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

 $K W V D Y S D K Y G F G F Q L D D G S W G V F F N D T T K V V M L A N N L N V H$ K WV D Y S D K Y G L G Y Q L C D N S $\quad$ G GV L F N D S S R M L L A S N G E N M Q

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 K WV D Y S D K Y G $\quad$ I G Y Q L
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 K W V K WVV Y S D K Y G L G Y QL C D N S V G V L F N D S T R L IMMY N D G D S L Q
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 K WV $\operatorname{D}$ D S N K Y G F G Y Q L K WV DYSNKYGF GY QL S NR S I GVLLFNS GTHMVLPTHRRHVH

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 Y I E R D GTE Y Y LT LDDCYP T DLLK K KIITM L K Y F R N Y M N E HLL K YNPTNSKHLVVFSVSADPEQLQQGQMSVLMYFASYMEQHLMK
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 Y Y DLLT G K L S A Y K Q Q YMPDRGKLETFTLRDVPRLLGTKLAVLRLFACHMQQQLRK FTDRDGKVTCMTLDAYPDELNKKITTLLKYFRDYMRENLQD Y IS S R R S R K N Y T V S E Y P E DLLK T K V Y L L K H F E K Y I M D R L Y Y I S S R R QR K N Y TVVS DHP E ELLKK S K VVYL L K K H F E K Y I M D R L Y

 $Y \square G V D R K V Q \square F A M T S V P Q R L A N K V T V L D D Y F A T Y M A E H L D K$ Y Y L N N S Q HFSFS A S A I P E QL A NQMKVVQYFATYMEEHLME Y C P GR GEAVSFP Q S DV P A S L A T K M GI L H F F S Q Y M Q Q K L L E
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 LRDLDQQLFELYTSKPHKKVP LLMDEAEDPAATPMVWVS NNFNSTQKGFMQTGTQNFGKPVQPVWVT QT LSMALEA QARGRVFRDPREDSEPEEKVFIV $R K L Q L C L N A G P A$
$Q M H R A L E A C \square P E M K R N N A C N P W D P P Q Q P V L C A P B$
$V$ PPAVQDPPGEPVRWAP
VTRVLRSCLENTPLAQRNP
PPCQARVWVT
EMHTNLHNAFTAKREAKRFE $\square P S Q Y R D T D S A S K V F I V$ NATENPVA LDPGVFWVTT
SPVATQDPPQLSVLWAP
EMHQNLHNAFLSKKEARKFELDPEEYKDVESASKVFIV $\square G T L Q T N L A D A L Q V E A A T R K M A G P V A A Q E P P Q R P V L W A P$ EQMCKTL GQAFDAKDSGRLFRDPRLDADDPTT,KVFIV MKVLINCLSSMPAASRNTPCVTK QS L QLCLLDA K GSPAMQEPPGEHPGTLPLLLWAP LQ GVAKPLLSRDDAKNHQNNKDREEFAE

AGPPATQDPEQQR $I L W A P$ $\mathrm{P} L \mathrm{~F} \cap \mathrm{~N}$ FEARALGRVFRDPRVDAAPHERVVIV $\square \mathrm{L}_{\mathrm{L}}^{\mathrm{W}} \mathrm{W} \mathrm{V}_{\mathrm{T}}^{\mathrm{T}}$
pCLN

$\square L E V E A A \square R G L A G P P A V Q D A P G E Q R L W A P$ EQRPVLVAP
HTLSVAFDAKAKGK LFRDPRADVDDPDAKVFIV $\square S \square M H N N I K Q A F N V Q Q A A G K L D V P S S T D M P G P S V W V S$ AAKNILEIT
$S \square P A P Q D P P Q Q P V L W A P$ $S E D A D S E P V Q L I T^{T}$ $\square Q K \square V V H \square E A V L E L T A S R R D A F R P T S P Q S V V A G P T R W V S$ AGKFSPFADEGDTPSMDPMYWI S $P S E K G S T Q R D M K D Q S M S G P S C W V K$
$P Q T S Q G Q R N Q I K A N Q S N G P D V W V K$ $\square T L A F D A R N K G R V F R D P R P D P H P V P D E Q V F I V$
 QMHQALETCITDIKCKNKLNNHPPVKD
 TTALNFNNSGSYFQA PVSSEVQ\|
K NATDRDSAQP DGSKP $\square$ SKDPYTDQLETE VWVK NLISVQSNRQNAQGTQAKSQVEVK HPNVWVK NLLKMQSM QTLKHGQFNSDLNSENTLVNTPPASEIWVT

QNLSTALVMAQTEEGFTSPS $\quad$ EAKPQPPRVFVV LHSAIENRPSNTSSNFY $A$ VS TLQVSHIS $\square X D M \square R Q L H N \square H A S K P S E Q G L V R Q D E T E D P A C I P Q F W G S$

RK $\backslash A \square R \square G M A \square E T R A A T S T \square D P R A V E R W P S L F I T$ ETVEKNLSRALVMAATDTGFTTPQ DPSDPPA PKVFVV TLE S QLARVLSSRGVGTDDTGENCSGDGSTQPMVFVM TLESQLARVLSSRGVGTDITLENCSGDGSTQPMVFVM
STLIFKQFS QNQTSSEKK DFRKQSTLST LINEQNLPAWVV SECHMT LRGDKSAE DDKRQSNYP YPKELQKKVTLLQHFKSADSKT\TSSDTNDYDPFQSVYVK YPKELQKKVTLLQHFKSADSKTITSSDTNDYDPFQSVYVK


Q N A LQLK NQN NGENNMLN NQKNQFRENIPPPDLQNDPPATEVWVV YPRELQKKVTLLQHFRNYLEGEQNRSDMEEYDSKQVVYVK YPRELQKKVTLLQHFRNYLEGEQNRSDMEEYDSKQVVYVK QFEANLATAFEA AKNGGFRTPHDELSPPAPRVFVV AMMHRALEHCLTE $\square$ RYNRTTCNPLPVGVAPLFITT

L WVV R V FI A
VLAS PFQTADPTRTVHMGDDPAPPEVWI C NANLQIK STGFDRMMENNNQIPLVWVC YPKDLQKKVT LLLDTDSTDKDGMDQS DDNKMPMVYVK YPKDLQKKVTLLLDTDSTDKDGIDQS DDNKIPMVYVK


