGPVLIHALDGFADAGHAVALA MS QLHYHA QPTLRDPLVI AAFRGWNDAAESATHA \(R P A L R A P H L I A G G A G W P D G G G V S T G V\)
D A HA Q D LRVRRTLVLNDDP LIDDAGNTA QA LFEFADH \(\square\) S QSEAADERLLKTLVVTLNAFGDTGHTQRLL

PS GS GA LVVEIA F E GQA DASEAAAS SLL
DALGRRAIVAAFDGWNDAGEAASAA RPEMNNPI TVVGFGGWADAGNVSTMS EPSAPNSRVLIVAFQGWSDAGDATTEV
A HDEEVNRTIA AAF GGWNDAGTGSS EA
PKLKNPRMVIGFS GWMDGGDVSTGT

\(P V L R D P V V A A F E G W N D A G D A A S A A\)
EEPRKHRTVLI SAFEGWNDAGLAATQA

\(D\) VD S R S L H A S T L V VT LG S F VD S GRVQE K L








 E F E \(\square\) E R \(\square \mathrm{A}\)

V G HV G K L V EFE ER DAD GELTDPVLVE GLPG

\(1 G N V G L M A\)
VGHVGK L V
DGYPEKP
\(D\) DD I E TVAEP G L \(L\) E
\(\square G Q V G K L V\)
G D D P M E GLP G
E V D \(\square\) E V VA
A RPS EAPRMMGFS GWMD
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\(\vee G H V G K L A\)
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\(\vee G H V G K L A\)


\section*{DEFTTDNFPNR\|VGTFDSDQVIDYTAVRPPTSLEQDHLTG} VEHLDADWEAKQILEDDDESYYDYQVNRPVIRQVDGVTRE AAA LDDTLPHRPVVAFDTDVLIDHRSRRPRMLFNEDHVEE SKSLKGLATG VAARFDSDPLIDYRAQRPLMNFRNGRLVG VRSELSTLDAVPVASVDVDPLKDYRAQRPRVNYMNGELVG

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Y S A WR P VS S VPA SV DHRDEHRDHPTS PDVSFTVLVPHYV RVVLEAD F WFPAS FADYV E FHLGKGGVSHTNVAVRVPMYL



 MEDW
 L K K Y D L I Q K G DA GL N GL L L G DA K E R D I D G VCCL L G E V P M Y A
 \(L S K C N V I L R G L A G L N G L V L G L A K E R D L E G L C\)
\(H\)

 AK OYDLVERGIVAGNGLLLGVAKERGIEGUCLLGEVPMYA YGAVFNEGELSGGISGLLLGLGELRGMECVCFMGETSGYL NNSFRSAQSNVSGLNGLMVGVADRRGLPAACLMGEVPDYL QFKPNEP G GGUVGAS GLLMLGLCK LDRGDDAACLMMMTS GY I LGAEKLE Y D GPTGDP FVF

 H DVMFTNY
\(V G V E F R S E E P A G G I S G L L V G L G G R R G F D A A C L M G E T S ~ G Y L\) \(V\) E RYPNTVVGVITGG N GL L L A V A K K K R G L LE SVVCLMM GE DP E WLL







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UniRef90-M4ZZ79
UniRef90-D3D980 UniRef90_UPIO0036813F0 UniRef90_UPI0003F5A0CA UniRef90-UPI0003794B68 UniRef90-UPIO00255D1D8 UniRef90-XOZSU2 UniRef90-K4ILW0 UniRef90_A0A011SKW5 UniRef90_E3BDM9 UniRef90_I6WVM1 UniRef90-J0X0U1 UniRef90_UPIO002629B2F UniRef90-U2YJ26 UniRef90_UPI0003B5C30F UniRef90-UPI00034BD14F UniRef90-Q83GH2 UniRef90-W4LCH4
UniRef90- A9WSI8
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UniRef90-H5TUV5
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ATTPNDMVS SA LLTT LDNGYS DD DDDDEDQAEARRFSSRD AQFPAYPAALALAQATTTALDLDLDTPELDLLIARTAAE I AQTPSPKAVLGLIVRELDDRIAAPIP
VRGENPAGALAAVKMLA ARGGPTFPDGDDEQDEDNQHVAD A DLEEFDGPLALIKTLRKMEELDLPEGGLQKDSETTHA



