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UniRef90_G7YDE2
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UniRef90_D8LFY8

| UniRef90_L8HGK4 |
| :--- |
| UniRef90 |

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UniRef90-G4VPF8
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UniRef90-TORBP9
UniRef90-UPI0004574445
UniRef90_KOKHH0
UniRef90-T1KJ04
UniRef90-QOTZZ3
UniRef90_I1S4D6
UniRef90_UPI00038703E6
UniRef90-DOND66
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UniRef90_A9V098 UniRef90_A7TFG9 UniRef90_N1JKP2 UniRef90-X6NT59 UniRef90_FOZSX8 UniRef90 F4Q4Q9 UniRef90_F9X5B6 UniRef90_F1A370 UniRef90_G8BU63 UniRet90_UPI0002B431A6

SFGLPQTRRTSLASPRQLFKASNMTQRWQHRETSNFEY GTSYGLPQARRISLATPRQLFKSSNMTQRWQRREI SNFEY GTGCGLPQARRUSLASPRQLLKSSNMTERWQRREVTNFEY G $\square K Y G I G Q T R R A S L M T P R Q I F Q Q S N M T Q K W Q R R E I S N F E Y$ GSKYGLPRTRTVSLDSPRRLFQQSNMTHRWQRREVSNFDY GVKYGI PQSRRASMMSSRQLMRSSNMTQKWQRREI SNFEY G T L $Y$

GLPQARRYSLASPRQLFKASNMTQRWQQRE GLRPPSQGYYGSHSPQEMLRASGLTQKWVHRE GLRPPNLFYFGSRSPQELLKASGLTQKWVYRE $G V K Y G D T Q S R R M S M A S G K Q L E R D S G M T Q K W Q R R E$
$S L D P P N L Y Y M G A R S P A Q L D K A S G L T E R W V K R E$
GVKYGLPQSRKTSLMTPRQLEKHSDMCAKWQKRE

$N T V Y A G T Q R P E Q L L K R T R L T B R W A R R E$
GAKYGLP QS RKTS LMTP
QTSRVSLLT
$R D P N V R R$
LR
PS
GTSYGLPQARRDSLATPRQLYRNSPMSTRWIQHE
GARYGVTQSHRTSLATGRQHLL
GNS $\begin{aligned} & \text { S } \text { GR } \\ & \text { G }\end{aligned}$
s LK P
PQTFYFGSRSPQELLK
TSLKPSSMKNQDTKSPK
MS PRQ

VKLCSPKQHVLSGRSPREVFQSSGLTERWDQREDSNFEY GTSAT PQFF GSKLVNVFGQGGLHPATRKWLKGEMSNFHY GTSATLDVMSPVTPLSISSSFKLTNLTSRWEKREMSNFQY $\square S \square R P P N L F Y H S S R T P A E L L R S S G L D Q K W V N R E I S N F D Y$ NSFTFKLTSAFSNL NNLTVTKKWRRGEI SNFYY $\square R \square R P P N L V Y Y Q S R S P A G L I G E T S V T Q R W V R G E L S N F Q Y$
 GTGDS P $\square$ SFGGKLANVF LAASANPATKRWLKHEI SNFHY $T T T G L S S T F R L L S S L F G T S T L H A D L T Q R W E R K E I T N F Q Y$ AEKARDCWRRRECSNFDY AEDARKQWRRREMSNFDY ARSFSKRWQNGEISNFQY
TKETASFNPSETLK KAT DE WQQRRMCNFDY ANRFANVFSSPNLSSLADTKKWRHGKVSNFYY G LK Y G $\square$ S P ANRFANVFSSPNLSSGADTKKWRHGKV L L K A WQRRR
LWKKTAMQKWVEGEI GPNYGLPQTRSVSLSPPRQLFKRSDMTDKWIKSEL DTENLTDRWQRGE LIRPPSQGY LSSRSPQEMLGASGLTQKWVQRE MQPPSLQPSLGRTPRAREEHSSARDRWRRRE TNFEY
 NYILEATKKWQRGEMSNFYY $P Q S R R A S L M T P K Q L F A A S N M T H K W Q K R E D T N F E Y$
$P Q T L G S R F A S A F G S A S S H P A T K K W L K G E M S N F H Y$ SSKPTNGFGSKFGTFFNASPWNPILKKWQKGEISNFHY
 $L \operatorname{LPAPFRSMKRL}$ $\qquad$ QSLT

KTALIK
RPPHLNNDY DATPDQLLKRKQLMEWQKGEMSNFEY ATSSELLTKDSLLERWWVHWEVSNFEY WNPIMKRWQRGEMSNFHY
PPSMASKWVNAFNPMAQNPATKKWLKGE!SNFHY LPSLKGKGVTDPFNDRKHKTMLHRWQKKDI SNFEY GSS LIKI H FLFHPGKHVARAKLTDDWVNRKISNFEY TS DK P PRLNLTKAWQMRVMSNYDY ISLKP RLF GARMIAPGALLTESGLTERWCRRQISNFDY GปSKASLKTKFLDALSSSSNFDEYEATKLWQNGEISNFCY

PTSLSYKFGNDFSPSASNPAMRKWVKGEIV
VNLHPPNDKVKWSDHPSK■IKKSKLTAKWKNRE ASSPQEMLKY KS PTARRWKKREI
SKPLPNRVDYAAEVQGN LLKMS









20 20
30
40
$R K L L R \quad N T M T E R W V Q G D I I S N F A Y$ A E GCTLQWQRGLLSNYQY
GKANGKSNFLSSKLANALSFSTMHPATKRWERRELSNFNY
S S VS LS TK FANVF S P P S N L LD T F DA DNLWWKNGY IS N F Y Y


SFFASKFTSAFANMNVLEATKKWKMGEISNFYY
QK T KLLEHIT K RWERREMSNFEY

SRFSNVFTPRSDSNGFEVTELWQKGKIISNFFY

 GFRSPLIDRMSARVTHALQSSRSTATRRWQAREXINAAY KWQKGE

E QKNY L L R WQN G L $\begin{array}{llllll}R & S & A & T & Q & Q \\ l & T & W & R & R & G \\ l & T & K & W & Q & N\end{array}$ $\qquad$
QTS SLG $L$
Q T S S $\square$ G S L LD K G S VTA A WQ A G H I S N Y D Y K $\square P$ E MLLAK WQA G GVVSNE Y




EEMTLQ WWQNGVV
$R K$ LAAAQRAQERWCRRELSTYY DLQFMMRKWQRREGLSFDY

$\qquad$
T LSK K L P P EAP S LQ EMTSSKWQK GE



E ELLATAQRKWQAREI SNFTY

K S L Q M P Q L K MCQTVEFKPFFEQ
SVESKK S LA EARK LVKR WCS GA

GPMLRSPFDSRVTARVFTARDDDASARSRWQTREISNFAY GTSYGLPQARRISLATPRQLFKSSNMTQRWQRREISNFEY A E S Y MULQWQR GLLL S N Y Q Y E QENMLL RWQNRKI SNYDY

SFTMMRVVNA $\square$ SSTSSSTLELLKK LDMHAWT DGAIISNGDY PRCLLDWKDACARWKRRQLSNFEY MLS E L L Q A W W R RE
$E N A T L D W Q N G F$ QMTMRWQNGSLS

N S L R Y V I P S P K K $\square$ L K T S QLT QRWQK R LIS N F D Y MQK RWKEREISTF DY TSDTLHH $\quad$ QQAT QQRTRFQMVN $\square$ SVVTKRWENGHMSNFAY