UniRef90_G3UHW2 UniRef90-UPIOOO2B4C291 UniRef90-M7AN36 UniRef90-A9VDW2 UniRef90-E9G380 UniRef90-17M1K4 UniRef90-UPIo00440A4BF UniRef90-UPIOO038EF49C UniRef90 E9ISM4 UniRef90_UPI0003C87C81 UniRef90_UPIooo3C2A6F1 UniRef90-R9AGX9 UniRef90-B7PKA1 UniRef90-A6H8T5 UniRet90_UPIo0033307A4 UniRef90-I4YJT6 UniRef90_UPIOOO38C1D41 UniRef90-JoWXW2 UniRef90 W5U5N3 UniRef90-UPIO003F11A17 UniReffo-R7TPB2 UniRef90-A7SRL3 UniRef90-UPIO0020AE6E9 UniRef90-LOP942 UniRef90-UPIO004416DC9 UniRef90-H2RUE7 UniRef90-UPIO0034FE672 UniRef90-T1EFI3 UniRef90-UPIo0026587E8 UniRef90-UPIOOO3FOB513 UniRef90_UPIOOO2C59618 UniRef90-G3HF85 UniRef90-UP10004408CC2 UniRef90-LIJZ37 UniReffo-T1J1L9 UniRef90_M M VXA0 UniRef90-W5kWR3 UniRef90-P50528 UniRef90-B5Y4Z1 UniRef90_B3S755
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K WV|E Y S S K Y GF GY Q|L|S D G G S G|VLL|RD GTHMA|L|RPP G GQ|V|C $K W V D Y S N K Y G F G A Q L S N G C D V I R R N D G T T L A V D A H K R R L Q$
 $K$ WI D Y S Y K Y G L G Y Q L KWVNYSDEYVFGYQL Q WV D Y S A K Y GLLGY LLLSNGCSGVVFNDSTKVILDPTTNNDE
 $M W V D Y S S K Y G F G Y Q L S D G G S A V L F R D G T H M A L R P P G S Q V C$
 E WV D Y S S K Y G F GY Q L S D G G S GV L L R D G T H M A L R P P G G Q V K WV DYSNKYGFGY L L S WL D Y CNKY GMGYAL K WI DYSNKYGFGFQL

S WL Y S SKY GF GYQL
S WL D Y C N K Y G M G Y A L
S WV $\begin{array}{llll}\text { D Y C } & \text { NK Y G M G Y A } \\ \text { K }\end{array}$
$K W V D Y S N K Y G F G Y Q L$
K WV DYS SKYGF GY H L
K WV DYTNKYGF GF QL
K WV DYSNKY GF GAQL

| $K$ | $W V$ |
| :--- | :--- |
| $K$ | K S S K Y G F G Y Q |
| K | S |
| S | S K Y G L G Y Q |

SWV DYCNKY GMGYA L
$\begin{array}{ll}K & W V D Y S N K Y G F ~ G Y ~ Q L \\ K & \text { WMD Y S N K Y G F G Y Q L }\end{array}$
K WVD Y SN K Y GF G F QL

S
R
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K

## T

KWV DYSSKY GFGYQLL
$\begin{array}{lllll}K & W & V & Y & S \\ N & K & Y & G & L \\ G & Y & Q & L \\ R & V & D & Y & T \\ S & K & Y & G L & G \\ K & L & L & N \\ K & D & Y & S & D\end{array}$
$K W V D D Y S S$
K WV D Y S S K Y G L G Y L L
SWVDYCNKYGMGYAL
K WI DYSNKY GFGFQLL
$\begin{array}{llllllllllllll}S W & W & D & Y & S & K & K & Y & G & L & G & K & L \\ K & W & D & Y & S & N & K & Y & G & L & G & F & Q & L\end{array}$

| $K$ | $W I$ | $D$ | $Y$ | $S$ | $N$ | $K$ | $Y$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $A$ | $F$ | $Q$ | $L$ |  |  |  |  |
| $K$ | $W$ | $D$ |  |  |  |  |  |  |
| $D$ | $S$ | $N$ | $K$ | $H$ | $G$ | $F$ | $S$ | $Y$ |

$K W V D Y S S K Y G L G Y L$
$\begin{array}{llll}K & W & D & Y \\ K & N & K & Y \\ K & G M G & Y & Q \\ K & Y & S & S \\ K & Y & G L G G Y & L\end{array}$


Q WV D Y S N K Y G L G Y A L N N G T I GVFFNDFTKIV IDPE GQYI E
K WI D Y S N K F G F G F QLLS D R TV G V L L F N D A T H L S F S A D R L R L L

K G Y
 K WV $V$ Y S N R Y GLL G Y QLS D E S V GVVF F N D S S S L V L S P D E S Y F D SWLD Y C GKYGMGFAMNDGTIAVHFNDSSSLALAPNKKYFD
$K W V$
K WV

LWAD DS S K Y G G F GY W WL Q WID Y S Q K Y G L G Y LL C N G C S GVVYFN DA T KMI F EP S S N KV E


Q WVD Y T S K Y GI G Y M L

| $T$ | $E$ | $L$ | $S$ | $S$ | $E$ | $K$ | $L$ | $T$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $T$ | $K$ | $M$ | $S$ | $S$ | $A$ | $D$ | $G$ | $R$ | $V$ |

K WV D Y S D K Y G L G Y QL C D E S V G GVLIF N D S T R LI L C S S GE
$\begin{array}{llllllllll}K & W & D & Y & S & G & K & Y & G & L \\ K & Y & R & L & S \\ K & W & D & Y & S & G & K & Y & G & L \\ G & Y & R & L & S\end{array}$
Q
KWVDYSSKYGFGYQLS
Q WF D Y S D K Y G L G Y L L S N G H T G VVYF F N D S T K I I Y D P N S N L V K
S WVD Y S N K Y G L G Y C L C N G A Y GVVY F N D S S K I I L D S G E C Y T E
KWM K TKHAIMFRLSNKIVQVNFTDKTEIILSSEHKMVT
 SWLDYCTKYGMGFAMSDGTVSVHFNDTSSLVLSPNKTHVD
 S WV $\operatorname{D} Y \mathrm{Y}$ C N K Y G M G Y A L K WV D Y T S K Y GVGY QL S N G D Y GVYF N D A TKI ML H A DA S A DE QHVDYSSKYGLGYMLSNGCAGVLFNDNTKIVTDHKGVNFE K WM K K K H A V M F R L S N K V V Q V D F T D K T I I I L N S D T K S V T
 K WID Y S N K Y GF GY QMS D G T T GVF F N D S S QUSL D G T K T C I T