G Q


QEKPNP LAMWNVIDAJS DY LDVY LIKD DG LPEQVKQWRKKA EKS PRVVVAR I G ILLNRLVGLRCSTEVLDQKSQELDRK \(\square\) RGTNY
SNPPNPKATVALLRRVEDVLDLEVPLGELPLLAEEWEQTV


GESGSAGPALDAALEGVTSATSLAFRTEELRQADREFQQ A GHQFSS GAAGVL GLMSS LSSGLHFPDGDLEQEAAAEASNL QTDVNHAGRLRIL KI IDCELYGFNMDLERI ELDARQQNSELL T G N R Y A A GA V S A L S ML A S V S G L S F P L G D L E L G V R E A GDRYFTGAA GAL GLTS SLSSGLYFPLGDLE QAAAEEVEAY
```

    Q A T N PKG \R A A LR VLLLPFA GLLSLP
    VD PKSSQSILLKKVLCNDFDFEVVDA GPLE ERAKEMEK\V
RG PHEMIVVANLLSSVLGGGLIDGVGIDDTS ALLA E GWA KRE QEIG

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 TRILQNPMAALAILMVLTKMLDI EIDDTAELA


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


 \(V D \quad P K S A E A I L K V L S K I L G U E I D\)
ARAP YPAAVKSVLQVMS GFLGFELDYTELDEMRRQTNEMV
 VD

P K S A Q SLL K V I C K L F DLDDID A G



VD P K S A RVVLETVED L L GFDVD
SS S P Y P K A S K S V L E V F A D L L G \(\square\) S I G S N \(\quad\) L
VD PKSARAVLEVLA DHLD FSSI D
V D PKSAKAVL EVLMKMLV IDVVS
R DE N D Y M A WL \(\operatorname{L}\) G L L




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UniRef90-U2YVT7

S A QLLE ENPEAKELI EKMEQHYDEAL
DELAAADPDVAKYVALLEQATDTEFERY DTLLVYNDDLNHYVHRLEK \(\square A D T E\)
D E
SEAVERDP
D A QVEQ
DEVIASDEQLKMYVRMLEAEFDRRAE
DSQIKGGGEAADVVKAIEEQYDAF
TEAVVESDDEARRGYVEYL EQTRDAEFERF TEAVDADEDLRTYI RYL E EARDAEFERF NRIAAADEEMSRYIRGLEESRDDAM
T DVVQEHPELASNTSKLEEDYDNE \(\square\)
GMLLRCNDDLANYVHRLEMDVDQ
DAAAADDEEMTEYIHQLEQTRDTEFERY SELVAQDGDMTSYVDTLEHSMD
DELSAEDPDVAEYI EQLEEARDAEFERY DALLAYNDDLKEYVRSLEKDSDREAAE
DAAAADDEEMTEY TRQLEQTRDTW
D I L R N T P DLTKYVEQLEREYDREQARH NRIIAEGDDEMSQYI RTLERARDEAL TQAASSDPR LLE YIKQLEELQDR DQAllarNASVQAHVRELEQEYDA NELAVEDPEI AVVYVRQLEAKDTEFERY NRIAAADEDMTRYI RGLEESRDEAL NATLQQEDEDMQELVSNMEKQYDAQ D SLLESNPEHQPLVEQLEEAWDQ

D A M V
DQYVSDDPELVSYVGSLEHSYDQRTRR HEQUDSSPELAEYIKRLEHAYDT

A GMREEGSDFDDLIRHLEKDYDS
EAAVTADDDLAAYIHRLESMTDAEFERY
DELVSFNPRDAEVVKALEKQNDAEFERY D A A AADDEEMSDYIRQLEQTRDTEFERY NS LVES
N
V GVAEQDEQFARMDAQFEEEYDS
D A
DKLVHKQPLLAAQTKKLEENYDEYFEE NELLAHQPQLAEEIKKLEENYDQEF
NALARTNPD\AEYMKTVESYRD NEALAKDPNLKQFVES
TDMDDDDEETAEYVRTLEERGDAEAEE DQSAAENEQLASLIKGFEDNY

ASMVRQNDELATITANFEREYDA S S AMEQNPEVKNLIEQLEDQY
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S S A \E GNEELA QF पD K LE K D Y D A

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AK L ME