 QQTDLES MLRKWQQREVSNYEY
 HRTPLLGRATTRVMTDLDELATAQRKWQAREI SNFTY TPRKEP LL MCRTNQWRERKI SNFEY

QREDLEVMMRKWQTREDSNFEY $L S$ L K VT F M WQ N Y Qi S N Y E Y ELLETAT RKWQARELSNFAAY
SVGVP GFKSPAEGVALSDATRAWQTKELDNFSY
 EVNDK GNMMVAWQNGK
TKASLKSKVFKALSSGPSLIDGFAATTQWQKGEWEDCELY
L H S P L Y $\square \mathrm{F}$ Q VN P K K DP M L WR RME QWR DRE LP GLS EMLDWRWKRRE
P P N L N D $\square F L A T$ QR QI LKR T QL M E R WA N WE
Q K T M $\square$ Q T $\square$ P S $\square$ N M $\square$ A T N G VT E K W V Q G K K S K S SQLS TLTEQWAKRADSNFSY
LQ QLER A HRPP P GDRD S LA EAVVQQWRS GAI TN N WE Y


LMELNVLAGRTYNDVTQYPVFPWVLDNFHSSTMDGNDTSN LTALNKLAGRTYHDLSQYPVFPWILSDYESATTNLEDPKV LMFLNTLAGRSYND:TGYPVFPWILRDYESEVLNLANPSV LLFCNAAARSFNDLTQWPVFPWVLADYTSAKLDLEDPAV







## LMYLNSQSDRSFNDLAQYPVFPWULADYESPELDLENDRTV

 LTLGNTLAGRTFNDLTQYPEFPWVLADYKSNELDLSDPPLVUniRef90_G6D196
L L H L N T I S G R T K N D LT Q



YRD DSKPVGALNPERLEHFDEKYDSAEDVSVPPYHYATHY Y R D L S LP IG AL NP VRLLK Q F I E R F K QLE S D S MPAFHY GS H Y Y R DLT T K P M GA Q T E P RAS E F K E R F E T WE D P T A P P WHY G S H Y



 R DLTKPMGALSSDARCDAARQRYENLKSVGEAPFHYGTHF
 YR DLS K PI GALN E QR LEYFKMRYEEEAE GMPPPFLYGTHY

 F R D L T K P I G A L N R A R L D N L V D R F E Q M K H M A QP P F L Y G S H Y
 F R DLL S P VAVLNERNAKAVREKYESFEDPT\|DRFHYGTHY Y R DL L S K P M GA Q S K R R E T QF DIER Y E S L D DEN S L P F H Y G T H Y


Y R DL S K P I G A L G E S RLLK E I I ER QK S LTTEF GLIDNYMY S S C Y
Y R N L A K P I G A L N P A KEA NL RERFENWLDK S QPPFHY GTH Y


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UniRef90-G8JX51 UniRef90-X1WKM1 UniRef90_UPI000333ED07 UniRef90_A5DMF4 UniRef90_U5H756 UniRef90_E4XS02 UniRef90_G8BCC0 UniRef90-H2AXF9 UniRef90-A0A024U8D2 UniRef90_G8ZWX0 UniRef90_X8IW46 UniRef90_UPI0002989512 UniRef90-UPI000185A603 UniRef90_W7TKY2 UniRef90_UPI00045616C6 UniRef90_J9K1Y9
UniRef90_D3BQ11
UniRef90_S4R477 UniRef90_A9V898 UniRef90_E0W257
UniRef90 K3W8J6 UniRef90-K3W8J6
UniRef90_D8T4H0 UniRef90_T0SFX7 UniRef90_UPI0002C3DC8D UniRef90_A9RNB9 UniRef90_V2X2L1 UniRef90-X6MNM2 UniRef90_UPI00034FA197 UniRef90_C1E8K2 UniRef90_H3G607 UniRef90_L1JL18 UniRef90_R7TBT8 UniRef90_K1VY45 UniRef90_E4XJY3
UniRef90_D2VLR1 UniRef90_R7TB50 UniRef90_UPI0003C14BD0 UniRef90_C3Y0L9 UniRef90_M2RCR5

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UniRef90_M7NSE3 UniRef90_K0TDC7 UniRef90-I2H356 UniRef90_M2Y8Y9 UniRef90_R1E7T0
UniRef90 B3RIQ0 UniRef90_UPI0003DE98C0 UniRef90_K1QCE9 UniRef90_X6LS29 UniRef90-K8EI76 UniRef90-X6NF24 UniRef90_D7FWC3 UniRef90-IOZ9X4 UniRef90-X6NSH4 UniRef90_H3G609
UniRef90_UPI00045719A5 UniRef90_A2D7B6 UniRef90_A0A058ZEZ9 UniRef90_UPI0004407C7F UniRef90_D0A319 UniRef90-A7T0Y3 UniRef90_K3WMD0 UniRef90_Q22C84
UniRef90_M5G0N8 UniRef90_F0Y231 UniRef90_A0A058Z5X5 UniRef90_L5L196 UniRef90_A9V7S7 UniRef90_UPI0003EC1386 UniRef90_S6EFA8 UniRef90_Q4D8V3 UniRef90_A0A024GHG9 UniRef90_M0VBD6 UniRef90_G6DHS7
UniRef90_A2E2Z4 UniRef90_A2E2Z4 UniRef90_G0U0F0 UniRef90_Q178M7
UniRef90_G6D196 <br> \section*{S <br> \section*{S <br> S <br> $S$
$S$
$S$ <br> 
$\qquad$


130
140
150
160
S S A A IITLTHY|L|MR|L|EPFTSHFRR|L|HGGKYDHADR|L|FTS|IVG

 S N S A GVVLH Y L V S S A M I V A S Y L V R M E P F T Q L L L L R L Q G G H F D L A D R M F H S V R A
 S S A M I T T V G Y L I R L R P F T E S Y L D L Q G G F D HA D R M F H N L A K S S A M I V S S F L V R SEPFT DFF L R L Q G GHFD LDPDRMFHSVVKE S S A M I V T S Y L I R LLK P Y VQ S Y L L L Q G G K F D H A D R L F N S V E K SSAMLVLGYLI RLKPFTDSFLILLQGGSFGHPDRLFSSI ER

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

 S T A ATVCGFLI RTRPFERLYMALQGGNFDLADRTFSSI GK
 S N A A GV MHYM MR VE PLLT

 STA GVV L F F L F R L Q P FA E L Q R R T Q G G S F D L P D R L F H S I R D


 S S SMIVCHFLI RMAPFTNMFKTLQQGGWDLPDRLEIDDIAR


 S T P GYV LF Y L AR I A P
S S S MIV CGYMIRMS P T E


 S S SMLVCHFLI RLEPFTHMFKTLQQGGDWDLPDRLFSDMSR



 $T \mathrm{Q} \square \mathrm{S}$ C S Q L L S L F L E P F T

## $\begin{array}{llllllllllllll}S & S & P & G & Y & V & L & F & Y & L & V & R & V & A \\ S & P \\ S & P & G & F & I & L & Y & Y & L & V & R & K & V & P\end{array}$

S SAMIVCSYLI R LKP F V S S A G V V D H F L L R M H P F S S S L H R QL Q S G H F D V A D R L F S S S V Q R





 S CAA I V L Y F L I R L E P F T K FA NKK Q DCR F D HAD RLLA S S I P Y




 QLMLLCLQS G R F D H P D R M F N S V V D
 E CMLCLQQNGKF DAP D RLEF Q S L L S




 | $S$ | $S$ | $S$ |
| :--- | :--- | :--- |
| $S$ | $M$ | $V$ |



 S S S A V V L
 S S P L TVV F M WL MRMMEPFT T L HTQQLQ S GKFDHAAR LF DS V G D


## UniRef90_G4ZQR6

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UniRef90_H2RXJ4 UniRet90_T1JHX1 UniRef90_M7NSE3 UniRef90-KOTDC7
UniRef90 $12 H 356$ UniRef90-M2Y8Y9 UniRef90-R1E7TO UniRef90-B3RIQ0 UniRef90-UPIO003DE98C0 UniRet90 K1QCE9 UniRef90- X6LS29
UniRef90 K8E176 UniRef90- ${ }^{-1} 6 \mathrm{NF} 24$ UniRef90-D7FWC3 UniRef90-10Z9X4 UniRef90 H3G609 UniRef90-UPIOOO45719A5 UniRef90-A2D7B6 UniRet90-A0A058ZEZ9 UniRef90 UPIO0004407C7F UniRef90-DOA319 UniRef90-A7TOY3 UniRef90-Q22C84 UniRef90-M5GON8
UniRef90_FOY231 UniRef90-A0A058Z5X5 UniRef90-L5L-196
UniRefgo-Av7 UniRef90-A9V7S7 UniRef90_UPIO003EC1386 UniRef90 S6EFA8 UniRef90-Q4D8V3 UniRef90_A0A024GHG9 UniRef90 MOVBD6 UniRef90-GGDHS7 UniRef90-A2E2Z4 UniRet90_Q178M7
UniRef90G6D196

