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 SGAEMVVQSLRDQGVEFLFGYPGGAVLDIYDAI HTGIEH TGAEIVVRCLQEEKVDYVFGYPGGSVLYLYDELQDRVRH GSFALLDSLVRNGTKHIFGYPGGAILPIYDEVYKWIKH SGSKAVIETLLREGVDTVFGYPGGTIMPVYDALYDYLNH VIEALRDQGVDTVFGYPGGAVLPIYDEIQNDIRH SGGDMLVRALQDEGVDLIFGYPGGSALHIYDAIQKSIKH TGAETLLRSLILEQVEYI FGYPGGAVLPIYDSLYSYFKH TGRKLFVKALQEEGVDTVFGYPGGTVEDLFDELYKQHDV SGAELVVEALKQQGITETVFGYPGGAIMDIYDALYDGVEH TGAQVLVDSLQEQGVEMIFGYPGGAVLPLYDQLYDAIPN

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 I T K H N Y L V V K D P G E L A Q TVV V E A F Y I T K H N F F L V K K R $\quad$ I E D L I T K H N F I V K K DV D DLAA K I L R R A F T I A A R K G R P G P V L V D I P K D



 DTKWAY QI RRPEDUAWAVARAFY:IARTGRPGPVVLDLAKS CVKHNFLVTDNDLANTGKAFYUASTGRPGPVLVD:PKD
 CTKHNYLVKDVRDLPQIGHEAFKIATTGRPGPVLIDD|PKD
 ITKHNYLVSTEELPRVICEAFRIAESGRPGPVWIDDKD CTKHNYLVKKTDDLGRVMHEAFHVARSGRPGPVVVDLPKD I T K WN DQVVTRP E DI P GAI A K A FY I A G S GRP GP V L V D I T R N
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 TKYNYQVKDAAALPREMREAFRIGASSGRPGPVVI DVPKD ITKHNFFVKKDEDLAPTIREAFRIAKSGRPGPVLVDIPKD VTKWNYQVTTAEEIPAALAKAFYVARSGRPGPVLLDITKN CVKHNFLVKDVRDLARTLKKAFLVATSGRPGPVVVDVPKD

 VTKWNF CTKHSFLVTDTSKLASTLAEAFVVAKEGRPGPVLVDVAKD TTKHNFVVRKVDELADVLRDAFRGAQTGRKGPVLVDUPKD VTKWNRVVDDVHDLADVVRQAFLVARSGRPGPVLLDDITKD
 CVKHNFLVKDVRDLALTIRKAFH:ATTGRPGPVVVD|PKD TKKHNYLIKDVKELPKVMKEAFHIARTGRPGPVLIDDAKD TKKNYIVKDVKDLSFAVSEAFYVATSGRKGPVLIDIPAN TK S SFVRDVRDLAWTVKAAYHVARTGRPGPVVVDLPKD
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 VTKWNYQITKASEDPEVMAKAFY|:ARSGRPGPVLID: TKN TKHNYLVKDVKDLARIVKQAFY ARTGRPGPVLIDLPKD VVKHSYLVHDVADIPATVKKAFYUAQSGRPGPVVIDFPKD VTKHNYLVKKVADIPQVLADAFYIASTGRPGPVLI DLPKD VVKHSFLVKNSEDIPSIIKKAFYIASTGRPGPVVIDLPKD
$\frac{1}{C}$ IVKHSYVIRDVTKIAHIVSEAFF VTKWNCQVRHAADIPAAI AKAFYIARTGRPGPVVVDI TK K CTKHNWLVKETDELAATIHKAFHIATSGRPGPVLIDDPKD OVKHSFLVKKAEDIPAVVKKAFYVAATGRPGPVVIDIPKD VTKHSYFVRDVRDIPRVVKEAFH|IATTGRPGPVLID:| PKD CTKHNFLVKDVRDLADTVKKAFHIARTGRPGVVLVDLPKD


| QUERY | $\text { DWDKDADPQSHHLFDRHVSS }{ }^{180}$ |
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| UniRef90-F2KNU6 | VTMADIEFDYPPK |
| UniRef90-A0RBK9 | MVVEQGE |
| UniRef90-Q3AEQ6 |  |
| UniRef90-A7HVZ0 | VQFQRAEYAGP |
| UniRef90_Q7VD57 |  |
| UniRef90-Q3AEQ9 | V S A A RARYEFPEKVE |
| UniRef90-D3DGZ6 | 1 T QK $\square$ S DVE ${ }^{\text {P }}$ PS |
| UniRef90-N2A6U2 | $\checkmark$ T A NKADPEQlRMPER |
| UniRef90-K9TFK9 | $V \mathrm{G}$ SEFD Y T PVQPA |
| UniRef90_A6Q363 | $V T$ A QVA |
| UniRef90-R5JGU3 | VTAAETDYEPVVPEEDS PVT |
| UniRef90-UPI0003815CB4 | I QVAK GEPAPHLLP VEEVVS |
| UniRef90_R5L3D0 | 1 T S A K CEYYPA |
| UniRef90-H5SDP8 | $V \mathrm{SLGGKDEWDP}$ |
| UniRef90-UPI00047B1D86 |  |
| UniRef90_U4PVB6 | 1 Q F A T GT |
| UniRef90_E4T0E0 | AQTQEVEF |
| UniRef90-W1S1H0 | $V Q \\| A T A P Y$ A |
| UniRef90-UPI000379F91F | ITTAKCEFSYPET T H $\mathrm{T}^{\text {T }}$ |
| UniRef90-E0RUN6 | V T AKTCDFRPVVIADEEPA |
| UniRef90-A0B5D8 | I T ELLEFDYPEI NL P GYNPST |
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| UniRef90-E1RGH5 | $\checkmark$ LMK V S |
| UniRef90-B6XDD7 | V Q T A T I E L E T L P |
| UniRef90-K9GX00 | V $\square$ MKEGEYTPAARV |
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| UniRef90-C7PB45 | AQVAKFDFESYRPVPR |
| UniRef90-V9H266 | $1 \mathrm{~T}^{\text {T A A K A KYE }}$ |
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| UniRef90_D3L3K2 | V Q E E GEP P KLEEFPGYHP |
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| UniRef90-R5V478 | VQTALLYE Y NVEPVVEK |
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| UniRef90-X1NIG2 | VQVT KA DFK $\square$ PAK $\square$ KYARPS |
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| UniRef90-H0PW82 | VQNQLVT FEAFPEP |
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| UniRef90_UPI00038150CD | AQFEEFD |
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| UniRef90-Q3A3A6 | $\checkmark$ Q $\square^{\text {A }}$ |
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| UniRef90-C6KIN9 | $\checkmark \mathrm{G}$ L E E |
| UniRef90-F9Z5X7 | AQQEMAEY |
| UniRef90-A1B417 |  |
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| UniRef90-M8DHH0 | V S NAKAPFFYPEKVE |
| UniRef90-D4KTZ7 | 1 Q T APAEYPS |
| UniRef90-F0S338 | V T RELT DFFEEE |
| UniRef90-E3BH45 |  |
| UniRef90-C9AAP6 | 1 T LQE |
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 CVIK H N F

 $V$ T K H N MLLV T
 I T K N S Y Q V R D V N E L P R I I Q E E A F H I A A M T G R P G P V V I D L P P K D I T K H N Y Q V Q D V A D I P R I V K E A F HI A N T G R K G P V VI D F P K N
 I T K H S Y $\operatorname{L}$ V R N V L C K R T W WV A T V
 I T K H S Y L I M K P E DI A T AI K E A F YIIA NT GRPGPVLI DIPK D
 I T K H N F L V T R A E D I A P AVVRLA F Q I A T S GRP GP V L V D I T K D



 IT K WS A LVV P T P E S V








 $\begin{array}{rl}1 \\ I & K\end{array}$

 L A V M S H T L LlP P N D L P S S V M E R A F F S V L
 LVKWSAEPVDAQDVVPRALASQAVVHTACLDEPRGPVVYL S V P Y D I CKHSYLIKDCEEI A DVVAEAFHDASTGKPGPVIIDIAKD







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


 V TK WN SVID QGEQI PNTLRQAFRQMTNGKPGAAHI GLP F D I T K K N Y L I R SVQE L A R A L P E A F R I A E S GRPGPVWI DI P K D
 LVKHS YVVR QPE DI A RVVAEAFHDADTGRPGPV LI D I P K D V T K H N F L V S D A D E I P QV I K Q A F H I A S T G R P G VV L V D V T K D






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| :---: | :---: |
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| UniRei90＇${ }^{\text {B7GH16 }}$ | MAVAEAEEQDVQLPGYQPTT |
| UniRef90－12H8U8 | VTA A |
| UniRef90－N4WD54 |  |
| UniRef90－UP100036621DB | ＇TQDSCEFपYPETVD |
| UniRef90－Joo |  |
| UniRef90－UP100047B32 | AQVSEMEPPTFDLPGYRV |
| UniRef90－UP100036EBD | ALQATFDFEWPHLPGYRPVT |
| UniRet90＿E7RUV5 |  |
| UniRef90－UPIOOC | VMGEFVYPKEVH】PSYKPT |
| UniRef90＿A0AO24HNY5 | VQQAVTDYRYPDKV |
| 退 |  |
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| UniRef90 ${ }^{\text {D4ZCU4 }}$ | I Q I A MFEYFTP |
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| UniRee90－A0AOO9FAK5 | A AA |
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| AsF | $\checkmark$ GeA |
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| iRe | VAAMPATV |
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| UniRef90－E0XPB3 |  |
| UniRet90＿O5YVD8 | VLRATWPPRLDLPGYRPVT |
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| UniRef90－TOFDQ2 | VQLISP |
| UniRef90 R1B4B3 | $\checkmark$ M T |
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| UniRef90－E8JG38 | A Q EPPALDLPGY |
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| UniRef90－W1MV55 | VLAAPVAHDWSAAVARRP |
| UniRef90 G8PUZ5 | IQYDAVDPSD |
| UniRef90 NoJDK7 | DWDVQVNEQNEHLLLEKDVIS |
| UniRef90 D1C2H8 | VLRAEAE |
| AlV188 | Vs |
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 S GAEAVVRALENAGVEHAFGVQGGADMPVYDALYDEIYH

 SGAEVLLRVLGEQGVEVIFGYPGGAVLPIYDALQNAIRH T GADLFVDALESYGVDYVFGNPGTTELPIVDADASGLEY


TGGR\LVDQLVAQGCDRIVTVPGESFLAVLDALHPQDDT


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VAD YVL QRLTEWGVERVYGYPGDGINGMLGAFDRRPEF
TGAQSVI R S LE E L GVVEVIVG DPGGAVLPVYDPDSKKDRH
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KASDLFVRCLEEEGITHIVGVPGEENADFMMSLESSIQF
SGAELL I N SLLAK QQVNNMDFGYPGGAMMPQY DMYQQBMFKN
$F G Y P G G A V L P L Y D T \square Y Q Y \square N H$
$N G G Q L V V D C L V A L G A R R A F G V P G E S Y L A V L D A M H D K L D B$
TVGDHVL R RL REWGTRQVFGYPGDGDNGIVASSGNQPRF


G H L L L V



K A S D L M MV K A L EA E G V



S G G H L V A K A L L K C E Glv i Til F T L C G G H I I
K VIS D Yil VN F I V N Q Gli H Dil F GY Q G T M I A A H L V D S I Y K N I K N

T P

GERLVV GLL
$N G A Q W L V Q A L R A Q G V G M V F G Y P G G A D M P V Y D A L D G G V K H$
S D Y L A K R L K E H GVVGHFF MV V G G GAMHLN D S L L G R A I P Y
VS D YI A DF LVSHDI R DVF TV T G G GAMYLNDSFHPHLHC
TGAESVIAALEGADVTRAFGVQGGA\MPIYDALYHSITH

$V L E Y L$ K G N GVVE YV F GI P A G S V N A F F D EL Y D MI T P
EAABEVMK LE GVVDVVFGVPGAAIDPMYAAMKKVIDH
K V S





K A S D L L V K C L E N E GI E Y IVF G V P G E E N A D F M M S L E D


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I GARHEQACGYMAYGYARSSGRPGVVSVVPGPGVLNAGAA I LGLLQEASVVAMAD GYA QASGRPGFVNLHTAGGLGNATGA
 $V L V R H E Q G A G H A A E G Y A M V T G R P G V C V A T S G P G A T N L V T A$ IV N H H E Q A C A M A A E GY A R L T G E IA A V C CVTS GP G G T N TII N G V TPRHE QGAGFMADGYARTS GKPGVCFIDTGPGMTNNTTA I LVRHEQGAGHAAQGYAAATGKVVGVCMATS GPGATNDVTP

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

 $V L G L H E G V V V G M A D G F A D A S G H P A L V N D H A A A G S G N A M G A$ I TTRHEQGAAFMADVYGRLT GKAGV CLSTLGPGATNDVTG $V L V R H E Q A A V H A A E A Y A R S T G K V G V V L V T S G P G A T N T V T G$ $V L G L H E D V A V G M A S$ GYAQTRRYHAHHDTPVGVANDHDAPG

 $V$ Q S R H E EMMAA F QA V GY A K F G G R V G V
 $V T M A H E Q G A S H A A D A F G D V S G E P G V C F A T S G P G A T N L V T G$ $V$ VSRHEAAS $\square H A A D G Y A R V T G K P A D V L A T S G P G G T N V I T G G$ V HMRHEEVGAFAA GAEAHLTGNLVVCAGSCGPGNTHLI NG TVCRQE GGAAMMADAY GKMTGRPGICFVTRGPGATNASAG VTP RHE QGA GFMA D GYARAS GRPAACFF ITGBPGMTNNDATAA


 $V \mathrm{LV}$ V HE Q GA GHAASGYAHATGKVGVCMATSGPGATNLVTA



 $V$ TTR HE S GA GFMAVVAD GKLLTGRPGVA FVVTRGPGAMNAADA $V L S K H E G A A G F E A A G Y A M M K D V P G V A D G T S$ GPGGTNDLTA






 $V$ CRHEGGAGFMALGDARLTGKPGVLFVSRGPGSMNASIA
 $I V C R Q E G G A A Y M A E A Y G K L T G K P G I C E V T R G P G A T N A S V G$ $V V C R H E G G A A M M A E A Q G K L T G R P G V A F V T R G P G A T N A S A G$ I NVR HE Q GAAFMAD GLAR RVTGQPAACLVTS GPGATNLLTG YNARHE A GAADMAEA YGKLTGRPGDCMVTRGPGACRAAVG VPAMHEQGAAHMADGYYRAS GK IAADCTS IGPGATNTTLTG

 $V V C K H E G A A A N M A E A D G K L T G R P G G C F V T R G P G A T H A S D G$ I I NRHEQASGFMAATYGRLTGKVGVCLSTLGPGATNLMTA I LVRHE QAA LDHAADAYARMS GEVGVADVTS GPGFTNTTITG $V$ DVR HE QVVA A HA A D GYAR QTGRRLGCVVTTA GPGCTNAVTGG




 TANHHEQACSFAAEGYARVNQELAVVNVTTGPGGLDNCLNG TYNHNEQASSMAAEAYARIDNRIAAVCVTTGPGATNAITG
 $V I T K H E G A A S Y M A A T Y A K F S K K M S V C D A C S G P G G T N E L A T G G$ $V L A R H V E G A S H M A E G Y T R H T G N \square G V C I G T S G P A G T D M I T G$ TYQHHEQACAMAAEAYARMDNRMAAVVCVTTGPGATNAI TG
 TLAR HVVEGASHMAE GYTRAKA GNIGVCITS GPAGTMMITG