EALDTEDQEFRKLFEAVKRERTDE
DKA LAK QP \(\square\) LT E Q \(V R K L E D N Y D S E T\)
HKAKRLEEEMDE
E
\[
\text { E E VVG K } \square \mathrm{RE} \text { E E Q Q Q Q A }
\]

D Q A \(\square \mathrm{A}\)

K QVAAEA MGEY \(\square \quad\) DYFTE
TK】K E
D QFFDQFPD
SQDA A E
A MEDY \(\square \mathrm{DYFTE}\)

ESMVEGDEELS

NEMVVQ \(\square\) EE \(\square\) VEGLYNAFPAEDERY

QELS GQMPE \(\square\) QAYFENL
QEMQEGGP
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UniRef90 A6UQQ3 UniRef90 JOS1Z5 UniRef90-D7DQN1 UniRef90-DJEYR8 UniRef90-D2RGK7 UniRef90_Q12W63 UniRef90_MOLUB6 UniRef90-KOINE0 UniRef90-X0SV08
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UniRef90 B0R3L8 UniRef90-G7WK06 UniRef90-H1YX30
UniRef90 \({ }^{-}\)X1EDQ UniRef90-UPIO00370BA0A UniRef90 W0JXJ4 UniRef90-Q6L213 UniRef90-FOT7X6 UniRef90-X119Q8 UniRef90-D2NT67 UniRef90_C6A1Z7 UniRet90_T1AC50 UniRef90_F8AN96
UniRef90-D5E7R5 UniRef90_U1P576 UniRef90_LOADV3 UniRef90-T0LRR5
UniRef90-M0MJ94 UniRef90 \({ }^{-}\)W9DQ49 UniRef90_E4NS28 UniRef90-O29725 UniRef90-D8J.J682 UniRef90_EGIZ6 UniRef90-Q2NE62 UniRef90-Q3ISI3 UniRef90-Q3Z808 UniRef90_Q8U1R3 UniRef90_F2KT10 UniRet90-G0HVC2 UniRef90-LOI7W3 UniRef90_TOYPQ9 UniRef90 UPI000360B569 UniRef90_L9W4V8 UniRef90_D5VT09 UniRef90 GOLHK9 UniRef90-A0B682
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1


R GQVGKLV V GHVVGKLA GHVGKLV 1 GHVGKLV V GHVGKKL S GYVGKL


DAEPLTDAVLEGLPG
 GWMD
EPEVEEPVLVEGLPG
 G WMD

G WP G
ES S E E DNYTTMVMVGFN S LEKVTLRNPILVEGLPG D 1 E

\(M D D W E D E T\)
VAEVQLDDPVLVEGLP


EDVELNNPVLIVGLPG
L E N P PV F I
A EPELDDPVLVEGLPG

E RPD PY D P TF TE G LP G VELGLENPVFIEGLPG


DVEPLEDALLIEGDPG
 LK DLSLLESPILVEGLPG MDEFEVERTG A पDG TAPVMVEGWPG KSP1 I GGLP
 LEDVEL N N P V FI EA L P G EDGUABAPVLI EGGLPG KDVDLTDPIMI EGLPG EKPQ NEPVLIEGLP



1 G HVGGIT V G QV GKL A V G HV G S L A
 \(G L V G K \square A\)
TG HVGRLA I GNVGKIA V GHVGK DAGNLGPKV
\(\square G N\) V K K A


UniRef90_MOGQAO UniRef90-M1 XKU4 UniRef90-R4LWD5 UniRef90-A6UQQ3 UniRef90-D7DQN1 UniRet90-J3EYR8 UniRet90-K2QFB8 UniRef90-D2RGK7
UniRef90-Q12W63 UniRef90-MOLUB6 UniRef90-KOINEO UniRef90- XOSV08
UniRefo
U9T5S9 UniRef90-Q8TY84 UniRef90-MOAOZ3 UniRef90 R9SM35
UniRef90 F7PKG8 UniRef90-X0V4J4 UniRef90-WOJPC6 UniRefefo-BOR3L8 UniRef90-G7WK06 UniRef90-H1YX30
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UniRef90- TONME4 UniRef90-×OWEP4 UniRef90-X1P3B0 UniRef90_X1J885