A WKSAQNGTQDVVKELI IPEFFY|LIPEFLENVNDRAFGTSQTG TWKNCLDGATDFKELI PEFYGDDSFLVNSLKLDLGKRQGG AWRSSSENMADVRELYPEFYGDDSEMFINGNGGDFGSRQKE AWNSASHNMADVKELI PEFFYLPEFLVNSNNFDLGCKQSG S WKSSSENTTDVRELI PEFYYLPDFLSNVNNYNFGWLQSG
TWKLLMDTPNDVKELP A WY SASHNMADVKELI P
A WNSAARNTTDVKELTP
A WDSCSRSHSDVRELTP
A W L S S T R N NADVRELEI P

AYKSCTSNPSDVRELDP
A WS SA IDENTTDVVEETPB

TWOSASRNMADVRELLI P
A WASASESRGDVRELI P
A WRNVLNNMSDFKELVP
TWNSVYNSTSDVKELI P
TWLS CSESSSDVKELI P
VWRNVINNMSDFKELIP
TWNMCNSHMSEVKELTP

A WESVSGNNPAQVMELI P
CFEGCYYNSSDVVEELI
VFNNCLKNMSDFKELVP
CWRACLESTADVKELI P
SWDSASQSLDSDVKKELI P
A WRNCLTSMSDFKELI P
A WD SASENRGDVRELI P
A WKLLASNDSTDVVKE ELVMP
TWQSQIE NANDVKELVP

SYESASQDLGDVRELI P

TWRSCMSNMSDVKELI P
TWEAGNKNMDDVKELCP
TWNSVLEDMNDVKELVP
A WF SASHNMADVKELI P
A WD S A SQD S G DVVRE
S WR S C Q R D T S

A WLS SSENMADVRELIP
T WEMCTKRSAAEVKKELTP
A WNSVTQSMQDVKELI P

VWKNVLVNMSDFKELI P

TWNAVLESTADVKELI P
A WDSVLNN NHADLKELL
A WD SVTTA STADVKKELI P
C F E GCLDNSTGDVKKELI P
T WRSSFESMTDVVKLI P
A WNLCTKTQNDFRELI P

CWNGVLTNSQDVRELI P
AWQNCNRDTSDDVKELLI P
DWRNVLDNPTSVKELI P
A WS SAAESRGDVRELI P
CFSGLLDNAPTDFKELI P
TWWNATHGMADVKEKL
TWQTLMDNPNDVKELIP

C WK S CLTTNYTDLKELLIP
VYNNCLKNMSDFKELV A
TWKMVTSHMNDFRELI P




LIF GYKQRGSEARKACNVFHPMTYEGEVDLDSVQDPDERQ LI F GYK QRGPA AVEALDVFYYCTYE GAVDLDAI TAEKERK LI F GFK QRGENAVTSVVNVNNLSYPGAVNLDSUNDETERR
 L F GY
 LI WGVVNSCGEGAEKS LNTFDPNMYESAWN NETLNDPGKRS L VF GYKQQGE EAVQALNVFSHLSYQHGVEFRKATSEEECK

| $L$ | $F$ | $G Y$ | $K$ | $Q$ | $R$ | $G$ | $E$ | $E$ | $A$ | $L$ | $K$ | $A$ | $D$ | $N$ | $F$ | $Y$ | $H$ | $L$ | $C$ | $Y$ | $E$ | $G$ | $S$ | $V$ | $D$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $V$ | $Q$ | $Q$ | $K$ | $D$ | $L$ | $L$ | $A$ | $A$ | $R$ | $H$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


|  |  |
| :---: | :---: |
| UniRef90-UP100042C7503 | $A M L T Q L D E F G Q T P K Q L F R T P H P R R$ |
| UniRef90-Q7LKZ7 | A AVGIIHNFGQTPKQVFKKPHPQR |
| UniRef90-H9JLH2 | ATIGFINNFGQपPKQLFKKAHPSK |
| UniRef90-G8JX5 | SVTSTIHNFGQTPLQLFDSPHPKR |
| UniRef90-×1WKN | AVEGMI NNFGQTPSQL LKEPHPLR |
| UniRef90-UPI000333ED07 | AT!GFINNFGQDPKQLFKKPHPPK |
| UniRet90_A5DMF4 | AVIGAINNFGQTPMKLFSRPHLAK |
| UniRef90_U5H756 | AATSTIHSFGMIPKQLFSKPHPTR |
| UniRef90 E4XS02 | AAIGFINNFGQ\\|PTKLFNKPHPQR |
| UniRef90-G8BCC0 | AlIGMINNFGQTPAKVFTKPHVMK |
| UniRef90-H2AXF9 | A 1 TGlIHNFGQTPLQLEEKPHPKR |
| UniRef90-A0A024U8D2 | Q I DCFGQTPPQLDFRPHPKR |
| UniRef90-G8 | AVTGTI HNFGQTPLQIFQDDHPTR |
| UniRef90-X81W46 | A TVGLIHNFGQTPRKLFNSPHPPR |
| UniRet90-UP10002989512 |  |
| ef90-U1000 |  |
| UniRef90_W7TKY2 |  |
| UniRef90-UPIO0045616C6 | AVAQVI HNFGQTPSRLFSQPHPQR |
| UniRef90-J9k | E F |
| UniRef90-D3 | GLEAQLNEFGQTPRQLFKTPHPQR |
| UniRet90-S4R477 |  |
| UniRet90_A9V898 |  |
| UniRef90-EOW257 |  |
| UniRef90-K3W8J6 | M |
| UniRef90-D8T4H0 |  |
| UniRef90_ToSFX7 |  |
| UniRef90-UPIO002C3DC8D | AYEDMI INFGQTPIQFKQPHPKR |
| UniRet90 A9RNB9 |  |
| UniRet90-2x |  |
| UniRet90-X6MNM2 |  |
| UniRet90_UPIO0034FA197 | ALEVQI MEFGQVPKQLFTKPHVRR |
| UniRet90_C1E8 |  |
| UniRef90 H3Ge | R |
| UniRef90-L1JL18 | Q1 DNFGQTPTQLFSKPHPRR |
| UniRef90-R7TBT8 | Q1 MEFGQTPKQLFRHPHPRR |
| UniRef90-KIVY4 |  |
| UniRef90-E4XJY3 | ALETM KTYGQIPNRLESSPHPQR |
| UniRet90_D2VLR1 |  |
| UniRef90_R7TB50 | A |
| UniRef90 UPI0003C14BD0 | TVLGFVSNFGQITPKQEFKH |
| UniRef90 ${ }^{\text {C3 }}$ | KTYGQTPRQLFKSPHPPR |
| UniRef90_M2RCR5 | ATVGII HNFGQTPRKIFNSPHPER |
| UniRet90 R7S324 | R |
| UniRet90_D6WL26 | GQIPKQVEKVPHPAR |
| UniRet90_R1CA77 | AVEAQILFFGQTPTQLLS |
| UniRef90_A2E1P4 | $R$ |
| UniRef90 LiJ7 | $\underline{k}$ |
| UniRef90 J3LFJ9 | DQI CNFGQTPSQLLTVPHTKR |
| UniRef90-Q4RUY8 | GFI NNFGQ\PKQLFKKPHPPK |
| UniRef90 G4TU38 | ATVGII HNFGQTPRKLFTHPHPQR |
| UniRei90_W5L8x | SMEAQ QTFGQVPSQLLIEPHPPR |
| UniRet90_H2RXJ4 | R |
| T1JHX1 |  |
| UniRef90 M7NSE3 | R |
| UniRef90-K0 | ATELQI AHFGQCPMQLFYRPHTKR |
| UniRef90-12H356 | S $\\|$ TAl HNFGQTPLQIFQKPHPKR |
| UniRef90 M2Y8Y9 | A HFGQTPPQLMDSGHPQR |
| UniRef90-R1E7TO | LQAQ KNFGQTPPQLFTS |
| UniRef90-B3RIQ0 | SLKLQ LEFGQTPRK F DNP P PQR |
| UniRef90-K100 |  |
| UniRef90 ${ }^{\text {- } 61}$ | A TEQQTYHFGQTPNQLFDTPHMER |
| UniRef90-K8E176 | A ${ }^{\text {LeTQIVNFGQTPAQVF }}$ |
| UniRef90-X6NF24 | GKIJAl NNFGQTPKQLFTKPHPQR |
| UniRef90 D7FWC3 |  |
| UniRet90_10z9x4 |  |
| UniRet90-X6NSH4 | AILEQI DSFGQTPSQLFFKPHPKR |
| UniRef90 H3C | QI QEFGQTPKLLFCGAHPSR |
| UniRet90-UPIO0045719A5 | MI K TYGQTPRQLETTTHPSK |
| UniRef90-A2D7B6 | GI EATLMHVGQTPQQIFTKPHPQR |
| A0A058ZEZ9 |  |
| ef90_UPI0004407C | R |
| UniRef90_D0A319 | LLIDSLDNUGQTPIQLETRPHVER |
| UniRef90-A7TOY3 | Q |
| UniRef90-K3WMD0 | SI ESQI QEFGQTPKLLFSTPHPSR |
|  | QI NEFGQCPKQLFK |
| UniRef90-M5GON8 | ATVGAI HNFGQTPRQVFRHSHPDR |
| UniRef90_FO) | ALELQI DEFGQTPRKLFFAPHVRR |
| UniRef90_A0A058Z5 | GQAPSQLWSQPHPQR |
| -5L |  |
| UniRef90_A9V7S7 | YEVPPPAF |
| UniRef90-UPI0003EC138 | ALEGMITSNFGQTPCQLLKEPHPVR |
|  | HNFGQTPLQL ${ }^{\text {F }}$ QEPHPPK |
| UniR | DNTGQTP!QLFTQNHVER |
| UniRef90-A0A024GHG9 | SLLESQLQEFGQTPRQLFAMPHPVR |
|  |  |
| iRef90_G6DHS7 |  |
| UniRef90_A2E2Z4 |  |
| UniRef90 GoU0F0 | NFGQTPKQIFLRPHSRR |
| 178M7 | K |
| UnRef90_G6D196 | A A A AMVRTYGQAPRQLFRTPHPQR |