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


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 CAKHVFLVENPEELEETVRTAFYIARTGRPGPVVIDVPKD DTKHHYLVTDGADLPRVMKEAFHIATSGRPGPVLVDMPKD MTKYAQMVTCASDI RKVMEKAYHLAVTGRPGPVWI DTPVD MTKWSWSURNPQNIPEVVRRAFKIALTEKPGATHI ELPQD
 AK WSYEPSCPEDVPRALSQAGHTANGPARGPVYVSVPMD VTKYNYGVRRADEI APSVHEAFHTARSGRPGPVLVDLPKN FCKWSDEVRDVAALPTMLRRAFRVALTPPTGPVFLALPGD
 FTKYARLVAHGSS: KQAMEEAYDNAMTGNPGPVHLDFARD ASAYVQMATVPEQLPNLIDRAGR A ALAERAGAVCVELPAD LCKWAARDDDAQRLPEYVARAFSVAVSGRPGPVVLALPED VTKHSYFADDADTVGTEVGEAWALANEGRQGPTLVDLPKD VVKHSWRDTDPQEVADVLLQAWETARSGRPGPVVVEFPKN CSHYCQLI GSANQAVRTIEDADQTALT RRGVAVIVLPGD MAKWVVEI RDPAR\|PELVHRAFATAMSGRPGPVVVSLPED


 VSEYCQVVMHPGQMRHVIDRAFKTALTARGGVATVVPED ITKHNFLVVRGRNPAVLAEAFHWAASGRPARCSVDDMKD AKWVAEIDHASRVPEFISRAYHVATSGRPGPVVLALPED ITKYAVVLNDPLDARKVVEKADHLCRRGRPGPVWI DVPIDD
 CVKHNFLVKNDDDLTTTVKKAFQDARSGRPGPVVIDIAKD VAK WVTEI DDAARVPELLARAFATATAGRPGPVVLALPED VTKFSVRVEHAERLAPLLGHADEKAVTGVQGPVHLSSPFD LAKWVTEVNHTARLPEYVARAFHVATSGRPGPVVLALPED TKKSFLVTDPDE: PARIAEAFHVASTGRPGPVEVDVAKS LTKMTRQUVSASSVPTLVRDAFRVASEERPGPVHLELCPED TKRNYQVQSPGDVPQVAEAFATAQTGRKGPVVVDLPKD MTKYNYQVRDTADIPRIVTEADHDATTGRKGPVVVDLPKD ASEYLVQVNVAEQLPNALDRAFRTAWS RRAPTALIU PAD VTKWARQVVADSIPSRVREAFRLAQEERPGAVHLELDPED DAKWVTEVNDANRI ADVVAQAFHAAASGTPGPVVVSVPED STKGMERIDDARRIPEYVARAFATAMNGRPGPVVLVLPED
MAKWVVQI DDAR LAKWVAEI DDTARI PEYVGRAFEVAMSGRPGPVVLALPED VTKLSVLI NKPERI PELMRYAFRMAMTGRKGPVFVEIPRD VAKWAAQUDDAARIPEYMARAFRVATSGRPGPVVLALPED
 SARWAHTLTRPEELAKVMARTFALYFQSERPGPVHLTHPCD
 CVKHNY VTCDEEFPRDKKAFYUARSGRPGPVHVDVPKD
 LTKYAQLVTNAEQ|RYYLEKADYUARSGRPGPVLLDIPMN VTKETVRVTHPGRVADCLRTAFRVAYAERGPVLFDUPRD CARFSHTLMDPEELPKVLARAFAVFSSARPGPVHI QUPBCD

 MTKYCELVKNASDVRYVLEKAYHALATGRPGPCWLDLPMD VSVYNTVVSDAAHMENVASLACRTALSARRGVAHLSVAND VTKWATTVLEPAQVPRAFQKAFHLMRSGRPGPVLLDRPD
 VTKWAVTVREPALVPRVFSQAFHVMRSGRPGPVLIDMPLD VTKAATTVLEAAQVPGVFQQAFHLMRSGRPGPVLIDLPDD



| UniRef90_UPI000407A71B | $\|\mathrm{V}\| \mathrm{F} \text { T Q R A A A G }{ }^{170} \text { A E V } \mathrm{V} \text { D }$ |
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| UniRef90-14KJ18 | V MEQHT DVKAGPP |
| UniRef90-L7Y7M7 | AQFQRTE |
| UniRef90 ${ }^{-}$UPI00036CF1A9 | $A \square Q$ |
| UniRef90-F9EHZ3 | $A Q E D L T E F R W P A R L D$ |
| UniRef90-R6LWN9 | IQQGSKVA E D E L R Y F E |
| UniRef90-S6K2Z3 | V L V E E A D E |
| UniRef90-UPI0003683223 | ALTA TVVWPDAADLP G Y R P T T |
| UniRef90-15C2H4 | A Q ${ }^{\text {a }}$ LAE |
| UniRef90-D9QQE0 | L Q A P $\square$ |
| UniRef90-UPI00035C89C3 | $V$ Q Y E C |
| UniRef90-Q7UHW9 | $\checkmark$ Q |
| UniRef90-UPI0003B3810B | I Q A R M D P P D S LEA Y D |
| UniRef90-K0B7C4 | I A K R E S D $\square$ P P |
| UniRef90-D2RXB8 | I T NGETD P D A P SVPETY |
| UniRef90-A0A011U5A4 | MLVS EVD A P A A L P F |
| UniRef90_A0A024PV07 | DWGHEVSEEAALLLSEREV |
| UniRef90-R7FE90 | $\square \mathrm{A}$ K LPV P P E DP NVMPMRHTA |
| UniRef90_G2I7K0 | L M V A P A P Y V A P P R |
| UniRef90-L0K5I7 | $V A L A E T D G E P E R L$ |
| UniRef90_UPI0003A94DDD | $V \mathrm{ME} \mathrm{ELSDA}$ |
| UniRef90_UPI000237A599 | TILE QIVE D P P A L P E V H P S |
| UniRef90_G0J6M4 | I A QENVEDHVFEVVD Y M L P |
| UniRef90_D1AE69 | LQEETYRPPEHAF RQVPS |
| UniRef90- W9BY96 | MLK D V VE T A D R P R VT R P |
| UniRef90 ${ }^{-}$W2DLV6 | V L D P A |
| UniRef90_C7NZJ0 | I T K G E T DVE P A A P |
| UniRef90_UPI000307B208 | 1 QF MECPE |
| UniRef90-UPI0003733C75 | $V \mathrm{SYEEDEAPAPRLPVLHRRS}$ |
| UniRef90_V4RJ51 | LTE L A E A VET P R A |
| UniRef90_G4F4E6 | $L$ F V A P V A E Q L P R P T E |
| UniRef90_J0WP39 | MFSREMDEE |
| UniRef90_UPI0003B30876 | V Q T A E F |
| UniRef90-C5CY72 | MLT E A A D A Q P Y A VVET H P G A |
| UniRef90 R5DJS1 | V F L E E E |
| UniRef90-UPI0003FB8DAF | $V$ QEA D A M P S P P |
| UniRef90_Q59498 | V LQ G Q C T P P R $\square \mathrm{H}$ LP G Y K P T T |
| UniRef90-R5S5K5 | V QRGNVDLK T M R |
| UniRef90-B9R2H7 | TLLVELAD P P A WQQVET H P |
| UniRef90-T0J5G9 | VQA A PVD F D A LE P F D |
| UniRef90_UPI00036A3B1F | $V$ T E |
| UniRef90_A0A023X1R2 | DLD A D Y |
| UniRef90_D4DQR9 | V T Q S M A |
| UniRef90_Q2CC29 | MQTQEV |
| UniRef90_K2FPP1 | \LLEE A E P F L LD $\square$ P D R T P |
| UniRef90-M9R954 | ML S A L A DV |
| UniRef90 ${ }^{-}$X5MNY6 | I A K H ET DPMQPRRFRRP |
| UniRef90-C5C2I0 | AQQAETTPPETDLPGYHPT |
| UniRef90-A0A023NST8 | IA VE E A D A L L VP P H S $\square$ E M P |
| UniRef90-B9LUZ6 | $V T$ Q E TEETPGPAAP |
| UniRef90-UPI00024901F7 | V M A K T IE T D D |
| UniRef90_UPI00036D4B49 | V A A S ETDFY |
| UniRef90_Q0FID3 | MLM A E T E A A P VD G P |
| UniRef90_UPI000463511C | VQEEEYTPPRHAF KHVPS |
| UniRef90_D0LXM0 | I A AEEAGVIQAS QVRRPVA |
| UniRef90 H2G142 | V Q M E I D P E A Q P |
| UniRef90-Q2KVK0 | MLEEQDSTAS PAAPFALPV |
| UniRef90-A0A024IGE9 | MLTHEVD T A P LPRVE |
| UniRef90 ${ }^{-}$M3J5P5 | MLTS HADAPA YKHVEMHPGS |
| UniRef90-U3AER8 | VLS GLA EAR DLAPAPERL |
| UniRef90-W4L7J5 | VLN QEIEDD MIPPPEQYR P |
| UniRef90-X7EEY8 | MLT D R V AVPD GRPY |
| UniRef90_Q0S7Z6 | LQAEYGDYTPDTGARRP |
| UniRef90_G4QMJ6 | 1 A D E |
| UniRef90_K4L1U2 | V I T A P A |
| UniRef90-A0A024HBX1 | $V L A Q V A D A P A P R \square P Q V A P A$ |
| UniRef90_Q471R9 | $V L D G L$ VNCADAAPY RPVAA |
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| UniRef90_UPI00046F82F8 | V LD R EVPLES AVLPD |
| UniRef90-B1C6M0 | I QREEI E |
| UniRef90-R4KQA8 | I Q R A Q I E P D K La S F |
| UniRef90-UPI0003727CB5 | V Q S L A EVED |
| UniRef90-UPI0002D8B3C1 | Y F Y G EVE DQ L L P P Q Y RVD S |
| UniRef90-X4ZQA7 | MLVEMADVP D A P H Y E |
| UniRef90_A4A3X6 | VI T Q D A |
| UniRef90_G3ADS1 | 1 Q |
| UniRef90_V8CJK5 | I Q A T M I D E E N V VEF D |
| UniRef90-UPI0004653A53 | VQGA I I E T D EL Q |
| UniRef90-V4HFY3 | V S LD D T D P GPAEAPARSTP |
| UniRef90-U4QFJ5 | TQEKPAEEESRRNLPRHVP |
| UniRef90_W4QQW3 | VQLEPVVDIP S A PVRKPIVPS |
| UniRef90_A6FD61 | $V Q L A E I D I D S Y E P L E P Y$ |
| UniRef90-R6KSD7 | $V Q G A$ I E T E S LRA |
| UniRef90-A0A023XHJ0 | $V Q L A B E D D E T Y E P L S V Y K P T$ |
| UniRef90-D5BNH0 | I LAETI DFPAFQS PDTY |
| UniRef90-F2RCB7 | V Q L T E I D P E T Y E P LP V Y |
| UniRef90_UPI00037273D5 | L F P A P |
| UniRef90-R7CP74 | I Q R S EVENPVY D |
| UniRef90_F9T249 | I A K T T SVPMSTR R F R S $\square$ P A |
| UniRef90_UPI0004696DC5 | I AEEQCDTAVIPPHKRY |
| UniRef90_Q31E01 |  |

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UniRef90_K5CCR0

S G G H|LVAKA|L|KAEG|V|DVV|FT|LCGGHTI|D|IYDGCADE|I||| K A A DLMVKALENE GVQYVF GIPGEENLDLLES LSNSUEL TGKEAI I EQFLAD GITHMFGNPGTVEQGFLDALEKYFHY SAGHVIVDTLAAHGVERTYVVPGESFLDVLDGLHESDET





VAFQLVRFLESRGVEKVFGLCGHTVIGLLDAFRERIEY $T V$ H DVTYDLL RK LGLTTVFGNPGSTVESFLDDFPEDFTY






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



TGGEALVRALAAQGADTVFGIPGTHNLGAYSALERVLRH





S GGQALVDALVAHGVDTVFGI PGTHNDAAFAALAAPDRT
S I A S I L V S N F R R L G I N HVVF GI P G K P LVV P L L I E L D Q DV N F
G D L L V A Y LAA QL S V D Y V F GVVPG G A I V P L
GAELVVDCLVE Q GVVTHVFGIPGAKIDAVFDALQDKPE I
TVADLLVEALVNAGI KRIVYGIVGDSLINAVLDSIREKIEV

K V S D HL L K RL RE WGVVERVF GYP GD GI NGLLAAAWDRRPR F
$V A E L V A D C L V A H G V D R A F G V P G E S F D A L L D A L R N D F D L$


K A A QWI I D Y L R Q D GLLD Y VF GI PA G S V N A L F D KM Y E H I T P
GAELIVKNLEAHGVKHVFGIPGAKVDRLFDALDSSITT
K G S DLL A R Y L E H R GI T H V F E L DG G T I T Y L L D S L H L H I H I



S S G A E E L I I $A$ A $N$ N C C L





K A S D

T GA QLLVETLLTNGAEI GFGVPGESYLAVLDALYDDFRF

A E LI V $\operatorname{R}$ R N L L E A H G V

$T V A E A V V D A M L D R G V D T V F G \| P G K Q T L P L N R A L A D R D R F$

S K

G A D D L L A Q T $L$ L K A A G T S R I F
GA D L L

T A A D MVI D T L K N N GVVE Y V F Gll P G A K I D Y L F N A L D D G P E L
T G A WLIAMV R ALL
A TVVA D I L I

GADVLASAI ADCGVGTVFSLSGNQIMPLYDALEPGI RI
STTSEQIVAVLAAEGVVEVVGIIPGDENLHFMEALRNRIXF
S D F I F F K F L E E Y N I K
T V K
ETHDLLRKLQVTTVVGNPGSTEETFLKDFPSDFNY
T V K
DVLVK CLENEGVEYVFGFVGKENNDLI ESDSQQQQF

Unepupozcocc
UniRef90_UPI00034C04C4 UniRef90_A3WNQ2 UniRef90_D9SQE9 UniRef90_Q022M2 UniRef90_Q1GFA1 UniRef90_M0D8B9 UniRef90_Q122U7 UniRef90_B2JP16 UniRef90_B6HG78 UniRef90-I8TM70 UniRef90_D2Z612 UniRef90_A0QSU7 UniRef90_L9PKJ1
UniRef90_IOCBY4 UniRef90-W4LKH8 UniRef90_D3DDN4 UniRef90_UPI00046EE850 UniRef90_UPI0003673F29 UniRef90_K7RSR4 UniRef90-R4TG34 UniRef90_UPI0003671533 UniRef90 E8X750 UniRef90_UPI0003B76760 UniRef90_U3TG86 UniRef90_M1YX62 UniRef90_UPI0003722E6B UniRef90_J7QTH7 UniRef90-UPI0004149616 UniRef90_M6ZZ00 UniRef90_UPI00041736E1 UniRef90-A2U072 UniRef90_UPI000378E1C8 UniRef90_D3RPC2 UniRef90_O26576 UniRef90_K2AZF3 UniRef90_X5KWQ9
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UniRef90_E3C825 UniRef90_UPIO0035DCBF2 UniRef90_N6YT69 UniRef90-F5XIR5 UniRef90_UPI0002FDB85C UniRef90_11CQD8 UniRef90_U7KW71 UniRef90_UPI00035D782C UniRef90_-V9VT70 UniRef90_UPI0002629070 UniRef90_UPI000262AF28
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UniRef90_K5CCR0

140
150
160
I S K F A A T|V|PHTER|V|ADM|V|SMAFREASSGAP GPSF|L|E\|PR D
 FCKRIYRVDRVADLPRIVERAFHLSQAGRPGPVLVDVPMD
 $V$ VK WSVTVREPA QVPRAFQQAFHLMMRSGRPGPVLI DLPFD A GAYVQQASVPAQVRHLVDRADRIALSERR VTALLRPND
 FVKRAWRVDRPELLPEIMDKAFRLAVTGRPGPVLVSIPMD WVK WS Y EPARAEDVPAAFMQAYAVAMQPPMGPVFLSI P DD VSKYQMRVTKMERAVYELEKGVHLALEGRPGPTWI EI PMD MTKYAVELQRPDDVVDLVDSAVSAAMTEPVGPSFISLPVD VTK WNAMDDLPMQ PLRERAFQRMTTGKPGSTHLGFPD
 LTKWSALVEHPAEVPDALATAFREAAGGRPRPVSLAVPWD $V T K W S D T V A S A Q A V P E M M R K A F D L A Q A E R P G A T Y Y A V P E D$ VTKAGFTVTSADQVAATLHRAARLAQQPQSGPVYLGIPTD


