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 MKFA $\square$ CYNSESHSAEVKDTLQQILNARNVVSE VVIIDDGF

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E S L R RL A E YL HER G I S VIFVERETSEHIDA A
SEGY QVF DD D RLLA A LLDEDS Q FA S LVVE LGGKN A MKAALIVKPKGEVKKVIQQLEAKGI TPLLEKETVERLSQA L K QL I R F L D D K G L N VI L D Q K DA E M G E DC E T L NQQ AA H L R Q R E L R V L L D E S S A T 1 G E Q C $M K$ VGIVYYKEDEY L LKLLEVLQR

DEVAGQ I I R WLDE $R G V E V W L E P$
$M K \square G \prod I T N N E K Y T N M L I E S \prod R K F G G Q A G \square D N E V E$ MEIA: FGKS F GDVRQLFDYLHKKGPEVTGFFSSSEDLPAV




KQHRRVTVTAEAAKAANTSPK पTKP पED $\square G E G Q$ D Q ELLA S Q1
$G \square S V H \square A R S A A L T L G E K E Y D P S K A E E L A R D C$ HQLPCPAEHCMDIVELGKNA $E V A H F L A R Q G L E V S L E A Q P D E I G A Q C$ $M K V L L M S R \square D A Y$ A DE I R H L L L S S G Y T V A L E E GTA DV LT D A M $M R \square G \square \frac{\square}{\square} \mathrm{~A} R \mathrm{~F} D E \square$ $K$ VI F E

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MK $\square \mathrm{G} \square \mathrm{NVNTNKDAER} \mathrm{\square VEN} \mathrm{\square KKNYYDVNVIGLDSEDTRKL}$ V Y $\square E Q N F Y R V L A N E L K R D F P \| A G V F E G V N F D V$
$W L I S K G Y Q V I V E R Q Q A Q D L A L E G A Q T G S L A E D G K L A$
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MKCF LVSR $\square$ D DCASRMKTADERAGHTVVLDPDTASMLGGA

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 V A QF LT R QGCEVVLLDKETAEEVGK QC
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DLAl EGLLVLGGDGTMLNAARRLARGVP DLALVVGGDGNMLGAARULSRDVA DLVIVLGGDGTLLYARMFRFSVPVGLNMGHLGFLTAVE DLVIVVGGDGSLLGAARLAQSNVPVLGVNRGNLGFLTDTS DLAIMGGDGTMLNAARLVNYEVPILGVNDGRLGFLADVS DLVFVLGGDGTLLGVARRFADDIPILGFNLGNLGFLSEAE
 ELI CLGGDGTFLKTARAYLYNLPILGUNGGLGFLTDIE DMLFSIGGDGTFLQAVTIVRDGIPLVG｜NSGRLGFLADVS
 DAAIVVGGDGTMLGIARQLAPNVPLI GQGRLGFMTDIS DLVIVVGGDGSLLHAARLVRHNTPVIGVNGRLGFLTDIK DLVIVLGGDGTFIGAARDLRWKVPVLGVNMGRLGFLTEVS DMAVVGGGDGTLLQAGRLLAEDVPIGGUNLGRLGFLVDIS D DTLVVGGDGSFLNAAREMADDTPLVGVNQGRLGFLVDIS D AVVMGGDGTMLGDARLARHNVPLVGUNQGRLGFTDIP
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DLLIVLGGDGTILSAARATQRQIP
DMAVVI GGDGT L RTVQQLHEQI P
DLVIVVGGDGSLLGAARLARPRVPVLGNLGTLGFLSEAD
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160 K R D S A S M M S I RTYYVNNE F LVVNYQADGLI A TPTGSTA Y N L
 K WN TARMIDDFETY I D GE LAANRHHSDGLIVATPTGGSAAYAM


 R S GF S G MV ELARASVVDGRYMYNQRSDGGLIV A T P T G S T A Y A L



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

$R \prod A \| V S K P Q K D L P E L I A W W R N R G A E S G R Y T S D A P A V D D P$ $M K I A V Y D N T E D V I Q K L L A D V T T Y N P E V S V F T G H E D L D E G F$ K F A I C Y N PMDN S K DVVMQ E L K H L L D L Q G V N S E I L S I D S G Y

 EDPAIANDES FVVAKKNFCTFREDFDDDSNRD KFEIITNTTKDPKEVGSFLS GHAAEWVGSERTEGFEP M K F A IVVVN $V$ N R E A QEEL T S WLL QER GLLS YV LDD S V S E E LLN K D C MK F A I FAKK S S H A E NL F R L L E L H N A Q L C I C R E F H H F L T N A

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$R \square A \emptyset T G K P G D S A Q K L V T E L E G R G L E V F L D D A D G D A D D T H A$ MKVAI Y Y QETEYVLQQLIE ELLQNENAEIVTFTNSEGLDRSF I RKR GFEVVVCEAQTA QAARLTEYS LLSAASEGGTARA ANPDQHVRPLG $M K V A L Y Y N D D G P V R E I L D E L R Y \square G L D Y D T F D Q N$

 $R \square G \square F$ VK H Q D D A WD T A H A A L V A A R G A S QYIERIEKYLDCHNADVLI E
MKFGVVARRDKEAARVYRFRVGGFVVDT $K$ VAII LP NLLEK D T K K R L A M K L S L L Y K ENN D N S A K V Q D W L K N K G T E C I V F H S V I M A I Q N S $M K L L L M S R \square D S Y T R T L G \square D L E N V G F Q \| I V D T A T A S A L E D P$

FY F L L N Q N N DQVVI E E K FA A I L I E Y Q K F S S H K D L D K S F ADTARNTAV HE Y P V A T MQEEGGE S A $K \bigvee L V I H K N D G E V L E A A K T L V K Y L V S K D V T T E E V K$

QKVGHDVELDNVE QE\LGQI C
 MK DA DGGKPRQTHKALYDWLT TKGHDVLVDHRLA NDLDKA $M K F A\|Y G Q T N K\| V Q R L L N V L E T Y N P T Y E T F G D E N E L P T D V$


 $R$ V A L V G K F Q E H L Q Q L A K L V S FA I I A N K Q K DTE Q I R H H I S RLLGAVVCNI Y D Q Y D R DV S S I
IGLI ARSES E LRQQLIHFLHGRDCTVILDKHASQMGEAC

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V ID A T P D A V D G C

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DAFI
D MVI
D V DVVSLGGDGTLL ELVLVL
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 MKIAI HGRKFSYIQQVFDGLQQHKIDI QVSDTSPDEIFDA A H DAVEEEFLVSLEE RKMLQDLTLYR DVEKSLAEA $K 母 Y \square Y Y N D K E \square A Q E \square Y E K S \square P F F Q E K G I E I M T K E R E N E A$


EDTAAAVGANGYTVASYGTDGERA
KFYY ITTNSDKDTGQIVEYLKANGRKCYHYTNPALIPEDT MK IA A LYREEKEKELLKEKLSREHEVVSFHEASASNVVDA IGUITKPNDSVSELSEFLSTQGGVGVVFDDKS EAQQA

GHDLVS $\square$ GDGDRPA EKWDVKAYFQS L Y NADLE EA
VS F DEKEEGR DNDFKK DPKSVSF DSE DEDNK L

 RVAL F VK DSEEAKEVAEFLKSKGHTVKLLNRPPLNLKGY
 $M K 1$ GVYGRQFPYVQQVFDCLVTCGVEVVI YHDFYDFQKDV. $M K Y G U C Y N P N A Y V K E L Y D L L S S N G U N A D I L N D D N$ K K G G Y RFY V TN DGKDPEKVKRLLENGGKTCDLDCEKDEQVPDDV KVGII YNDVKTAEELHSKLDDQGWEVCLATMPPGFDEEI MKFA IVVNTTREARELAWLDARS GDYVFWEEKADLDQHC NESLYRLVDFLEKQKVQVYQDDDTADMGEEN
$K \square A L V S R N N K D M K T A E A \square F E R N G C A T V T \square A D P P N D V K D C$ GDKRFTK $\square \mathrm{QDKL}$ $K$ LK $N V$ K $R \square G \square F \square R K D D A V V Q V C K F L E S Q S V R L Y T N E P L S D F P E H C$ ETLLDAC
 RQL RYWTAEMCNKSPEDF RS L GLK K C CNLDEETGPTA
 RRALVVRHSGRPEALERALLRDADVEPVTASQDTEEDPPF $R$ VA 1 A $\square$ NPNKVA
 RFFITNNQKDVDKIRQYLEHHGRTCQUYTNPDK PDD T

RS LQK LG DPYDLLDS DKSQLTEM
VLIVNKTGSQSVKLHKYFEARQPEVKVLHEDVHDAEPI DDALLNEDVQFRADRDKLVTFKDGRDDDTDRGI AEKVAGRFASAG R R RVVEEEAEDLDPA

 R $\square \mathrm{G} \| \mathrm{V}$ TRPEETLHTLAAFLLAQGLEVFIVTDKDNDGREC KAGIIYNDSRVADELKDQLTAAGWDVCVTTNPPGFDSDM QLTHWFRSQGWEVGLIE WNE IITQGV $\square A \square V G K P R H D \square A A V Y N W \square K D R K Y N V L V E E N \square A E I G K W A$ RMLADEAE ILGGLTVNTVPRDDEAAVGV
 MRIAVFGNKSAQARRLFDTLDRYDAEILVCED DSDRRFEA
 W $\square T$ SKGYKVLIE QQDARELNDKYAKTGS LASUGKSA $M K V D\|L V S P D T \quad A K P L G L K N Y K\| V P \square K N M R D L L A Q M$ VGIIGKPKQEVSELETASGLELLSPLGTFSSQEEVPKET KVAIVYRGHKMSKKLAARLKSKRFKVFTAPESSNDLKEM FGUISRDNE ES S DEVADYLDSKGDKYEGLDSSTYNALKNC
 MKFGIVIDTSREARELMAWLTEHGQDYVFDTESAELNKQC