\begin{tabular}{|c|}
\hline \multirow[t]{4}{*}{M} \\
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\hline \\
\hline \\
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\end{tabular}

KNEFYLVKEPV
\(P M V I V L G P E G Q Y\)
 EPMKNEFYYLQGENERDFIFLQGLSPEGQYEGCGHILD
 LMKNSTFWWQGEEGQGTDLLLLTGDSPDSEYALAEEVLG LVNNEVYYSKSEDGSRPDLLIVVGPEGQYDDSDY L VMRNEFYVYESEGDEPDIIFLIGEAQAQGEEVTDRILQ LTCVEIYA CSPAEGRDLLLLTGDHQNEGHYVLTSAFLD SMSNELYYLKSQGEDERDLVVEVGNSQGGUTESGCGDVLD FRGPDNRFFY SGGAMNLLLFVGREPNLKWSELGDCILS AELTCATDHAVSNPEGRDMLVLTGDHQNAGHYALTSAFLD LLAAAEA HAVETGGRDLLVVTGDHQAVGQYRVTEAF MPNNEIFRYSGKDLNRRDLFLTGPEGH
 | A KNTMYYKKRRGKSDLIFLTGGODFQGYELSSK:CED LV NNEMY ICSTDESDLLILVGDHQSSGHYQLCDLYLD LEFPTNKFYYQRLRR KDLIFFLGEEQPTEGERMANLVLD LVWPKDFYNMVTIPERRRLLVVTGPAPSLCMQRFMTRFFK LVSNDGHYFRPTASGARDIVILQGDSPEGQYE ITHRVLE


 AKLACAELHAVE ADDQDLLVLTGPQESTGHYRLTDRVLD LA RAEFHAV DAGDRDLLVLTGDHQNSGHYHLTDAFLD RMPKNEVYAWKDGNGTDLLILVGDFQSISNEELVNAYI D LVAVEC HHVADGDRDLLVVTGDQQAVGHYRIAEAVLD VEPMRNEFYYLRDAGGRDYI ILVGPEGQY EI CGMILD LV C WEDYALTDDENQDVLVLTGDQDSVGHYRLTNAFLD ACAEVYADSAAE RDClLVLTGDHQAAGHYRLTEAFLD LRFPQSRFYY QKWCGQDVVIFMGDEQPADGQRMTAKVI D LMKNEFYYWKSPDDEHRDLIIVTGPTDSYGHFEVAGKMLD AQDACAEFHAVTPEEGQDLLVLSGDHQNQGHYGLTDTFLD VEDMKNELYYLKSAGGRDFL FLVGPEGQY LT WPTEVYAVTGTGGEDLLVFTGDHQAQHHYALAEAFL D I YM RAEFYKIEEP KGPMLIVLGNTQALGQYHLSEEVVK QVRNEDYAYKGADGEPDLLILVGDYQSAGHYELTGDFLD
 LVLANS YYKKMRGKHDLVI AGDHAVGHYGADTVLD LC KNE YYAWK SKEKGGDLVIVNGDQQSEQGYELSYQVLQ EDTCTEVHAVSVEDRDLLLLTGDHQNEGHYVLTDAFLD
 LVGNE:YRCEKDGKALLFLVGDFQSTSAEGLTESYLD LYLVKNEMYYHKNPNGRDLIILVGDYQGMNAEELSYKVLE LVSNDLYYARGSRGRERDLLILVGDSPEGQYEGLTDRVLKK LV RNTLYYKKGKGRSDLYFLVGDCQSLSNEGLAEQYLQ


UniRef90_MOGQAO UniRef90-M1XKU4
UniRef90 UniRef90-A6UQQ3 UniRef90-JoS1Z5 UniRef90-D7DQN1 10 1
UniRef90 J3EYR8 UniRef90-K2QFB8 UniRef90-D2RGK7 UniRef90-O12W63 UniRef90-MOLUB6 UniRe990-XOSVO8 Unireforo-R9T5S9 UniRet90-Q8TY84 UniRef90_MOAOZ3
UniRef90_R9SM35 UniRef90-F7PKG8 UniRef90-X0V4J4 UniRef90- WoJPC6
UniRef90 B0R3L8 UniRef90 G7WK06 UniRef90-H1YX30 UniRef90-X1EDQ7 UniRef90-UPIOoo370BAOA UniRef90-WOJXJ4 UniRef90_O6L213
UniRef90_FOT7X6 UniRef90-K4MB72 UniRef90-X11908 UniRef90-D2NT67
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UniRef90_LOADV3 \begin{tabular}{l} 
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UniRef90 \\