 LTKSTRQVVHGNSIPVIVRESVRLAQEERPGAVHI ELPED
 VAAFVQEAETPSQVRMDTDRADRIAKAEHA VSVI IFPAD



 FSVYNMTLVSPDEAAEUAREAVKHADLER GVSHVDVPRD VTKYANRVLDPKAVLAELEAAYYHAMHGRPGPCWI DI PMN


 VSVFNQRIMGAA HMRNDATMACRTAALAHRKGVAHI TIPGVD
 $V L K W S V R L N S A D L V P E M M A R A F A V A H A G T P G P V A I E L P E D$
 $V$ VKRAFQPSRVDMLPLALRQAMDTMVTGRPGPVNLDIPYN




 $I T K Y T H Q L A S A D N L P A R I R E A F R L A Q E E K P G A T H$ QAKQVFVLDDPKRASRVVAEAFFQAKQGRPGPVIVGLPED


 YVKRSYQPTRTDMVPLAVRQACQLLRSGRPGPVNLDVP YVKWS DEPARAADVPRALARAYHI AMQEPRGPVFVSI PVD

 I A AFTHSLLEPSNIEEVFHRAMSSMEVSRPRPALIEVPRD VTKYSAE GGPAATSEITANAFRAAEGGRPGGAFVSTPMD ITKWNTQU L LSQDIGDSLQKAFYAANHVRNAPVLIDDTKD

 VANFVQETATPAQLRHLVDRGVRLAK AQNGVAVLIIPKD $V$ TKFA A SVDSPAALARLLPEALHQATSGRPGPAWLADCDD
 SSKYSEEVQDPESLSEVMTNADRDATSGKNGASFI S I PQD
 VAAYSQI I TSPDQAPAVFHQADAQAYAQRGVAHLNIPAD VTKHAELLLDPENAATVLAESI RTALQGRPGPTAIATPWD
 ITKFAAKIPGAADLGASLLARAAMMSARLGERQGPAHLA PFD
 WVK WSYEPARPEDVPGAFMRAYATAMQQPQGPVFLSLPLD VTK WSAQ $V$ KEASAIPEMDRKAFKTANEEKPGSVYLELPEN


| UniRef90 UP100034C04C4 |  |
| :---: | :---: |
| Rer9_UP10034C04C4 |  |
| 俍et90-A3W | A A E E A A |
| UniRef90-N1UYF7 | 1 IRQQIDPTLHPAT |
| UniRef90-Q022M2 | I FSADLP |
| UniRef90-Q1GFA1 | MLT DEVT |
| Ref90-M0D | VAADSVE |
| UniRef90-Q122U7 | $V Q M A E D D \square D T Y$ P $\square P$ VYKPA |
| UniRe990_B2JP16 | QDLE |
| UniRef90-86HG78 | S SAlfodkat |
| UniRet90-18TM70 | MFSKE |
| UniRef90 D2Z612 | DFSMEPAGVAAVRFFQRTRVA |
| UniRef90-L9PKJ1 | TQSGRTDPATLEH |
| UniRef90-10CBY4 | LLGSEIDASVEHPAAKMPS |
| UniRef90-W4LKH8 | DWNAPMTGPA VVRSVST |
| UniRef90-D3DOOO46EE850 | DWDKPATGPAV VRST |
| UniRef90-UP10003673F29 | VLRAPAEAVG |
| UniRef90-K7RS | VEAQVAPAD |
| UniRef90_R4TG34 | FLSERTPARRPPRSHARPA |
| UniRet90-UPlooo3671533 | MLS SPCPAVPA |
| UniRet90-E8X750 |  |
| UniRefo-U3TG8 | LWNASMSEEAKKKIPRTPVA |
| UniRef90-M1 Y 62 | I AEEECASQPYPV |
| UniRef90_UP10003722E6B |  |
| Ret90_J70 | D |
| UniRef90-UPIOOO4149616 | L D R |
| UniRef90_M6ZZO0 | L FDVTAE! |
| UniRet90-UPIO0041736E1 | VCKEEA |
| UniRef90-UP1000378E1C8 | DWDQ ${ }^{\text {de }}$ |
| UniRef90-D31 | V ${ }^{\text {OTAL }}$ |
| UniRet90_O26576 | M C |
| UniRef90 K2AZF3 |  |
| UniRet90 X5KWQ9 | L |
| UniRef90-G7M8866 | L |
| iRef90-Q04789 | ${ }^{\text {A }}$ E |
| iRef90-18UBN4 | A Lie A |
| UniRef90-G7LDG0 | LQDQA |
| UniReef90-UPIIO0034D6247 | VQDDDYEPPAHAF |
| UniRef90-L7M2H6 | M ${ }^{\text {L M A A V }}$ |
| UniRef90-F3P7A2 |  |
| iRef90_A0A0241KX2 |  |
| UniRet90-V5HWL5 | IIQAAADFKLPA |
| UniRef90-EOMJU0 | YWIQVVDUELPQUVKFELP |
| UniRef90 S6CZP2 | V LSMPAHAPVLRPLPR |
| UniRef90_E5IJ35 | V QVA |
| UniRef90-E3C825 | V ${ }^{\text {d }}$ |
| niRef90_UPI00035DCBF2 | FWSQPYDGEPPPPFS |
| UniRet90 - N 6 YT | FFSAELPVGAFMQAPSPVA |
| UniRef90-UPIO002FDB85C | IAHAPTDAVPFKP |
| UniRet90_11CO | FlQYPD |
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| iRet90_V9V | VQRSPAHPAT |
| UniReef90_UP10002629070 | DWAAEID DNPVLDRTVR |
| UniRef90 UPIO00262AF28 | LLEAEAD |
| UniRef90-A8TL |  |
| UniRef90 LTU943 | VA |
| UniRef90-LOIP51 | VDADETDYDLQPLPRNVVRA |
| UniRef90-EOMLD9 | MLVAKSDARIR |
| UniRef90-X6H | LLSSKVA |
| UniRef90-UP1000367D93D | VLGLIPAD |
| UniRef90 LTVN63 |  |
| UniRet90-Q10682 | Q ${ }^{\text {dele }}$ |
| UniRet90- UOS 9747 | LLAGRTPQPAV |
| UniRef90-UPIO0046898C0 | DWDEPWE |
| UniRef90-M7MLI | YFYGETE ${ }^{\text {P/PEPRRVDR }}$ |
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| UniRef90 UPIOOO40A15C8 | VQAAEC |
| UniRe99-F7XP96 |  |
| UniRer90-A0AO19K273 | $\checkmark 1$ |
|  | VLESLSDCPEELLQARP |
| UniRef90_WOSIQO UniRef90_D8IUA6 | LVQGEAGDMPAPPALARPQPT |
|  | QVRVDDVAP |
| UniRef90-UP100047B7306 | EAVEAPVPTFASLIPS |
| UniRef90_UPIO0047BE161 | $\checkmark$ LNAA |
| UniRef90-AOPN |  |
| UniRef90-GOEQ06 | VQASDIDE |
| UniRef90 A4SXUO | DWEKLIVP |
|  |  |
| URef90-K5CCR0 | QT Q |

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TiADSIVESLLNSG|VKRIYGI TGDSLLNALLDAIRREIEW TVGDYLLDRLAQDGVQHVFGVPGDYNLMFLDEVHKELEW

ADVLARRLYDAGVRRAFGMPGGEVLTLVDALAAGIGF DAAVATLEKEGATQAFGLPGAAINPFYSAMRAHIGH TSSHALLNVLAANGVDRVFLVPESYLGDLDAVDF:DT $N V G D L V S E F L Y Q D G V K D V F G V V S V H N D M L D A T R N Y I Q M$
TVA
$\qquad$ TVADLVVERLVAWDVER VYGYAGDGNNP LDGALRRSPTF SVANHLLRRLADWGVTEVHGYPGDSVNGLVAELGRMPRF GAALARALEQLGVKHTFGITPGVHNTELYDELSDSIQP TDGRYLLDRLSELGIRHMFGVPGDYNLSFLDYIMEYIDW NGAQLIAQQLESLGURY:FGIPGAK DRLFDA:DTNI QM TVAEQLAKTLEOAGVRLWGVTGDSLNGLSDALRRMI EW
 NGGDLVVETLQALGGKDVFGIPGQHALGLFDALRSSLN VGAVVAAFLEQCDVKTAFGV1STHNMPILDAFAOQRV TVLQASLDVFRTHGMTTMFGNPGSNELPFLAGLGDDFRF NGGAAVIESLAAHGVDTVFGTPGTHNLELFRHLPAGTRC

ADQLARVLATLGADRMFCVPGESYLSFLDALQTAIDT
GGETVAEVLKAHGVKYDFTLVGGHISPILVACEKGVRV AHGADMVVAQLEAQGVKHVFGIPGAKIDKVFDSLDSPIEL TVAEVVIETLQQAGAKHCWGVPGDTLNHVTDALRRE:AW STADQVLEALLNAGIKRIVGIVGDSLNALLDSIRRQI EW TGRFAI LEQFLADGMHYMFGNPGTVEQGFLDALYPNLKY TGAQFIVEALKQGVKYVFGVGDPVESFAMQRNMCF GADLVVDSLMNHKVDYVFGUPGAKDDRVFDTLEDKPEL TAADFLVERLRERGFSLVFGNPGSTELPFLLGLEGTARY TGAELIVYALEQUGVKFTFGTPGVHNTELYDELSKSTEP TVADVLVSELAAWGITLYFGIPGSSS历PLVDAVRRNPHY TTADFMLQRLAEWDVRRDYGFPGDGINGLLGALDRQFEF NGGDLVVETLEALGTTVFGPRGQHALGLFDALRRSGHF SVATLVARFLRERGVRRFFGLQGGHIQPI WDAARLGVEI
 AHGAEDVVDMLAQEGVKHVFADPGAKIDAVFDALDRGPEL GADALLESLDNHDVKYVFGTPGAK DDRLFELLAHRPE

 GADAVVESLINHNVKYVFGI PGAKI DRLFERLAHPPKL GSKTVVESLINHKVDYIFGI PGAKIDGVFNELEDGPEL TVARNVVDTHASGVER1YGISGDSLNGLTDALAGTDEW TVGDAIVETLIQQGVSAVYGVISTHNLPIADAVHEALRF TGARVVADMLAGYGVTHVFGVPADRTLAALEAHHPHVQR TAAGYLVEQLAAWGCERIYGVAGDATLHLMDADQDQIRY

DAVVLILEKEGATETFGLPGAADNPLYSAMHGGIRH TTSTAFLEALAEGGVEYVFGNLGSDHPGLDEAYHTLPRL KVADVIINQLKLWGVKRIYGVIGDADFGLMEGLQNDLEW TVGAA IAAFLEQCEVKAAFGVISDHNMPIDDAFASNIRF MKDEGADTVFGCPGAALLPLYAAMERTIAH TGGDLVVETLRGLGATTVFGLPGQHALALFDALRSDLTY
 NVADALVTALREEGDGHDF CVPGEMIDPLDRSLQHEVQP KVSDYIVDFLSKKGVTDCFMVVGGGAMFLDNSFGHKIKC GADAIVDSLANHDVKYVFGVPGAKDDRLFERLDHPVNL NGCYIADE:YKAGAKDVFLVTGGGMMFLTDGLHPKINA NVADLVIETLDESGVKRIYGVVGDSLNGLTESVRERIVEW KASDAI, ARFLAAHDVRHCFELVGGMITHLDDSFARRFHD TGSDVLKEFITTFEINYIFGNPGTTELKFLEA BEQCDNY TGGDVLVDVLRRHGVTTVFGVISTHNLPLVEAVDRELDF
 SVADIVVETLFDAGARRCYGVPGDTLNHVTDAI RREMRW AKVGDVFVETLMKAGVKRVYGVAGDSLNGFTDAIRSHITEW MFGIPGVH TGGA ANALQRHGVSFAFGQS VPSAVILACEARGIRQ GAKIVAQSLHDLGVKIIFANSGTDFPP AEGLAEAPQG DAAVLIMEKEGATQVFGLPGAAINPLYSAMRSHIKH NGGDLVVETLAALGASSVFG1PGQHALGLFDALRSDLHF TDADHLAQTLAAAGVSHIWGVSGDSLNGLTDSLERTIRW TSADDLARRLYDAGCRHAFGLPGGEVLSVMHALDQGVEV STVADQLVRVLHLSGVRRVYGLPGDSLNGFTDAIRRVLSW
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UniRef90 K5BGZ3

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







 VVAKHEFAAACMAEGNHRTGGGPGVVMTTSGAGAMNLVPG $V$ PAR GEAGA GNMADAYARSTSSSLGVCLTSTGPAA GNIAAGS
 VVCRHE GGAGMMAVADAKLTGRPGLLVAVSRGPGATNASDA




 I GMRNEQSACYAAQAMGYLTGTPAV CLVVSGPGLLHCAGG
 I GMRNE QSACYAA QAIGYLT GKP GV CLVVS GP GLLDVVTGG $V L G L H E G V V V A M A D G Y A Q A G G R P A M V N L H A A P G L G N A M G A$
 $V \vee V R H E Q T A A L A A S A Y N K F T G K V A V C L T I A G P G A T N D A T G$ $V$ QARHEEEAAFMACAHAKFTGEVVGVCLATS GPGADH LDNG
 $\bar{M} H V R H E E T A A F A A C A E A A V T G E L A V C A G S C G P G N L H L I ~ N G$
 $V$ VVR HE Q N A A F M A Q AVGRLTTGKPGVAVVTSGPGVSNLATG |VL MRDERNAAYAADAYARLTGKPGVCDVTVGPGANLLSAG
 $V L A D H E G A A V G M A D G Y A R A G R R P A D V Q L H S G V G L G N G I G$




 $V$ VTHGEKK A AYMAD GYARVS GRPGIAMAQVVGALNDAA G I NCRLETTAALMASAEAKLTGRMAVCTATSGPGUVHMLNG

 $V M A R G E A G A A N M A D A Y A R T S G G L G V C L T S T G T A A G N A A G A$ L S A GHA E GAA HMAD GWARTTGRA GVAAVA GGPGAVR L L S G $V$ G L R VE N N A GF A A D A Y GRVVTGEAAPPLLLSAGPGA LTAA PA $V T$ CRHE G GA GFMAAADARLTTGRPGVALVSRGPGAMNAAIA
 $V L T R H E Q N A A F M A A G \square G R \square T G H P G V V D T T S G P G A S N D A T G$ IHF H HE Q GA A DAA E SYSRYENKVAAL CVTS GPGGTNAITG

 $\mid V G L R H E E V A A F A A C G E S Q V T G E L A V C A G S C G P G N D H L I N G$ $V$ SMHHEQAAAFAAE GVVARRHMGRKVAVGTSSGPGATNLI T G

 I N G $\square H E$ Q GSAFAAE GYARVT GKS GVVVIA TS GPGATNNLIT T $V A A R G E A G A V T M A D A H A R F K G L G V A L T S T G A G A G N N A V G S$

 1 LT R H E Q GA GF MA D GY A R V S GKP GV C F L I I T G P G L T N A A T A

 $V L A R H V E A A S H M A E G Y T R A A P G N I V C T G T S G P A G T D M I T G$
 MHT RHE EVVA AFAA GAQAASS GK LAAVCA GSCGP GNLDH L NG VLTKHENGAGFMAEGCYHRTGAPGVLFATLGPGMANAFNV