 $N \square P E E V E T L S D P$ D L GE DVA

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UniRef90-K9PS47


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 ELVMVLGGDGTILRAAELVRYDLPLLGVNLGHVGFLAESE DMVICLGGDGTLLYAASLFQSSPPVIAFHSGSLGFITSHK ELAVILGGDGTMLNAARHLACDVPLVGVNQGRLGFMTDDA ECLLVLGGDGTLLQAARDVHREDPMLGVNLGTLGFLAEVD DLIIVLGGDGSLLNAARSFDNNDPILGDNGGRGFLADVP EIVMVLGGDGTILRGAEVARSDTPVLGVLGHIGFLAESE ELAIVLGGDGTILRAAEMVRGSTPILGINMGHVGFLAEIE ELVLVLGGDGSLRGAELSRSDAPLLGNLGHVGFLAESE DLLFSVGGDGTFLSAVRVKNCGVPLGGNSGRLGFLANGA

 DFGIVLGGDGTVLAGFRQVAPCIPLLAVNTGHLGFLTESY LAVVVLGGDGTLLRAATAYMLDVPLLGVNLGRLGFLTEIT

 DAFVALGGDGTLELASHMYRSKPVVGVNVGDLGFLTEFS ELLVVLGGDGTLLRGAEFAASGVPMLGVNLGRVGFLAEAE DLVLVLGGDGTVRASQIARDDVPLMGNTGHVGFLAEAE
 DMLFSI GGDGTFLKAVTFVRDGIPVVGПNSGRLGFLADTS

 ECVI GGDGTLI QAARLAGRNIPMLGVNRGHLGYLNQVS DFVITLGGDGTVLFASWLFQKVPPI PFALGSLGFLTNFD
 ELAVVLGGDGTILRAAELTRGDVPLLGVNLGHVGFLAEWE DLVIVMGGDGTMLGVGRKLQYDVPLLGANHGLGFI TDI
 DCIVVLGGDGTLLQAARDVHKGUPLLGNDGGLGFLAEVD QLAVVVGGDGNMLGAARVLEYDIGVIGVRGNLGFLTDLS DFVISVGGDGTLLDAVCLVGPHTPVMGUNGRLGFLATAA

 DLLIVLGGDGGTVRAVERVAPGVPMLGVNLGRVGFLAEAE DLVTLGGDGTVLYASTLFQRVPPVMSFSLGSLGFLTNFK SLVLTLGGDGTVLFTSWLFQGVPPVLSFSLGSLGFMTTFE EFAVVLGGDGTVLAASAQVAPCIPRLGVNNGHMGFLTEVY EFLISLGGDGTLLEAAREAAPYIPVLGVNLGRLGFLCEME DLVIVIGGDGNMLGMARQLAKYVPLIGINRGNLGFLTDIA ELVLVLGGDGTLRGAELARSDI PLLGVNGHVGFLAEAE
 DMALSIGGDGTFLKTAERVGDNIPII GINTGRLGFLADIS
 DMVVVVGGDGNMLSAARVLAHDIKVIGGRGNLGFLTDLD DAGISLGGDGTFLQMARHLSPKIPVFGVNFGKLGFLAETE
 SLVIVLGGDGTYLRAVRLLGHSVPILGFNMGFLGFLTAHS DIIS GGDGTVLRASKMIGNEIPMVCNNMGVGFLTEFN DLGMVLGGDGTILRSAELVREDVPLLGVNGHVGFLAESE ELTAGGGGTLLSASRALAGNMPVGNVGRLGFADVT

 DLIVSVGGDGTLLETVLYVKKN:PRIGVNTGRLGFLATVS DLVVTLGGDGTVLYASNLFQRVPPVISFALGSLGFLTNFK
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RMAQYEVFINDELYATFKGDGVIISTPVGSTAYS F






 R K E H L K M M V E F D V $V$ Y I D D K K V N N N Q R A D G L I I T T P P T G S T A Y A L
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P S DVFVI 210
220 230

240
 VENFLAS MDSRAKI D DEATI TIIK KENFKAKMVKMEDF LST
 V H D A M V F C D G R R E V P PA G A R L
 VA H GVMWCDGRRTVDLGSRIVVTRSNQPVRLARTHPR SAR



 VGSGILWCDGRRSLPPGARVVVRRSSRPVRLARLHPF TER $V$ G Q GVL WCDGRRRAVDLGARVVEVCRSAEPVRRLARLQPFTDR







 I D R A E I WC D G R R S L DV G S R I R V T R G E R P V R L A R L N D F S R R
 R N S S WVV S F D G R N R Q E L L G D S
 $\stackrel{\rightharpoonup}{\mathrm{A}}$
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## N


L K K A A I V I D G Q Y T Y S
 Lid LK S TYVVIDDGNTEFEKGDEVI LIRKSESNAYFVK G DNFY

 I D E F P L N GD G H L R L A PQE TVVTV K

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| UniRef90-W7IGD0 | L V $\mathrm{V}^{\text {K }}$ |
| UniRef90-E5BH65 | 1 REKL |
| UniRef90-W9BG70 | L V RKF |
| UniRef90-H1YYC1 | V D K L K S V |
| UniRef90-UPI00041F1B3F | L V ${ }^{\text {K K }}$ |
| UniRef90_F7B670 | WF D S L |
| UniRef90-D9PL17 | LREKLH |
| UniRef90-R6KP83 | LRQKMR |
| UniRef90-B9K824 | I REKL |
| UniRef90-A1AXV1 | 1 RS KL H |
| UniRef90-UPI00037E6444 | L V ${ }^{\text {a K }}$ |
| UniRef90-E8NEQ6 | L VRKFR |
| UniRef90-W6JZ25 | LVEK |
| UniRef90-UPI00036C45DD | L R NKL |
| UniRef90-E1X270 | L K E K L |
| UniRef90-E1YA20 | L K T K L R |
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| UniRef90-A8UR52 | L R R K L R |
| UniRef90_UPI0003702FAA | L R EKL |
| UniRef90-F8AD64 | L R $\mathrm{D}^{\mathrm{K}} \mathrm{L}$ |
| UniRef90_UPI00031AC050 | L R K L |
| UniRef90-F8WSX5 | L R L K L |
| UniRef90-R5HHE3 | LR DKL |
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| UniRef90-K9SAP8 | LREKL |
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| UniRef90_L8XY70 | LR A K L |
| UniRef90-A0A023ES97 | WF D S L |
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| UniRef90-T1CNI7 | LR K K L |
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| UniRef90-D3DFE9 | L K EK $\square$ R |
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| UniRef90-U9VSJ6 | L R E K L |
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| UniRef90-UPIO002882387 | - R N K |
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| UniRef90-F7XMA6 | VQDKL |
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| UniRef90-Q5QXM6 | L R NKL |
| UniRef90-R7GXT4 | L R E K M |
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 NHYTDASTIPE GV
 $\square K \square A \square F$ GNNERA $\square$ A R VVQC $\square$ A Q H K A E V Y VD E P F L D Y L R D A
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 MNILIVNRGDPDVEELEKLLHHHGHHTSDYKEPSEVGQRC M K F YV I M N P D K E A D T I

 MKAGVVIEEAVDQLKAAGFVVSUVDNSEAVDDDT
 $K \square G \square I V N H S T R A G E L D H K L K V R E E S A E L F T D D S E D P E N A$
 $M K I G I Y G N A G T Y I N Q L L E L L Q E E K V E V I I E R N F L D L I N K Y$ $R\|G\| V T R P D P D L H N L V A F L H R R G A E I M H R D C A E Y L P S A$ VK L L E DEAP D LDDI P A E VV P C DE S A A K D A MKAAVFAKRTEALKKLLT LLRAENIQQ LLEESSTAEHLSKA


S K R F GASS LLEERPRQHLLKYWKPDMCRNQPEKF


 D E L A QL A S H L S T K GI QVWVE ENTAAD G S LV VIGLVAR HS K S S R QLLA QHMLKYWTPDLCWSSPEKF

MK $\square \mathrm{K} \square \mathrm{DK}$ K D D H Y LK VFF S Y LE E K K I E V V K T
 RE Q GVI S DAIDEQLNYA GFSVTIVDNT EADDPDT $M K \square A \square A \square N P S K D V$ K K V R E $\square$ L K E K N A S $\quad$ I C I L N S Y

K E Y F K L LE K Q N S VVGF ITH T F E S LDE K V
$V G V V A P A D \quad$ QVVDALL RHGGARVGSSVGE
$N S V Q \mathrm{Q} \| \mathrm{I}$ G S A
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$M T V A \square Y G R S \square E Y \square K R \square V E G L F R K G V G \square N C F G R T P E A A T G V$ A DLADLARHLSARHYEVWVE ENTAE GQVA $\square G L V V N S N E P V S K V V D W L N Q Q N G K V L F N Q E S A E D A Q Q C$ A RLDSHSAVVNQVT T QLSSAGFHVDVFHSAAVIDENT
 K V G L V S R P N S E IA A L E S IL K K K GVELLLLFK E S S QR LEMS

 MKDADHGRNFNESARMFDEDSRRKVEVQLVYEKPEEDCDA
 K A GI I Y N D L K L A V E L Q D K L S A A G WDVVYMTTGPP GFDDEKM


VR VLA E EAA E LDDPA CYTVK T GP L A A K G T MK VG $\square$ F Y H Q D S Y I E ELLF D ILDD HENDEVS IV S T F R E L D A T Y MKF G $\square$ VA R R DKEAYRVY D Y L K VKGYEVVIVDS ETDE DVA DV E F L K EVGGVD S T S I Y T N K D DL K G A RARARLADRGI AAALWESEDDGERRP MHFS $\square V Y K D D A P L R E L A Q V L E Q A N I V R I I E K D T A Q \square G Q L A$ EAKRIVFESRGIEVII DNDSGGM\ENS QFTRVSHSEEATEGV

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REIGGEKIELPPKHLASVDEIGSEA QMAN N L L A N A ITM G VVVD G E QA
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D E D VREMLEAD GGDGAPCTVMAPEQDPAAGT A E A MAVPGAEVVAFGPAASD $\square$ Q S H A EL DA A D F EFTY D F S D K QATSRAAELLQEAGITVRVVPHTDNAAAGC
 1 V VF VD -PTADDEGA
$M K \prod G \| I A R \prod N C H S R R \prod I E L L E D K \ A K A L N R K G V N F K D \prod D A$ $M K I A D N G R A F K Y V V L V F E E L Q K R Q A E V H V V Y K G R G B L E P M$ F LIEDVP LSNKV
DSEVRRLVEP PDQSLPCAVVAESEDPARGA
 FY Y V T NVT K D T D Y IE K Y L T E H GRHVTVD K HLL LQ DP P E T