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UniRef90 FOLJ09 UniRef90-FOLJO9
UniRef90-X1L237 UniRef90-B1L688 UniRef90-D8K423 UniRef90-Q58607
UniRef90_G0QGS6 UniRet90-M9SHHO UniRef90 GOQCFO UniRef90-MOCR21 UniRef90-A3CX78
UniRef90_X1TPC1 UniRef90-TONME4 UniRef90-XoWEP4 UniRef90-X1P3B0
UniRef90- \(\times 1\) IJ880
| | AEEFG|V|EQ|VFA
140
150 MAEFGVEQVFALGGVPTGELVDEPSVLGAVADDDEELED VAASFDVAQVYALGGLPTGELVDEPAVVGAATADIESLET
 AAEELGVKRVYTLGGYGVGQTIDEP RVLGAVNDDDLVAE LGDEYGATKTYTLGGLGVGQUPNDLKVYVASTSSEVAEE VAEEFGATRAFALGGVPTGELVDEYTVLGAVTDEVEVAED FVEKYGVKEDYTLGGLGTGQPVEKP KVGGAATNKELAQM
 AA AF GTQQVETLAAYDTGVFVDKP KVFGTATDLETVKE MAMKYNVKRIVTVGGYGVGKILDDPRRVVGACTSLELVEE VKEFGTEMIFTLGGLGTGTVPTEPKVVGAHKELIDLLKE FIEQFGVKNIFTLGGLATGQPVEETVVYGAATDEEKVDIV LASQFNVERLVALGGVPTGELIEEYDVIGAVTTEDTELSE ADEFETTEIYSLGGVPTGELIEDYAVI GAVTERRDSLEE AAAEFDATDVFSGGGVPTGELVEDHDVIGAVSSRKDGLAD I AEKYGVKRIYTLGGYGVGHLIDEDRVLAAVNSDKDEVEK VAQLFEVKRVYTAAAAPAPLHHTQPPGVLAVATNKKLKEY VAQQFGAEELYALGGVPTGELVEEHDVIGAVSNQKERLEE FVHNFGVKNVYTLGGLGTGQPVDKP KVFGAATNUELAEM AAEELGVKRIYTLGGFPTGQLTYSEEVLGAVNNPKEELQR

\section*{-}

F 1 GDKYGAKDTYTLGGFGDGQIKEEMPKVYVASTSKELADK I AEEYGVSRIFTGGGFPTGQLDHVDEVLGAVNQEDLVES VAEEFGASEAFALGGVPTGELIDEYAVVGAVGNDLEEVGV I AKKLNVTTVYTMGGYSTGRIVEKPRVLGAVTDKKLKSKM
LATELGVDRVFALGGVPTGELDDEYDVIGAATDDVDELET IAEEFGVEEGYALGGVPTGELVDEPSVLGAVTDDVERLEA VAKKFSARMDYTLGGYGVGKLVEEP YVIGAANSPEDVEE IAGEVGVGSVLALGGVPTGELVEEHAVLGAASSEDETLED FVEGYGARRIFTLGGLATGQPVEKARVYGAATSMELVED DADEFGVERIFAALGGVPTGELVEEYAVLGAAATTDDELED
 VAEELGCQREITFGAAVTMTHHKAKPKVWAVANSKNFLER VAKRFGAKRIYTLGGYGVGKLVEEP YVLGAANSPKLVEE FVESLGAKEFYTLGGLATGQPEGVEDRVGGAATDEERI EM VAESFDVSQCYALGGVPTGELIESYDVIGAVTSMDDDLED GMKYGAKMTYYLGGFGUGK TKETMNVYVASTSKELAEK

 LAEEFGVRRIYTLGGYGTGQFVEPPQVIGATNRSELVEE
 I AKEDGVSMI YTLGGYSTGKIVDKP RVLGAVTDKNLVAD A AQYDVSRIYTLGGYGUGQLVEK QTVLGSVNEDGLVEE VAEEFGASEVFALGGVPTGELIDEYAVVGAVSSMCDEFED FVKGKGASKIFTLGGMATGQPVEESKIFGAATDEENTED TAAELGVKRUYTGGGFGVGHLVSAPRVVGAANREDLVSE TAEDLGVQRIYALGGYGVGHLVETPRVLSAVNMEQEAAGG IAKELGTKLIFTLGGYGTGNLVEEP RVFGAATDMEMVEE VAQELGVKEVYTLAGFAQGHMVDTPRVLGAASSRVEAMKP IAA ALGVTRIYTLGGYGVGHLVDEP RVLCADNDPALVEE VGLRFQVKRIYTCAAALTRDHHTEEPRVWGVATSQQVAED IGVEYGATMTYTGGGFGTGTLNEELPKVFVASTSKELSDK I ADEFGADEAYALGGVPTGELIEEYAVVGAVNDESESLED LAKEMKASAVYTLGGYSVGKLIEHPRVLGAVSDMKMLIKG FVEQFGTREVITMGGYQVPELQGEPKVLASFTDLETKER YADQLGVKDVDTMGGYVPGSP EVKGVFACSNDEEFMKK VAEKYGVKRIYTCAAALTRDHHSEDSKVWGVATTPNLDEE I GDEYGANFVYTLGGFGVGKLCEEVKVYGATTSKELAKK LVDDIEASQIITVGGYGTGVEDPSVFGVTTSTEKQEKHSD LMMSYDVSKVITLGGYGTGQMDDEPHVYGALVSKEGRDG LADEVEAHEVVTVGGYGTGDVVDDPDVVFGAVTADEMKEK I AEELGVKRVYALGGYGVGRLVENPRVLSAVNSEVEAAGG VAEHYKAKELFTYNGTISPVAHTSSRRLLTVFNQQRLLQD LLKKYKVSMVYTLGGYSVGKIVDEP RVLGAVTDKKLVGR VAQHHKIRELYTISGTISSSAHTTPRSILTVFNQPEFQEG