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UniRef90_Q6D143 UniRef90_Q6D143
UniRef90-I3ZLJ3 UniRef90_UPIO00255B635 UniRef90_UPI00046388D8 UniRef90-F2IWW4 UniRef90_M3AL65 UniRef90_K6X9X8 UniRef90_UPIO0041C3018 UniRef90_Q4ZU15 UniRef90_UPI000476F89E UniRef90_LOI9K6
UniRef90_K5BGZ3

130
140
150
160 CSFFCEVVVTGPKQMPRAITMAMQTATTARSGVSVLVLPGD

 I A K WVVFEPTEPA QLAE A AFKADVRMATSSGTP GPVVEVVI PED






## 



 LAKGVWEVTEGSKAETVVRAWSLAOSGTPGVVIALPED
 CSVFCQEVRTAAQARRVTAMAAQAALTKGGVAVITLPVD
 YCKYSARPPFDTLI PRHVEKAVYLTTVGRPGTAYLDFPGN VTKAAYLVTKTADLPKDMSEAWKLATQGRKGPVLIDDPN ITKYSAEVHDPDTLSETVANAYRLEKEGKPGASFISIPQD VAKAALLAVAGAEDVPEALERAYHLLACLTPRGGPVVVVFPMD VAAFQQQIADPEQLPLVLDRAFKAALSMRAGPAVVILPHD
 AHEYVQQAASPAQMRHLVDRAMRDASAERTGVCDIVPND VTKSQRTVTHHAAMPTADESAWVEAMTYPRGPVWVEVPQD CSHFVELVSNPAQMPEVLNRAMRAATGGKRGVAVIVIPGD TTKWAVQVTDTKSMPEFMARAFSAALDGLPGPVYLEVPMD ISKNAWLVPSVTALPEII RTAFRTAVAPRPGPVAIIIPAD TKYSAEIQEPENASEVIANAYRAASSAKQGASFVSVPQD


Y YTKMAKTVLEAGQVPGVFQSAFQLMRSARPGPVLI DLP PD
 ISKAAFRVRSVDTAISTLKLAVQTALTAPAGPVSVEVPDD IVKSVERARTAARIPGAFREAFRIAREGRPGPVLIDVPAD
胃 MCKYAVMLEDPTDIRYHLEKAWFLMNNGRPGPVWIVDVPVN DTKYAVTLKETESVVYEVEKALYGAKEGRPGPVWI DVPDD CSHYCELISDTGQLPYVLDNADRAAVGQRGVAVIVLPGD YTKRAVQVSDASELLPELHGALSMALSGRQGPVLIDDPND AVKYAYEVNSASDLAVALQRGYAQAI LPGPGPVFLSIPMD I SAYATTITEAKDVEAELETADARTLTAPSGPASVEWPTD ITKYAVMVNKDEDLRYELEKAYYVSHFQRKGPVLVDVPMN ASVFCEEVRTPTQARRMTAMAAQAALTKRGVAVLIVPVD CSDFCEVISTPEQVPRVLADAMRTAIAKRC VAVVVIPGD VTAFSATAMSPEELPGLIARAFAVFNSERPRPVHILEVMMD
 VSKWAVTVKEGAQVPGTFQRAFWLMREG CSHFVELVSNPEQFPRVLQRAMRAAVS VVKGSFTLVD GAVDRIVDRALSAAMS
FTKTTADAETPGRAVEAVEAAVREATGG CSVYCELVVSAQMAPR\|IAMAMRAALEER

| UniRef90_S9T4A1 | $\text { V\|A AFEYDES P }{ }^{170} \text { VPERVIH S }$ |
| :---: | :---: |
| UniRef90-UPIO002E29110 | VYNKPANKPKKQLLDEEMKS |
| UniRef90-B8HHA4 | V Q M E $\square$ EF DEPLPVEKPKAS |
| UniRef90-X7FAR2 | VADAPAEARP |
| UniRef90-UPI0004097959 | VQQ T E D P D S EPLQ |
| UniRef90-A0A052JIE1 | 1 QQQEAAQPAWRAVP HAAS |
| UniRef90-UPI00036148D5 | I QRTIIERPSE |
| UniRef90_UPI00031F708A | $V Q L A E L D \square D T Y E P M T P H K P A$ |
| UniRef90-E6J911 | V Q A P APELGEDLDQEH |
| UniRef90-W4V0Y0 | LKNS $\square$ DEEEVNWP |
| UniRef90_UPI00034995A8 | VQEADYSPPTHDFLQ VPS |
| UniRef90_F7RVP8 |  |
| UniRef90-FOKEC2 | V Y D K P $\square$ N K P L K P L L D Y T $\square$ S S |
| UniRef90-F7YSQ9 | $\checkmark$ L |
| UniRef90-UPIO003825693 | $\checkmark A L Q E A$ |
| UniRef90_UPI00047D3783 | F S SQM ${ }^{\text {G G S P L P V }}$ |
| UniRef90_J4J8E0 | VQQA AVPQP |
| UniRef90-W5XYZ0 | 1 LLE |
| UniRef90_V6L012 | VQQAPAE |
| UniRef90-UP100047C89C2 | $\square Q Q A L I \quad P M P L D \square S P \square P \square P$ |
| UniRef90_UPIO00051034A | VLEQPWT GDPVVAAPSAPA |
| UniRef90-UPIO004657241 | MLS DPVDGALPAPV |
| UniRef90-H3BDZ5 | Y PYHVVEKELT S |
| UniRef90-S31YP8 | 1 S D G P A |
| UniRef90_L9PDJ3 | V SRENAADEPPFAVH |
| UniRef90_G4RMH6 | 1 Q |
| UniRef90_UPI000374A3C0 | V A G Lie a S A E P VP E H VY H VT |
| UniRef90-U5DME8 | 1 T D A P |
| UniRef90-E0VZ99 | L L Q Q |
| UniRef90-H5XYU8 | V Q |
| UniRef90_V6Z2U6 | VT D S K V SVK A I K P L |
| UniRef90-B0X3H9 | LLLARVPEEKVP |
| UniRef90-UPI000364857D | L WEEEAPPP |
| UniRef90_UPI00047A229B | 1 Q Q A P A P T P HE |
| UniRef90_10XWC2 | 1 Q |
| UniRef90-A3CWV6 | I QREALEPA |
| UniRef90_L0A5Z3 | VQEEDAVETPPR |
| UniRef90_E3BDJ8 | V L L A K T E $\square$ P P $\square \mathrm{R}$ |
| UniRef90-A0A023X757 | VLRETVSPA |
| UniRef90_M3JTK9 | V ALK Q APEGAKQTPPRMVPS |
| UniRef90_UPI0003B34456 | I I F NPADVEALEIYYSRPES |
| UniRef90-F3A1Y1 | V I NEKTSVKAIKRLREPV |
| UniRef90_UPI000478006F | 1 F D A E WD E DVLK |
| UniRef90_J2ZRK2 | V VDS S |
| UniRef90-K2PTX6 |  |
| UniRef90_A0A022MG99 | I M DELTTSEPAVPP D T R SVP A |
| UniRef90_UPI000426610E | 1 Q R A EV |
| UniRef90_G2KQ19 | MLS E |
| UniRef90_L8ES40 | VQELEYSAPTHEF KMVPS |
| UniRef90_UPI00047AE398 |  |
| UniRef90_UPI0002DCAA76 | VDDAEVTSPALEPLQAPV |
| UniRef90_S4DDX1 | VVDAPVKGEVIKPLS |
| UniRef90-A0A010PFW6 | $V$ ALA DVQAEAEPMLSRVIP A |
| UniRef90_A4WN44 | VWSMSSETAPCRFNVRPPP |
| UniRef90_Q1R1A1 | LQ GAT I E S Q T |
| UniRef90-A0A010Z2J3 | EGQLDDAEPTDVEPL |
| UniRef90_F5SJ54 | VWMDGVHGELYP P L S R T A |
| UniRef90_UPI000050FD3B | VQQTEID |
| UniRef90-UPI000467A052 | VMEAEAPPQRADPAQ |
| UniRef90-S9T8B7 | L WT L P C GAKPREP ${ }^{\text {P }}$ |
| UniRef90-T2E479 | I Q S A P A D L S P L P VPVAR P S |
| UniRef90_UPI000375D180 | LAAAE ${ }^{\text {a }}$ E YGPRPVAP |
| UniRef90_UPI0003C74C35 | VLA A P TDVP P HELVPRP |
| UniRef90-I3UFA1 | ML E D MVD |
| UniRef90-A7SFE8 | MVNEEVQACKAKVFSQ |
| UniRef90-K0DZQ4 | VQEADI T GEWARLP |
| UniRef90-UPI000249224D | VT D S EVKTDVLA P I P S P $\square$ |
| UniRef90-UPI00042669BA | FQNTDVDVALLARYDPE |
| UniRef90-B2GCH6 | VTDGEVT SAPLAPRE |
| UniRef90-R9JUH1 | 1 QQAELEG $\square$ A QRHF |
| UniRef90_18U203 | $V$ LFTPV |
| UniRef90_Q2KX15 | V A L R A SPVK A VT P |
| UniRef90-Q2T3R6 | VQRAE I |
| UniRef90-K9D9U3 | L L A Q T I E VK V VDP VPR Q $\mathrm{P}^{\text {P A }}$ |
| UniRef90-G8US82 | I WQEETQETT |
| UniRef90-R7Y715 | L Q Y LiA A P E A Q R P A P S VT VS T |
| UniRef90_T2BDC4 | 1 QRSEFDFD |
| UniRef90-A0A009ZJF1 | VQAAE】D |
| UniRef90-G1Y4G1 | $V$ S S A DAPEEPSFTAHR |
| UniRef90_Q6D143 | V A A P VGARPYPLV |
| UniRef90-I3ZLJ3 | 1 LT K LAS SPA |
| UniRef90_UPI000255B635 | V L A A PVAY |
| UniRef90-UPI00046388D8 | LQRAK A |
| UniRef90-F2IWW4 | VLCEPC |
| UniRef90-M3AL65 | LILGTGDVERNKLP |
| UniRef90-K6X9X8 | V QL T Ell $\mathrm{V}^{\text {d }}$ |
| UniRef90-UPI00041C3018 | VLLDPIE D A L A E P F D P P R |
| UniRef90-Q4ZU15 | $V A L S D A P D V A A K W \square E$ |
| UniRef90_UPI000476F89E | $\square$ A A |
| UniRef90_L019K6 | V VRA A T D R E P R D DLD A T F P S |
| UniRef90_K5BGZ3 | I FFSERA |

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UniRef90
W2BQD4 UniRef90 ${ }^{-10 \mathrm{JHH} 3}$ UniRef90_UPIO004663ABF UniRef90-N9UNG2 UniRef90-FOR1UO UniRef90-UPIO00376C6FO UniRef90-D5DBL0 UniRef90-M1SLG9 UniRef90-G8LDE4 UniRef90_B8FDQ9
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 VAQYVTEQLRMWGVKHIYGVAGDAILPWLDVIQKDIRY $T V G H S U G R M L L R H G \mid V E F F G L P Q G L S L P F A D E E G G L R Q$ NVSDLVVETLQQAGVRRVYGLVGDSUNGDTEAIRARUDW GGEALLEACRNLGVDVI FSSPGSEWAPVWEALARQPRY TVGERLMERLKQIGGTDVFGVPGDFSFALNDAVDNDI RW $K V A E V F V D T L V Q A G V T R V Y G V V G D S L N G L T N T I R Q N I E W$ GGELVAQVLKDHNVKYVFTLVGGHISPILVACEKDIRV TAGGAVFGKLKALGVDYVFANSGTDFPPIIVGLIEAPVP
 NVAEQFVDVLVRAGVRRYGVVGDSLNPVVDABRRLDW


AVLEYLVSGNVSKIF
TVADQLITALVDAGVRR1YGIVGDSLNPVVDAVRRTIDW
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k V KVYERLLQLFEAEGIKTMFGIPDPNFVHMFHAQERGWTV TVAEQFVTVLRQAGVERLYGVVGDSLNPDVDAVRRTVDW DA AARLKQEGI EYLSAFPTTPVIEAAABAGMRP NGADTLVASLAGHGVDRVFCVAGESYLLPVLDALHDSIDV NGADVLCDVLLANDVNCFANPGTSEMHFVAALDRRMRC ASQLVKTLEKQGVKRIFGLVGDSLNPDVDEVRQSDEW NGAHSVVQTLVNCGVEVCFANPGTSEMHFVAALDAVMRP VVDYLVDAVAALGVRNIFGVDGANDEDLYDAVDVDVTG TAGAALFTRLKALGVDYVFCNSGTDFPPIDEGLAPLPHA VADALGRMLAELGVKQVFGVVGSGNFRVTNALASGATF VADYVANFLSSLGVKDVFLVTGGGAMFLNDAKHEKLNP TVAELLVATLDQLGAHQVFGVVGDALNPFTDAMRRQVRW VADYLLDRLSQCGVEHLFGVPGDYNLQFLDHVSPEIRW TIADQLVAQLIDAGVDHIYGIVGDSLNPIVDAVRRSIDW TVADYLLDRLAGCGUGHLFGVPGDYNLDFLDHVHPTLRW TVGQFLFDCLKQEGATE
VTHAVVQALRANDVATAYGIVVGDPDTDLARAQASG|AKY VTHALAT NGAETLVDTLTGQGVDCFANPGTSEMHFLKALENPMRS KVADLFVRALAQAGVKRIYGVVGDSLNGLTEALRQD A W $V G E Y L M D C L S E A G V N K V F G V P G D F N L A F L D D I H E N L D W$ NGGDVAVETLIALGAHTAFGIPGQHALGLFDALHPEVRF TASYAFFEALVEAGVSHCFVNLGSDHPSLLEALNKGPEVV TTATAFLEALVEQGUTHAFVNLGSDHPGLVEALAEVPTV
 SGAESLLHTLVACGVDTCFANPGTSEMHFVAALDPAMRP EALVKALQAWDIDHLIYGIPGDSIDAVVDSLRDNIUEF TGADLL QALQENGLNKMYGVVGDPVTDFARAQLRGMKY AEYVVERLKAGVKQVFGVPGDYNLEFLDYFERDLEW TYADQLVDTLEVQGVKRIYGLVGDSLNPIVDAVRRSI EW T $\square$ ADSVVETLVKAGVKRIFGI TGDSLNAIIDAVRRKIEW ALAHALAARGVEVVFG|LPGVHNQEIYRGLDEGLRH KGSDALELELKEYSVSHVFGLVGETSFPLYESWYSEVNH TGGQLVARTLSSFGVTDIFGVHGGHLDSFLVECDEGMRI TVAAFI AKTLEQAGVKRIWGVTGDSLNGLSDSLNRMIEW HLLIDALKLNGVETIYNVPGDPITDLGRAQAQGLRVV TVAERIVEELERSGVQRVYGLPGDSLNGLTDALRTTITW TVADHIVATLKASGVGRVYGLPGDSLNGLTDALRRDLAW KTEAUADULVEEGVEYLFGFPSNPLFDTGVLAEKGIRK SASSDLDNSLLNNDEFDFGYPGGAVLHTYDATFSGIKH APHIFDILYKQGVQHAFGDPGDFALTLFDALASPUTP MLEALWDAGVRYVFANLGSDHPALMEA: DRFPKV




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UniRei90_UPLOo02FEB001 UniRef90-D2BAW2 UniRef90-W2BQD4 UniRef90-10JHI3 UniRef90-UPIOOO4663ABF UniRef90-NOUNG2 UniRef90-FOR1UO UniRef90-UP1000376C6F0 UniRef90 D5DBLO UniRef90-M1 SLG9 UniRef90-G8LDE4 UniRef90-B8FDQ9