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UniRef90
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UniRef90_-J9FVJ9
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UniRei90_Q6CUB8 UniRef90-AоC4P0 UniRef90 Aoc4P0 UniRef90-G4Z4P4
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UniRef90-GOQX45 UniRef90-AоC8T1 UniRef90-A0C8T1 UniRef90-G1POX3
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Y A S D R R K L E T F T L R D|V|PGA|L|GAK|L|A|VL|RLFSRYQQQR|LWE YFDEEKNLI FRFSVNNI PEDLSRKVTLLNYFANYMDKHLLK Y C P GR G E A V S F F P Q S D DV P A S L A T K M G L L M F F A S Q Y M Q Q K L L E FTNREGATTAMTGDSFPDDMTKK DALLKYFRDYMRDNLQD YVGKDGNENVYTLDHYPPELEKRMKI LTSVQALMQENFDK Y I E R L G N E Q Q F T L K DY P P E M K K K V T L L S H F K S Y L E E Q M Q K Y I R R N GTRKP YTVVSEYPEEMKNKVVYLKKHFER Y I MD KLLY G YLPTRGKLELFTLRDVPSWLGAKLAVLMRLTCYMQRRLRE YMTTDDETRYHRERDVPAPLQKKLELLRHFTEYMDDFLTE Y A P HR GNLETFTLRDVVPGLLGTKLLAVL RLFARYMQQRRRE YCPR L GEAVSFARGEVVGSLAVKMGVLHFFSQYMQQKLLE
 YHDTSGKLTVVDASALPTFLQERYSLLKYFAHYMDENLTE Q H A A LGGQKSVFSVVIEAPECAVAHVTILKYFABYMEENLMD YLSDRRRLQTFTLRDAPSVLRAKLAVLQLFAGYMQRRLRE Y I A S K GKS S MA I RKNYPKELESKMMI LRHFEDYMLERLY Y QP D Q G T L WT F A L R DVPP S P L R A K LLA V L R L F D C Y M Q R R L R E FMQPRKPGSTMRLSSYPEDMKNKVYLLKHFEKYMMTKLY YCLTNNKHFTF QADTLPEQLQSQKHIVELMANYMEQNLME Y A PDRGR LETFALR DVVSALGGAKLAVL RLFTRHLQQQLRE
 YRDED QPLLRRSSTSYVPSNLHSKVTVLLTYFANYMDKHLLK Y K P D R G R L E T F T L K DV P G P L G A K L A V L Q L F A G C L QR Q L R E
 YCLLTNNKHFTFPADALDPEQLHSSQKEIVELMANYMEQNLME Y S TS S S EHVTF PE WS PPCRMDDKMK L LQFFCEYMQEK I ME
 YMCCRGKLETFELRAVPSALVAKLAVLRLFTQYLEQRLRE
 Y QP D Q GTL WT F T LR DV P R P L R A K L A V L R L F A CYMQR RVRE Y I T S K Q T R K N F TVV Q Y E E GLLK S KVVYL LKHFERYIMDRLYG Y I E RMRREKPTKLKGHPADLTKKVTLMEHFKNYLDE
 Y $\square T H$ Q AK HS I F S T S K A P DA L K N K I Y L L K H FK S Y M VQ NL S R YASARGKLDTFAPRDAPSPLGAKLAVLRLLDARYMQQRPRE QHAEMGQCAVMYTTDVPENCVGQVTILLKYFAHYMEENLMD Y A L H P K D T E I Y P A S K V P E S I R S K L Q L L K H F K S Y M G Q NL S K Y I ERRK VEE THTLLSSYPEHLKKKVVTLLKHFRNYLLDQQNK YID S S GNE QCT TTEKHVQLI T K KLLAI I NHFVVYMDEKLVQ Y Y E R Q DVM T T Y N LT D Y P K DL Q K K V T L L Q H F R S Y L E N N YMERRGAESSHTLTEYPKEIQQKKVTLLLHFKSYLE
 F QDATGKTSSYSLNALPSYLMERLTTLLRYFAQYMDENLTE YMERQDKRSSYTMGERPAELNKKVTLLGHFKNYLND YVTTDDETRYHREED ITPVAL QEKLEELLQHFTGYMDKFMTE
 Y I ERNSSSK QYTLK DYPESLLQKKLLTLLQHFRSFGEGEDKK Y I Y N N R T R K S Y LV A D CP KVL QK K MY L L R NFRNYMNETLSR YFERRSSDRQCTLTEYPKELQKKVTLLQHFRSYLE YFER QDVMTT HLLLAEYPKELQQKKVTGLLQHFRSYLENSTQP Y DD R Q D TVVTHYSLTE Y P K DL Q K K M T L L Q H F K K Y L E
 D I R S Q N $\square R \mathrm{RN}$ Y S I E R Y P S DL K N K V Y L L K H F E N Y MLDD K L YI PSPGQYSEHAVDSPPKELEKKVYLLKHFKGYMTTHL

 HI SPSSSDRANYPVDGHPRDLANNVYLLKKSFE GYMLKRLYG Y L N R D G D L A V F P L T S E R P D L G K R
 YVPHRGQLEMFALRDVPSPLGAKLAVLRLFTCTMQRRLWE YVERQNNSEQFSLQEFPQDLKKKMTLLQLFRNY LKEQ Y I N Y DTK E G WY K L E S K P D ELLT R H LLEVVVDFFSN YMN S NLSR YVNKLGERSHYPLDS QNQEMAKRLK YTKEILTHMLN Y V N K L G E R S H Y P L D S Q N Q E M A K R L K $\quad$ Y T K E I L T H ML N Y I ERQSSNNRYTMDNYDPA LIKK KVVTLLGHFKGY L

YLDHTTQERHFPCDTVPEPLAKKTHWLNYFHGYMEDCLRD YLDHTTQERHFPCDTVPEPLAKKTHILNYFHGYMEDCLRD Y Y E K Q D K LTTVY N I N NYP QEL N K K V T L L Q HFR S Y L E S Q Y V P D R G KL E T Y A L R DV V GLLL GA K L A V L R L L V R Y TE QR L WE

 Y Y E K Q Q S K Q D F NI N N Y P S QL K K KVVTLLQ HFRSY L S K E YVNKNGERSHYPLDSQNTEMAKRLK YTKEILTHMLN YVNKNGERSHYPLDSQNTEMAKRLK YTKEILTHMLN

 Y ID Q D E I T E K H S LT E YP T D L Q K K V T L L Q H F R H Y L M T E V N K F I E S R R V R K Y Y TVVDE Y P P E LL K N K V V Y L L K H F E G Y I M N RL YVERDDW Q $\quad$ DF TWNDHRESLRKKVTLLRHFRQHLDEH YI QKVDNTQQHLISDYPK DLKKKVTLLQHFRNYLMSEDQK Y I NKK GEK QNF PL S T A LLESQNNHEMTERLKY TKEELLQQHMLQQ Y I N K K GEKKQNFP L S TAALESQNHEMTRLLKY TKEEILQBMMLQQ


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| UniRef90-UP10002B4C291 | G G |
| UniRet90-M9VDW | ${ }_{G P}{ }^{\text {a }}$ |
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| UniRef90-UPIO0038EF49C |  |
| UniRef90-E91SM4 | G G |
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| UniRef90-A6H8T5 | GG |
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| UniRef90-T1J1L9 | G |
| UniRef90_S9W117 | A |
| UniReef90 M ${ }^{\text {VXXAO }}$ |  |
| UniRet90-W5KWR3 | ${ }_{A}^{\text {G G }}$ |
| UniRef90-P50528 |  |
| UniRef90-B5Y4Z1 |  |
| UniRef90 B3S755 | S G |
| UniRef90-J91TQ4 |  |
| UniRet90-D8QH16 | A |
| UniRet90-E9GCT1 | G G |
| UniRef90-LIJ128 |  |
| UniRef90-UP1000258F1DD | GG |
| UniRef90-UP10002247090 | G G |
| UniRef90-C5DEP4 |  |
| UniRef90-Q22DA7 | A D S |
| UniRef90-U9UUN8 |  |
| UniRef90-_99,9908 |  |
| UniRef90-J9HPW8 | A D A |
| UniRef90-PoC8M8 |  |
| UniRef90-Q229B8 |  |
| UniRef90-L7LW99 | G G |
| UniRef90-Q5K9B8 |  |
| UniRef90-84XKH1 |  |
| UniRef90-UPIO001DEB460 | A D A |
| UniRef90-GOOMQ |  |
| UniRef90-B6JYY |  |
| UniRef90-UP10003F49837 |  |
| UniRef90-M4BT72 | Q |
| UniRef90-M4BT72 |  |
| UniRef90-UP100032B0644 | GNLP |
| UniRe990-GOQSR1 |  |
| UniRef90-Q6CUB8 |  |
| UniRef90-A0C4P0 | G N |
| UniRef90-A0C4P0 | G N |
| UniRef90-G4Z4P4 |  |
| UniRef90-M4SL44 |  |
| UniRef90-A0A058ZFS6 |  |
| UniRef90_A0A058ZFS6 |  |
| UniRet90_GoQLZ2 |  |
| UniRef90_UP10002C671E2 | K G |
| UniRef90-G0QK48 | N G |
| UniRef90-G0R2J1 | EN |
| UniRef90 G0QX45 |  |
| UniRef90-A0C8T1 |  |
| UniRef90-A0C8T1 |  |
| UniRet90-G1P0X3 | E G $\square^{\text {P }}$ |
| UniRef90_J6EQH2 |  |
| UniRee90 A0A022 699 | G G |
| UniRet90_O22C41 |  |
| UniRet90_S7RDV2 |  |
| UniRef90 M1UPK8 |  |
| UniRef90 GoQUB8 |  |
| UniRef90-AOBFU1 |  |
| UniRef90_A0BFU1 | G |
| UniRef90_EOVJX2 | G |
| UniRet90_GoszG2 |  |
| UniRef90_J91311 | SK[LP Q | YPQDLRKKVTLLQHFRDYLEPEPQTAASEENETKSLVYV荋 Y P Q DLLR K K V TLL L Q H F R D Y L E PEPPQTAA S E EN ETK S L V Y V K