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RAEFQARNYTKKWLKGKITNFEYY $\square K \square P N \square K \square L Q M T Q A E \square T P Y V K D A T K R W M K G E L S N F D Y$ KLKALTDGWQQGEDSNFEY
FY $\ F Q E N P \Pi K E P L L V W S Q N R W R S R E M S N F D Y$ TSDTLHH $\square Q A A Q Q R T A F Q L D M V S V V T R R W V N G Q M S N F A Y$ VATPDQT KVLGLTQQWREGLLTNWEY TYDWQKGLLSNYEY HSFCVFNENPKKETRDALYTEQWRERTMTNFDY PPY LS DIF LATPEQLK QTQLMERWAKWE SSFSNVSVQSATQLWREGA TTNFEY PYLDSTLTLSESNLKMWRNW WCEGCITNFHY WCEGRVSNFHY LADAMAQWRSGSITNWEY ELDHYTQQWREGALSNWEY
TDYARPHDDKTLMDTENNLRMWRNW
WCEGRTSNFHY TMMAPHLELHADRLTERWRRRLVTNFEY

KKRCPNDIYYNTLDPRKLDEKTNDTQKWLNRQTSNFEY PPSANLVQTVPY LSEFSTTDFTNKWVNGEISSNFDY PGMSRUAAHPMSEKGARGGUTRRWVRRECSNYMY WQRGRVSNFDY ST VVGEKSVTQRWERGEISNFQY SRVISFVDRRALLEMAENARDRW円KREUSNFEY

पset Volwhtrolt nmey RCPNLQYNKT位 MKPVNCRFSTDNFMEFFKGFDFSEKWANGEISNFEY PLFRN ARPNPMQFLYESNKTNLWLNRKLSNFEY RKVQKVTRRDFSLETVQKKWIDGLIDNYEY PATRARLLDAQVAWLCGQMSNFDY


FNQDDEMTE पWKKGEDSNFNY TQNTPPDELLEKDGATKAWLTRKISTFKY LLSAERMFSKSKWTEMWVRREISNFEY SAESYTLQWQRGHLSNYQY
LLTAERMFSKSKWTEMWVRREISNFEY
保
GRNQSMMSLKFLQENNEDAVRMAQKVYRKWQLGELLSNFDY LIRKTTKNQDSSDTDEKLTELWVNGDLSNFDY

TMNPKREQSMRSMLSGWINGSVSTLEY पRQCPQLQVQPPEA LGPFSTPYVGQATRERLLDAQVA WLRGQMSNFDY LPDESDELKLQKITEKWSNGKLSNFEY NITALTHLWYTAQITTFEY DPDSVLLESKAMNKWYNYKTSTFEY $K K V Q V \nabla D P E E F$ NLRYYDTLEPRILKKNYQQNWVGGQLSNFQY STMTLPNIKTLQTKDFYSYFKSLQMTELWQNHLLSNFDY KLKLPR』QDFQKDDFMEHFMESNFTDLWDHRQiSNFEY EFQKSGIKDDWKKGRITNFDY KAKVIADWRLGKLSNFDF KSHQAPHFNQSKTTDPGKLLEKQGYLQKWNKQQMSNFKY KRI SNMRNMLAGWGGRSVSTFEY F DDP NNVEADSKVTNAWKIGDV
QKARDQTVLYKDFVNQFDFTNKWQNGEISNFEY
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 $L M$ Y L N F A A G R S Y G D L R Q Y P V F P P H V V V A D $\vee M A L N T \square A G R S Y N D L A Q Y F V F P W I I A D C$
 $L \mathrm{MH} L \mathrm{~N}$ G L G S R S Y K D L T Q Y P V F P Wi I T D Y K S K D I F LII L N ELLS GRTYNSSAS MY PVVFPWTI K DY D S E F L D L S D P S V LRVLNDAASRTTASLGQYPVMPWVLSRYTESTLDLGBAGA L M F L N R E A GR S F M DLT Q Y P V F P WV V R D Y T S A T L D L S D P D T
 HYTSEELDLNNPAT

LS $\quad$ L N K M A A R S Y N D LM Q Y P VMP F VLA S Y NT TEELDLDNQLS T LVI L N T LA GRSYNDLT QYPI FPWVLADYTSEKLDFNKSST
 L MLLL N I Y S GR S Y N D S S Q Y P FLLP WV I K D Y T S E KI I Dil S D S K Y