 K F Y $\square$ IT NHAKDA G Q $\square$ A E FLLESHGAESR REAE QEVIPP DT $E N R$ R $\square K Y W N P K F V D E H D N F V$ $G D A V R V V E H S A A A A V G C$
VLAADDHAELAA VDAFFADVEVLD ASGPATL
NTEHARTVALDLASAGFEVRILAEEAGDLE GA

 K E I A P TRT WD

Y WT P DLDCWTEPEKE YYPQYED IF DSPD D L K E G

 RIGFIRKDDAVEQVNEFLATRDLTVVCVISIKEFKTHC


 IA L VY RLQ S VA QKVA T YL Q K K G FEEVV TAA R S K K Q LA E I


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

E L A E K IVA A AL R E A GVA A R L L S GEVVQSLAAAA
$M K I A T V L R N D D Y T R E V E L R L K D K L K E A G M Y T G V T G P D E H P$ $R V A \| I G G K H Y K K V E V L Y A Y L Q Q Q N L D V V V E D E T A S D L E N C$

VI I VYK I D S HAETCARQLEK LGCQVLMGPSGPKDG MKFCIVSNSYKDAKK TSEYVK LKKGGKCYLADNVDEFPK T
 $\square H$ Y WTP E F CTKHPBLAF

E L VE K L E
 RERAVEFDMPDCGVD DI EHA
 RA AVYVSPKEHVERLLDVLGE GGVEVLVVREEGEPNGDA NE $\square$ VWHKHRPDAQTAASVMMSEDDSLGVEVVEEARPNSAA ESFGAVKK K F C T F R E D Y D D $\square$ S N $\square G \square Y L N M D K D A E K C M D Y$ K I A HGFKVALYYSK TDFYRKP
 $M K V G I V A K G N S R A A Y L A A N M R E A L L D V D V V E G L P D E A A F D E C$ MRIGGIFPNVTKRVQKLMAGCRRHGVEALLYQPFSELMNT』.

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 QLAIVI GGDGNMLGRARLAKYDIPLIGINRGNLGFLTDID

 DLVIVLGGDGSLLQSARQMGHQIPVLGLNCGRLGFLAAGS ELVIFVLGGDGTLLRAAELARPNVPVLGVNLGRVGFLAEAD EIVLVFGGDGTFLRAAELARNDAAITGVNLGRVGFLAETE DLVIVDGGDGSVQSARQMGNQTPVLGINCGRLGFLAADS ELIIVLGGDGTVLRAAERFHTGVPVVGINLGHVGFLAESE ELVLVLGGDGTFLRAADMARADIPVLGVNLGHVGFLAEWE ELVEVLGGDGTFLRAAELADPCVPVLGVNLGRVGFLAEAE
 DFVISMGGDGTLLRSAYSVGRSDP I GVVNGRLGFLAGVG DIIVVVGGDGTILRTAQLSRGKILGINVGGLGFLSEVE




 DFIVSLGGDGTLLDTDTYGGAELPVVG|NTGRLGFLATMP DCVVVLGGDGTLMRAAYDVGMGIPLIGVNLGTLGYLAEVE EMVLVLGGDGTFLRACQYAAADVPVLGVNLGHIGFLAESE DLIVTLGGDGTVLWAASLFGPVPPVVAFSLGSLGFMTPFP DLIVTLGGDGTVLFVSSVFQRVPPVLSFSLGSLGFLTNFQ EMVLALGGDGTFLRAAELARPSVPVLGNNGRLGFLTEAE EMAVLGGGDGTVLRAAELVRDGAPVLGGNLGHVGFLAESE EVVFALGGDGTLLRGAELARPVVPLEGVNGGKVGFLAEAE DMMITLGGDGTVLYVSSQFQDVPPVMSFALGSLGFLTVEK EFMI VLGGDGTLLYASSLFQSVPPVMAFHLGSLGFLTPFN
 DVVFS GGDGTLLEADTLDQKETP L G NMGRLGFLATTA LLGGDGTFLRAAELYPAGVPIMGINGHIGFLAEAE
 DMVLS GGDGTLLEAVHQYGFEPAYVG|HTGHLGFYADWH

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 KLLGGDGTLLRGSEIGRAVAPVMALNYGHMGFLSEAD KLAlVLGGDGTYLRGVRVLGRNDPLLGFNMGSLGFLTVHP ELVVVLGGDGTDLNTSKLLGSDTPLLGVNTGHLGFLTQLE Di V GGDGTFLRASQKAKGALP GLVGHVGFLAEWE

 DTVLALGGDGTVLRSAKMAAEDVPLLGVNFGKVGFLAEAE $D F L G L G G D G T L L Y A S S L F Q S V P P V M A F H L G S L G F L T P F N$
$D M V L S G G D G T L L E A V H Q Y G M Q T Y V G I H T G H L G F Y A D W R$ DVALVVGGDGNFLKASRVLASNDPVIGVKGKLGFLTTLA EVVLVLGGDGS VLRAAELAAQDAPVLGVNLGHLGFMAEAE DLAVVLGGDGTLLAAARHLAPD PILAVNVGGHLGFDTEP ECVISIGGDGTLLHTAKLMKLDVVFVGVNKGTLGFLAEIS ELVLVLGGDGTFLRAAEVARPEVPVLGNLGHVGFLAEAE DLVVSI GGDGTFLFTARGAG GTPILGVLGEVGFLNAVG DLVISLGGDGTVLYTSWLFQKVPPVISFSSLRMRFECTVM SLMFTFGGDGTVLSADTLDRDGIPVVGVNTGNLGFAATFN DFALSLGGDGTLLGMCRRYAENPPVCGVNMGTLGFMADYE DLLIVLGGDGTLLGIARS円NDNSPILGINGGLGFLSSVD DMLIAFGGDGTILHLARTVAHNVPVLGNLLGSLGFMSELE DVVFVLGGDGTMLRASRIYPRTVVLLGVNGGRVGFMSGLL DLLLALGGDGTLLAAAEYARRCVPLLGVNLGHMGFLAEAT
$\stackrel{-}{D}$ DCIVVGGDGTL ELVLVLGGDGTELRAAGMAAQDVPVLG NGGHVGFAAEWE DLVVSI GGDGTFLYAARGADGVPILGVNLGEVGFLNAVP L DLL T DCAlATGGDGTTLNIAKKAAFGKP

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|  |  |



$\frac{200}{V}$

| $S$ | $A$ | $G$ | $G$ | $P$ | $L$ | $L$ | $T$ | $P$ | $K$ | $L$ | $D$ | $A$ | $A$ | $L$ | $V$ | $P$ | $M$ | $F$ | $P$ | $H$ | $T$ | $L$ | $T$ | $S$ | $R$ | $P$ | $L$ | $V$ | $I$ | $D$ | $G$ | $N$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |



SAGGP I I WP DVVQALLVVP SNAHAMFSRPDVVVRDSE I TVA



SAGGPIVVWPDVQALLVVPSNAHAMFTRPMAVSSRSVVGVEV










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UniRef90_K9EZS7


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| UniRef90-Q1LSM7 | L S R K L |
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| UniRef90-M5TJU7 | L R E K L |
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QLINWF NAHDWEC VI RAAQ LINHGSHVLMREEDQA KYWTVDLARKHPQTF KCR IVVNTSKESQALGNEDKRFLAEKNIASSDANPFS DS E L L Q WL RV H GHMAA L I EA G GED DE E L E EAVRL QQDI P QYAE L V HV DLDDWKS E L S D A I VKN $\square$ N D VK I K I F D DLLR S F


 $M K V A L L A K E E \| L L E R L A K K L R K R G V E A R \quad M L R R A$ LK I GFI SRP D DL I G LL Y R Y L K H E GHEVM IE Q S A A S E MK N A
 VS N W LG N R $\square H R H D L V A D K S E$
VY K E L Q P CNVVT WK EEDR YNLLSN
K Y WTVDLARKHPHTF
VIIVYKGDTHSQRWAEKLEAQGCHDLMGPSGPKDTPA $M K V A V A N N V P H T Q K \square K D R L D Q K F \square D$ RHFD $\square D Q Q A$ A ERCT QELEA LGGCKVLLGPSGPKDSKR


IIE D GAAAAENV
 K VG $\square$ I L R P Q S H $\square$ K E $\square$ Q K K L E K A D $\square$ QVMLLES S SAK M L D H V

EA $\square$ P A EVKT S DWAAVVSNEA
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 $V L V I Y K A N I T V F I Q K S M E D L T V Q Y W T T L L C T K H S Q L F$
 VIIVHKSKSWAEKCAQLLEKRGASVLLGPSGPKDQQPB Q MVVTHF E D P L K T Q N L L S QK D L D
MKFADTSKKGDSKSNTWMHKMRTYLQDFELV YDEEE
 NDVAEEIS QEFKERSPHVLYTGEMSEIVPKT
 $R \| G L I A A A N K L A D E \square K R W L G T R G C D V I S E D N L L A G G A P P$ K Y WT F E LLCTEYS S LF
 MKFAI LSKGDRKSNELRTKIKNYLAEFKL
 MRFAVTARGDERSHMLLKEQLLEQALIDERGSHRDTVT

GTD $\square$ REFS GPED DP S R I
ELLARR L LD WGEELGVQDRLEYEPMMTDLN DI ARSK QWAEICCAK QLLESRECQVLMMGPSEAHALARTV

$P D D Q A K P M S S K L P G \square D L D$
YWTP S L
S
M
C
G NE $\square$ TH L HR K K V
 GPPCAVVAPD DRPARGA

 RVWWLIVYRADSEARRCADALLT DLGGVTV SLA GLLLA SE TE LDP



LK P WLE K Y G $\operatorname{LEDD} \square \mathrm{L}$ K E K K F E R VG A MK F A $\square$ T S K GDSKSNTLLMHKMK T Y L L D F D L