ASPAHMAT

MRRLDN $\quad$ V V SE

LIE T L VD S K
TLATAFTCMSRNKRFDPPQ
LE K LD N VLP T K $\square$ S T K G G R E E R E S Q E N D Q P P G V V QLTALHDRLHQTLCGDAAADDAADNE APPPPVWVT HNAE NAI LSTTTKQQQLQARLAVLPPPRAAPDWVL LEKLDNHNDT STLEN MQT DQEY DRTGNSVVDDDHERPVVLVS NLAALHEKLHQTLC
$G D A P E E Q D D A V G P G P G V W V T$
KECEGT LTG G L A A E R Q A R S RVP NRYST L LK T
 $M R \square L N D T \square S T \square M N M K E \square E E Q K \square R P D A R \quad A M K K P D V V S$


FVSKPCELDNGRLH
$N \nabla K D \square E \square G \square A N N H U S E P S T K A M N G$

A QMLRELEMKKLPRSDKK LAMAPLWI T NSASPKLKPTRLSSR SPVPRTKVV
QPEQLAETVTE LLNRQYTTDAASGVAAENDPALVPNI WVT


EAFPPLWVT
LD A MA DTLSTAFAENVAGRDLLQAK LRASPCQPATMWVL
V V Y V
PESPRTFLI

$R N L Q L C L D S G P \quad P$ VFSPQGPPGEQQPVFWAP
Y L K E N Q Q
QK K

SALRKQRPMTSFFSPCPATQAPEQQPVLWAP
PIVT

P P A MQDPPQQPVFWAP
N VK D LE T R $\square$ A N N H $\square$ S E P VK A $\square$ S P S A A F A K S Q F P R D L VF V S NEAEYPQDDPPCYIM
$R P S I S$ QLMQHPFLTPGRTMPPYMVR
ATMPRYCVS V C V N
CHQTLMAALGATTPEALMRLPDDPQDQAQAPGVFIQ
R N A P A S T T P E T T MP K Y CVA
Q $\square$ K E LE T K $\square$ A N N H $\square S ~ E A P Q Q K \square D P N H C F T \quad G L P S N L V Y$ I $L$ NSSSPAEAEEAPEHESGQPLRLPSYSVR

HVRI C

 E D $\square \mathrm{Y}$ T VLHNMQK V E A S F ETTTTTLRE QTGFS RDPYPDSNYKPHVFIT
$\square$ A S $\square$ T H L N A F D D $\square$ K N G L VY GE GE N S N V C N N W W
K S P K H N P T T RLLEDNRVVWI S
P N NLV Y I S
CA LRRNCVAFMPPAEQNPAPLAQPEPLVWVS
KTLNEAFEARADGRVW RDPALDAGLPGKVVFVQ
DFALEPCPLPPVFVS

LQ K L Q TE L E R A $\square$ N S R S M A $\square \mathrm{M}$
R GP TGRVLGRENGPLPA

## UniRef90 M2WVZ6

 UniRef90-A0EGB9 UniRef90-AOEGB99 UniRef90-DONEA4 UniRef90-A5DLX5UniRef90 D8LFY9 UniRef90- V8N6P5 UniRef90-F6U9Q1 UniRef90-GOR2Z22 UniRef90-S4RYI2 UniRef90-B9W6P6 UniRef90-G3B1F4 4 UniRef90-G7E6G4 UniRef90-G4U272 UniRef90-F4R6G2
UniRef90 B8C1H9 UniRef90-Q4QEC3 UniRef90-TOPZ32 UniRef90-C4R3Z4 UniRef90-KOR317 UniRef90-KoKKD2 UniRef90-G3AEH1 UniRef90-C1N9S4 UniRef90-M9LXA8 UniRet90_UPIOOO3EBFA62 UniRef90-W1QEB5 UniRef90-FOWXU7
UniRef90 $12 J V N 2$ UniRef90-H2Y8V5 UniRef90-R9PA73 UniRef90-D3BM83 UniRef90-AOCPF2 UniRef90-A0CPF2 UniRet90-V5EQ41 UniRef90-A8Q6E0 UniRef90_s9UC96 UniRef90-A0A024GMH2 UniRef90-D2V521 UniRef90-D2VZP4 UniRef90-E9C178 UniRef90-W6L7N1 UniRef90-E7A2C7 UniRef90- W6KV18
UniRef90 C1ECY6 UniRef90-A0A024UG41 UniRef90-AOBHH1 UniRef90-Q4Р9H9 UniRef90-12FYE3 UniRef90-W5PRS5 UniRef90_AODLA9 UniRef90-A2ESM2 UniRef90-G1L9U1 UniRef90-A7TFP9 UniRef90-Q20845 UniRef90-EE1B147 UniRef90-F4PHG2 UniRef90-V6TLK0 UniRef90-T1FXU3 UniRef90-R4UW34 UniRef90-A2FR69
UniRef90 GOR5A7 UniRef90-J3PNQ3 UniRef90-A2FN87 UniRef90-J915R2 UniRef90-FOZPOO UniRef90-A2EQW5 UniRef90-X6LYX1 UniRef90-W4GG36 UniRef90-A8NB65 UniRef90_GORDQ5 UniRef90-WPZ85 UniRef90-A0A024JKH5 UniRef90_L8GG91 UniRef90-X6NVX44 UniRef90 E4XEY9 UniRef90 1686 L9A2 UniRef90_D8M5N7 UniRef90-M5GDC8 UniRef90-U6NT63 UniRef90-A2FOP6 UniRef90-C5K510 UniRef90-H8ZEB9 UniRef90_S2JoA4
KWVDYSNKYGFSYQMNNDDDGVLFNDGNTFLKSHNSDRFD
RYVDYSTKYGLGF LLSDGSAGVYFNDATKIVLEPAGVAFE
KWVDYSNKYGFGYLLSNGSAGVYFNDATKMALEPAGVAFEC
KWVDHSSKYGFGYQLSDGGSGVLFRDGTHMALRPPGGRVC
QWI DYSDKYGDGYVLSNGNTGVYFNDSTK IVDDNTNDVQ
K WVDYSNKYGFSYQMNNDDTGVLFNDENTILKLHNSDRFI
KWVDHSNRLGFGYKLSDGSVGVLSNEGSHFRLLSDATTVQ