UniRef90_W8TBZ1 UniRef90-V2TQE2 UniRef9O-UPIIOOO3716A03 UniRef90 D3F2F9 UniRef90_UPIOOO46608A9 UniRef90_W4LE20 UniRef90 UPIOOO371D7A8 UniRef90-UPIO0035D15A7 UniRef90-Q4JWDO UniRet90_Q216P2 UniRef90-A0A059MPJ6 UniRef90-UP1000467CAF3 UniRef90-W0Z844 UniRef90_UPIooo35D2790 UniRef90-J2H1Z5 UniRef90-A2RNJ4 UniRef90-UP10003B71C38 UniRef90-X2NM52 UniRef90-H8L738 UniRef90-UPI000400DB48 | UniRef90-X7TCT7 |
| :--- |
| UniRef90 | UniRef90-G7Q8X6 UniRef90-UPIOOO3807A43 UniRef90-B1LSV3 UniRef90-UPIO002EA3D82 UniRef90 UPIO00348C7AB UniRef90_W9CRE3

UniRef90 RoJoE3 UniRef90-UPIO003B406AE UniRef90-R4K1V44 UniRef90-Q5YN72
UniRet90 A9HO39 UniRef90-C6ZDGO UniRef9_NZR42 UniRef90_W5XWIO UniRef90-UP1000370FCDD UniReffo-U3A8K3 UniRef90-TOLMR5 UniRef90-K6WKHO UniRef90-UPOOO2EF2EBE
UniRef90- V4RUG6 UniRef90-K6WHJ9 UniRef90-UPIO003702B8F UniRef90-D8FMB3 UniRef90-M1PWP6 UniRef90-UPI00036ADD65 UniRef90-S5RL14 UniRef90-K9QMN3 UniRef90-F2PJU3 UniRef90-HOTNT1 1 UniRef90-Q9P7P6 UniRef90-A0A059MIA4 UniRef90-R8BJE7
UniRef90-Q8TT45

LYDCHRSRVPVLAI AAQDPSNEMG SGYFQETNPEHLFAQ
 LVNAALENAPLVLISGATAVRDWQKGALQQEMEQTAMVRP LLEAKNLGAPLLLLALGTGGDKLGTRSFQEADQ\SLVKP MMCAKVNRAPVVIFLGGQRAREQRVRBGRDQFVQQADLFAP LFDAHRSGAPVLALASHDPSAQVGTLFFQETHPERLFQE LVEGVKANTPMVLLAGDTPVTDKDNFQNVPQREHVLATGA VATSFSDAVPILFLPLGHPRDREGVYPLFSSMKSFD G S VHAAAEDGTPLLLLVGGVAEAEDD QEVFQSLDSGRFFGG LHNARRARVPMINVVGDHASYHLPDDAPLTA DTECLAAP LHNARRAASPIVNVVGDHATYHLQYDALLTS DGAGFARP
 AINAAVDQVPLLMMSGRTPVTEEGRFWGQEMRDQAALVRE LAEAAKCHTPVLELAADVAKKEVGHVSPVQEANQDPAVRG LYEARKDHAPVLA SGGVASAKRGIDY SQEDADPVALFND LYDAQYDHVPVLALVGQVPTSAM NTNYFQEDNENPMFAD LYDAHRSGAPVLAI ASHDPSAQDG SGYFQETHPERLFVE AGSYAEYVPVLHVVGAPCSAAQQRGELMHHTLGDGDFRH LYDAQMDHVPLVAFLGQVASTSM NYNSFQELNENPDFAD AGAYSEHVPI HTVDQKEHKLMHHTGMDGDFNVFRNMYK LANATTNCFPMI QI SGSSDRALVDRRGDYQDLDQDAARP $V A Q A Y G E S A P L V A L P A G Y D E A K T D V D P K F N S R V N$
$A$
$A$ AASARADASPVLFLTGQVPTDWEGRGGFQDSFDDTALLSH
 LQEAAAASAPVLCLSSQDPSEGLGRGFLHEQPDQSAAARG VHNASCGRAPVLIFAGLSPYTIEGDHWIQDVPNQAEDVRQ VHNAAKARIPVLIFAGSSPFTQDGEMWUQDVHDQRGLVRGG LAQATKNCFPLIMLSGSSDRHDDDLDRGDYEGDQYNVAKP LHNARRAQSSIVNIVGDHATYHLQYDAPLTS DIAGFARP MYDAKMDNVPQLILAGQTDSTALGTKAFQETDISKMVDDV LAQATKNCFPLI MMSGSSERHYUDLDQGDYEGDQYNVAKP VAGSLAERVPVLHVVGAPNTKMQSEHALLHETLNTDMSKP YDCYRNRVPVLAIAAHIPSDEIGSGYFQATHPELIFQE LGQSWSDSVAVLALSSCLPNGGPPDHRLHEMRDQRAAAA I EAN SSGVPLII LS SDISSLSEKRNFLTEYDKSAMFKS CNAGADRTPVLLI TSSPPDREAELNVLQGGLDQVAVGGV LDCHRNHVPVLAI AAHDPSSEDG SGYFQETHPQELFRE LAHATTNCWPMI LI SGSSEREIVDQRGDYEEMDQLIATARP
 I AQAYGESVPGVAFPAGYDQSNNDTDPKFSSLVN 1
 VHNASVGRTPVFI FAGLSPFTQEGIHWLQDVPDQKQIVAQ MQNLFRYRLPVLLLAGRAPFALHGEHFVQDSFDQASUVRP LGGAYAEDLPVLLISGSPNTNDLGSSHLDHHTYQYEMAKK

UniRef90 UPIo0040EBCB7 UniRef90-17KHT5 UniRef90-UP100039C7E7E UniRef90_U1QVX6 UniRef90_R5RA55 UniRef90-F4LDK9 UniRef90-G1LQN9 UniRef90_UPIO003455212 UniRef90-JoXFY9 UniRef90-C3A6P2 UniRef90_M8DJLO UniRef90 E5Y911 UniRef90_UPIO003B79402 UniRef90-C5AZII UniRef90_D3CYF6 UniRef90-X5L9N1 UniRef90-G7Q4C3 UniRef90-G8P1U0 UniRef90-V4A0X9 UniRet90_U7FRV1 UniRef90-X1D3D3 UniRef90_-66SE92 UniRef90 UPIO002FEB001 UniRef90-D2BAW2
UniRef90
W2BQD4 UniRef90 ${ }^{10 \mathrm{JHH} 3}$ UniRef90_UPIo004663ABF UniRef90-NMUNG2 UniRet90_FOR1UO UniRef90-UPIIOOO376C6F0 UniRef90-D5DBL0 UniRef90-M1SLG9 UniRef90-G8LDE4 UniRef90-W8TBZ1 UniRef90_V2TQE2 UniRef90 UPIO003716A03 UniRef90 D3F2F9 UniRef90_UPIO0046608A9 UniRef90_W4LE20 UniRef90-UPIIO00371D7A8 UniRef90-UPIO0035D15A7 UniRef90-Q4JWDO UniRef90_Q216P2 UniRef90-A0A059MPJ6 UniRef90-UP1000467CAF3 UniRef90-W0Z844 UniRet90_UPIooo35D2790 UniRef90- J2H125
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UniRet90
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UniRef90 A9HO39 UniRef90-C6ZDGO UniRef9_NZR42 UniRef90_W5xWIO UniRef90-UPIO00370FCDD UniReffo-U3A8K3 UniRef90-TOLMR5 UniRef90-K6WKHO UniRef90-UPOOO2EF2EBE UniRef90-V4RUG6 UniRef90_K6WHJ9
UniRet90 UPIOOO37 UniRef90_D8FMB3 UniRef90-M1PWP6 UniRef90-UP100036ADD65 UniRef90-S5RL14 UniRef90-K9QMN3 UniRef90-F2PJU3 UniRef90-HOTNT1 1 UniRef90-Q9P7P6 UniRef90-A0A059MIA4 UniRef90_R8BJE7 ${ }^{\text {UniRef90_Q8TTM }}$

## .

DTKSSVEIVQDPDTLSEAFANAYATAVVSAKGAAFJLSVVPQD ASVWCASAKTADLIPVLTDEA DRQA YARKGPAVLIIPKD VLASPQRVNSAASALNDVVEAFRLARDERRGTVVENLPMN
 VTKWVRRVTEASRTEDYVDQAFAAACSGRPGPVALLLPAD

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## -

## 0

○○○ COTMAMVAAATADDTLVRAMAAALTG
 ITKCSILLDDPESTKSDLERC, ALLAMTPRCGPSWLDVPDD SSKRAYRIISNANQAIALLHKAI QEAQTPPCGPVSVEDPID LVKWAYRVEHVDRLVWAMEAAAFHALNGAPGPVYIELEPN SVKYSASIIEYPDQTDEITRGLRKALSGTPGPVYIEYPSN CSHYCELVSAAEMP RVLRIVATALSGRGGVSVAMPGD GTKYEQRASPGVAEDMVAFRAAQDERAPVVLNMPAD IIAKAWTLHDPAAAASLAARAFRLLAESGTPGPVTLTLPED MSNWVRRIEGPDDVARATOAAHASLS PPGIVTLILPAD VSSWIDHSTSAGSVGADATRAVQAARSAPGGLATLIMPAD


 VSVYNRTVMTAEOMPAVVDEALRQAYAKRGVAVITLCKD
 FYMMSQALSAASALLDEQNACFEDEMLAARRFGYVMPAD QVTAYSAVLTPENAMIEGPAAIRTDK EKKQPVYLVVADD FAKAAYR NRVDDVGGVARAVRTAVSGRPGGVYLDVGD
 CSHYCELVSSPAQLPGVVETATAVAVAERGGVVVV)PGD VVKSVHTVRHASQTPSAI AEAWRSAASGPAGPTWVEIPQD YCRYSLELKTGKNIKQMVNAALQWATSAPTGPVYLYSARE YMPYDNEIRTGANVKQLVHRAMQFARSDPKPVYLMAPRE FCKAAYRVDAEDMGLAVARAVRTAVSGRPGGVYEDPAD vsdwvrbpasaralpgovatavacaraspgo itill pad AVYKHQVIENDKDIFGIIVNEAIRTAYEKKGVSVLILPNN FCKKAYRVDRAQDIGLLIIARAVRTAVSGRPGGVYLDLPAE LCSCATATLNDVQPYADVFDDAVRACLTGOCRPAYVELPMD CSDFCEVIMTEKQMPRTLTMAIQTADAGST VSVVVLPGD VTAWSEEARDADAYALLDRAFAGGAERRPRPAHMOVPDP YVKMACRAESGARVPFYI最KARRVAMYGRPGPTYVETPAN A AKWSHRVTTVARIPDLTAKAVRHARTGVPGPVVLDIPGDD HAKAAYRIILHAEDIGLGVARAMRASLSGRGGVYLDVPGA CSAFCEMVSTPDQMPRLLDVALRTAVERRDVAVLVIPGE CSVYCEELVSDAEQEPRLLEEAMRTADYERGVAVLVVPGE ISKSCEQLTDADAVAETVRRAFSAARSGPRPAVVEVPKD
 HTLYATTLTDPKTADTKIHRALDYAMTFKR PVYLETPRD YCRYSGELKTGKNVKQMVNRALQFATSAPKGPVYMVAGRE YVKWEYT PSGVVVKKALARAAAFMHSDPPGPYMMLPRES


| UniRef90_UPI00040EBCB7 | V M G H A VR P E $\mathrm{P}^{170}$ |
| :---: | :---: |
| UniRef90-17KHT5 | Y G WQKI E |
| UniRef90-UPI00039C7E7E | VQDERVP A A S $\square$ R A L |
| UniRef90-U1QVX6 | $V \mathrm{~T}$ G A E TDPPTHDPPER |
| UniRef90-R5RA55 | LAKK T A |
| UniRef90 F4LDK9 |  |
| UniRef90_G1LQN9 | F V N F Q VNVS S V K Y V VE |
| UniRef90_UPI0003455212 | VANTEIEVTS PFELAEH |
| UniRef90_J0XFY9 | V L Y |
| UniRef90_C3A6P2 | LVT K P $\square$ K V WT EPAPPRPTS |
| UniRef90-M8DJL0 | I F S R T TVVWPLVET LPPR |
| UniRef90-E5Y911 | MLGMPAEPEKRD IP |
| UniRef90-UPI0003B79402 | FFYGD DE C D \PQPI |
| UniRef90_C5AZI3 | VALK E A P K A A L A P |
| UniRef90-D3CYF6 | V L L E P WK P A PVALLPGSRVST |
| UniRef90-X5L9N1 | V L E Q D |
| UniRef90-G7Q4C3 | HAD A P L A G E P VCVVPE |
| UniRef90_G8P1U0 | VLA R E CS A A T L A L |
| UniRef90_V4A0X9 | V L Y |
| UniRef90_U7FRV1 | $V L C E Q T P P D G L D T P S K Q A P$ |
| UniRef90-X1D3D3 | DL Q N $\square$ M N P E Q Y R P L E R P |
| UniRef90_F6SE92 | T L Y |
| UniRef90-UPI0002FEB001 | 1 A S QP A P EK T |
| UniRef90- D2BAW2 | $V A D L P A$ |
| UniRef90- W2BQD4 | V L L S E T D A K P E I E S A P F R A |
| UniRef90-10JHI3 |  |
| UniRef90_UPI0004663ABF | V A M A A AS GP MLP |
| UniRef90-N9UNG2 | MS A E AVEAQA |
| UniRef90-F0R1U0 | V T T A E V |
| UniRef90_UPI000376C6F0 | V A M R E V VEE Q V S R L |
| UniRef90_D5DBL0 | 1 P S S T I |
| UniRef90-M1SLG9 | 1 Q A FVLPEDYPD\D |
| UniRef90-G8LDE4 | I Q G A K I PVVS T A P VK P T S V S A |
| UniRef90-B8FDQ9 | $V \mathrm{~L} N \mathrm{~V}$ S AQENEIVPA |
| UniRef90-W8TBZ1 | L M D Q S VP T G IQ F A P P EKLS |
| UniRef90_V2TQE2 | I S EA Y I D D D |
| UniRef90-UPI0003716A03 | V I L E E L DVP E P LP P A A Y |
| UniRef90-D3F2F9 | LANEDV |
| UniRef90_UPI00046608A9 | FQWQEVE Y R S L H LP E Y R |
| UniRef90-W4LE20 | VAVE EVD P A IV D GY Q S P K P A |
| UniRef90_UPI000371D7A8 | V L A R |
| UniRef90_UPI00035D15A7 | A A WGEAR P P A S A V ID R P A P |
| UniRef90_Q4JWD0 | V S S P $\square$ E E E |
| UniRef90_Q216P2 | $V$ A WNEAALDA HKLDD |
| UniRef90_A0A059MPJ6 | VQQATVT GPRFTPPTRRV |
| UniRef90 UPI000467CAF3 | V LCEDVDAA GLDAP |
| UniRef90-W0Z844 | 1 Q DLEII A Y P G A P P A S N R VP T |
| UniRef90_UPI00035D2790 | $V Q \mathrm{G}$ A I E E |
| UniRef90_J2H1Z5 | V F S A K V S G P VP S $\square$ A T L R P R |
| UniRef90_A2RNJ4 | L G WQEI E |
| UniRef90-A4WD07 | V A K K P A DP P V S A F |
| UniRef90_UPI0003B71C38 | $V$ A EFEASDAFPQLVLT APAT |
| UniRef90-X2NM52 | $V A K K T A D P P T Q A L A$ |
| UniRef90-H8L738 | LGFEEI D E Q P F S TA H T HK T S |
| UniRef90_UPI000400DB48 | L V Q P I |
| UniRef90 X7TCT7 | V L G A M D A S A A |
| UniRef90-M0AFZ4 | V F H E E IP G D LE Y H P S S |
| UniRef90-G7Q8X6 | 1 Q R A DVA A PWEPLDE |
| UniRef90_UPI0003807A43 | AS WQEAGAQPPLPAP |
| UniRef90-B1LSV3 | V GLMAMP G G A P DL |
| UniRef90_UPI0002EA3D82 | VA Q S Eli |
| UniRef90-UPI000348C7AB | $V \mathrm{~L}$ L G P A G L P A VA D VD |
| UniRef90_W9CRE3 | V ME E E I D D ${ }^{\text {P }}$ |
| UniRef90-R0J0E3 | LSAELVD |
| UniRef90_UPI0003B406AE | $V$ L E A P C E P V SVDMAR |
| UniRef90_R4K1V4 | TVA QKS DA NI Y K V V D |
| UniRef90_Q5YN72 | VQQAE GYPVPVPL EPRHV |
| UniRef90-A9HQ39 | TA WAPAEPETEMLPATTPES |
| UniRef90-C6ZDG0 | L L T R K VK D T T N Q KVD T A P P A |
| UniRef90-N1ZR42 | TI S Q E |
| UniRef90-J5RIJ3 | V L HVKVS D E |
| UniRef90-W5XWIO | LASAEAE |
| UniRef90_UPI000370FCDD | 1 A S LD E S T H P $\square$ P E Q |
| UniRef90_U3A8K3 | L L E |
| UniRef90_T0LMR5 | V Y D D V VE $\square \mathrm{Y}$ S Q D A F S T Y P S |
| UniRef90_L8GZ11 | V I Y D L M E |
| UniRef90_K6WKH0 | 1 MFKEIDE |
| UniRef90-UPI0002EF2EBE | V A L K P A P E |
| UniRef90_V4RUG6 | L L GQ T M D A |
| UniRef90-K6WHJ9 | L F L K P C P K R R A G A P $\square$ R H V P |
| UniRef90 UPI0003702B8F | $V \mathrm{~F}$ R |
| UniRef90-D8FMB3 | FGWQETE D N Y R\S A S N HVA |
| UniRef90_M1PWP6 | VF Y HEVEP F D Y T P |
| UniRef90-UPI00036ADD65 | M |
| UniRef90-S5RL14 | L |
| UniRef90_K9QMN3 | MVY A E T E E |
| UniRef90-F2PJU3 | VL E E E I E P Y S LD |
| UniRef90-H0TNT1 | TLA ETWDERAMP |
| UniRef90_Q9P7P6 | $V A S Q P C A A P G P A S L I T E P E T$ |
| UniRef90_A0A059MIA4 | LQY L A SPDEQRAAEAR |
| UniRef90_R8BJE7 UniRef90_Q8TT45 | VMTAPAFPASAFTPPDYGPS $\mathrm{Y} V \mathrm{HENI}$ |