## UniRef90 W8U5P3

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 K N DIVENAVKR LVEDK FTVVERMMDGKIIAEDDVLNDVVI S
 P DE Y L T E R R F L L E T QVVKS SLLT LI IE P N N S S CPRRTI N E MVLH FDDFKSKVTTVLQCDQLDDAPFKHVESKQNDLVLNEVVVDD FEDFQDGDRLESDRYA DQRRMMLQAQMSDRFFCLNEMCVVK AEHLEDALLGQVVRREYRUEHRMTLDMEVWQGWALNEASVVES
 K NTEQVWHRLQSDRYAMLQRMMLEARIFQRFYCLNEMCIK HTSLDQLE












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## P P


K N K V F E A DD K I V N G N Y E I E K R T K C A GL I K H A D Y L N E V V I I





P







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6CFEC2



 RDVDSRTFEASI GVDGCELSSFKVDTVLFSTATGSTAYNF PEKVAHMDEFEVWI DDLFAFSQRSDGLIIATPTGSTAYSL






## R





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 K E S R I K Y WTP E F V D Q N DVVF F $K V N V F K N K S K F D H S G E Q A L K S A Q U T Y D F$ Y QKRLKYWTNELGHYKPET F $R \square A E V F R E A G \square A L R D A E Q P S T G D T$ DARVVDEESNSAHGC MKFNVRSRGDHDSNVLTQRVKSYLQEFDL E Y DEEEP MKFA IVSKGD DRSNK I Q ATMKQYLSDFNLDEAS MQYAIJTSKGDAKSEAIGKARMKQYLQEFDLVYDETT
$\square D L D N A$

 A Q K T MKYTVCSRGDRDSQEDSQKDQQY LD DFHL E LDDAEKP IK VD N A VY A E T D S LIDT D C $M K \square A \square H N R E A L S L K D A D E L K N L L Q T$ STHQMDQENP NTDS $\square$ VK K LK N I I N K Y NA E Y N N DN K A $\square K$ T L K N V MKFS ILLSKGDQKSNEIIRSKI KNY LTEFQLEYNEDE

KVLIV K K P K N K LLHE I GA WL RARGIEVFVERDPHVNRHDD

$R V W L I Y R A D K E A K A C A S Q L E L L G V S V A D A G L L A S E P E D P$ $V N I \quad I \quad V E S D \quad V A D E I E N D L D A V L Y T G S A A S C Q S K T$ $R \square F F Y V N S D G V L R K A T E D A A R S G Y Q C K V Y E D A S E D E D E P$ $M K V G \square V A R G N D R A A A L A D R D H E S G D E V L V D E A T A D A A L S A D A$ $M K$ F A I T S R G D R V S N T L M E RMK T Y L L D F HL L E A D E D E P
 $M K Y A L L D R G D Q L S R Q L A E Q L H G L A A T K G L$ THNEQKP $M R V G I V A R A A A L A A E V R E H L R E S G A Q V W I D E A T A D T V L D C D$


 $M R V \operatorname{T}$ I I S N Q S E K S K QVVSK S L E D L L Q E E GVV I D GLAA

 F

VYF FHK Q DQETNE QARSLT QLA EEHGF TVAVNQHSDA $R V W L I V R S Q R Q A R R C C E D L R S Q G V Q Q T V A S S G A S E P C D P$

$M K \square A \square Y S N L G E S S N N V A T A L K K G D H S K H L S V D G L N P$ MKFSVAS RGDNLSNDLCESMKEKLLKADLI LIDHEEP MRVA I I H NKKALSSLEVAAK LRELLQQKA HYQLDDQDDP K E F A E T $\square$ R S L G VEKE Y GCNACPP VGD G $M K$ AKETARNAGVSGYPVADWDEDGRTA $\begin{aligned} M K \operatorname{LI} & \text { I Y R S D K A S K F C E E V L K D K N I }\end{aligned}$
 $M K Y N V I / N R G D D S G E L M N T F H E L V K P Y G L V L D E T E \quad P$

MKFAVS SKGNSVS DTLKNK】QTYULDFGMELNE
E E P


 $M K \boxtimes G \square V A R A T A L A T R L F E R L H D G E T T V V F D E T T A D Q M D G C D$

EEAERAGNP

UniRetgo_b8E249

UniRef90 ETC2Q3 UniRef90_U7VAA3
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UniRef90 H1LE31 UniRef90-W8AB29 UniRef90-S1R3V9 UniRef90-W6QH10 UniRef90-UPI0002E653A8 UniRef90-A0A058VCF5 UniRef90-UPI00014B4359 UniRef90-_13ECG8 UniRef90-G0EMJ2 UniRef90_UPIO003773AD2 UniRef90_U4LB28 UniRef90-W8QLU9 UniRef90-W7BXE0 UniRef90-E3C9J9 UniRef90_F2F883 UniRef90 W4WB21 UniRef90_C7P3V4
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$E M V I S V G G D G T W L S A F H H Y Q D Q \square R M V G \square H T G H L G F Y T D W R$ DIVITVGGDGTLLEAFHLYAHRLAFVGIHTGHLGFYADWV ELVISVGGDGTLLSAFHLYNDQVRFLGVHTGHLGFYTDWR $D F V I T L G G D G T V L Y T S W L F Q R V P P V L S F A D G S L G F M T N F D$
$A V M V C Y G G D G T L L D G V R L G G A P P V V G I N A G H M G F L T G G R$
 N 1 GI ALGGGDGTLLKCANALADDI PLLSSINDFDKSFI EDLE



DLVITVGGDGTLLYAFHRYSNRDAFVGVHTGHLGFYADWV EVVISGGDGTLLAAFHEYEDDTAFVGIHTGHLGFYADWR EVVITI GGDGTLLSAFHHYDDQLDFVGIHTGHLGFYTDWR EIVLSI GGDGTLLHAFHRYLHRLDFVGIHTGHLGFYADWK
 $D F V V T L G G D G T V L Y A S W L F Q R V P P V L S F A L G S V G F L T K F D$ $D L I V T V G G D G T F L R G V R V A A P V S L V L G V N V G R V G F L T E V A$

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UniRef90_W7BXE0 UniRef90-E3C9J9 UniRef90-F2F883 UniRef90-W4WB21 UniRef90-C7P3V4 UniRef90-K1Y3T5 UniRef90_UPIO002628E0E UniRef90_U4TXU3

AEEAK GA】GAALKGMVESR】ERTTGE\|VGPWTGLNEAVIE

$\square$

##  <br> F



 Y GAFFEATVMRKQQRGDKYKTRRTHRPDGTHNDLNDVVVD
P G S A E E D I E S L LD G H Y T LQ CRRRLLK GQVWR GHAALNDLVI S
P D E V

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VANFEATLERVLDDTNS QPLVCTLLRTRKRCEHHVLNECVLDD
 QDSEKLDWERLQTVDVYAVQQRMMLEASSICE GDRHLLNEMCVVK

A


## 

 P E D A V

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







 | $Q$ | $Y$ | $Q V L$ | $N$ | $D V$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | $G$ | $G F$ | $D$ | $R$ | $G$ |


 $K$ E A IIE E LIFA E IMAR G T R IVE Q R T M L R V E GA V E G M P Q G A L A V N



 P S E IVE K LV LA ITA K T P Y H IIE Y P IL E V I V R Y N D G G R E E K Y L A







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170
180
190
200 SARGS|IV|APTHWS|LQLTPVAPHMLFDRS|LVL|RPDTQDR||A



 A A G G S L S H P E N P V I L L T A I CAA H L L N F R P I I L

 S A G G P V I A P G L D A LLI I T P I C P H TIL T


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 S A G G P I I Q N E V


 S A G G P V V $A$ A P S V A L G G A ll I H P S L E A I Q Q




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



 A A G G P I L H P G DD Al V V A P I C P M S L






 S A H G P L


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 A L G G A D H P T L Q A LQQ T EMA S F R TV G S S L V LPA A H N CV L K A A GAS MI HPSVPAIMITPDCPHSLSRRPIVVPAGVELK S E D G P LVVHPGVVDGLVV TEMA G E EA MP P L V V D D S S E I T V R A A G G S L CHPC N N VI L V T A I C A H T L L S F R P I I L P D T IVVL R I G S A G G P I V S P G L D A L V F T P V

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 $K \boxtimes A \square V S K A E K A A K G \square A E K L L K Q K F K V Y T \square S P V S E D L R K Z$

MKFAVQSRNDPQSNE $\square$ ME RA $\square$ SY $\square$ T DFGMEVDEEKP RVWVIYRADSEARQCAKEDKA LGSHVVTAGGLDAVEESFP


 MKLGLTANSERVGRRVYNLLKDEDVVLELFGKEGKPIEDII MKRIITINTNQLNKSLEELLTRKLINAGFEVYSDVYPDT
 $M K$ VW $M K \square A V Y T Y R S T E S M R V R Q A D L D G Q Q Q G T P D E Y D E D H P$ EEASAKGRLKYWDWDLVKKK PQTF
 $M K Y A L V Q R H D Q V S A A L A D K F R V L A R Q Y G M E E K E K N P$

$$
\text { K } V \text { A VVS K S E D A A K K } \square \text { A K K F } \square \text { A K K S } \square V Y \text { T } \square \text { S P } \square \mathrm{EV} \text { V G E K }
$$

 $\square Y \square V Y N E S K F S \square D T A S Y V K R K F E E \square G \quad Y H V C E D F D Y N A$ A QE $\square$ MA WMEKRNCS SCMAAFPYEDMEDP



S A E EMVE $\mathrm{D}_{\mathrm{R}}^{\mathrm{P}} \mathrm{P}$ MKYK LIFSNNNEKS LK DTE LIAHNK TTENGFVYKDS M NY

 $M K \nabla A \square Y H N D Q Q R S \square K \square V E L K K E \square A Q Q G \square E R D D V \quad H P$ MKFGワAARRDREAYRVYDFLKVSGYEVYVDEEAHENFARVV MRILI MRNAESASLMLGAYLSSQD IEFTLADAADPDASSF
 $K$ VLIYVNAEVLACEDQK Y