K WV DYSSNKY GFS Y QL N N N DIGGVLAFND G N T I L K M T N N E K F L
WV DYS SKYGMGYAMKD GTVASHFNDSTSLI MSPDEKHLDE
SWVDYTHKYGTAYALTDGSSGLYFNDGTTMVMAPDRNHFD
RYVDYTSKYGLGFLLNDGCSGVYFNDSTKAVISSSDDKFV
RYVDYTSKYGLGFLLNDGCSGVYFNDSTKAVISSSDDKFV
QYVDYTAKYGLGYVLSNGSAGVYFNDSTKIIASPDGSTFD
KWVDYSNKHGFSYQLSTNDDGVLFNNGSTVLKDSDEESGW
ECADFSAKYGLCYRLSTNGTGALFNNGSTKMVWESDEESGW
RYVDYTSKYGLGFLLNDGSSGVYFNDSTKAVHSATNDEFII
KWVDYSNKHGFSYQLSSEDPGVLFNDGNTLLRVNHSNSFW
KWVDYSNKYGFSYQLNNDDVGVLFNDDNTLLKLHNSDRFLL
KWVDYSNRYGFGYQLANGRVCVLFNDGKHISMLPGGK
SWLDHSERYGLGYALSDGTVGVYFRDATSMVLAASKMYVD
KWVDYSNKHGFSY LSSGAVGVLFNAGORVLKMADGDSVQ
$K W V D Y S N K H G F S Y Q L S S G A I G V L F N A G Q T V L K M V D T T D V F$
$Q W V D Y T K Y G L G Y I L S N G S A G V Y F D S T R I I T S T D A Q F F D$
KWVDYSNKHGFAYQLSTGSAGVYFNAGHTVLKNPDYSQlC
KWVDYSNRYGFGYQLANGRICVLFNDGKHIAMLPGGKLI E
SWLDHSERYGLGYALSDGTVGVYFRDATSMILSAGKKSVD

$K W M \quad K A K H A I I F R L S D K T V Q V V F N D N T Q I I L T Q Q L K V V T$
D Y A D F S A K Y G L C Y R L S T S H T G V V H F N D S T K M V WE P I T G R V E
S WLLD H S E R Y G L

ECADFSSKYGMCYKLSSGHTGAHFNDSTKMVWEPDTDRVE
QWVDYTTKYGLGYULSNGSAGVYFNDSTRDVTSTDARFFD

$K W V D L S N K Y G L G Y Q L S N G V V G G Y F N D A N T L L M Y P D G R T V D$
ACADFSAKYGICYRLSTGQTGVYFNDSTKMI WDPVLGRVE
S WLD H S E R Y G L
ACADFSAKYGLCYRLSTGQTGVYFNDATKMIWDPALGRVE
RWVDYTSKYGLGYVLSDGTFGVVFNDATKMTQRQPGAAST
QFVDYTSKYGLGYLKSNQCTGVYFNDATKMI ANSTTFG
KCCDYQSKYGLGYVLSNHHSGVLFNDSTKLIQC NRLEFN
SWLDHSERYGLGYALSDGTVGVYFRDATSMVLSASKKHVD
SWLDHSERYGLGYALSDGTVGVYFRDATSMVLSASKKYVD
KCCDYOSKYGFGYVLSNGNCGILVNDATKMALHAPGDQVS
$K C C D Y Q S K Y G L G Y V L S N N C G I L F N D A T K I I Q C N K Q Q F N$
$R F C D H S K Y G L G Y L L I D G S V G A C F N D L S R M I M D P Y Q E F T Q$
KWMDYSSKYSFGYQLLNGGSGVLLWDGTHMALCPPGDPVH
KWVDYTNRHGFAYQLSTEDDGVLFNNGVTVLKLSDVEEFW
QWVHFPN HGDGYRLCENSSGMLFNDNTQMKVNSAGNQLT
KWVDYYSKYGFGYQLSDGRNRVLVRDSTHMALHPPGGKVS
QFEDFTSKYGMAYNLSNGSVGAYFNDSTKVITFLDTGIAY
SWVDYSNRYGFAYQUSNGSVGVIFNDESAAILSPNALIVD
KWVDFTEKYGRSYEL NNSVGLLFNDDTRLIELIKQTRTLV
AWWDYSNRYGLTY LDSHIVGACFNDSSRITLSPDEAYSQ

SWVDYTHKYGTAYAMTDGSSGLYFNDGTTMVMSADRKYFD
RFCDHSEKYGLGYLLIDGTVGACFNDLSRMVMDPFEEFVQ
QYVDFSTKYGMGYKLSNGQYGVLFNDSTK LLLDANLGFHFD
QFADFTNRYGLAYLLSNNYVGAYFNDSTKY NLIDDSEDAH
QFADFTNRYGLAYLLSNNYVGAYFNDSTKIINLIDSEDAH
GWIDYAKKYGVGY LSNKCMGVYFNDSSKVVMCPDKQTVF
QYVDYTAKYGLGYVLSNQCTGVYFNDATKII ASSTMFG
SWVDYCNKYGMG HF
KWVDYTNKFGLGY ILNDGSVGCILRDGSKTALLPPAGVFD
KWVDYSSKYGFGYQLSDGGSGVLLRDGTHMALLPPGEVPQ
KWVDYSSKYGFGYQLSDGGSGVLLRDGTHMALRPPGEVPQ
KWVDYSNRYGFSYQLSTNAMGLLFTDGHTVVKFLPTDDIM
$K W F D D S D R Y G L A Y Q L Q D G S I G G Y F N D R T S W K M E N E F V Y M S$