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UniRef90_A2E8J9



50ABE1

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Y R D L R R P

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FRRLD RPIAVVQEDDRAEAVAARFNEAESSACPPYHYPAHC

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Y R DLS LPMMGAQTKERRKSVRDLLYNQMSEMMEHPFHH GTHY




## Y

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140
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 S S A A LV L HF LV R QEPFASHAVALQS GSFDCPDRLFFS L R A S N S G V V L H F L V R I P P F T D MF L D FQ GK S F D DA D R S F HKV A T S S A A V V L Y Y L M R L E P F T A LTY L L Q G G R F D H P D R M F H T M S A S N S G T V V L H F STAAFYVVHFLVVREPYTSDHMELQDNMFDNPNRTFRSIP F S NS GTVVLHFLVRVMPYTVQMIDYQDQSEDLPDRTFHSMAT S S PAVVI YYMTRI EPFTTGQI ILQQGGHFDHADRMFHSLCA
 SAPGYVLY WLI RAAP AHHLRRLQS GRYDAPDRQFHSSI A E
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 S SAMLVASYLIRLPPFVQSYILLQGGSFDHADRLFFSIEG
 K Y Q
S S P A I L LYF LI RLQP FTRGA DQLQGGKF D DADRRLYYS I QE
 STAA Y V I GY L DR DE P F T S L H I DL Q S GKF D Y A N R L F Y S L D E



 S S A G A V L F WL L R L L E P Y T S Y S II E L Q S G R F D HA D R L F A S L E E


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## S S S



S NA AIVVFNYLI RLEP FNELDHFSSLQKN KFDVA DRLLFSK I DI

S S S GGVAYY CVRSHP E



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 SHTRSI LYFLIRLLMPLT RVARNRSMEKTTQSFNSISE

 S Y P A A V L H Y M M R L E P F T L F N V M M L H S G F F D H R D R L F C D L Y E S S A M V V A Y L VR M E P FT Q L F L R L Q G G H F D L A D RM F H S V R E



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 TWLLASRDPTDVKELIPE TWRSSYESTTDVKELIP TWNGVLQDMNDVKELVP SWESVLT SSADVKELTP AFTISSSGKDVKELLP TWRLDTK KPTDVKELI P A

TWDHCQKDSHDVKELIP AFRLCNNQMGDFRELTP TWNSVMTLPTDVKELIPE
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TWSSCLNNADLKELTM
AFRMIMNHIDNYRELIP
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VQLIGDVVLIPEWCGGDERFVHLHAEA|LESDVV|SGK|L|HEWV|D



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AlVATAANFGQTPRQLIFNRAHARR GYLTQ QQS F GQVPFQLFTKPHPQK F LQEYALCFGQAPTQLFTTPHPQ A WETMVRTYGQTPAQLFRAAHP ATEAQIRHYGQTPSQLFSQPHPPR
 QL LID I L
A VKTMVKTYGQMPRQLFKSAHP
$T I Q \square Y A S N S G \| V P R Q I F N Y P H P K R$ A YLTMVNTYGQTPLRLFRNPHVEK LLID SLDNDGQTPLQLFTQPHVAR ATQDHLVNFGQTPSQLLIVPHI RR ALRTMMQTYGQMPLQLRRSPHLP SLEAQMNEFGRAPRRLEAKAHPRR

 ALETMVKTYGQMPRRLIDTPHPP ALEGDI SNFGQTPCQLLKEPHPVR
 A A E AQQ T S F GQQTPVPQLDAEAHPPR STETQLDNFGQTPFQLL FDKPHPQR SIVASADNFGQTPDQLIFSRAHPAR
 A I EDQIANFGQTPDQIFRVKHPRR ATTS I HNFGQTPHQVFTKPHPPR
 A $\square$ EDQI ANFGQTP IQQI FRMKHPRR STEAQI $\square \mathrm{NFGQTPIQL} \mathrm{\square DKPH} \mathrm{\square QR}$ AMETQVTEFGQCPVQLEQKAHPQR FI QSHAANCGVVPDQLFQQPHQQR
 A I RMQI HEFGQV GLEDFLSMDGQMPAQLFTSPHPQK AVQSMIRNYGQVPRQLFNHPHPRR NMLVQVAQYGQTPSQLFTSPHPAR


ALETMlKHV
AIENQIRSFGQTPTQLLTEPHPPR TTLDKIRNFGQTP DQLEKTPHPKR
 AVLT Q L LEFGQTPKQLEATPHPRR LVQR GTVPDQLFRKPHPAR SV LGAMCNW
AVEAMDNNYGQTPKQLFHKPHPCR MI KEYAACFGTAPMQLFFEPKPK ALETQVAEFGQVPVQLFNSGHPNR SVRAKLTQRGTIPI QLERKPHPAR


Q TK A NLNHVGQVPPQLFFENHPVK AVQSMIRNYGQVPRQLFTHPHPRR RAMFSGQLPVQLFTKPHPTR


|  | ESQIINFGQTPSQ | Q |
| :---: | :---: | :---: |
|  | EA QVVNF G $\mathrm{L}^{\text {T P }} \mathrm{L}$ Q | L F K |
|  | VA E V D N F G Q P MQ | L F Q |
|  | ETQUNEFGQTPKR | F G DViV |
|  | A TMTNCGQ\PPQ | F |
|  | E A A N Y L Q Q P H | L |
|  | QMSMSILVGQCPCQI | F N $\mathrm{L}^{\text {P }} \mathrm{H}$ |
|  | EAAMCHIGSMPPQ | L |
|  | $R \quad G V L P F Q$ | LFKKPHPR |

SSREYAREFGNVPDQLFADLHPPR
Y IEQETTHCGQUPQQLFTDFHKPR $\square D V I D N F G Q C P Q Q I F T S P H$
A V $\square \mathrm{A} M \square \mathrm{NT} \square \mathrm{G}$ Q $\square \mathrm{PQQQ} \mathrm{C}$ T S P H P K R
A MLT Q L LE F G Q TP K QLR VTPHPQK LLQNHCANFGCDPMKLESQDHAQR

# $\square V N R K K E F L K S T V L D D W R K G K I T N F E F$ 

K E F RE $\square \mathrm{K} \square \mathrm{KENW} \mathrm{L}$ K GE $\square \mathrm{T}$ NQQF

EESELRSLTHKWVHRRDSNFEY
EITMLDAI VDHWVHRRITNFQY
NNSTLLSPQNiSRTKDLVLLWQEGKISNFDY

PQAFMLQASD

VA RLSSLVDDWVQCKMTNFDY G 1 K ALEQLKPQAFMMQASDELLRCMQQRWLEGRLSSLHY GUKYGI PQTRRASMMSPRQLMRNSNMTQKWQRREI SNFEY LHLPTSSTVKLAYDPAHFNLREYAEMWCSGQLSNFDY GTRYGLPVSRASTLASPSKDFQLSNMTQRWQRRELSNFDY QLVTNWTNNKI SNFDY GTNFGLPQTRR DS L ATPKQLFKAANMTQRWQRREI TNFEY PCA $\square G G G N G S G A K M D V L P E \square M Q K W A M G Q L T N F D Y$ LPSSST $\quad$ K $\square$ A Y DPA QF N $\square R E Y C E M W C N G Q L S N F D Y$ LTEA WAYRALSNFDY TQE $\quad V L G N \square P K E \square Q D D T L T M K W V R G D I S N F D Y$

S S SLD WQS YSKRWWMGELSNYEY

## UniRef90 A2G287 UniRef90_D8LVR4 UniRef90-A2DG76 UniRef90-A2FX25 UniRet90_UPIO0022B50CC UniRef90_UPIO003C12BB6 UniRef90_UPIO000221A52 UniRef90-UPI00029DBDDB

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UniRef90-B8C7T1
UniRef90-G3I3U3
UniRef90-W7X011
UniRef90-F6U6E8
UniRef90-J4D943
UniRef90-17J8B8
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UniRef90-G0R282
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UniRef90_A0ECD7
UniRef90_S9U145
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$\square T M \square N L F S G R T \square H D S S S Y P \square F P R \square L A R F G N D K \square D L E N R F D$ LI Y L N F $\backslash A$ G R S Y N D LTT Q Y P DF P WVLS N Y S S S S $\square$ D $L$ N D S $\square N$