UniRef90 R5F623 UniRet90-B9QSS5 UniRef90-UP10003B4B7D5 UniRef90-A0A011 TC74 UniRef90-R9GR88 UniRef90-G2IN83 UniRef90_UPI000369EC99 UniRef90-AOR480 UniRef90-G4ELW8 UniRef90-V6J067 UniRef90_UPIO002491F37 UniRef90-AзKOR0 UniRef90-G3MG81 UniRet90-R7WNB9 UniRef90-C2MBE5 UniRef90-UP1000037A01A2 UniRef90-X0GS58 UniRef90-N4UEF5 UniRef90 UPIOOO37309B5 UniRef90 UPIO003605887 UniRef90-D3T115 UniRef90-W9XFE6 UniRef90-SoDW71 UniRef90-G4BBV7 UniRef90-J32267 UniRef90-UPIOOO3FAB399 UniRef90-D5ULX2 UniRef90-B4UGN3 UniRef90-F7SWY6 UniRef90-DOZ353
ne UniRefefo-EESSK18 UniRef90_UPIO00287B88F UniRef90-V8QYK0 UniRef90_UPIO00465CA20 UniRef90-A0A023F558 UniRef90_UPIOO0344B374 UniRef90_UPIooo2626F45 UniRef90-LONLI3 UniRef90-Q211A5 UniRef90-UPIO0047DF8CF UniRef90-S0A161
UniRef90-W4M6C7
UniRef90-UPIOOO46789E0
UniRef90_UPIO004127E74 UniRef90-Q60A74 UniRef90-A4HB43
UniRef90_UPIO002E3A341 UniRef90-U5QK81 UniRef90-K2GMH5 UniRef90-10.JPY6 UniRef90-17MIT6 UniRef90-B9R2G1 UniRet90-4FEET
UniRef90-UPIIOOO46A6E6A UniR Ref0-AOCTV7 UniRef90-E6QU91
UniRef90_W9X3J3 UniRef90-F1ZD36 UniRef90-UPIO00255F2BD UniRef90_M1CZC6 UniRef90-UPIO00455EAC8 UniRef90-K8WY92 UniRef90-X6KVx6 UniRef90-A0A058YJTO UniRef90-KoV6G8 UniRee90-UPIo004283E9E UniRef90-D4IJG2 UniRef90-A0A01012G2 UniRef90-A1CU50 UniRef90-UPI00035E99FE UniRef90-UP10004407DDE UniRef90-P33287 UniRef90-W7ZUN5 UniRef9OOPIIOO0471148B UniRef90-F8MU83
UniRef90-R9C3C5 UniRef90 Lolw45 UniRef90_M5R197 UniRef90-E8UYT9
UniRef90 F2LCB4 UniRef90-R1F3S4 UniRef90-N8YB76 UniRef90-M9UWU0 UniRef90_UPIO003610B94 UniRef90- Mов2D8 UniRef90_UPIOOO37E7755 UniRef90-B3DZR6 UniRef90-B8FA09
UniRef90_D3QZM3
UniRet90_UPI000381C8C9

1
Lv ${ }^{10}$ DA DLITETMAAAGGVERUWGNSGTDFPPVIEGGLAEAPEA NGADMLCDVLLTNDVNVCFANPGTSEMHFVAALDPQMRC ANVAEQVVEMLVEAGIKRIYAVTGDSLNETNDAVRRNVDW NGGDALVEVLKLEGVDVLFGYPGRNALLEAAAQANIRT TVGDYLLDRLAELGVTEVFGVPGDYQLELCDHVHPRITW TVANYLLDKISKLGVKKIFGVPGDFNLEFLDFINDKLDW VGEFLFECLKNEGUTDIFGVPGDYNFSLLDQIEKDVRF TLGAESSHALKARGVEVVFGIPGVHNVELYRGLEEGLHH NGGDLVADVLKAHDVKFLFCLSGGHDSPILAAEREGURV VRDA GRTLHELGVRTAFGVVGSGNFHTNAFAAGGRF GGDLVVETLRALGADTVFGLPGQHALGLFEALAPGLRL TVGDYLAERLVQGGRHHFIVPGDYNLTLGDKLEAHPSL KVGDYLFRRLHELGRSVEGVPGDYELALLDLVDNDVVW STAA AVVDLLVANGVGTCFGLDGGDDLELLCALDADGLLDV MGQYLFRRIKQLGTEHILGVPGDFNLILDDEI YNVLKW AFFEALYEAGVRYVFANLGSDHPADMEALAKFPTV VAEYLIKSLINENVEFDFGYPGGAVLHDYDEFKSGIKH SVAALIARMLKRRGVQRVYALCGGHIMPIWMRLAEGIRI ATGADQLVAQLVAAGARHVYG1LGOSLNPVVDAVRRD| SW K GADYLAALLRHAGLEKYVALNPGASYRGLHDSLVNYLKM KIDAYMVKLLSEAGVKRIWGVTGDSGNGISDSLRAD:EW

 TVSDVMDQTMVNWGIDTVFGMVGHSNLGVADAMRRQLRF TVAEQLVRThASAGVTRIYGVVGDSLNPVVDAVRETIEW $N G A E Q L 1 R T L V A G G L K V C F A N P G T S E M H F C A A L D R V L E C$ TGADRLCDALLAHEVDVCFANPGTSEMHFVAALQPRMKC TVGEAI ARTLEQYEVSAMYGLISDHNLDPI ADAVRGKIRF ERIVEVLEEAGIDHVFGMPGGDTGRIFKAMYNKIKV TVADRMVEALAASGVRRVHGLPGDSLNGFDALRRNVGW VAEQLVEMLVEAGVKRVYAVTGDSLNYFNDALRRNGKD TVSCYLLDRLVEAGCEHLFGVPGDFNLRFLDDVMPRMKW NGAHSLVHTLLQSGVDTCFANPGTSEMHFVAALDQMMRC

GEIMTRQLLDWGVKHIYGLPGDSINELIDDIRDELGF HFVDQLVFSGI EHVVISPGSRSTPLAMTLAEHMNH
VY
LLAEALQQQGLEYCFSVENSPVIQLEDALANEDKN TVADHIVQRLACWGVRRYFGYPGDGINGMTSALHQQAQF NGAESLVTTLLANGVNVCFTNPGTSEMHFVAALDHDMRS SGNQVI AQSFAQNHLKYVFGDVGVPVIELGYAFQQGMEY TVAEYLLIRRKQTGVDHLFGVPGDFVLGFFNQLKSEVKY TLGSYIFRRLKQLGI DHIFGCPGDFTLNLLDYI YPELKW NGAEAFVATLRACGVDTCFANPGTSEMQLVAAVDRQMRA ATLGRHLARRLLETGVEDVFSVPGDFNLTLLDHLEPRLKN
 NAGGAIFPRLKALGUDYVFANSGTDFPPIDEGLAEAPKA NGADSLCDTLLANDLDVCFANPGTSEMHFVAALDPRMRC STGAEVVVNRLLAEGVDVCFANPGTSEMHFVAALAPAMRP NGAESLVRTLVAGGVDVCFTNPGTSEMHFVAALDRVMRC KVADQLVETI CRAGI RHIYYAVGDSLNEVNDAVRRTVRW IGKFLNKRLKELGIQQVFGVPGDFNLSYLEQLEEDLEF ATG

DYLVEAVVEAGVKYCFVNLG
 AN IEDFYDAVDCDVTG DYNL LLLDKLQAHPDL
 DFNLVALDYVPKGLKW SRSTPLLDAEEEDIQL GHLESIYDGCAENI RL DYVLSLYSEGEKPINV TTEMPFVGALDQVVRP ANEACIVLCNALAEAGVSHVYGGHGGAVVPLVNAVCSHLTW
 SIIADYLTSRLKIEGIIEYLFGVPGDYADPLFSAFRKGDET SGGDAVARVLVENGVTEAYVLLGNQTVDVADGLDSRGRVV VRSVEGLPGDDLDALAAVRGEGLGF TVGQALVKFLNQQYVEFTFTIFGHGNVEALDADAMGDKV


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| :---: | :---: |
|  | RFWG |
| UniRef90- UPI0003B4B7D5 | VLATAAHTPSSETG LSYFQETHP |
| UniRef90-A0A011TC74 | MHNARRAHTPMVNVVGD |
| UniRef90_R9 | LYDAHRSGASVLAI ASTTPTGEFGTNFFQETNTTKLFDD |
| UniRet90_G2IN | AGVAQAYGESVPILVMPGGYSTATAHVGRNFNSVRNMAQ |
| UniRef90-UP1000369EC99 | AASAPVLAVSSQIPVRGLGGGRHGHLILDQQASFRD |
| UniRet90-A0R48 | VP |
| UniRef90-G4ELW8 | AGSYSEDIPII HIVGVPPTKVVHHTLGNYKFDEFKKDYE |
|  |  |
| Uni | ATSEGDPVVALGGQVPRNDV ARLTHQS |
| UniRef90-A3K0 | LGQAYSDSVPVLAVASCLDEVAARRGQLHQMLNQTGAGAS |
| UniRef90-G3MG81 | 1KNAQMAESPV |
| UniRef90-R7WNB9 | VAEAAKSNTPLLVVTAEATT PMSNFFIDQAAIAEG |
| niRe990-C2 | VAEAYYQGVPLVILSADRPERWIGQWAGQTLPQPGLIFKAV |
| UniRee90-UP100037A01A2 | QSAMAEDLPVILVSGSPNTDVGQRILHHDTPYQLASAR |
| UniRef90- N4UEF5 | MAGHYAEFVPVVHIVGYPTVDAVRNKKIMHHDMYENMAKN |
| UniRef90-UP100037309B5 | GARSEHVPMVSIAGAPPLYATEYAWHLHHTDADGDYTN |
| UniRef90-UP10003605887 | LVEARESGAPVLVLAAGTPERRRGSGGFQ ELLDQVAVAAP |
| UniRef90-D3T115 | Q |
| UniRef90_W9XFE6 |  |
| UniRet90_SodW71 | MHNASCSRTPVFVFAGLSPFTLEGIHWLQDAHDQRAIVAQ |
| UniRet90_G4BBV7 | DALMDSIPIVAITGQVASPLIGTDAFQ |
| UniRef90_J3Z267 | A ATAVIDFSSI I ILCGQVNKNLI AQNSFQEL |
| UniRef90-UPI0003FAB399 | I ANAHDSRAPVLVISGTSPR PQENRGGLQDLDQAGLVRG |
| UniRef90 D5ULX2 | LYDANRTRVPV |
| UniRef90-B4UGN3 | LENARLAQSPVVLLGGATATLLRGRGALQ |
| UniRet90-F7SWY6 |  |
| UniRef90_D0Z35 |  |
| UniRef90_E8SK18 | DAKMDNVPQL V |
| UniRef90 O96XV8 | FTSRIPLIVIAGRSPYTETGDHWTQEARDQ |
| UniRet90-VP1000287888F |  |
| UniRef90- UPI000465CA20 | MWDAKVDRAPLLALSGQVNTQVVG TGAFQEVDLTKAFD |
| UniRef90-A0A023F5 |  |
| UniRef90-UP10003 | LYDAQRSGVPVLALASHIPSRQIG TQFFQETHPERLFGD |
| UniRef90-UP10002626F45 | IHNARKAHTPMVNVIGEHATYHGEHDAPLNADVEGEALARP |
| $\begin{aligned} & \text { Unirefyo_LoNLI3 } \\ & \text { UniRef90_Q211A5 } \end{aligned}$ | IHNARRANSPMINIVGDHAVEHDPLDSPDTS DI |
| UniRef90-UP100047DF8CF | MAGAASESITPIUVVGSPPSSTQHHTLMNGDFDV |
| UniRef90-SOAI61 | M 1 EALIANTPLLHI TGQVEKAWLDADFIHETRDQLGFLRA |
| UniRet90_W4M6C7 |  |
| UniRef90_UPIOO | EAQRSRVPVLAIAA |
| UniRef90 UPIOOO4127E74 | LYDAHKSHVPLLAIAST |
| UniRef90-Q60A74 | GAYAESSPV |
| UniRef90-UPIO002Е3A341 | NARRARSGIVNV VGDQA |
| UniRef90-U5QK81 | AQAFAEKSPVVVISGAPGTNERYKNPLLHHKVRDFDVFEQ |
| UniRet90_K2GMH5 |  |
| UniRef90_10JPY6 | AYYSR |
| UniRef90-17MIT6 | NAWINGWPVIVISACKDIYNQAKGTHQ |
| UniRef90 B9R2G1 | TEGVRGH |
| UniRef90-F4FEE7 |  |
| UniRef90 UPIOOO4 | LHNAKKAGSGVVNI GEHASTHIELDDPLTS DIIEGUARP |
| UniRef90- E6QU91 | VAGAYAERVPVVVITTNFRTKPQLSHTAGDYQTPLRMFEK |
| UniRef90 W9x3J3 |  |
|  | LHNARRAASPVI NMVGDHATYHLUYNAPLTS DAAGVARP |
| UniRet90-UPI000255F2BD | I GEAAKSRTPMIVLTADAAGPAVRSNFR ПDQDELARS |
| UniRef90_M1CZC |  |
| UP1000455EAC8 |  |
| UniRet90-K8WY | AYAEHVPI FHLVGMPPSRVQRNRTIA HHFDVFYKISQ |
| UniF | ACEHVPMLLMSGRTPARTVPIGWGQEMRDQTALVRE |
| UniRet90-A0A058YJT0 | LHNAKRARTPMVNVVGDHATYHVQYDAPLTS DVEAVAQP |
| UniRef90- UPI0004283E9E | LHNAKKAHSGIVNIVGQHATYHTGYNAPLTS |
| UniRef90-D41JG2 | LYDAHRSNCPVLAI ASTCPSDQFG TGYFQETDPIRLFDD |
| UniRet90-A0A01012G2 | IAGSYTENTAVIHISGAPPLHADQNKSLHHTLVDGNYHN |
| iRef90 A1CU50 | Q |
| UniRef90_UPIO0035E | SFASRVPVLALVGQAPTAFQDTSGLAGTFDAARLYEP |
| UniRef90-UP10004407DDE | AFSEHVPVLHIVGVPSTTQMKTKPMLHHTLGDGRFQQ |
| UniRef90 P33 | TGSAYAENLPLVLISGSPNTNDPSQYHIILHHTYQYEMAKK |
| UniRef90-UPIOOO471148B | LLDAMDDSTPVVCFSGQVGVPLDG TDAFQEADTTGITRP |
| UniRef90-F8MU83 |  |
| UniRet90_R9C3C5 |  |
| UniRet90_Lolw45 | MAAAQQNQSPLVVLGGRAP ALRWGQGSLQEIDHVPFVAP |
| UniRef90_M5R197 |  |
|  |  |
| iRef90-F2LCB4 | ARRARTPTLNLDGDHTRAHDKYDAPLTS DDESLARP |
| UniRef90-R1F3S4 | LLDAQLDRVPVIALTGCKPRSDQGHSEFQDIIDQARLLLAAG |
|  |  |
| niRef90_M9UWU0 | VHNAARGR\PAIVVAGLSPVSCDP\HYTQDTTRQSDIVAP |
| UniRef90 UPI0003610B94 |  |
|  | YTAASPMILVSAVLPKDAPTESLLHGVDDPFFKAFEP |
| $755$ |  |
| ef90_B3D |  |
| B8FA09 |  |
| UniRef90' ${ }^{\text {D }}$ OZZM 3 | LATVNNIPLLLLPADVFATRQPDQGHDLSLTANDCFRP |
| Ref90-UP1000381-8C9 |  |