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UniRef90_D8K423 UniRef90-Q58607 UniRef90-GOQGS6 UniRef90_M9SHHO
UniRef90-GOQCFO UniRef90-MOCR21 UniRef90-A3CX78 UniRef90 - X1TPC1
UniRef90
TONME4 UniRef90-×OWEP4 UniRef90 - - 1 P3B0
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 FKDSEVEPMPDAGLNGLILGVAAKYNLESACFLGTDPSFA LGVVFPKGEPGGGIVGLGGLGMELFNMNGACLMGETSGYF \(M K G Y G V E F R D V V G A S G L L L G L G K M R G D P A V C L D G L T S G Y\)
\(A G V E F R E D E P A G G G V G V S G L L L G R R G F D A A C L M G E T S G Y U\)

 MKEYDPSGGIVVGAGLLLGLGSVAFDMRGVCLMGETSGYF AGGIFTRDEPGGGUVGLLLGLGAGQGMDGLCLMGETSGYL LKKYDLIQKGDAGLNGLLLGAAKERDDDGVCLLGEVPMYA SKELGAEYRGIIGAAGLMLTFSKLNGLDAVCLMGETPGYL SGAVFAQDEPGGGMSGLLGLGAKRGMEGICLMGETSGY
 YKQLDGDMVVIVGAAGLLLGLGKLRGMRGACFLGESLGY
 LKLFRTDGGGVVGAAGLMLMFADLNGIPGMCLMGETPGYL LGELLVTFNGUIGAAGLLIGMSQUNGIDGFCLMGETSGFF VGVEFREDEPAGGIVGVSGLLDERRGFEAACLMGETSGY

 LNKHNVVLRGGAGLNGLILGMAEERGMDGUCGLGEVPAYA


UniRef90 M0GQA0 UniRef90-M1XKU4 UniRef90-R4LWD5 UniRef90 \({ }^{-}\)A6UQQ3 UniRef90 JOS1Z5 UniRef90_D7DQN1 UniRef90-J3EYR8 UniRef90-K2QFB8 UniRef90-D2RGK7 UniRef90_Q12W63 UniRef90 MOLUB6 UniRef90 KOINEO UniRef90-X0SV08 UniRef90-R9T5S9 UniRef90_Q8TY84 UniRef90 \({ }^{-}\)M0A0Z3 UniRef90-R9SM35 UniRef90_F7PKG8 UniRef90 X0V4J4 UniRef90-W0JPC6 UniRef90-B0R3L8 UniRef90 G7WK06 UniRef90 H1YX30 UniRef90-X1EDQ7 UniRef90_UPI000370BAOA UniRef90 W0JXJ4 UniRef90 \({ }^{-}\)Q6L213 UniRef90-F0T7X6 UniRef90 K4MB72 UniRef90- X119Q8 UniRef90-D2NT67 UniRef90-C6A1Z7 UniRef90 T1AC50 UniRef90 F8AN96 UniRef90-D5E7R5 UniRef90 U1P576 UniRef90 LOADV3 UniRef90-T0LRR5 UniRef90-M0MJ94 UniRef90 W9DQ49 UniRef90-E4NS28 UniRef90-O29725 UniRef90 D8J682 UniRef90 T2GIZ6 UniRef90-E7QRD4 UniRef90_Q2NE62 UniRef90 Q3ISI3 UniRef90- Q3Z808 UniRef90_Q8U1R3 UniRef90_F2KT10 UniRef90 G0HVC2 UniRef90-D3DZ76 UniRef90-LOI7W3
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TET \(\square\) AEDHE \(\square\) AE Y VQT \(\square E Q H G D A A V D\)

AEMPEDNDDLS

E Q Q M
SKLKEETPQLDE VA QLIE E