 KVA VIPNYSRDASRLTEFLEKQS IEVVWAPDKKKNVDNT VNVIVNEDVADELVHEFLDKSTKHILYTGKFGD\|VDKT
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UniRef90- X0QLM8 UniRef90_L0E915 UniRef90_A0A024PJ20 UniRef90_B0C2T6 UniRef90_X0UPL8 UniRef90_G4RL01 UniRef90_F1T460 UniRef90_Q9RJS6
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UniRef90_R5N778 UniRef90_UPI000367F695 UniRef90_E3JS73
UniRef90_A1RXJ9
UniRef90_UPI000362A20C

$D V V I T I G G D G T L L G A F H Q Y E D Q L D H V G V H T G H L G F Y T D W R$ EIV I SVGGG GTLLEAFHKYSYRLAFVGVHTGHLGFYADWLD



$D L V V T \square G G D G T T L R V F R Y L E N E T P\|L T \square N V G G N R G\| L S E E$



$E L I V C \ G G D G S L L R T L H N H Q P E \square P \| V G \square N T G H L G F L V E \ N$



$D L V V T L G G D G T F L R G A R T A V N C A T V L G V D L G K V G F L T E V P$ $G L L V S L G G D G T M L R S M R L V G R K T P V L G V N V G R L G F L A E V D$ DLAI AI G GDGSFI RMVNHFSSDTVYVGVNAGTLGFAQEVA






 $D$ LVI S V G G D G M L L S A FHRFERQLLD FI GV H T G H L G F Y T D Y Q

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 $D L V V S\|G G D G T L L F V A R E V G \quad S T P\| L G \| N L G E V G F L N A V A$

$D L G V V V G G D G T L L R T V Q K S N A V P P D L G F S S D S L G Y L L P H R$ $D \| V L S I G G D G T L L Q A F H R F R D N V A F V G V H T G H \mid G B Y A D W Q$
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## L



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$78 E 6 C F$

## F S P P

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UniRef90_A3GHN0 UniRef90_H3NN15 UniRef90_UPI00034F3A33 UniRef90_F4G2N9 UniRef90_I7CTE3 UniRef90_R5N778 UniRef90_UPI000367F695 UniRef90_E3JS73
UniRef90_A1RXJ9


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V


 S D A WE G R L N N L F K E K F K I E S L L E V V V G N N K Y Y A L N E V L F C


DDEADERDEKDKFFDDKRTRVVASCGGKEFPPALNEIYIC










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| :---: | :---: |
|  |  |
| UniRef90-S2ZPE1 |  |
| UniRef90-H8LBH3 | SVGGAVIHPSINAFQLAEIASFRTLGSPMV |
| UniRef90 UPIO003 | AAGGPVLSPHMDAVV |
| UniRef90-UP1000 | SAGGPVVIPGVSVLQLIPI CAHSLASRALVFPDSELIQIV |
| UniRef90 UPIO001C37976 | SAGGPIIEPDLECLEMTLICPHSLISRATLFAAGRRLRMK |
| UniRef90 M1 XPR0 | SEGGPLVHPDVSAFVVTEMCPVEP MPSLAV |
| UniRet90-R5FRQ2 | SSGGPLLLPTAKNYVITPLCPQLRTDTSLVV |
| UniRef90-UPIo003F082AF | AAGGAMCHPNVPAILITPICPHSLSFRPIVIPAGVE |
| UniRef90-K9VAD8 | SANGP MHSGMEAI AVVPICPLSLSSRAIVLPPGSVVSIW |
| UniRef90-83T9, |  |
| UniRef90 D6ZHV2 | SVGGPVVWPDVQALVLSPLAAHGLFTRSLV |
| UniRef90-S7Z×41 | S SLGPIVHPKVPALLLTPICPPRSSFRPLVLPAESEV |
| UniRef90-UPI0002889D36 | ALGGAILHPSLEALQITEMASFRTVGSSLVL |
| UniRef90-W0GXB2 | AAGGPILHPGIDAI IVAPDCPMSLSRTLVVPPRAR |
| UniRef90-F6PFT1 | AAGASMIHPNVPAIMITPICPHSLSFRPIVVPAGVE |
| UniRef90-V6L | SAGGVPVKSSVDCILLTPVCPHVMSSKQLILSDQDVI |
| UniRef90-UPLİOO382E551 | SRNGPLIDPSLDLLIM |
| UniRef90 UPIO0036430E5 | SAGGP V |
| UniRef90-Q83IC3 | SSGGP |
| UniRef90-C9XNE 4 | SAGGSIVDDNLELMQIPLHPYRCFTSSIICSN |
| UniRef90_A2EED9 | SAGGCMVHPSVSSILFTPICGHSLITQPIV |
| Uni | SAGGPLIHPGVPAYGIPPICPFLGSFRPTVLPKETVTEVV |
| UniRef90 A6TSZ55 | SSGGSIVDPRUDVLQVTPLAPYRSFTSSVILPADAVIKVS |
| UniRef90-C7YT3 | AAGGSLCHPENPAMLYSSIUGPHTLSFRPLLVHDSMILR |
| UniRef90-R5TCF7 | SCSGPILSPSVKQMMVVPICPHTLSRFASVLSEKDI |
| UniRef90_S3BNX9 |  |
| UniRef90_L9x106 | S ANGP |
|  | SVGGAVI |
| UniRef90-UP10003B33A7E | ANGGPVLT |
| UniRef90-K8ZMR1 | SLGGGAVTEPTMNVFQLTEMAAFHTLGSSMILQGSERVDI |
| UniRef90-B9DIP5 | ALGGAL |
| UniRef90_B2GB65 | GGA M ${ }^{\text {d }}$ |
| UniRef90-A6C | AAGGSLSHPENP |
| UniRef90 UPIO00478B853 | SAGGSVVYPNLNVLQLTPLAPYRSLTSSAI PANMYIK |
| UniRef90-W2E4E7 | SLGGAIVHPSLEAI Qil AEIASYRTLGSPMLLPN |
| UniRef90-X0Y3J5 | SAGGPIVNPSINSIMLTPICPHTLSARPFIIGENDO |
|  |  |
|  |  |
|  |  |
| UniRef90-UP10003686ABA | ALGGGALLHPSLESMQVAEMASYRTDGSPLVLPQHHT |
| UniRet90-M3K2Y | SAGGSITHPAVPCVLLTPPICPRSLSFRPLILPSSSDIMV |
| UniRet90-A8PWE3 | SAGGSLVHPFIPAMLITPICPHTLSFRPMLVPDSMEL |
| UniRef90-UPIO00478E6CF | SUGGSIVDPSLDVIQVSPLAPYRSFTSSMLLPSSAT |
| UniRet90 Q72AV2 | SARGPLMDPALDAFTVTPI俍PFLGNFPPLVLGGGSV |
| UniRef90-W7BA80 | SLGGALIHPSVKSMQLTEMASY |
| UniRef90-TOCLP2 | A AGGSIVDPSLK |
| UniRef90 J9VRG6 |  |
| UniRef90 G8SC44 | A SGGPIIVSPNVEGLIVSAAAAHSSFNRSLVLDPSEHLS |
| UniRee90-R6CWC0 | SLGGSIVYNTFHTLQITPTAPYRNLNRSVILPDNMK |
| UniRef90_D7GE | MWP NTEAFEVVPIAAHA |
| UniRef90 X1 | A AGASM1HPSVPA |
| UniRe90 Q IDH2 |  |
| UniRef90-OORK76 | SAGGPIVSPSVEALLVTPAAPHSAFNRGVV |
| UniRef90-X1T778 | SAGGPILHPEMEAFIFNPICPFTLSWRSU FL |
| UniRef90-UP100021A7EBD | A AGASMI HPSVPA MLITPICPHSLSFRPLVVP |
| UniRef90_UPIO002196089 | ANGGAVLHPS:KA1 QMSEIASFRTLGSPLIVP |
| UniRef90-H3ZJP1 | SAGGPLVDPRLHALLLVPLAPVALTARPL |
| UniRef90-C7MP17 | SAGGPLVAPNFRGLVVVPVAPHSL |
|  | AARGSII DPS |
| UniRet90 S9VP70 | NAGGSLVHPNLNAILI TPMCPHCLSFRPVILPDYSIV |
|  | SAGGSILESDLR |
|  | SLGGAVI |
| UniRef90-LOE | SLGGAVIHPS:ESLQQAE:ASY |
| UniRef90 A0A024PJ20 | SANGGAVV |
| UniRet90-X0UPL8 | A AGGPIVKPGVEAMILTTICCPYSLYFRSVVVPTDSR |
| UniRef90-G4RL01 | SAGGPIVDVKLDALI SFIAPYTLYLRPLVVPPE |
| UniRef90-F1T | A AGGP |
| UniRef90_Q9 | AAGGPVVSP |
| UniRef90-A3GHNO UniRet90 H3NN15 | SAGGS |
| UniRef90- UPIO0034F3A33 | A AGASM1 |
| UniRet90-F4G2N9 | SAGGPMV1DRAKVFIAVPVNSLNPMRRSLV |
| UniRef90 -17CTE3 | SEGG |
| UniRef90-R5 |  |
| UniRef90 UPIO00367F695 | STSGAVIDPKIPCLQVTELASYRTLGSS |
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UniRef90_UPI000367F695
UniRef90_E3JS73
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UniRef90_UPI000362A20C