VLRVNRLA GRSYNDLS QYPIVPWVLSNYTSPLLDLRNPAN LLAL NFQS GRTF LDDSQYPVFPWILSDYKSESUDLEDSRS
 LLYCNLAAGRTFCDLAQWPVFPWVLARYEEEEVDLDGAAG LLSL NCLA GRSYNDI CQYPVMPWVLSNYTSEEPDDTDAGA LTHLNKHAGRSFNDLMQYPVFPFILSDYVNETDDLNDPSITl



 MYLNIFSGRSHNDVTQYFVFPWIFI ICTQENI EI QNKNS
 MYGNFLSCRSY IDDLTRYVFPWVLKGNASDFDDNDNE INN LL F L NQUA GRTNMDFNQYPVFPWVIAQYTSKHDDREQPDT

 LDFLNCIGGRSRKDFSQYPIYPWVISSYTNEKLEYDNKE I LKL NFI SGRSWSDFTQFPIFPWTITDFTSET

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


## LLM $\square$ NKYSGRSFND $\square$ NQYP $\square$ FPW $\square$ I R DYHTESYDEDKGEA

LMVLNRFAGRRMCDPNHHPVLPWDMDFTQPQGGWRDLTRS LMLLNYLA GRRMGDPNNHPVLPWVLDFSGPDSGYRDLTKS LMKLNALAGRRLGDQQYHPVLPWI I DFESDPTDPNSRVE
TDF LNCDS GRSRKDFSQYPVFPWLLSDYSSKK DDLNNEKV LLFLNKLAGRRWGDHTFHPVMPWVI DFSKKPDNDSDS
LQFLNSAAGRSSSNFSAYPVFPWVLRSYGEDENPLVNPAA
$\square M E D N R \square A G R R M G D A D H H P V L P W V T D F S C A H G G W R D L T K S$ 1 QF L NSAAGRSTSNFSAYPVFPWVLQRYSEGDNSLSDPSA LMFL NTDAGRTYNDGNQYPVFPWVLTNYDSTEDDLSQPSN LT LLNNACGRSLTNAAHHHIMPWV TMAFARNGAN LMYLNTDAGRSYNDLNQYPI FPWVISNYTTKELDLSSPSN






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 UniRef90_N9UVV3 UniRef90-A2EJ76 UniRef90_UPI000440EA24 UniRef90_D8LXZ3 UniRef90-M2X7D7 UniRef90-A2G275 UniRef90-A0A059LD70 UniRef90-TOR8V9 UniRef90-B8C7T1 UniRef90-G313U3 UniRef90_W7X011 UniRef90_F6U6E8 UniRef90-J4D943 UniRef90-17J8B8 UniRef90-UPI0003EC083F UniRef90-G0R282 UniRef90-W4HA25UniRef90-G0QQC8 UniRef90_UPIO003F07219 UniRef90_UPIO003EC032A UniRef90-A0ECD7 UniRef90_S9U145 UniRef90 A8HVE6
UniRef90 K6UDF6 UniRef90-K6UDF6 UniRef90-L8Y035 UniRef90_UPI0003C25E1B UniRef90_Q8IIC2
UniRef90 A2G2F8 UniRef90-A2G2F8


FRDLSKPMGAQTLERKRKFLQRYNEVEKSEGDRCHYCTHY YRDLSKPVGCLNKNRLDNSLIEKMHDHD YFYGSHY FRDFRYPIFAQTSQQQKSLTDYYNATLQMNDEPYNFANYV K F RLNKGDKQLDFTYEMTRQAFVASGGGSGGEPPHVPHHII FRDLSKPVGALNPERLEKFQERYSSFDDPVIPKFLYGSHY

YRDLSRPMGALNPSRLAYFRARFEQWDSDDLEPFLYGSHY YRDLSRPDGALNEERYKGFEARYESLLQPDDAPFLYGTHY
 KFRLNKGDKQLDFTYEMTKQAFAGGSSSDHLHVPHHUSDV FRDLTKPMGMQTLDRAQ MYFESDYKDSNGQYFYGQHY WRDFTKSKFRLNKGDRQLDLTFDPECAEVGMYHVSDV KFRLNKGDKQLDFTYEMTKQAFAAGGGGEPPHVPHHVSDV YRQLGTPDGALNRERFEKYMQRFKSDPDDKNTYFMYGTHY
 K A WQNRQ $\square$ S NF DY LMA L
KFRLNKGDHQLDLMYESDNVVPSVSHDVGSHHVPHHTTDV KFRLNKGDGQLD FTYSVMNDVSDSNEHVPHHVSDI WRDLTKTKFRLNKGDEML

FKKMSFEDPTGMTDKFHYGTHY
Y R D LT K P VGC L N ES RLN S LIE KMHDHE
YFFGSHY FRDDSWRDLRKSKWRLAKGDEQLDFTYSTFEDPHHVSDEC


KYR LTKGD LRDLSKPV G $K Q \square D L T Y E T \square A A D E D D S S H V A H H V S D V$
 WRDLSRSKYRLNKGDVHDDLMYAHASQHGGEQVPHHVSDF YRDLSKP DGAI NPKRKAFFDERYKNWEDENQPPFHYGTHY KFRLNKGDRQLDATYESSGR NNSNDSGDHVRHHVSDG FRDLSKPDGALNPKRAAFFSDRFESWEDDQVPKFHYGTHY KYRLNKGDNQLDFTYESALQMQAMNEEDGSNQVPHHDSDV WRDLSKS

K WR LA K GDEQLDFTY $\square$ AS E $\square P H H V S D E C$
WRDLTKSKYRDNKGD DHLDLMYTHPTQHAPAEAVTPVEQL WRDLTKSKFRLNKGDRQLDLTYDLPANATQAQDPHHVPDV WRDFTKTKFRLNKGDEQLDFTF WRDLTKS KWRLAKGDEQLDFTYSSSEVPHHVSDEC
WRDLSKSKLRLTRGDVQLDVSWRSSSP
KYRINKGDYQLD FTYNSM $\square$ GLNENGEH
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YRNLQLP LGAQKETN Q DEDNYYEKEC KFRLNKGDKQLDFTYEMTKQAFAAGGASGYNCCLL LRDFGDNS GQMDTTYEMTKQAFAAGGAS GEQHVPHHDSDV YRDLTKSKYRLNKGKFRQLDDEY Y KEGDEKTS ILTPHYYSAM
 WRDLTKSKYRLNKGDVHLDLMFSHATQPGGNQAPHHVSDF


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SSAI IVASYLVRMEPFTQTFCSLQGGGFDVADRMFHSVKN
 SNVGSSLYFLIARLEPFTDELITFQSGSFDAADRTFQSMQD STAGTVLYY LTRDEPFTTLSVQLQGGNFDHADRMFYDVSA EPYTTYFLNLQGGKFDHASRTFSS IAS
SNMGTVLFFLLRVEPFTSHFLHFQGDRFDHPGRSFFSLAQ SAPGYVLYYLLRTMP QHMLCLQNGRFDVPDRLFHSVGS MHFGVVLFFNFRADPFCLLGUHLNRGW DHPNRIFTSVSD LSDITYFVYKARQTPKSVLCSHVRSQWEPNEYPASMERMQ

 SNATIVLTFLMRMEPFAGLHFQQQENKFDYADRLFHSVKE NTAGRSYNDLNQYPVFPWVITNYESEELDL SNKMFTLAYL DR LEPFTDSFIQVNKN LDNPDRLVQS DEH NTAGRS FNDLTQYPVFPWVLSNYEDSTLDLSDPHNFRDLS MFHSVQN



LT D IT Y YVYMARRTDRSVLCRHVRPKWVPAEYPSS円QRMQ STPAYTVHFLVRLDPECLLRLHCGGRFDCTHRDFRSMQG



 $L S E L A V C S Y K A R R L P G S \quad \| L R M A V R S V Y E P N E Y P S N M Q R$
QVPHHVTDFLSEDTYFVYMARRTPQS\|LCAHVRPIWVPAE