UniRef90_R5F623 UniRef90_B9QSS5
UniRef90_UPI0003B4B7D5 UniRef90_A0A011TC74 UniRef90 R9GR88 UniRef90_G2IN83
UniRef90_UPI000369EC99 UniRef90_UPI0003
UniRef90_A0R480 UniRef90_G4ELW8
UniRef90_V6J067
UniRef90_UPI0002491F37
UniRef90_A3K0R0
UniRef90_G3MG81
UniRef90-R7WNB9
UniRef90-C2MBE5
UniRef90-UPI00037A01A2
UniRef90-X0GS58
UniRef90_N4UEF5
UniRef90_UPI00037309B5 UniRef90-UPI0003605887
UniRef90-D3T115
UniRef90_W9XFE6
UniRef90_S0DW71
UniRef90_G4BBV7
UniRef90-J3Z267
UniRef90_Q0CNV1
UniRef90_UPI0003FAB399
UniRef90-D5ULX2
UniRef90_B4UGN3
UniRef90_F7SWY6
UniRef90-D0Z353
UniRef90_E8SK18
UniRef90 Q96XV8
UniRef90_UPI000287B88F
UniRef90_V8QYK0
UniRef90_UPI000465CA20
UniRef90-A0A023F558
UniRef90_UPI000344B374
UniRef90_UPI0002626F45
UniRef90_LONLI3
UniRef90-Q211A5
UniRef90_UPI00047DF8CF
UniRef90_S0AI61
UniRef90_W4M6C7
UniRef90_UPI00046789E0
UniRef90_UPI0004127E74
UniRef90_Q60A74
UniRef90-A4HB43
UniRef90_UPI0002E3A341
UniRef90_U5QK81
UniRef90 K2GMH5
UniRef90_10JPY6
UniRef90_I7MIT6
UniRef90_B9R2G1
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UniRef90_A0CTV7
UniRef90_E6QU91
UniRef90-W9X3J3
UniRef90-F1ZD36
UniRef90_UPI000255F2BD
UniRef90_M1CZC6
UniRef90_UPI000455EAC8
UniRef90_K8WY92
UniRef90_X6KVX6
UniRef90_A0A058YJT0
UniRef90_K0V6G8
UniRef90_UPI0004283E9E
UniRef90_D4IJG2
UniRef90_A0A010I2G2
UniRef90_A1CU50
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UniRef90 UPI000471148B
UniRef90_F8MU83
UniRef90_R9C3C5
UniRef90_LOIW45
UniRef90_M5RI97
UniRef90_E8UYT9
UniRef90_F2LCB4
UniRef90 R1F3S4
UniRef90_N8YB76
UniRef90_M9UWU0
UniRef90_UPI0003610B94
UniRef90- M0B2D8
UniRef90_UPI00037E7755
UniRef90_B3DZR6
UniRef90 B8FA09
UniRef90_D3QZM3
UniRef90_UPI000381C8C9

PLT Q E M D MPSERFVTR TP S S

AAWGEVQPDTLSPV
VTAMD AVESPA

$V L E A A T A L P V V S G L D A T P R$
V ARFPTE PPTAPLPR
V MK M E $\square$ G P
V VT
V L D D NVT T ET $\square \mathrm{DPL}$
LLE QAVAPAPAP
$V L Y$
$V Q D E L L \quad P D D Q V A P R V V$
DPSVSLLPPTPDPSDRRP
$V L L A P V A L P A \square R S V P$ A A P A
$L A G E P C A R P G P$
I A Y E MID A E GLDNVP
I THLLSI QAPEEAL

| $V$ | $R$ | $T$ | $A$ | $E$ | $V$ | $V$ | $E$ | $A$ | $L$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $A$ | $I$ | $T$ | $A$ | $E$ |  |  |  |  |  |


| $A$ | $I$ | $T$ | $A$ | $E$ | $V$ | $P$ | $E$ | $D$ | $P$ | $T$ | $P$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $A$ |  |  |  |  |  |  |  |  |  |  |  |
| $A$ | $V$ | $S$ | $V$ | $Q$ | $L$ | $D$ | $A$ | $K$ | $R$ | $L$ | $E$ | $T$ |

V M E E D I P A Y S L
$V Q L A P T T A K P$
L

| 1 | $V$ | $K$ | $K$ | $I$ | $E$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $T$ | $L$ | $R$ | $A$ | $E$ | $V$ |

$\begin{array}{lll}T & L A A E V P \\ V A D E A A\end{array}$
L L Y D E A
LQEAPADAPPLLP LARHAP
$V$ A
I L N T K VE D N FPTEVEP Y VP
V S I E K S E Y R K VR V
$V$ A H A Q A T HPT
A A WS ETPVETAPPVTR
V A
L L N S Q C
1 A GRRAT GPA
AAWQDA
VLSET DDASA
MAWNE
TAKAE $\square$ DMPEPTFP
1 Q
SLVGEDTDETFPRV
V S E L K A
RVMAPGYP $\square P Q E T P E T P$
LAEMMVPPPPTKLMRR
ASWNEGGVVAEPL
1 V N A
LFAEK
$\square$ LD S QVP
FMWQEAAFEKH
VQDEAAVPDPPHAHGYHTSS
TAWNE D D L LPAPAPF D
L L R S N I P E T E L
VVMMKCNRPGTFGFPAPARS
HAWSEGSAPVAPRV
$V Q S Q P A Q G A P$
L P A TP HP T F S R D P $\square P$

VLCETTRSEGLEAP
A A WT DLPD DTPAP QP
Y S WGSAP QNPLP
TAWNEAD
VA A SPCAESP
V T H L E D

LVYA K $\square P$
L A G A T C
1 Q

## M V E K K $\square \mathrm{E}$

HVFSEAQDAPGALS QRPVAA M
VA G V R T G P $\square$ T VP L
L Q S I A V D S S A SLLAV P V Q P P S
I QVA TV A S P P A R V L S CS P E T I T HVVK I QV E D QP L
$V$ WEAS APPARSPAEHWRPSA L MLVPCRPPSTRR
L LMESVD IP E SAFEWTPVS
L A K E E I PVVSHD GVA T ELSP T IVAAE E D $\square$ P
APS GPVSQPVLE A A K R Y



STAE TLTDSTSSQ TSDVFGTAGTHGMSLFEETRKKLKY TLGNHLARRLVEDGUSDVFGVPGDFNLALLDYLEPKLNL IV ALLKEYQIRHIVLNPGGTNIUVQAVQDFFHC TVAQAVVRFLARQGVERRFGIFGHGNMGQALLADDEEPY OLIALLADEGVAHFFINPGTDSAPIQEALAAARAA
 VATYLFTRLKQLGLDSVHGLPGDFNLVALDYLECGLKW TVADQL LDYLVLERATLMFGVPGAGIAHLLERIRQRFTY GQTVADELATVGDETAVLAPGSRSTPLAVAFAQHDEA TTASVFLATLSRVGVTHPFANWGNDHPAFLEELERQLDV SGAKVI AQALKTQDVEYMFGVVGDPVTELLAABELGGKY NGAESVVRSLHAGGVDVCFANPGTSEMQFVDALDRTMRC VLVLEEWGI RNAYGLPAGSLNSLMDAFQGNDNF AQQVLLLFKKKGVQHVVISPGSRNAPLTDGFDSYFKC NVAQAVGIIALARFGVRRAFGVVGSGNFHVTNGLRGGAEF AEYLFARLKQLGVGSTHGVPGDFNLTLLDYVEPSLKW AALHTLESWGVTHIYGIPGGTFNNMMYALDERIKY HADVQTFLRAGVEDVVISPGSRSTPLAYAFSQTFNT SDAIADILRGLDIPYVLLNPGASFRGLHDSIVNHLQM SVAHRLAGALRRHGVEVIFGQSIPAALCVVAPEFGLRQ TGMRVLAMLLKQHGVRYVVASPGNTNTAFIGSDQQYFTD AFVEQLVHAGI QQAVISPGSRSTPLVMAEHPQLNI TVTDVMVDTMTNWGLQSVFGMVGHSNLGLAESIIRGKLKY TVADLVVERLRALNVVDAVGSPGSRSTPLLMEQHEQUKT TTSSAFLALCAKKGVHHVILSPGSRCAPLTLAAFARHIQA TNSDYLVQQLTANQTQFVFTIPGKLIPDPLFESVSSQI QV NTSTASLKVMAGWGПDTIYGIPSGTLAPLMEALETD\KF TVGDHLVARMRAAGUSVVCGLPTSRLDSLLVRLSRDFQI NAGKVFLSLLKESGUNKIFIVSGTDYASLIEADPSLPDF STSEYLLARLNQLKVKTVFGVPGDFNGEFLDYUEPDFTW NVAESLVETLARLGLKGGVVSPGSRSTPLTLMALHPQIEA LKVLEEWGVQDVFGDPAGSLNSLMDAFQENDNF

| UniRef90_V8A665 <br> UniRef90-S3CQB1 <br> UniRef90_W4M855 <br> UniRef90- F9YMZ0 <br> UniRef90-F9F2Z2 <br> UniRef90_D8J3M7 <br> UniRef90-14EJL2 <br> UniRef90_G8PAU3 <br> UniRef90_W7CIK9 <br> UniRef90-B5JNX3 <br> UniRef90-K2DHV0 <br> UniRef90-F2RUL4 <br> UniRef90_UPI00034BC2D7 <br> UniRef90- Q09EA2 <br> UniRef90_F8EBY6 <br> UniRef90-Q09737 <br> UniRef90_UPI0001FFE0B7 <br> UniRef90_LOJLK6 <br> UniRef90_UPI00023B23EB <br> UniRef90_D8J2U7 |  |
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IISFRHEQPAAHAAS $\square$ SGYDTRKPGLCLITTSAPGFDNALPA VGNANELNAAYAADGYGRIKGDSAVVTTFGVGELS AINA


 WQVRHEEVGAMLAAAADAKLTGKDGVSFGSAGPGATNHLFNG
 $V L A D H E G S V V G M A T G W A D A R D R A A L V Q L H T T A G L G N A V G A$ FQPKNEQGMVHAADAYAKARRRLSAFACTSSDGPTNMVTG VGNTNELNGAYAADGYARVNGLSAIVTTFGVGELS AANG $V G S P N E L G A G Y A A D G Y A R A T R G M A A M V T T F G V G E L S A I D A$
$Y S H D D E R S A A F F A L G R A R R T G E P T A L V C T S G T A A A N F H P A$
 $H S H D D E R S A A F Y A D G R A K R T G E P T P L V C T S G T A A A N F H P A$
$V G N V E L D N G Y A A D G Y A R V K G D S A D I T T F G V G E L S A B D N A$
 TGSCNELNGGYAADGYAKIKG\GALI TTFGVGELS A I NA $V L A R H V E G A S H M A E G Y T R T N G N D G V C I G T S G P A G T D M V T G$
$Y Q G C N E Q G M A H D A M G Y A K Q N K R K K I V A V T S S S V G P G A A N M V$
 $H Q G R N E Q G M A H A A M G Y A K Q K R R K Q D Y A C T S S V G P G A A N M V$
$I G N S N E L N A A Y A A D G Y A R D K R T D S A V V T T F G V G E L S A L N G$
 LIMRMEQGMAHAADGFAKQKRRKQMYACTSSVGPGNMVTA VTRHEQNAAFMAQAFARDTGKTGVVIVTSGPGVGNLVSGG
$I V P V T D E R S A G F Y A M G L Q A L C E P I V V C V T S G T A L L N L C P A ~$ FSHLDERSAAFFAMGLALATDTPAAVVCTSGSAAANFFPA HVIVDERNAAFYALGIIQCTRKPVVI CCTSGTALLNYAPA VGNCNELNAAYAADGYARVKGMSAIITTAGVGELSABNG $V G N T N E L N A G Y S A D G Y S R V K R D A C L V T T F G V G E L S A D A A$ QVFFDERGAAFHADGYGRATGKPAVLVSTSGSAAANYFPA VGNTNEDNAGYAADGYARERRFAAMVTTFGVGELSADNA
 MTSPSEFVALTAAQAFAQVTGRPAAVIVHVDVGTQSADGA FMPRDEYGGADMADYYARVKENVGVFISVNGPGFTNSLTG
 YSVPDERSAMYFA $V$ LVVHESVALAAAAGHHMASGRPQAVMVHVDAGTDNLGCQ YSVVDERSAGYFALGLSQQLQEPVVI SCTASTASCNYWPP 1 GNCNELNAAYAADGYARLHGVSALLTTYGVGDLS ADNG VGNCNELNAGYAADGYARIKGISAVVTTFGVGELS LPNA $V V C R H E S A A A Y M A D G Y F R A T G K P G V V L V T S G P G A T N A L T G$ V SLLDE RSAAFFADGYAKRTGQPAPLVCTSGTALANFHPA VTCPN EMVALSAAQGYASVTGKPAAVIVHVDVGTQALAGAA
 IGNCNEDNAAYAADGYSRMHSLGVVITTFGVGELSAAINA
 $Y S I V D E R C A S H F A M G D A Q Q L K Q P V A V V C T S G S A L L N Y Y P A$
$V A A R H E G G A T T M A D A Y A R C S G E V A V V S V H Q G C G L A N A T Y G ~$ VAARHEGGATTMADAYARCSGEVAVVSVHQGCGLANATTG