| UniRef90_X0SSP7 | F WK R V ${ }^{\text {K }}$ |
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| UniRef90_S2ZPE1 |  |
| UniRef90-UPI000378629F | F WNRVRQ |
| UniRef90-H8LBH3 | FWHRVK |
| UniRef90-UPI000368DB54 | LR D R FR |
| UniRef90_UPI00047564FF | $L$ R EK |
| UniRef90-UPI0001C37976 | L CTKM |
| UniRef90-M1XPR0 | A L G K L |
| UniRef90-R5FRQ2 |  |
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| UniRef90-K9VAD8 | LREKL H |
| UniRef90_B3T991 | Q M A K |
| UniRef90_U5WA90 | A R R K L R |
| UniRef90-D6ZHV2 |  |
| UniRef90-S7ZX41 |  |
| UniRef90-UPI0002889D36 | F WQR V H |
| UniRef90-W0GXB2 | LS H K L H |
| UniRef90_F6PFT1 |  |
| UniRef90-V6LL38 | F F K S LR |
| UniRef90-UPI000382E551 | R $\square \mathrm{K}$ I R S L |
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| UniRef90-Q83IC3 | LV K K |
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| UniRef90_C9XNE4 |  |
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| UniRef90-R5TCF7 | LS G K L |
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| UniRef90-R3WSH1 | FWR R V K |
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| UniRef90-S2JH04 | WF S SVQS |
| UniRef90-K8ZMR1 | F WK R V K |
| UniRef90-B9DIP5 | F WKRV H |
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| UniRef90-A6QYT8 |  |
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| UniRef90-W2E4E7 | F WT R V R |
| UniRef90-X0Y3J5 | $\square \mathrm{REK}$ L R |
| UniRef90-F3KM90 | QMSKL |
| UniRef90-G1XDM1 |  |
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| UniRef90-E3PT54 | F WS K V |
| UniRef90-M3К2Y3 |  |
| UniRef90-A8PWE3 | WFHSV |
| UniRef90-UPI000478E6CF | FWTKVK N |
| UniRef90-D6SR76 | LR Y K |
| UniRef90-Q72AV2 |  |
| UniRef90-W7BA80 | F WH R V H |
| UniRef90-T0CLP2 | F WS RV |
| UniRef90-J9VRG6 | WF S S I R T L |
| UniRef90-V6KGH1 | $\square \mathrm{L}$ N R FR |
| UniRef90-G8SC44 | ARRK L R |
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| UniRef90-X1Y9P5 |  |
| UniRef90-Q6IDH2 | WF DSL |
| UniRef90-Q03AS0 | F WD R V |
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| UniRef90-L0E915 | F WR R V R |
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| UniRef90-X0UPL8 | L ERRL |
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| UniRef90-E3JS73 | WF |
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AA RYGTVALL 30

40 MRVAVVNRANPEAIDAS LLL GAYGIDYDLVDSTDEHLEQP

 | DEHLEQP |
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| $E V V E E D Y$ |
| ID |
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 | $N T$ | $F$ |  |
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| $A V$ | $L$ | $C D$ |
| $A$ |  |  |

KKDQNNP
 K F S I EVVRDDETSCKI GLKLR DFLLANEMVEDKETP MRFTII DSRPDDHSKEVVDYLRRRCEETGW KFDESDF




VA IV V P D A G DAA RLEA WCT DRGGLGLGTVVDVGDNDENRA
 MKVA I YYYYPN DET R A V I E R L T T A L L N K A HL
$T E \square D$ DPS F
$\square$ Y F F Y K H T K S M Q E A VEP LK QLAA T Q G L NVVD DVQK A $M Q V V I V Y K N D C R A T L L A R D L H A R D V T V L T S Q D L P N Y N Y G A$ 1 AFI AS ATPDATEAQERLSALY DSTDPEAA MKFAIVERGDAYSKELADYI KERCQQEGWQYHKS NP $\mathrm{V} G 1 \mathrm{~V}$ A QRDNEAASLVDALEREGASVVVDEATGEAVGAT

 KIA F V A SEVSEAREALLRLS DRYGAVE


 KLLIVTNNSSRSRLVKEEFLDRKAQAKGL HIVDDQDS P

 $K V A D I$ A N GKYQS K RVVA A K L F A V L R D D DAF Y LTTK K K


$\nabla G \square V A R D N E R A Q A \square A A T L E S T G A A \square N E D G \square P V A S M A S R$
VA IV S E S EA AVQRLLETWAD DNGLGLQTVDVGDDDPDSE $L R R A L V A S P T Q V A Q E A G A L L A D \quad A H D W V P V E D A$ $1 F F Y Y L S D Q G L E D K L N A L Y Q L A E S N G F \quad T V V N F E H A$ $M K L H F A A S T H A D S Q R L A Q L T G K Y G Q T M E$ R RA LVASPTQAARAAEERRLRAAYDFV

IF FYYHPDEEMD GKVKALKK IS SENGL NVVENSSSA

 E S Q E $\square$ CEMHD DHQHHQCS YNDY QSRNVV $\square$









 MALAF VA A N NEEALLA QK LLS E QYGNVV VP TRA $K \square Y \square F Y K K T N E M N T Y S E L F R S K A K E L N \square X V N H L E D A$ SRFHF DS A E DE EAAMKATDKLI S I YGHYS L E ET
 R AFEA GEK GA QEACERLRERYDGCK GRDWVPLEEA
K $\square$ HF TAS QAEAALMAHERLEARYGSV GETIDAN GVVPVA E
$\begin{array}{lllll}P & L & P & E & A \\ E & A & D & R\end{array}$
$R 1 C F L A S A T P E A Q Q A H A Q L V A R Y G D C E$ $\square K$ A F VA SERPEALAACASLRARYGQ
RIA F TA S PAPAATEALDRVLTA RYGQVAV A D SP A S D R P E A $\square E A R E R L D A R Y G D V G \quad D E S A$

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 DYVLS:GGDGTLLGAFHAYEDHVQFLGAHTGHLGFYTDWL NVIS GGDGAFLKSVRETQDCLYAGIALTEQLGQYCDFH DRVIVIGGDGTLLRAAIKAGDNDVVMAVRAGKRGFLLDVD
 DVVVSVGGDGTLLSAFHHYRAEIRFVGLHTGHLGFYTDWR DLVVTLGGDGTTLRVFRNLENETPILTANVGGNRGLLAEE DMVVSLGGDGTMLHSARLVGHRVPILGNNGHLGFLVNS DLVVVLGGDGTFIAVARMLGLGVPFVGVNLGRVGFMAQLA EVVFVLGGDGTVLRAARHFSRSAPILGVNLGKVGFLSSVE

 DVLVAI GGDGTFLRTAQMFTFKKPFWSLGTGRLNFLPNNV DVIVALGGDGLMLQTMHHMKRRMPRYGMNRGSVGFLMNEY DLGI SI GGDGTFLEGVRAFGPGUPLVGDNAGTLSFLARVG DVIVALGGDGFMLQTLHRTEDNPPVYGMNRGTVGFLMNEY DVLVALGGDGFMLQTLHATEGDLPVYGMNRGTVGFLMNGY DYVVTUGGDGMLLSAFHMYEDQLDFVGUGTGHLGFYTDYR
d T A A TGadgaflQa Trks doc EIVVALGGDGLMLQTLHVMSRSIPVYGMNFGSVGFLMNEF DIVITVGGDGMLLSAFHMYDDSVRFVGVHTGHLGFYTDYR ALGVSVGGDGTFLEGTRVFTRQLPLVGVNAGTLAFLARGR TVVITVGGDGTLLSADQKYLPDIDFVGVHTGHLGFYTDWR ELVVS $\square$ GGDGTLLFVAREVG GTP $\square \mathbf{V G V N G E V G F \square N A V D}$ thavtVGgdatfleg TKQFSRNVPILGVNTGTLAFLVRVD ELIVALGGDGFMLQTLHAMKPVVPVFGMNLGTVGFLMNEW NIIVSi GGDGAFLQAVRKTQDCLYTGITRSGESGLYCDFN DVIVVLGGDGQMLQAMRDDRHNLPLFGLNCGR GGFLMNEY SMVVAGGGDGYMLQTLIAMMRIVVVVGMNLGTVGFLMNEW EVIVALGGDGFMLQALHDSQESTPVYGMNRGTIGFLMNAY
 DYIITGGGDGTILRLLSKYRNDPPI ITFSSGSLNYLGNFD DVLVTLGGDGLMLQTLHRFGHAKPIYGMNRGSVGFLMNEY EMAVALGGDGFMLHVLHRFMDGKP:YGMNKGTVGFLMNEY DVVIVTGGGGGTLLSAVQEYLPRLDFVGVHTGHLGFYTDWR DVVVALGGDGTMLEALHRFHDDLPVYGMHRGSVGFLMNDY DVIVALGGDGFMLQTLHATQDHPPVYGMNRGTIGFLMNAY DAlVVAGGDGTLL KYVKYGDPVLGMKFGRRSKLLEAY $N L V V A L G G D G T L L R A A H V G Y T V P L M G L S Y G H L G F L T C A G$
$N$
$N$ DIVISVGGDGMLLSVFHKYEKQDDFVGVHTGHLGFYTDYR ELTVG1GGDGAFIKSMHNNPQMPFVGUNTGHLGFFQEUL
 MFAVSI GGDGTTLFAARCASPGI PI LADNDGRFGFiAPDE QAVVALGGDGFMLRTLHHLPGA:PVYGMKLGRVGFLMNKH

D LI \A $\square \mathrm{GGDGYMDET} \mathrm{\square RATSTCKP} \mathrm{\square YGMNCGT} \mathrm{\square GF} \mathrm{\square MNKF}$
T T TASTGGDNAFLQAAQKTNFSPYTGПTPDपTTGFYTDFT DVVVAI GGDGTMLQTVRNVMNGKPIYGMNQGSVGFLMNEF EIIISVGGDGTLLAALHYYETQLEFIGVHTGHLGFYADFQ DVIVAMGGDGFMLEMLHHMGEDRPVFGMNFGSVGFLMNEY DAAVVIGGDGFMLQTLHTMDH\|VPAFGLNLGTVGFLMNKY
$D V V V A L G G D G F M L Q T L H A M G R N \square P V Y G M N R G T V G F L M N N F$ DLAVSIGGDGTLLFVAREDG STPLVGVNLGEVGFLNAVS
$D V L C A L G G D G F M \square Q T L H R H G G S K P V F G M K \square G T V G F L M N H F$ $D V V V A L G G D G W L L E T V H Y F R D G L P I F G M N R G S V G F L L N H Y$ DIVVALGGDGFMLQTLHETATGLPVYGMNCGTI GFLMNAY



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30 EKHGNSTPVEA
 K IA A L A S ET DVAREARAA LA ARGVEVYVDSYGDAPLDEAA
 40 RRALVVSPTDAARGAASALSAR $R$ DWVDVTEA $R \square A F L S S G A P E A T A A L H E L V A R Y G N V$

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\text { H N } \square \text { A K E A N T D } \square \text { D R } \square \text { K Y WN P Y } \square C L I K
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PS $\square F$ $R V A \square I A N G K Y Q S K R V A S K L \quad$ A A FKHDPDFYDSKKDP