KWVDYSNKFGFGYQLSSRRVAVLFNDGTHMALSANRKMY


$K W V D Y$ S N K F G L G Y I L N D G S V G CVVLK S G G K T V M L P P S C


|  |  |
| :---: | :---: |
| UniRef90_M2WVZ6 | Y Y M K R T ES HKM T M E D Y P S ElL Q K K V V K L L I H F R N Y M L D H T P K |
| UniRef90_A0EGB9 | YVNKNGDRSHYPLDSQNTEMS K R L K Y T K E I L T HMLN |
| UniRef90_A0EGB9 |  |
| UniRef90_E3L9Q7 | Y I F N R T Q R K N Y TLK N Y P DELLERK T Y L L E Y F E D Y M |
| UniRef90_D0NEA4 | Y I E R Q S S A R Y TVENY D PVLS K K V T L L G H F K G Y |
| UniRef90_A5DLX5 | FHENEGWTCDENSVSHPPSQAKRLEIVDFFAKYMNSNLSK |
| UniRef90_D8LFY9 |  |
| UniRef90_V8N6P5 | YCSEVEAAESF GWQEVP LCLLATKRRLLHFFTQYMQRWLQE |
| UniRef90_F6U9Q1 | Y VP A R G K LE T Y A PR DVPPGPL GAKLAVL R L L A C |
| UniRef90_G0R2Z2 |  |
| UniRef90_C4XZS9 | H HEKEGWTCVENSVSHPPSQRRQLEIVVFFAKYMNSNLSK |
| UniRef90_S4RYI2 | HQAEVGGTATTFDLTSPPRHMTRVVATLRYFTQFMDQHLLE |
| UniRef90_B9W6P6 | Y HENEGWTCDENLANPPAQAKRQLEDVDFFAKYMNSNLSK |
| UniRef90_G3B1F4 | ELLLHEEQEGWTCIENAPSKCKKQLEIVVDFFAKYMNSNLSK |
| UniRef90_G7E6G4 | Y L F H R K VR CNY DKG S P P A DL A R RVSSLL D Y F Q N Y M N K V L |
| UniRef90_G4U272 | YVVRRGKRKHYEVEKRPDDLA D K T R L L G H F S T Y L M Q KL Y G |
| UniRef90_F4R6G2 | Y I F N R T Q R K N Y T L K N Y P $\square E L$ S R K T Y L L E Y F E D Y M |
| UniRef90_B8C1H9 |  |
| UniRef90_Q4QEC3 | Y HARKDERHVFSMHNYPPELEKKVTLTKYFKTYL |
| UniRef90_T0PZ32 | YVDRDSPRTTESAKQFDAALAKKVTLMGHFQEYMKEE |
| UniRef90_C4R3Z4 | HII I D N SYG WY LA H D $\square$ P T R L K K Eli EVVVD F F S K Y M K A NLC E |
| UniRef90_S9VSN1 | Y YAR R D Q L E A F HMS Q HP GT L D K K V T L I K Y F K S Y L |
| UniRef90_K0R3I7 | Y I E R R EPVA $\square$ Y T VN D Y P Q DL K K K V T L L Q H F R N Y L VE Q Q K Q |
| UniRef90_K0KKD2 | Y I M N D LT D GWY K M G F $\square$ P HELLS RQVEI ADFFAKYMK T NLCK |
| UniRef90_G3AEH1 | YHENE GWACVENSTSHPPTQAKQLEIVDFFAKYMNSNLSK |
| UniRef90_F6XWE7 | YASNEQSNARFSVDSVPPCLERYANMLNNFTHYMDTKLR |
| UniRef90_C1N9S4 | WTD GAATSAATS SPSLPEGLEKKVKLMRHFRGYLTQ |
| UniRef90_M9LXA8 |  |
| UniRef90_UPI0003EBFA62 | Y I D K T A T E S Y M S VR S F P S TL N K K I T L L K Y F R N Y M S E HL L K |
| UniRef90_W1QEB5 |  |
| UniRef90_F0WXU7 | Y FERSNSKGPET LSSGYS S S L A K K A T L L T HFQ S Y L |
| UniRef90_I2JVN2 | V VEP ETVNGWDESAEVPSVLLK DVVEIVVDFFQKYMNA HLS D |
| UniRef90_H2Y8V5 | YASNEQCNARFPADSVPLCLLERYATMLKSFTNYMDSKLR |
| UniRef90_R9PA73 |  |
| UniRef90_D3BM83 |  |
| UniRef90_A0CPF2 | Y I D K E L VK S T Y MLS T ALLESEN N QVKKRLK Y T K EliL S Q MLS G |
| UniRef90_A0CPF2 | Y I D K EL V K S T Y ML S T ALLESEN NQVKKRLK Y T K E I L S Q ML S G |
| UniRef90-K4DPB8 | Y YARRRDQR QAF HMETFP |
| UniRef90_V5EQ41 | Y $\square$ S K R D N F S L P T L D S VP T ELTTS RVR V M K Y F E K El M D R L Y G |
| UniRef90_A8Q6E0 | Y HERHDQLRREPLDWLPRELVSKFKLLRFFESEIMERLYG |
| UniRef90_S9UC96 | Y Y A R K D QLE T F S M K Y Y S TMEEK K VTL I K Y F R S Y L |
| UniRef90-A0A024GMH2 | YFERNNSKESEALLSEYDAALLAKKAMLLTHFQGYL |
| UniRef90_D2V521 |  |
| UniRef90_D2VZP4 | Y Y ERKATRST F TVVSDFPPQMNKKVTLI K Y F A DVLLSK |
| UniRef90-E9CI78 | S $\square$ S Y E GEPVRYMI D R L P D D I Q P KVA ALSRFEEHMK NLLMD |
| UniRef90_W6L7N1 | Y YA R K DQLEEAFHIA NAPGALEEKKI T LI K Y F T S Y L S R |
| UniRef90_E7A2C7 | Y $\square$ S T Q LKRENFVMGTVPKELHSRVRVMQFFEKEIMDRLYG |
| UniRef90_W6KV18 | Y Y A R A D E LEA F H $\quad$ E N P P A ALLEK K I A L T K Y F T S Y L |
| UniRef90_C1ECY6 | ERRVAPPPVCFRASTCPPGLEKKVGLMRHFRGYLSSDGRS |
| UniRef90_A0A024UG41 |  |
| UniRef90_A0BHH1 | Y FDSCNQKS SHEFENYP QELNKKVTLLLQKFTQYL |
| UniRef90-Q4P9H9 |  |
| UniRef90_I2FYE3 | Y IA QNS TPGGE ENGTVPRELHSSRVRVMKYFEKEIMDRLYG |
| UniRef90_W5PRS5 | Y AP H L G K L HMF T L R N |
| UniRef90_A0DLA9 | Y $\square$ D K Q NLI Q D Y Q Y D N Y P S DLD K K V L L L Q K F T L Y L |
| UniRef90_A2ESM2 |  |
| UniRef90_G1L9U1 | RPSFFNHFSRSELP GP L G A ELLAIL R L C A R C $\square$ Q Q R L R E |
| UniRef90_A7TFP9 |  |
| UniRef90_Q20845 |  |
| UniRef90_E1BI47 | Y A P HLEKLQ M F T L R NEPRLL |
| UniRef90_Q6ZNI2 | Y HPRISS IT Q WNS I D D Y P D EL A K K I T L IK Y F R |
| UniRef90_F4PHG2 | Y MEHDGKR L L N I NEEHPHDTQKKVTL MKYFSNRFDQQP\K |
| UniRef90_V6TLK0 |  |
| UniRef90_T1FXU3 | Y M G K D GQ T T T R TI CNFPNDLK K K F FILHYFMQYMRKHLST |
| UniRef90-R4UW34 | Y F A T P H T T DPETI ETHP LLRKKLILI L HFASELKENLL |
| UniRef90_A2FR69 | Y WP D Y Q TFFPEILSSPHDTKYSKKLLLLIJRKFSENLKT N |
| UniRef90_G0R5A7 | Y I E N N D N $\square$ Q E Y NL K D Y P Q D L K K KL |
| UniRef90_J3PNQ3 |  |
| UniRef90_A2FN87 | YWPNYQTQTPELMKPFDTAQPKKLSILRRKFAE |
| UniRef90-J915R2 | Y VQR D D DVQ S L NFFNYPKA |
| UniRef90_F0ZP00 | Y MEHD GRR L L N |
| UniRef90_A2EQW5 | Y WA S P Q TPEMS TIEVSSP $\quad$ I R K K L L L I Q HFAVEELR Q R |
| UniRef90_X6LYX1 | Y ID QR S S $\square$ QEMSI G NYPSHLAK K M T L L L H F D NYL |
| UniRef90_W4GG36 |  |
| UniRef90-A8NB65 |  |
| UniRef90_G0RDQ5 | HILLRRQDES YPDRHQPVPM MEP【QFFEN |
| UniRef90_F1PZ85 | MSPSHTSNVT F LD GRAPR |
| UniRef90_W6MI50 |  |
| UniRef90_A0A024JKH5 | YSTSNNRHHTT D $\square$ S Q CLP SHTNKFRLVKTMYSYMQKNLRE |
| UniRef90_L8GG91 | Y S T R R G K R Q HY SMD K F P Q ELY K K VQL L Y F Q K L F L K E |
| UniRef90-X6NVX4 | Y A DKV NCTTVFSVVRNCPA HLS K K V T L L G H F H N HL |
| UniRef90_E4XEY9 |  |
| UniRef90_Q86HN7 | Y MEHDGRRVLNVT Q Q H P H D T Q K K VTLIVKY L L N H |