\(S R L\)
ERLKAMDQQ
NEF 1 K S SEEDEEMKKGDKAR
DMFAESDSDLAKR DAMMEEEYDDATE
SRLREMEE
EKMKEE

EK \(\square Y \mathrm{EE}\)
AEEMAKDYEKVE LVREDEQKMDS
\(K K\) VQEMQRAMFEQQ
A Q R \(\square\) H D A E Q

EKMQEE

A
AEMYARFPEMVR QKLDNRYHA LRKVEE

EER \(\square\) EEEEEWHDLVEDSEVDHEREVPRF
GKMAEE

QGLLESDEELS

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ERL

A Q LREEDAE \(\square\) NEY \(\square\) NR \(\square \mathrm{E}\)
KEEV

DEKVEESQD【LKKVQNL

D N \(\square\) REENPD \(\square\) NRY \(\square\) GM \(\square E\)

D R \(\square \mathrm{A}\)
EKFYEHPPE \(\square\) RD




\section*{UniRef90 D8JZS3} UniRefefo-TOMN60
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\hline UniRef90－T0MN60 &  \\
\hline UniRef90－M4YNB1 & ADH KAA \(\mathrm{A}^{\text {a }}\) A \\
\hline UniRef90－V4Y8 & VD PKSARAVITALEDLLGFS \\
\hline UniRef90－XoTRM8
UniRef90
－ 1 SUM & AAGEDFQADKLTLSFLDKRFNGALDREDDERTRDQNDKD \\
\hline & \\
\hline UniRet90－Q2FPL & VD PRSATTVLSVLTKLLGDEDDAK LTERAGEMEVAL \\
\hline UniRef90 TomYH6 & \\
\hline UniRef90 U7V6Y3 UniRef90－J1ARQ2 & AEAQNPRAVVDM｜KALLEKILGGMTV \\
\hline UniRef90－17J787 & VNTPDPRSSAATIEVLNKYNLELDKP \\
\hline UniRef90－D5 & TQNPDPRAAAAVIKLLNDLFDYSUDTESLIEQAEKLEVEM \\
\hline UniRef90 X1DJE0 & VDPKSAKA \\
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& \text { UniRefoo-LWWP8 }
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\hline UniRef90－D3T198 & PDPKAAKSVTEALEPLVDFDID \\
\hline UniRef90－M1XPD9 & PRFPDPEASRAILEHIGPIVAVDVNTDR \\
\hline & VNAPDPRASASTI EVLNKM \\
\hline UniRef90－G2MIW5 & VDDPRKSAKAVLEVLEGQLEFKVDFAAL \\
\hline UniRei90－X1PZG2 & TRVPNPMAALAVLKTLTKMLDTE \\
\hline UniRef90－C7DID4 & DF DPMAAKAVLTVLSKRLNLP：KTDN：DSMVEKTAKAL \\
\hline UniRef90 B1L684 & DPRAAKSVLLS \({ }^{\text {d }}\) D AVFSL \\
\hline UniRef90 BoR310 & PQFPDPAGARRLTDALEPLVEVSVPTDDLVDRAADIRSQK \\
\hline & DPRAAVASLEVLNHMYNLEVDTQPLLEQADEIEATM \\
\hline UniRef90－D7D926 & LDDLPDPESAAEALKLSQ \\
\hline UniRet90－L9x844 & Q \\
\hline UniRef90－F9CVNO & SPDPTAASTLI EAL NRFYDMKI DTS STEKEKERTHSEF \\
\hline UniRef90－D1JEC5 & R \\
\hline UniRef90－M0LAJ88 & FPDPEAARALLQAISPLADFEVDTEALVEQAEEIKAKLL \\
\hline UniRei90－YPIooos691287 & MAPLYPFATRETMRRVRSMFKLDLDLSELRTMGESESNQL \\
\hline Ref90－W0K11 & PQFPDPAAAKHLDDAI EP SSGVDV \\
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\hline UniRef90－ETOYT8 & PRFPDPEARILLDASDPIDGID \\
\hline Q12XF7 & T \\