# $K \square A L L A S P T D A A Q E A A R R W S T \square S H F W E \square G$ Q A 

 KV WL I GNS S E K S K K T L N K K L S K L K A E H F V F D D $\square$
$R \square A F L A S D A D V A Q S S R S S L V K R Y$
$\square K L A F T A S E R P E A Q A A C A V L R K R Y G E$
K I A F VA S A S A E A Q T A LE QL T A MY
MK F V CIA R P D A T SMQLKEAI Q NRMDE K G W KENLIQP $M R \square A Y H A S D R D D A Q A A K A E L I D R Y G E V D L L$ K FAFVSSGAPDAEAAVARLAKKYGSV

P VTEA
FFFYGDDKAT LVEKMKP $\quad$ KYR $\square L E E N G F T \quad L D H P K N A$ $K \square R L V N D N E K S K R I E N E D K N Y G F E I \quad V E E Q E$ SSEADDAKKAKAELVGRYGNVPAGDA RMALVASPTTAAQEAATEDRADY EWHPDERA
 KI A CVA S DTPKA QA GLE QLA GLYDLV PADEA RVA IVARPDELAREAYRRLREAGAEAGLVGGPSTDVDDV
 $R \square A F \square A S R A P V A$ Q T A K T A MVVSRY G N V V

K I C F A A DET QK A WE A L S F LLK K H Y G S V
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 $R \square A F D A A P T E V A E L A R D R F V A L \quad H G Q A D P E E A$ RIA FVAS P S A EA QA A LT QLSSSLYY GNSDPDLA

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 $\square A F V S A A T D E A Q S A A R R L A A L Y G Q A S L L E A$ D $\square$ N T $R \square A L M A S R N P K S E A \square Y S Q L F N A \square R D A G F \square L S S$ FREDY $R$ VGLIAK P HAELQQQLLP WLEQRQDEVFLDHDTAAAA NQ MRVGIVARAAALAAEVREHLRES GAQVWIDEATADALS DA

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PDKRPVMADA ${ }^{210}$ DSTSFPD ${ }^{220}$ EWVETGTKPSII ${ }^{230}$ RHR $\mathbb{Z}^{240}$
 AHPANMVLDGQKTVSVGAEVRISNSERMLR\|LFVKEFEVK VRPVAAVADGKHFELKNVVKVTVSDHATGVVLLHDPGHS
 PKRVTTSUDNKTHYKNVTK乌EYSUDEKS $\square$ NFVSTPS HTS VQNYAI QFDGVAETQ
VGRVAVSDDGQLRLEPGDWVAAYRAPARLRLVRPTEFYHR $V R P V S A V A D$ QREVRDVAQVQD
PDDYSLTFD

 V LECDKRPVAASADTFEVR
VRPVAAVADHDEVRDVR RVEV DSDKT DAMRMDFDPGHS SEDAVLGADSKVSLKGDHDVEIRYSKEKKVRVLRTNWLNP

 LDDAVVTADGQGYTKNADEVTITESEYDFELVKMQSFYDT LRPPVIGMDNEASIKQVEKAVVRUSDKQUKTVKLKNFMS VKRLVNAFADHTEVKHVLHVRIEQDPERAKVLSDPNR
VLDALAAAD SLSVPDVLSVEDRSEPAT RHRT 1 LDP DHRPVGAAADSFEVRDVAKVRVVEDHSRPAV LRPAKLIVDGEKLLSRGAVVRACLCGPPVRIARYR
VRPVNAAADNTEVKSVVGDVRTTQSDTTARLLSDPDR
TLINKLWMDGATSIWPGQWVSISMAQCQAQFIILHSFYKT PDKRPVMADA DSVSFPNVVRVEDSQKKDRHKILFDPGHG VDSAPVAVD
1
VDKRPTSA SADTFEVRNVVHVDTAE
$V R P V S A V A D Q R E D R E V A H V H V E I$
PEDVSVTVD QLDTFNYEKDEAAEYSMDGKTDAFANCAHTS $V Q E V M A D A D G T S Y R D V A S V E V R V R S E P A V S H R$
$V N D M A N A D S Q$
VPDAWASFDGKVRTEDGFYVTDQASPFPFPTVTSSKYDDS PERRYLVVDGEYTYRQLRKINIRMSKRKTQRITLNK DN ADKRPVMADDSTSTTDIDWVEIQSEPTURHRILFDPGHG MRPVNAAAD HTEVKAVTSVTVRES
D De
v


VRPVNAVADHNEVKSVTREVAESKETAR■LTDSSH
I RPVAAVAD FTEVRDVVSVQIAEDRA
VVEA
SNPLVVNDDGQYEDEPGGDVDTERCGSGVRDARFRDYYER
$\square R P V A A V A D N V E V R D T R$ SVEVR
VKRPVAAVADHDEVRNVQRVEV LSDKTTSM RM
LREVEVSIIDGNTITELGTGMEVRI GGEVVK
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VRPVAAVAD R Y VEVRDVVRVVRBSSEPTLEADPDH
 RLHCDVVLDGDDRFKLNNKLEATKFTPSARGIDMK VDEPLITLDG
$\square R$ PVNAVAD HTEDRSVLKVTVREASDVTATV
VRPVAAVAD STEVRDVTSVQREDRNTVTLLFDPGQT PDRYSLSVDNKTYVY DSIEFYLDNTKINFVATPS HTS NTAWVSFDGRKRQEDGDSUS $\square T$ TSCYPLPSUCFRDPVSD

VSPAEVSVDGRHTLIKQQSASVQMSPFP $\square$ PC $\square$ TFSP
VRPVMADADSRSFANV ARVSVK
VSELEVSDDGKRSAPIGTEIRVE
I R PVNAVADHTE
VRPVMAALDAQVFTNTKARTSTDRKNSVIDADFRKD
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GRELPVS:DGKRRVTVGMERVE

| UniRef90_A4ES01 | LF D |
| :---: | :---: |
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| UniRef90-UPI00046EF20E | L S E R ${ }^{\text {l }}$ |
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HKNA $\square$ KFCQE $\square$ LSKKPVEWKP $\square$ ND L S HP $\square$ RDV
MEKRYHLINVKENND LD $\quad$ I
VYVVYKPTD $V$ AKKKYSDDFKGRGVSVEVSTVDDASTRSV KRKIPDSPEKRILLIFGKDVKEILPIFKKFPQLKIVQENP $\square N \square K K Q Q K K Y N I Q E A\|I S P D I K L G T D\|$

VCQVLEAANVQYGLIDUKKNKEAAI
IT DNTNKALSAKKQILKSYK
K $\square \mathrm{HV}$ VA D S KVGILYHPYTLAKKLQDFLSSSSTSVWLCEKARAQVADS
MK $\square$ T E V

 HHDAINFCQA ILQKKSIEWKAVNNLSQPI NDV

FNEAYTESP LLKELFEKYGVRVS PEA
MKVLLTGKN
SKD DEDLVKS FGFE DT A L
HKNA $\square \mathrm{NF} \mathrm{CQS}$ SLKRKAVDWEFRSDDSTPDRDV D KK MLHKKV QLDERS $M R V G \| V P S T D G D V E E \square E G A L G D E A E P T T S E D T G T V L D A N P$ EPHTAREQSQFPNDTVFNEITDSPVKLLDNT HKEATQDLVDAVVEAAGAEARVFDAASSDPEGV $V Q E \backsim V S E L G K A G U K V V T R E Q L A Q Y L P E A$ NHLSKPIHDV

MK TAFVASPRPAAQRALEELSGRYGQA
A A A EA MRGFVYDRHDHHVEALEDILKQHSTQVDVISADREAVNSA KGNSFAHELYEKLS VFSPAEDVEDA LKFA TFGNEYQ\|IQKV LSYLSEKQAEVE\|AGVFDGMDFQA WIK S S SKPKYKLVSFSVDKDELRKSLDLSYEYSEEDF


VSHLLAILRQHQVNVNRVELDRQHLADV $M R C L I V V K N R K E V D D E L E$ ESTKK K IIEEVDVSDVPEMYAEDY MKI VFTKDGELLPR

EAVDEDTSSFKERD I EVKVVSATHEAVEGT
VGVVDPEDDETERLEGAVADAGGTVVDGGLEGVLAATP
REYYEK $\square$ SVFEANAD EEP HTKNVQHILDSLRNEGTEVRLVKRDEETVRWA HTKNVEHIIDDSRDEGUEVRLVKRDEETVRWA


## VKAVKRMLEQRGVAFECVERTEESVRGH

 ELVVNTLRENEIEVDRFDYTDSNIDWA QKD DEAGRYQNDTFDKKKA

CCCCCCCCCCCCCC

$G \| V A V Y G R D K D \square L K T L R E T D R V \quad V V G D A P P G V D V \quad K \square A$ NVVVGGDGFMLQTLKKNKNSKKFYGINSGNYGFLMNKF DAVISYGGDGTLLSSERTY PGMPKLP RNS SVCKKCPDH DLVISVGGDGTLLQASHLMDDSIPILGVNSDPTRPHEVAE DLIVTLGGDGTVLWAASLFGPVPPVVAFAMGSLGFMTPFP DHLLVYGVDRDILAALRERDEV VVGMSPRGVDAELAFA $T V V V A V G E$ DFVITLGGDGTVLHASQLFSRCPPVLCFSLGSLGFLLPFK
 DLVISAGGDGTFLAAASVVNDNTPI GGINTDHECVGGKNP DFVTCLGGDGV1LHASNLFRSVPPVVSFNLGSLGFDTSHN
 DVIMVAGGDGELLHNIHRYMHNIPFYGVNLGSLGFLMN
DLIVPIGGDGYMMHCIRNWQRFIPFFGVNAGHAGHLLNDP DYAISMGGDGTFLKAASRVAKQUPIIGVNMGRMGFLADVL EYLFVFGGDGSFIHYAKKYAKGKKIVGGKNGNLSFLSKFS

 KAL VLFGGDGTVLKTLSMMDRRVPMVVVSKDRHYTPMIFS NAIMVLGWDGTMLRAL QQFKDNLPYLWINFWSKWFLLNER SLVLCDGNDG SLLVIPGEAG LSALTRAGVDTPVLPV GPVCGMESVD IGGDGTLLQASHFVDNSDPVLGVNSPTQAKEVEEC DLIVPUGGDGYMMHCIRNWSRFIPFFGVNAGHVGYLLNDP