Y VPRSATPT QDASNSRPRDLSSKVTLLMAFKDYDYKELYR Y A Q T P F S SP H IV YYDSPHTVNFQIVDAKTPDVSKKLII LDSK S D LVRDAEQHCSRRHDPGYLDRQ



| UniRef90_M2WVZ6 | G |
| :---: | :---: |
| UniRef90-A0EGB9 | S G |
| UniRef90-A0EGB9 | S G |
| UniRef90-E3L9Q7 |  |
| UniRef90 DONEA4 |  |
| UniRef90-A5DLX5 | V |
| UniRef90-D8LFY9 | K G |
| UniRef90_V8N6P5 | G S P |
| UniRef90-F6U9Q1 |  |
| UniRef90-G0R2Z2 |  |
| UniRef90-C4XZS9 | V |
| UniRef90-S4RYI2 | G |
| UniRef90-B9W6P6 | V |
| UniRef90_G3B1F4 | V |
| UniRef90-G7E6G4 |  |
| UniRef90-G4U272 | E |
| UniRef90-F4R6G2 |  |
| UniRef90-B8C1H9 | A |
| UniRef90-Q4QEC3 |  |
| UniRef90_T0PZ32 |  |
| UniRef90-C4R3Z4 | V |
| UniRef90_S9VSN1 |  |
| UniRef90-K0R317 | A |
| UniRef90-K0KKD2 | V |
| UniRef90-G3AEH1 | V |
| UniRef90-F6XWE7 |  |
| UniRef90_C1N9S4 |  |
| UniRef90-M9LXA8 | A D S P |
| UniRef90_UPIO003EBFA62 | A GA |
| UniRef90-W1QEB5 | V S S |
| UniRef90-FOWXU7 |  |
| UniRef90-I2JVN2 | V |
| UniRef90-H2Y8V5 |  |
| UniRef90-R9PA73 | A D S P |
| UniRef90-D3BM83 |  |
| UniRef90-A0CPF2 | G N G |
| UniRef90-A0CPF2 | G N G |
| UniRef90-K4DPB8 |  |
| UniRef90-V5EQ41 | A D S P |
| UniRef90-A8Q6E0 | A D S P |
| UniRef90-S9UC96 |  |
| UniRef90-A0A024GMH2 |  |
| UniRef90-D2V521 | T G K P |
| UniRef90-D2VZP4 |  |
| UniRef90-E9CI78 |  |
| UniRef90-W6L7N1 |  |
| UniRef90-E7A2C7 | A D S P |
| UniRef90-W6KV18 |  |
| UniRef90-C1ECY6 | A G A |
| UniRef90-A0A024UG41 |  |
| UniRef90-A0BHH1 |  |
| UniRef90-Q4P9H9 | A D S P |
| UniRef90-I2FYE3 | A D S P |
| UniRef90-W5PRS5 |  |
| UniRef90-A0DLA9 |  |
| UniRef90-A2ESM2 |  |
| UniRef90-G1L9U1 |  |
| UniRef90-A7TFP9 | V S S |
| UniRef90-Q20845 |  |
| UniRef90-E1B147 |  |
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| UniRef90-F4PHG2 |  |
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| UniRef90_S2J0A4 |  |

 HEALDRQLRSGPVS RVLGRENGPLPPVWI T HHNS S GRADEKT SV
$\square R R L E T E \square E R A D N A R S M Q I S$
 LQKLQAELERALNARTMALVSSR LMLLRDNLASALDKPTSTRTPSSQRDMDAASRLP

LRKLQAELERALNSRSMAYVSTREKT
 $\square Q K \square Q A E L E R A D N A R T M A D M S S R \quad D K T P A P P H D V V$ LRRLKAELERAKNARSMALVSSRLKRLEDKTMSPMIVV LHRLQNELERALNS RTMA IISSKTVAPPHPHVGVV
$\square$ QK LQAELERALNAR
TMA IVSTKEQTPAPPQTVV $\square K K \square Q A E L E R A L N S R S M A \square I S S R E X E A P R L S D P Q Q N M V / S$


S DEALRPLDF QLNVVS
SHKRSSASRSGGKHTPPPPSVFVR
LRSLHQALDSRTYDEAAKRPRSGYGTRKARA DSTYPRVD NLQEI YHDL ALDDCDHEESTKR FRGVPSTAHPD LQDLHAVLDPTLEKRPSAYGTRKVRPRSDYPR
$P$ L S A R $\square K V V^{R}$
LQDLHKALDPRRFDEAGRRPRSAYGTRAVRTMSTYDRVM $L$ LS L HRALDARSYDEVARRPRSGYGTRKVRTASSYPRVD $L Q S L H R A L D V R R Y D E A V R R P R S A R A D S T Y P R \quad V D$

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UniRef90 B0F6P7 UniRef90_A2R5J4 UniRef90_Q2US47 UniRef90_F9XC37 UniRef90_Q4WC53 UniRef90_R7YRH1 UniRef90_A1C4A8 UniRef90_C0RYT6 UniRef90-Q0UU82 UniRef90_E4V5G9 UniRef90_A2G7H1 UniRef90_A0A044RNC6 UniRef90_S9V5G9 UniRef90_H6C7H7 UniRef90_U1GA25 UniRef90_V9DJQ2 UniRef90_UPI0002C3EDAD UniRef90_R7QHB4 UniRef90_K8ER51 UniRef90_W9X9G4 UniRef90-W9XCE3
UniRef90 W9Z1S7 UniRef90-B0CW39



80
 DEEGL CYRLNT GHTGVVFNDSTKMVWEPDTNRVE
 K WCNFTS KYGU G F L L S S G N M GVYFN D S T QMI ALSAMMMVE
 K WVV $\operatorname{D}$ Y T N K F G L G Y LL N D G G V G CI L R D G S K T A L L P P A G V F I K WI DY S N K Y GL G F QL S D R S V G V L F N D N T K I S Y TH D R R K WV D Y T N K F GL GYVLNDGSVGCILRSPPACLLVMDAERHC RWVDYSRKHGIGGYVLS DGTVGCIINATSKPNQSPTHVSHV S WL D S S K K Y GFC Y CL S D N TLG A L YN D G S T L K WV D Y T N K F G L G Y I L S D G T I GC I L N D G A K S P M L P P A C L L V
 R WADYT QKYGMGYKL SNNTYSVLEN DSTSVQQLEKQ GLGT $K W V D Y T N K F G L G Y I L N D G S V G C I L R E G S R S G L L P Q N E G V Y$



 K WV DYT N K Y GF G CV L S D G THC T L F V V D N S S V S R R H A I E M I S K WV DY T N K F GLGGYVLN D G S V G C L L K N G K S G Y L P P S C V L V H



 | $K$ | $W$ | $D$ | $Y$ | $T$ | $N$ | $K$ | $H$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $G$ | $L$ | $L$ | $G$ | $Y$ | $L$ |  |  |
| $K$ | $D$ | $Y$ | $S$ | $S$ | $K$ | $Y$ | $G$ | K WV V Y T N K F G L G Y V L S D G G N R V L V R D S T H M A L H H H P K WV D Y T N K Y GLG Y I L S N G SVVGCiVFAMSA GSQYPNRGN I K WV D Y T N R Y GF G CVV L D G T E CVVQY