 SACDYVFHF LVRVEPFTTMFIRMNENHYDRPERMFYS IGH
 UniRef90_UPI0003C34F84 UniRef90-B0WNU3 UniRef90_S2JF06 UniRef90_A2E4M9 UniRef90_K2H5R5
UniRef90_UP10003C4C54B UniRef90-A2D799 UniRef90 J9K9U2 UniRef90_K7GMG9 UniRef90_UPI00032A3978 UniRef90-A9UWG6 UniRef90-X1YDH9



## EGVDDLDC

ERVDDVLLPPWARGARHFVRTNRRALESDVCTRGLHRWDD RDASFVVLPKWSSSEYDFSQKMMFSLEQEKVGKGIGNWFD PDMPDLDVPSWCKSYEDFIEVHRRLLESREVSQHLHHWDD TDMPDLEIPSWCSSYEDFIGHVHRALLESSRDVSQDLHHWI D
 PDMPDLEVPPWAGSGEAFVAAHRALLESKEVSQDLHHWID




 PSMSDLAVPPWASSPEEFIRLHRDALESPAVSSLLIHHWI D



## 

T DMPDLQVNPWASSPEDFVRRHKHLLDGEHVSKRDHHWDD EDLDDLEVPAWATGPEDFIERHREALESNHVSERLHYWID


EDLPDLELPAWASCPEDFTAKHREALESQYVSERLQYWTD



## $\square$ NF GYK L S GKAAVKSKNVCLTLV

L $\square F G Y K \square S G K A A V K A K N V H D H D A$ D NHEK
$L T F G Y K L S G R A A G K T K N V C L H L A D D H T Y G T K S G \square$
LT F GCK LDS GSAAVKAKNVVLCVVDQHTL
I AFGYKMSGEAAIDAKNVMLDLSEP
$L V F G Y K Q T G K E A V K A D N V F F H L T Y E G S \square D \square D H \square T D \square H E R H$ LNFGYK】SGKAAI KSKNVCLSLV
LT F GYK L S G I A AVVK S K NVVCLTVLD

LTF GYKLSGESSVEAKNVMLPPSDPENSDKGGEDEELLKK
LTFGYKSCGEEARKADNLYMPSCY
LTFGYKLSGSAAVKSKNVYLQLVDNHKT

L IFGYKQKGFNGTN IYYNPVLFEDVWQNWTDTKSD
LVFG $\operatorname{LTFGYKLGKDAVVQQNRNKFNVYSKEYTKESEVDEQDKE~}$
GFGYKLGKDVKKNVCLHGDSQD
LTWGIDRKKEN NKYDPS LYDDSPNPE
GIVA
LNFGYKLSGKAAVKSKNVCLSLV DQHKEL
LTF GYLLTGEAAVKAKNVPYDLVGKRNV


UniRef90 A2G287 UniRef90_D8LVR4 UniRef90_A2DG76 UniRef90 UPI00022B50CC UniRef90_UPIO003C12BB6
UniRef90-UPI0000221A52 UniRef90-UPIO000221A52 UniRef90_N9UVV3 UniRef90_A2EJ76 UniRef90_UPI000440EA24 UniRef90_D8LXZ3 UniRef90-M2X7D7
UniRef90-A2G275 UniRef90-A2G275
UniRef90 A0A059LD70 UniRef90-T0R8V9 UniRef90-B8C7T1 UniRef90-G3I3U3 UniRef90 W7X01 UniRef90-F6U6E8 UniRef90-J4D943 UniRef90 UPIO003EC083F UniRef90_GOR282 UniRef90-W4HA25 UniRef90-G0QQC8 UniRef90_UPI0003F07219 UniRef90_UPI0003EC032A UniRef90_A0ECD7
UniRef90_S9U145 UniRef90_A8HVE6
UniRef90 K6UDF6 UniRef90-L8Y035 UniRef90_UPI0003C25E1B UniRef90-Q8IIC2 UniRef90_A2G2F8 UniRef90 UPIOOO4433112 UniRef90-S8CU66 UniRef90_UPIO002654D15 UniRef90 V8NKN2 UniRef90-A0A058ZAA4 UniRef90-K0T3G0 UniRef90-A2G4R9
UniRef90-UPI000298FA75 UniRef90_UPI0001DE7D9A UniRef90-A2G530 UniRef90 UPI00046C97E0 UniRef90-UPI000203AA05 UniRef90_G0QRH7 UniRef90_UPIO0032B08D8 UniRef90_J9IQ14 UniRef90-G5A758
UniRef90_UPI0004547B7D
UniRef90_C3ZQX4
UniRef90-UPI000359C7DD
UniRef90-D2VMV9
UniRef90_V8P3A0
UniRef90-Q4XET4
UniRef90_V4KV56
UniRef90-U6GJR0
UniRef90-T1JGN9
UniRef90_U6KP62
UniRef90-B5M0U3
UniRef90_Q29NJ1
UniRef90-UPI0001A640D4
UniRef90-B3SOSO
UniRef90 Q4SZN1
UniRef90-W4XRX6
UniRef90_UPI0002B420F5
UniRef90 B7Q2C9
UniRef90-B4JQX9
UniRef90-A0A023F186
UniRef90-A0A015JKC9
UniRef90 B8A757
UniRef90-M2QC13
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UniRef90-V4A0J2
UniRef90_UPI0003C34F84
UniRef90-BOWNU3
UniRef90_S2JF06
UniRef90_A2E4M9
UniRef90-K2H5R5
UniRef90-UPI0003C4C54B
UniRef90_A2D799
UniRef90-J9K9U2
UniRef90_K7GMG9
UniRef90_UPIO0032A3978
UniRef90 A9UWG6
UniRef90-X1YDH9
UniRef90_Q7Q366

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EDELEWRS 30
30
FF R GE|LNF 40 SQFKKWFR GE LIS NFDY
 LP NSETS QSNDRKNAVK LEK IDCMLLWLN GMLSNLDY

S K T T S Q WVN G S M S N Y D Y $T \square A L R$ F N K A S L S QE D VT N L WWRN GE $\square$ SN F E Y

S P S E N QLE S S $\quad \mathrm{N}$ K WV H G E LS N F N Y $P P Q S \square N T L G D V V D Q W V C G K M S N F D Y$ T P N E LLQRFN EAQRRKWVVK GE LIS N Y E F S I G M K S VT QRWER GE SN F Q Y
 Q E Q WVT GY L S T F E Y
$\square D F E S P N$ Q S I VT S NLIDNMHNLESTGQQKWVRSNEMSSNE E Y
 HAPHS LAD LLLRFNPSSGLADDVA $\square R \square M \square Y Q M S N F D Y$ P P I N S S S S A NTGTM LYK S NLT R D WMF GG L S N F DY QF RAPRARIPLDEATSNWANRKWENYQY

PMLDA $\square$ R G K S A P K L S D $\square$ S E A T A N WV H R R WD N Y Q Y E GRVGNLEY

 EATIA WRAGVL S NLDY
 WI LRKVSNYDY
E S SMNKWI NGELSNFNY $\square S E T V D L W R T R Q Q T N M E Y$ WVLGNISN Y D Y

S NFDY


A RALQKQKPEAFLVQSSMKQLWVNGRワSTYHY A R A L Q K QK P E A F LV Q S S MK QL WVV D GR L S T Y H Y FPMHPSRTVDDMDPRSLL

$\square N K K E V F E T W K Q N K I S T F D F$
$N L R G L T A A W R L G A D S N L E Y$ KYFNEMMKLE K WVNCQUS T FE Y PTVKDD DSNYLEKFSNGEMSVLEF ■QTMKPLEYFKSRNSTEKWDNHEDTNFEY
 TSLLQLE ILK GKF S I P NLS KL F L Y C S Y T K D WV E G K I T T Y E Y F LTKRDSTS DWVNGNKSNFEY P FE YVVTS K ITE K WL NYEDT S LE Y $H Q \square Q T V I Y \square D P \square K A F N Q S T \square \square K D W T N G R M S N Y M F$ $P K M Q D L Q R M V S$ GETFARMHATARWQQ G F MS N F E Y