DLVISAGGDGTF पAAASVVHGQपP\|IGVNTDHDCVGGKAP $D R V V A V G E D A V A A A A R V D G D P L V L P V A A G R$ GVRSVP DAVFSAGGDGTFLIAAAKINDQRPVIGFNTDPLGSEWVEE DAV円AAGGDGTMLLAASKLDRLKPVIGVNTDPERSEGHLC DAIVSAGGDGTMLLVASKFDKNKPVIGVNTDPLPVHYTQS
 DGIVAVGDAALREAMRAVASGVPILPVGDARHAVDPALA DAVVAVG DAALREAMRAAARSAPILPVGDGRHAVDPDRG DAVESAGGDGTFLVAAEKDRDHRAVVGFNTDPMVENDKNN DLV GALGGDNHFTYVAHHALENLAVLGCNSDSVGALLSFH
 DVVVAVGEPATLGAVARQRPSMPVVPVDAGRLSVPGAA DLIVPDGGDGTFLLAAGRASPRTPVI TNNEFRWMHRSRDR DAIISAGGDGTMLLAASKVQDRKPVIGVNTDPLPVRYTQS DVVVVGQDGLVANVAKYL DGQPVVGUDEPGRNAGVLV DLIVALGGDGTTLISAHHVRDAVPILGI NTDHLCAANRFD DVIFTTGGDGTFLMAASKYTRDKPLIGUNSDPLCLPGHYT


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 UniRef90-S0B2V1 UniRef90-E8RA75 UniRef90 UPIO0036F36FB UniRef90-UPI000368C1E9 UniRef90-M4F1V3 UniRef90-Q3YR41 UniRef90-W4LYG3 UniRef90-F211T2 UniRef90-UPI000368572B UniRef90-X1LZC8 UniRef90_Q7NAU0 UniRef90_A1RVY6 UniRef90-B3CRT5 UniRef90 EOCS10 UniRef90-A9SDX5 UniRef90_S6C667 UniRef90_H6Q7D3 UniRef90_W9DUP1 UniRef90_K2CGW7 UniRef90_A0A022RDW9 UniRef90_W5DCP4 UniRef90-G4RMZ5 UniRef90-EFQSV0 UniRef90-K1VS05 UniRef90-R4W6W1 UniRef90_UPI00042B1EFA UniRef90_Q9N4A9 UniRef90_I1IPH1 UniRef90-W5ENK3 UniRef90-L9ZU83 UniRef90_UPI0002FAF5B6 UniRef90_A0A024GDM3 UniRef90-Q1RH32 UniRef90-GOTYY4 UniRef90 R6E6Z2 UniRef90-H6N8N1 UniRef90-L9W5N2 UniRef90-R5PU29 UniRef90_B7FV00UniRef90_LOACZO UniRef90_H8ZEI9 UniRef90_A8M8T8 UniRef90-K2G506 UniRef90-LOI772 UniRef90_DOMQC3 UniRef90_LOJMU5
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UniRef90_UPIO001E477F8 UniRef90-S3UL06 UniRef90_UPIO002A4CE5E UniRef90-C7P1V7 UniRef90-T1L1M6 UniRef90_W5JQF3 UniRef90_A6H8J0
UniRef90_E9UUE6 UniRef90-A4RTT4 UniRef90_A0A023GCP6 UniRef90_K5C169 UniRef90_UPI0003CFD4B4 UniRef90_T0F5G2




SEYNLIDR\NKAVPTQTLNMVATD $\quad$ YQ QHKHESTA $\square$ NEVSLL E S SVE DRPVRCYTHPYLTATSDMGENTDPPVKAFNDVWI
 PE E V





 FGSEFDAHRSTGH LCELLTRIMMSVNGLDLSTYALNDILIA ■GNFEQVLDDILDDRRTPSNLSRMS DCLNPTYALNDALLA AENFEQMLDD DLNGTMEPAEVTR
AFDVREDPDLENAKCKVAEDPRDMAESAHGQVVVNEVAVF
 $\begin{array}{ll}K & \text { K VLLK }\end{array}$

| S |
| :---: |
| S |
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| L |
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| $R$ |}

PRDLISRLVSGKDDWVQRTRDRVTVSTKSGFFS NEVF A RDDAVAAVSGLADARVETHPVLRVAMPDTVEQAFWDVTGV
 $\stackrel{\rightharpoonup}{\mathrm{V}} \stackrel{-}{\mathrm{V}}$
$\stackrel{V}{T}$
A


## F A N

 FPEALQKLYRGEFRWQWRQRIGRLYGPHLLIPVRALNEVFI G RYPPRAAADLIDRSTGTCEERTMVEAVADDGQSLVALNEVY AETVLDGALRGTDKPTRLARDRTVLNGKVLEPALNDVLIA


lupas 21 lupas_14 lupas_28
jnet
cont
sol25


[^1]

| UniRef90 FOS829 |  |
| :---: | :---: |
| UniRef90-17ASE4 | SLNGPLL L EGMVVNVVAPNNCRFKPIVCGIGTRVRV |
| UniRef90-113PB8 | SANGSLAHPDMMCTLVTPLCPHTLSFRPML |
| UniRef90-A7T4S9 | AAGASMVHPTVPATLITPICPHSLSFRPTV |
| UniRet90-L2GMQ1 | SLINGPLAF TECILLNCVGANRTRFTPIVLPTDVRTRDD |
| UniRef90-Q500Y9 | SAGGPMLSRDLQFMVREPISPGSTSLMHSTFKPDQD |
| UniRef90-UP100037002CC | FSAGGPIVWPEVAALLVVPISSALDFARPVVVSPDAT |
| UniRef90 Q5FGA8 |  |
| UniRef90-E8RA75 | SARGPLVAGWGDELVLTHLNPMQLGIPSTTLPAY |
| UniRef90-UP100036F36FB | NVTRGI F WNGI G\| AFLAT SEAVTHMILSEDTEVK |
| UniRef90-UP1000368C1E9 | AVGGLVLP LSANLLPITAISPFRRRWRGALISKTSV |
| UniRef90-M4F1V3 | S |
|  | SAGGSILPLLSNVLSLTAINSFRRRWRGAILTN |
| UniRef90-W4LYG3 | AAGGPLHSRQRQYLVREPYVGNGSRYRLLIVSPDT |
|  | SAGGQ L HLD SKK AMTP SPFRRGLKGKA SNKSKIL |
| UniRef90- X11ZC8 | ARGPVL |
| UniRef90-Q7NAUO | SANGAILFPRTKATQMVE\YPFTTTQSP\ILPTDTKT |
|  | SAGGAVI NPRAHVVEVVPVNS ALRKPPHVFPSDVVI |
| UniRef90-B3CRT5 |  |
| UniRef90-EOCS10 | SAGGPiLSQDLQYMVREPISPYSSLMHGLLKPDQSMVSWF |
| UniRet90-A9SDX5 | HTSFLKGFVEDD |
| UniRef90_S6C667 | APHTLRSRAVVT |
| et90-H6C | GGP1 DLGVRAVEIVPVNS AMGR |
| UniRef90-W9DUP1 UniRef90 K2CGW7 | SVHGPILSLNSKKLSUSPISPFRRRWKGKIVNDK |
| UniRef90-A0AO22RDW9 |  |
|  |  |
| UniRef90-G4RM | SAGGVLIDPDADVLEVVPVNSARRS PVIVPASKAVEIA |
| UniRet90_E7QS | DAGGPVVERGTGVVSVVPVAPFAIIHVDNWVLRGPVTLAVE |
|  | AGEGPLLEPGTGLAVVPVAPFRTDRNRWVVPERVTVRVQ |
| UniRef90-UPIoo042B1EFA | SAGGPILSQDLQYMVREPIAADSGLMHGLIKSDQSIAAWF |
| UniRet90-Q9N4A9 | GMNRDDENATTSVLVDVPITSFAFSDREPIFNAT IKLESR |
| UniRef90-111PH1 |  |
| UniRef90-W5ENK3 |  |
| UniRef90-UPIO002FAF5B6 | SLGGPLLALGSSLLALLTGUA |
| UniRef90-A0A024GDM3 | QMYBEQ |
|  |  |

AAGGQPMPLASEDTQY $\square N V D G H D \square D N G M \square R T E E K M H V R W N$ AVDAPMLSAVDAVAAAPIAPFVTNTRRWVLPENVTLTLE SANGPILHGGVEGIVITFVCPADKKTPSFVVSSDCTVTVK IIVGPAWPHTSPSFLATPLLIPE RNDKPLVLENDKKV I S AAGGPTLEWELDAVTVVALSPFTTDIAPWVGSPDLELSUA S
 SAGGPILSKDLQYIVREPIAPYNSLMHGQVKPEEMEI AWY A LGASPVPVGAPLI QUVVVSP AQWRPTHLNQEDHVELE SMNATDENAATSVI
NTNRVATQAVEdVLNT
$\mathrm{N} \mid \mathrm{N}$
ALESPRपSPVVDAVSVVP $\square S P F S T S S R Q W V L P P D E V V T V D$ GVGGPTLAPSDQA VVAP TAPFATDPDHWVLPVSASVERD NINRVSIMKTMGVLCVEPICPHSSKMSPAMAPSRDRVRSR

N
NiN
SCENTDTSFDKQS
$A A G G P V V S P G G G L A V V P V S P F T T R P D T W V A S G G L R V T V K$ AAGGPVVSPG GGLSVVPVSPFTTRPDTWVASGGVRVTVE NTN
SCENRDVSFDKQ
NTN
QVGTP VVAATGVLAVAP $\square A P F A T N P D H W \square V G \quad D E R \square T \square T$ SENVSKCSKNQGNKII
SMNRLSTNNVQDLLDV
SMNKMSSQSVEELLNIV SAGGE $\square$ MPHDSMSMQ

SC F
GNGGP पLPMQSD पWG LMPFNYHLLKPQS $\square \mathrm{H} \square \mathrm{SPSGR}$
SCENRDVSFDKQ



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sol0
jhmm
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B B B B $_{B^{120}}$





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