\hline UniRef90－B1L3V4 & DAYPDPGAAAELLKALEEA \\
\hline UniRef90－A8A8X6 & PDFPDPGAAAKVLDALSKIYDVENTGKLTEDSERTKARL \\
\hline UniRef90－W0JQN7 & ASELLEAIAPLTDLSI DVDRLIERDEELQEHR \\
\hline UniRef90－C7POE & \\
\hline  &  \\
\hline & PQP岛AK \\
\hline & LIIDPDPLYREAEEMEKQL \\
\hline UniRef90－T1ANMO & DASAAKVVMEVMAEILKLK｜NLDDMUKNAASAVKA】 \\
\hline UniRef90－E6N7W & APDFAAKRAVEA AKLLN \\
\hline UniRef90＿Q31P24
UniRef90－Q46DI8 &  \\
\hline Uni & SQNPDPRAAAVVI DVLNLLYDFSV \\
\hline UniRef90－D3R & VN NPDPRAAAEVIRVMNKL \\
\hline UniRe990－M0G： & A QVPDVEATIRLVDAANEVYDLGVDSSPLESFAAEVQQYY \\
\hline UniRef90－A6UT46 & DPKGASNL T L N E Y L DVNTEDLLKEDKALKEKL \\
\hline UniRef90＿M0MF2C & PPDPEAARAVIDGVEPIV \\
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& \text { UniRef90-M0M7 }
\end{aligned}
\] &  \\
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\hline UniRef90 D7EB & （ \({ }^{\text {P }}\) \\
\hline UniRef90＿G2MJU9 &  \\
\hline UniRet90－F8AH51 & GDRPDPRAAANVI EVLKKMLGTEVST \\
\hline UniRet90－E7QQA8 & AQTPDVEAALRLI DAVRDVYGLTIDTDPLEAFAEEVGEYY \\
\hline UniRef90 D2R & PDPRAAAEVINVLNRM \\
\hline UniRef90－Kolut & VpQYRSAKSLLVSLEKLTYQKFKMEELDEDAGA\｜DSEL \\
\hline UniRef90 Q5JEQ5 & PDPRAAANVLEVVKKL \\
\hline UniRet90－G7WQB6 &  \\
\hline UniRef90－M1J2A9 & DPEASAlALS SLS K Y GFPLDTEELLKEAEEVR \\
\hline UniRef90－M01 & GLDID TEPLEAFADEVR \\
\hline UniRet90－D2F & FPDPEAASVL \\
\hline UniRef90－F4BUT9 & SAEPDPRSAITALIETINKMIVGL \\
\hline UniRef90－T1AWN5 & DYPDARAAAKVIEAVNPLVPLMVNTRP俉QKAKEDEAEV \\
\hline iRef90 & SEPNFAAAKEVI IAFSKL \\
\hline UniRef90＿AOAO31 & DIP PPEASAVALNVISKYIGFSDVSSLLQEAEDTRSKI \\
\hline UniRef90 J3JHP1 & DPEAARVI D Dil EPMLTGMECPVDDLVNHTEEUREAK \\
\hline  & QYRAADSIIKTLEKLTYRKFDTSRLEDMAQEDERK \\
\hline ef90－1 & \\
\hline iRef90－M0CRP9 & RNFPDPEAARVLLDGFGPUAGVDVDTDHLVEQAEEUSQAR \\
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\hline ef90－08TW & E \\
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\(E S V A L E D P P T L V V G F P\)
T EPDAA EP T L I E G L L P G H
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\(V\) & \(G\) & \(L\) & \(V\) & \(G\) & \(K\) \\
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VGLVGKI A

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\(\mathrm{P} Q \mathrm{~F}\)
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REVRE
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