पMHLNREAGRSFKDLSQYPVMPWVVADYSSPTDDLSDPAT L L VNHFAKRSFVDCSNYPIFPRLIKDNQNKTEENEDDFI LMAVNAAAGRSTASTTSHAVLPWVTDFSAPSTPSEHPSSH FAGRERGDPYNHPVVPWVVDFSSENGGWRPLNRT
 L $\square A L N H A A G R S M K H R S V H P V L P W V L D F N G Q H$
LMMLNAAGRTDGNQTNPPILPWVTDFTAEDGRDNDDCNA
 SR NADSGRREGDFRFHAFMPWVIDFSKHPFSSSMNERA LSMLNRYSGRTFHSTKQYPTFPWVLSDYFTDEYSDDNPSL LNVVNVAAERSYSDMSCYPIFPKVSMNM NGIS

LCQLNYYSGRSLDDTSQYYDFPWTTTVFDKPFNQDYNNTD LCQLNYYSGRSLIDISQYYUFPWITTTTFDKPFNQYNNTMY LMELNFFGGRTMKWAGAYPILPNVFAD
NQLNFFAGYSYND』NNHPFFPW』DTSMSWETLI CH
1 VKMNDLSGR
SFNDPFL
LCILNDISGRSFNK LS $\square$ YP $\square$ MPNFNTE





[^1]



[^2]


[^3]



PDMPDLQLPDWFQTPSDFLTYHRRVLECDAVSSNLHYWDD T PLGDVELPGWCEDPALLLLVHRAALESSNCSSALHRWID
KE!VS QFPDWASSPYSFVT $\square$ MREILNSDEVRTNLNNWFD D D MASLTLPPWCATPDACVAYHRRVLESDDVSAQLHTWID TDMPSLEVPSFAGNPEGFIHWHRAKLESDEVSAHLNEWID VALADVDLPPWPAHSTVLAHAPNSDADS
VALT DVLLPPW
SLDDHGMTPDAFLQCHRAALESPHVSRDLHAWDD

S DLPDLGGLPLWAESPEVFIVRRHRELLESSTAVSARLHMWIDD

K L VE




MAVLSKELHKW

ETLGDVELPGWCEDPALLLLLHRAALESSNCSGADHRWID
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm



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LTTFGYKLL|SGEAAVVDAKN|V|TLIS T T A P
LTFGYKLLSGSAAVNAKNVCLLQLVDQHMYPL
L DFGYKQRGKEAIIDANNLFHPI TYY
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LNFGQADLAGPVAVVDSLLNV HMCFSEPKRMHRLC
```



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LIFGYKQRGDAAVEALNNVFYYLTYEGAEDLEADEDE|EKQ
LTFGYLLLRGEEAIIKAKNVAD
VTFGYKLRGRHAEEAMNVCRQLVDDHR
N D Y T \N S T Q P P D S LIK Q
l
LTFGYK\\GEAAATAKNVHDELVSPHPPSNSRVT
LIFGYKQTGKEAQAANNVFHPLLTYVDADAAAAATGSCCPT
```

$\square V F G F K L N N S \quad K F L N T F H P N S \square H C E E D D N E E K K E W R F \square$
LNF GVHLNGPSAVRHKNVVHR
LAFGYQLSGDAAVRALNVPLSSVRKRS $\square R \quad$ TTAAAPAA

LNFGDALVGERAVAEKNVVLHRVSWHSVFSGNATDESTEE VNGGHKQTSDESFNVFNPLVYPVIDDDTNNNNNNSNFNFN
VHFGAMQVNNPSAVEAKNTCKVGEDN
TTF GSLQKSPP
NSYDDENF
NFFGILQSKFDFVD

LTFGYK LIGGEAAVAAKNVHL NEKTIPENCKMA
M ${ }^{\circ} \mathrm{FGKKM}$


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| $S$ | $F$ |

KVFGUGSS Y Y K RMEDFDEGFVKDPFRRV

lupas_21
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UniRef90 D8S7P5
UniRef90-UPI0003F06150
UniRef90-B6AD93
UniRef90_UPI00034FB09D UniRef90 ${ }^{-}$UPI000252C83F
UniRef90- U6NYX5
UniRef90_UPI0002C3F56E
UniRef90 X6MQF9
UniRef90-FOZH92
UniRef90-H2YJ53
UniRef90-K2H0V7
UniRef90 UPI0002652D28
UniRef90-M4CD85
UniRef90-V9ESN4
UniRef90 D2VR53
UniRef90 A2F1N8
UniRef90-D8MBH8
UniRef90-A0BP16
UniRef90_IOZ6V4
UniRef90 ${ }^{-}$T1FU82
UniRef90_UPI0001D99E03
UniRef90-S9WHT0
UniRef90 K7GUK2
UniRef90-W7U3W6
UniRef90_D3AY89
UniRef90 A2FZX6
UniRef90 C1N3R5
UniRef90_G4V8N5
UniRef90-A0A023B5T1
UniRef90 U6HDW2
UniRef90_-Q55FJO
UniRef90-X1XQC3
UniRef90_U6IBY5
UniRef90 U6LSR2
UniRef90-E1ZH53
UniRef90-A2F1L2
UniRef90 A0A024UIP6
UniRef90-H3EZN6
UniRef90-FOVG59
UniRef90 V4YUS8
UniRef90 TOR5C0
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UniRef90_A2EM55
UniRef90 A0A058ZF52
UniRef90-K8EGT5
UniRef90-A2E5Q6
UniRef90_A2E682
UniRef90 A2DCQ3
UniRef90_U6GJR5
UniRef90_G7YD34
UniRef90 B0EDM9
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UniRef90-A2G3C7
UniRef90-A2DTJ2
UniRef90 K2HPL8
UniRef90-A2DQX6
UniRef90-A2FDD1
UniRef90-U6K4F4

## 290 <br> 300 <br> SMPRSSGR RQLLFSKPHPMR NHGVV QLFDKPHPQR

TRLRRGGTV QLFTAPH
A WE TMVRTYGQTPAQLFRVAHP
TNGMV QLFHRPHPKR $\nabla M K D S \prod R D F G Q T P D Q L I N K A H P K R$ AKIAHINNFGQV
MDTSVPRNSGIV QLFTTPHPKK HTHGUV QQLFSAPHPQK $\mathrm{T} \square \mathrm{W} \quad \mathrm{K} T \mathrm{MGHL} \mathrm{P} \square \mathrm{C}$ I M TKECPER


ADWFMLHGF $\quad \mathrm{V}$ QLF T R P H P K R
 QRHTWMMNCGSVPIQVFDQ
$P L V Q T L Q Q L A R S R A Q I F H S P H P$
$G K L L A Y G R T \quad K V F R Y P H P V R$

S WRYTSGCVPKQVFF
S V VARTEEEGQLPSRLFSEKHPQR LLQQQLQEFGQTPDKL FSQPHPMR GSQTTFRRSGVTC $F$ QSKFKQLIGQQPGQLLFKTHPKR


EFDVELNF $\square$ RTNPVK $\square$ F DKEHPKR
lupas 21
lupas_14
lupas_28
jnet
conf
conf
sol25
sol5
sol5
solo
jhmm
jpssm



[^0]:     $L V W G Y K S R G Q N A V E A N N V F H P L A Y G F T N N P P T C S D$

[^1]:    lupas 21
    lupas_14
    lupas_28
    jnet
    conf
    sol 25
    sol5
    sol0
    jhmm
    jpssm

[^2]:    lupas_21
    lupas-14
    lupas 28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

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