 K WVVD Y T N R Y GI G Y V L D D G S V G CVV F K QP A S GVVVLDR D G E K H I K WVV Y S N K F G L G Y I L D N D G S V G C V L R G G K T V K K L P P S C I V V R
 K WVD Y T NKY GFGCVLSDG RWVDYSRKHGMGYVMSDGTVGCIINASAKTNLANAMVTH K WV D Y T N K F G L G Y I L N D G S V G C I L R S V A T T L L P P A C L L V H RWVDYSRKH GVGYVLS DGTVGCII NATARAGQEPATPVTH
 RFCDDSKANGLGYLL K WVD Y S NKY GVG Y I L ND DTTGTIFND GTNVLMD K WV D Y S R K H GVVGYVLEN GNDGCDLGATTHVVVRDGYK H L Q $K W V D Y T N R Y G I A Y V L D E G S V G C V E R G P A T G V V V R D G E S H L$ K WV D Y T N K F G L GYI L N D G GVGGCILRDNNKTLTLPSACMLV K WV D Y S NKY GVVGYILND DTTGTI FNDGTNVLMD K WVV K WV D Y T N R Y G $\ G Y Y V L D D G S V G C V F K S P A S C V V V R D G E R H D$ K WVDYSNKYGFGCLLSDGTTSVKFNSGEIIALRNDCTGNH
 D Y L D K T D K Y G V L Y M L D D G TVIA A N F N D S T S M F M K WVVDYTNR Y G I G Y V L D D G S V G C V F K Q P A S GVVVMR D G E K H I
 K WV D Y S R K H G V GY V L E D G T I G T LVNA T K R Y P V THVLVVRNG

 $K W V D Y T N R Y G I A Y V L D E G S V G C V F R G E$ $N K \square G L A Y L L V D G G V G G I F N D G Y K F \square Q D P H Q Q F V Q$ $K W V D Y T N K Y G F G C V L S D G T H C T L F V D N S S \| S R R H D P M I$ RFVFY GKYGYGLALCNHLYGTLLNDNTKMLLDASAGTVC K WV D Y S T R H Gli Y I L S D G TVVGMIL K S S K WV D Y T E R Y GI GY L L S D GAA GAALLNARSSCCVVIRNSREH
 D YLD K T D K Y GVI 1 Y L ME D S TVGGGRFNDNTTIFFYGD Y Y S
 HFTN QTE QWGLGYALTTDNSFGAIIFNDES RAVLTTKCGKCVVF


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 $\begin{array}{lllll}6 & 3 & 0 & 5 & 7 \\ B & B & B & B & B\end{array}$ B B
$\begin{array}{lllllllllll}7 & 1 & 5 & 8 & 9 & 8 & 5 & 4 & 8 & 7 \\ \text { B } & \text { B } & \text { B } & \text { B } & \text { B } & \text { B } & \text { B } & \text { B } \\ \text { B } & & \\ & B & B & B & B & B & \end{array}$
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YTEPSSTSYNYTLDSFPFYLRRKVAAVRYFR
 YYMRRDQQHVFHMDSFPESLTKKVTLIKYFKTYLSR F $\square$ TRRDQTKMEVLNEKKRTLARKMQMWKRFKNYMKSDL Y RYRSGSNTERTSENRPEDVKKKLT LMKQFRAFLLQ VMEQEAKDVTFTSTQYPAEHKHRGKLVKQFHKFMNDHL MASPHSQNPDPPDEDYPRDVAKKVLLAGHFREYLSD H $\square$ LRRQDES YPERNQPVPMSQS $\square T$ FFEN

FYENNGETG $\square$ SRVRVAPENFRER VVLWKKFANYMDAYGRE LVRNGQK
TTHDENEA $\square$ YAFDQFPAH $\square E K K R W \square L K Q F K C Y M \square N K \square V E$ HDGERHDRRKNDLSYPDRHQ
Y L ERTSDRVRYAVGKHDPSDAKKVTLLKHFKSY
FYENNGEEGISRVRVPPENFRERIVLWKKFANYM Y $\square P G N T V D V T Y N P M N D P K T \square E K K Y T L D N Q F K Q Y \square Q N M E D K$ FYENNGEDGDNRVRVPPQNFTGKDTLWKKFANYMDQYGRE GAERRGKDETYEDRVQPDPMT EEPIKFFENNGEAGLSE Y 1 STQQRREHFEMPAFPQTLHAKVKVMRYFESEDMERLYG Y IDDVQK E EMQLTNDRQQVI EKKYKLDMYFKEYLENR FMERNATEQEDSVHNCPSYLNKKDTLLLHFRNYLNQK GAERHCQRKEDPT
D $\square \mathrm{D} Q \mathrm{DPWTEWT}$ T $\square \mathrm{DT} \square$ S DQ $\square$ AKK $\square H V V E \square F S D Y M D K E \square$ DAERH
YTTERSIVQRFSYKNGQEVVNKKWALIVYFADLLETR H L LRREDET YEDRSQPLPMT EPILKFFENNGETGLSE $M Q A D D G S L E E V T L T G M V R$ RQHTTLWAKFARYMCKQL YFEHKVTKEKYTVETASGK LDCK $\square L L V G Y F$ DAEHHLQNRENT SYPD

FYEHNGEQGFSTLNVSPESFAAKMTLWKKFANYM

RDAERH $\square$ ERRHD ESYPERHQ
RRKARSQEN
DAESHCQRRHDP GYPHQ $\quad \mathrm{VPMTQP} \mathrm{\square QFFEN}$
RKARSQETKNYEYSEV
YTDE $\square G H T \square R F Q Y D K A E Q \square V P K K W M D F L Q F S K Y D Q Q$
D $\square$ DQDP WT EWTS $\square D N \square S D Q L A K K \square H V V E L F S N Y M D K E \square$ AFVRNGKR
DAERHVQRKN
VLVRNGQR
YTPPANERESSTRRDYGRAVAKKVLLAMHFRAY NAEEHSKRDQYTDRHQP
Y Y R D Y H VEEPENVEVYSTKYH QVT I I
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FFENNGDEG ${ }^{\text {F }}$ S C VKVNPRAFAAK VLWRKFANYM
RLRTRAKESP
$L R M V D \quad \square T K N Y K \square \quad Y M E T Q L A K$
RRKSRCLENRDQYP
 RRKARSQEQQE
RRKARHQERKEN
VLARNGQYWLNR DSR DKKFTPDQFFEDH
Y Y FKDGK $\square$ D S S F $\square$ NK $\square$ PFEFRKRSTVWAQFSRYMCQQL RRKARQKGGDYFYSEVDQLVPLKGRPVEFFEN
RRKAHSK
H $\square R$ NA GKNSFYTTVKKDRGLKRRDTVWHKFGRYMCAS $\square$ SD
YY L P N S MAVNHVTA AS GNDVQKKASMLSKFAE
KLNFFFKSNVIIDNVCK VI YYC $\square$ NYMDKEL
Y Y D R
YRRRTRQEEVQUVPQGP QATPVEFYETFAKDGDRK
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YYGKDDSKAANEIDKQTHDVNKKCRIIKGFLKNLE
Y DP S S DS S DGDAQEKRSKDISKKACLCNLFADLMHD
YWPNNVSATSSAHHS SSAEKRISPRKKFSSKM




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