 IGYRTENAGAAMADAYARLSGKVPVVIVGQNGPAATLLVAG
FSAVDERSAAYMACGUAAETGETVVI SCTGATASRNYLPG
 YPMTDERSAGFFALGLDALHGGAPAAVCCTSGTALLNLHPA YGDRHEGAAAFA DSAYGKLTGEPAAALI DAGPGATNLLTG
Y L HVVDERSAAFFALGMAKAKKQPVAILCTSGTAAANYYPA
 $R T D S D E R S A A F I A L G M A Q Q L K K P V A L V C T S G S A A L N Y Y P A$
$I T C P N E M V A L S A A Q G Y G Q V T G K P A A V I V H V D V G T Q A L A G A$
$I D A N H E L G A G F M A D G Y A R A A Q N R G V C L C I G A P G A S N L L T A$ LQVKHEEVGAMAADMQWKFGGKDGVCVGSGGPGASHLING V LARHEGGAGYLADGFARASGKSAAVFVAGPGAT NVISA EIVPHEDTADSTADGYADGNKDSAVAVHTTPGTANALGG HVRVDERSASFILALGLDARASRRPTAVVCTSGTAAANFHPA A GNANELNASYAADGYARVSKGLAVLVTTFGVGELSALCG
 FLALHEDGPADGMASGYSGMTGKVGVTNTHAAPGLMNSLGY
$\square Q V R H E E T G A Q G A A M Y A K F N N K L G V G G S A G P G A T H L Y N G$

UniRef90 V8A665 UniRet90_S3CQB1 UniRefefo-WMM855 UniRef90 ${ }^{-}$F9F2Z2 UniRef90-D8J3M7 UniRef90-I4EJL2 UniRef90_G8PAU3 UniRef90-W7CIK9
UniRef90 B5JNX3 UniRef90_BJJNX UniRef90 F2RUL4 UniRef90-UP100034BC2D7 UniRef90-Q09EA2 UniRef90-F8EBY6 UniRef90-Q09737 UniRef90-UPIO001FFEOB7 UniRef90-LOJLK6 UniRee90 ${ }^{-}$UPI00023B23EB UniRef90-D8J2U7 UniRef90-E3OLS8 UniRef90_M2MT18 UniRef90_M3C9H8
UniRef90 UPIOOO46A3346 UniRef90-H2IEN1
UniRef90-F4RL41 UniRef90-H3K904 UniRef90-I2FPY6 UniRef90-A6QYW4 UniRet90_U2TF92 UniRef90-B1N056
UniRef90 H1HQ36 UniRef90-H1HQ36
UniRef90 ATNRP8 UniRef90- 5 - ${ }^{\text {IT35 }}$ UniRef90-M7SGJo UniRef90-C6C9L5 UniRef90_D5A2Q7 UniRef90-F5SQV44
UniRef90 UniRef90-LODBG5
UniRef90 18 AKX9 UniRef90-M2RL26 UniRef90-UPIOO0472EA74 UniRef90-M1IY65 UniRef90-F9D620
UniRef90_UPI00037247FD UniRef90-H8142 UniRef90-D7IIV5 UniRef90-N8VIZ7 UniRef90-H6BX44 UniRef90 S31373 UniRef90_Q3IQZO UniR Refo-B8PAY6 UniRet90_-F3ZPGO UniRef90-E9PWM4
UniRef90 A0A016PD8: UniRef90-B7RRZ8 UniRef90-UPI0003B5E36A UniRef90-Q26CK3 UniRef90-UPIO0036D7B1D UniRef90-M7SPK7 UniRef90-B5QKU0 UniRef90-UP10003F7EC6F UniRef90-A0A052lBR7 UniRef90-UP100047EC64C UniRef90-A3QCS9 UniRef90_R5AVJo UniRef90-M5RA48 UniRef90 R5MN12 UniRef90-A0A037ZK71 UniRef90-A7GU91 UniRef90 C4RM99 UniRef90-UP100041D21DD UniRef90-V2YJR7 UniRef90-B4W3U3 UniRet90_F4BPJO UniRef90_O06335 UniRef90-C3N921 UniRef90-UPI0004765C9F UniRef90-G3EC51 UniRef90-B9S974
UniRetoo- Bo.lli UniRef90-A4YFSO UniRef90_G4L5Z7

90
100
110
120
LIANATTNGYPMILI SGSSDRATVIDQQGDYEEDQLAAARP I AGAYTEFSPIVHIVGVPSRTAQDTRAHVHHTFNDGMHAH LAGAFGDNVPMLYLPGGPARA AQDQHAVRPNFSNVRTYAT IMNARRAGSGMLNIVGDHATDHVAHDSPLTA DVEALVGG VAQAYGESAPIVAVPAGYDLAKTDVDPKFNSLVS M YQS
 LYDAKMDHAPVLAIVGQSSTEVM NTNFFQEMNQDPMFTD VAEANLSQVPLLVLTADRPHELR NVGAPQAMDQVRLFGS IVEASESGAPVVVLTADRPPELRDCSAGQTADDQVKFFGG MQDALSEWH
LATARVNRAPLVVLVGQQDRRHLALEPFDTGHLVRGLAGE AATATINRLPVDIFANRAPQPVLQQLECPHSMDVNDCFRP VAGSYAEHVPVVHIVGMPSTKVQDTGALLHHTLGDGDFRT VAGAYAENVPLVQUTGAPPTTSAAAGRLLHHTLGDGDFGR VMEADRARVPLVLLTADRPSEDRDSGANQTEDQVKGYGD


Q -1 TAAGAYAEQVPILHIAGDPSSKMQENKADVHHSYAKISDF TAAATATANCVPVLFQPDPVLQQMEQPHDLSDSTNDAFRA
 LMTASAENDPVVATGGQVPRRDL YRLTHQSTNSVALFNS VAEAFYQHLPLVVVSADRPNRWINQLDGQTLPQAGAFCSV IVEAHQAGVPLLALTADRPHELRDSGANQT DDQVKMFGS LAGAYYQQLPRVVVIVADRSQEVIGQMDGQTHLPQAGVFGS LAGAYSEMVPVVHIVGCPSTISQRRNMLLHHTLGNGDFQV IIEAATDNLPMI IISADRPPERRKTGANQTIDQVNLYGD TAGSFAEYAPVLHMVGPDTELRKGKRRLHHSLGDGEFNH
 VHNADRGHAPVLIFSGAPPHSAHGPMWPQDVPDQSS VRQ LADAMMDSLPLVVFTGQVATNVIGTDAFQ EADVIGGTMP A A AYSEDLPIICIVGARNSNDFGSNKLLHHTQEDRCFEP LTEAFYKHVPILALTTSK LDERYEYQDYMQAPDQCSLPRD AAGATMNRLPVLLLPGDTFSTRVASPDLQELEDQNDCLKP LHNAQRNGTPVVMFAGRTPYSDAYIHWQQEQLDQPAVVRN AAGAYAEQVAMVHISGDPPGAALGHTLTDGDYDNDMNCMR ITAGAYAEFVPVVHLVGTPSTISQANGMLDHHTLGNGNFQV VIEADTARVPMVLLTADRPPE LADSGANQTDDQADLYGD VHNVDKGQAPVIIFAGASPFSNEWPMWGQDVPDQPAIVRQ $V A E A Y Y Q Q V P L V V I S A D R P E A W \square G Q M D G Q T I P Q P N A F G K V$ MANANMNCWPLIVI GGSSERNQEAMGAFQEFP
DAGAFAERAPVLHVGAPSRSTQSARLNVHHTFLDGEYKR HNARKARVPMLNLVGDHALRHQ KYDAPLSADVSGACAP
HD
Y VTEAFYSEIPLIVLSADRPPHKIDQQNVYANHILYDTHLE LGEAAKSRTPLLVVTGEATRADDPLSNFHDDQDALARS AYDAKMDKVPTLFLVGQVEQRFM NADFFQELDEDPMFQD



 MWDAKVDRAPVLALTGQVQTQVFGPGAFQDIDLKSAFQA



## UniRef90 V8A665 UniRef90_S3CQB1 UniRef90_W4M855 UniRet90_F9YMZO UniRef90-D8JJ3M7 UniRef90-14EJL2 UniRef90-G8PAU3 UniRef90-W7CIK9 UniRef90 B5JNX3 UniRef90 K2DHVO UniRef90 F2RUL4

 UniRef90-UP100034BC2D7 UniRet90-O09EA2 UniRef90-F8EBY6 UniRef90-Q09737 UniRef90-UPI0001FFEOB7 UniRef90-LoJLK6 VTAA QTRLYDPQTSAEQIDSVLQQCLIHHR PVYLQVPVD VSTYGEVIWKPEMTASVMRRAFHKLRNGRPGPVIVEI PAD SSEWHRFGTKPAS GGADAMAGDKEASFGYGQDASLVLPAD TVQQENLMDVSTAPAQIDRAI $\square$ ACVRHKRPVYI QLPAD VSKSCEQLADPEAVSETMRRAFSSARNGRPRPSVVEVPKD QVKWFVEVAMPRYVRMLAGRAVATALASPSGPVHLNFPFR VAVFNK QVVSAQQIPYVVDAAI RAA YANKGPAVVIIPDN HVKDFTDMEMLRFAKWHGSKAVDDAMNAPRGPVHLNFPDR YVRKQVEVAMLRYARQAVSHCTNLAMAPDRGPVHLNVPFD -1 K Y A QLI L N P E N I K Y ELEK CVYLMKE GRQGPVL LD

YPVWTCEPAVPQEVPGATARARFEAEHGR GPA VVVVPQG VS RYWDRDQRPEQILSALPEAMRVADPAETGAVTLCLPQD LPADYAHPDANWYI ERVLNEAINLSQTAPKGPVHINVPID FMDMFKKVSAYSIMIDDNGNDAIDEALSKKARPVYIGIPSD
 AVRWYTELPEPEADERKVRAARALAETGPPGPVHVNCPFR AVRSYRELPEPAPEGRRLRRALAESTGGPAGPVHINAPFA

 FAAMYKHVTSDPRTATALLDAALAQCLLHSRPDYLQUPV







 YVRWKFDI PCPDEK IT TIDDAVYRAQRSPQGPVHLNC FI KMAEPVSVARAEITAKNAASEDMVLKKQRPGYLLLSPD




 YAKWHMEV VRGRELAPIVRRAMQVAQSSPSGPAYVMLPRE

 AVRSYRTLPEPEAAARKLRRAVGTATGTEPGPVHKNVPFR





 FAQMHAHVRDPRTSPAQI DDVLQQCLID SRPVYI EVPVD A AVYARTVTTAQSLPAVIDEAVRRAYAAH GAAAVVVIPND FIKWDAQPASIGAAQEA LDRARQDASTAPQGPVYVCFDAA AAKWVRRVSEADRVEDYVDMAFTAAASGRPGPAVLVVPIDD
 NLPEVTDEESEWFCNRLDNEALLELNHHGKGPVHINVPD VSAFSQPVLSSSNHAELTSLAMKNALIHQ DVAHLIFPDD $M A D P E A R E P M Y Q Y V R M A A G R A V A S A S F A P M G P V H M N F P D$
$C N Q F V R Y G R T P A Q V P A V L D Q A F R T A A A T R S ~ P T C V V L P R E ~$




 FEDMSAKI SAHTGKLTTRAENADKVALDE CRPVYLTFPTD




UniRef90 V8A665 UniRef90-S3CQB1 UniRef90-W4M855 UniRef90 F9YMZ0 UniRef90 F9F2Z2 UniRef90-D8J3M7 UniRef90_-14EJL2 UniRef90- G8PAU3 UniRef90 ${ }^{-}$W7CIK9 UniRef90-B5JNX3 UniRef90 K2DHV0 UniRef90 F2RUL4 UniRef90_UPI00034BC2D7 UniRef90_Q09EA2 UniRef90_F8EBY6 UniRef90-Q09737 UniRef90_UPI0001FFE0B7 UniRef90_LOJLK6 UniRef90 UPI00023B23EB UniRef90_D8J2U7 UniRef90-E3QLS8 UniRef90_M2MTI8 UniRef90_UPI00046A3346 UniRef90-H2IEN1 UniRef90 F4RL41 UniRef90-H3K904
UniRef90_I2FPY6
UniRef90_A6QYW4
UniRef90 - U2TF92
UniRef90-B1N056
UniRef90_H1HQ36 UniRef90 A7NRP8
UniRef90-F5IT35
UniRef90_M7SGJ0
UniRef90_Q6C9L5
UniRef90_D5A2Q7
UniRef90_F5SQV4
UniRef90_LODBG5
UniRef90_18AKX9
UniRef90-M2RL26
UniRef90_UPI000472EA74
UniRef90 M1IY65
UniRef90 UPI00032A72D4
UniRef90_F9D620
UniRef90_UPI00037247FD
UniRef90_H8II42
UniRef90_D7IIV5
UniRef90_N8VIZ7
UniRef90_H6BX44
UniRef90 S3I373
UniRef90_Q3IQZ0
UniRef90_B8PAY6
UniRef90_F3ZPGO
UniRef90_A0A016PD83
UniRef90-B7RRZ8
UniRef90 UPI0003B5E36A
UniRef90 Q26CK3
UniRef90_UPI00036D7B1D
UniRef90 M7SPK7
UniRef90 B5QKU0
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UniRef90_A0A052IBR7
UniRef90 UPI00047EC64C
UniRef90_A3QCS9
UniRef90_R5AVJ0
UniRef90_M5RA48
UniRef90 R5MN12
UniRef90_A0A037ZK71
UniRef90_A7GU91
UniRef90 ${ }^{-}$C4RM99
UniRef90_UPI00041D21DD
UniRef90_V2YJR7
UniRef90_B4W3U3
UniRef90 F4BPJ0
UniRef90_O06335
UniRef90_C3N921
UniRef90_UPI0004765C9F
UniRef90_G3EC5
UniRef90_B9S976
UniRef90_B0JII8
UniRef90 A4YFS0
UniRef90_G4L5Z7

V STQEVPESS
V SWS E
MVD A K VP S A P L
VFYTDLEEE
$L \vee P L P V D P D A$

| $L S G Q E$ | $D Y S S$ |  |  |
| :--- | :--- | :--- | :--- |
| $L$ | $L$ | $L$ |  |
| $E$ | $L M P$ | $L$ | $L$ |

GFASPFDEESYEAFFAHLLES

DWSAPAGGAGHPAPARVVRS VQAEAFDCPAHF LQER REPFYPLADETYDRHV
$K P$ L E P I E V P
VL HQ T V
KPLEPTETDPADFPRRRPTA
$M V Q K K V E$ GERMQQP
LQEDEEI DPE TVVMLPDTE
$M \bigvee A \vee P \vee S S A T L E T P$
VQGEAYDFPEYHR $\square E R R P A T$
L VD A K $\square$ PA
V EGEA YD YPEYHR $\square$ DRRPAT
LV HA T IP A D A L
$\mathrm{M} V$ Q AKVD
VEGEAWDYPEYFFKKR
V D D A P VT $\square D$ A LP QVP
$P P$ L $E$ P P M P
S E P LF D Y S V

1 V GKKVE
FSEVDI A D Q A
MFREPLAP
$\square$ A K L P I Y P P T T K L K D
FFNEVWDYD
D V T K T
VMEEDLDE
M MVEK
V L E D S T D $\quad$ E
LS T $\square$ P H P S F $\square \mathrm{HH}$ S $\square \mathrm{P}$
VQAEAYDWPDELFARRHVP
A L MEP
$\square \mathrm{TH} \mathrm{L} Q \square \mathrm{~K} \mathrm{~V}$ P K Q P LD LS R P Q S
MVK K K V E G E
VASAKI D DEDPFVAPRPPA
KPLEPLAAAEPP
T L Q E EV
F VT LQA

| $M$ | $\vee$ | $Q$ | $L$ |
| :--- | :--- | :--- | :--- |
|  | $P$ | $A$ |  |
|  | $L$ | $A$ | $E$ |

FGWA KI D
VQ Q P QV D P K VLE P
I Q N A P F D E
LVA ATV
LAA E L I PA
LQESRLA QQPARLPSRYLP
$M F L E T P Q A V T P R R A S$

VQTLDP E QPAALPEGRVAA

VQQAVYSPKK P
FGYHE $\square \mathrm{D}$ Y S S GHS FRDYVS S L V D E
$V$ S
DP L TPPDGPSPV

DPLAPTP
$\square$ DEE E
F GWE QLD TAT




