## QUERY

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NERMLMNMAKLSTKGLIESALNLGRTLDSDYAPLQQF VER S N L L S M M K L S I K V L I Q S S L S L G R T L D S D Y P P L Q Q F
 E I ERSNLVNDCKLVVKELLEQSVRYGRMLDSDHLPLQHF
 EPI D DS SEEF I N F





 MMEERANLMHMMKLSIKVLLQSALSL M K V E R R S L L G M A K L S V K GL I E S S L S A A V E R R N L I T

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

## $A Q E V$

QHLLDR R
S $V$ V RFS V K TLL E K Y T

QRII H DLLQDAVTELSKKEFKET GEPIT DDSTNLHKF
 A K DVVK K I K E K L A Q S $L$ K K A L Q K K R Y V A S D S V V T S D D S D A N L L

MLDSDHMPLQHF
M A D E R A K IT R R D L K A A V S A I I Q G Y G E R Q Q S V T D A S A E L H R L





 VS IEKRNLIN LTKLSVKSLIEAAMKRPQALTDSNTQLRQL MS I H R Q NL L CV S RLSSIKALIA QSQY QAIIDDSCSEFKNF E E E R D AL L R RA S D A I K A V QRE Y A GK T T I AT D K D S QVT C L MAKE GAVLTR DLK A A V S A L L Q GYGA GR Q PVVTDASA E L H RL NER I NLLMNMAK LS I K GLI E S A L N L G R T L D S HYPP P L Q

ASERENLQSQLLASVVKNCQTRFGGRTE DATELDPYVGTLG A VERRNLITVCSFIYSVLQLSPEG
 MA K E GA T L T R DLLKAA AV S A L L Q G Y G D G K G P V T D A S A E L L H R L R NIL LH SFLDAVA E IVTKEYKENGEPITDDS SNLQKF
 MA $\square$ E R S N


E R R QL L Q R T S D A L K QQV QV R F A G K T E I ST G Q E S Q V S L L




AVERRNLITVCRFSVKTVIDRSC FETTDDSSPEFNNF R C AV K S L I D A S C

DRPINEESEEVCNF $K$ D RULENDNLSVKKLQSYFADETPAI RNHDRVVLQRL MER D R N D L I Q D L MAEERAVLTKDLKAAVSTILQGYGDGLGPVTDASAELHRLL

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F VVMEHCLKHGLKANKSFWGPLELVEK\VPEAAETTASVK

 F IVIDE HVLGH GLLRTKKGLWDLLGQCVETYCPEAQDITAASVVR
 F I V L E HV L R H G L
 FVVLEHCLKHGLRGKSKYMTPI KAI EEVRAASVQVPTPAR CAVLEH L H H GLKVKRSPFGCI EALEKTFPLSATAINNDR
 FVVMEHCLKHGLKVRKSFWGPLELVEKLYPEAEEI GASVR FIVLE HVMRHGLKPKKGLWDDLQMVEKYSPEAADI TASSVR

 A A L EQILSHGYESPRSFWDYI RVACRKV SQNCICSIIE


 CAQFEAVLLQHGLRRKSKGAAGFSSKTEAELTEWLNVKEQLN F V V M E H C L K H G L K Q N K S F WG P L E L V E K L V P E A A E I T T A S V K
 FVVVME H CLL K H G L K T K K S F W G A L E L V E K L T P EA G E I T A S V K
 A A L E Q L SHRFKGQRGFWDYIVRACSKVP NNCVSSI C CVVLE A V F WV H G L K K T K P V F F WA L L L K S V S Y K L E Y L L Q F D





 C G C L E C L L Q F D L G P R K D Y W D F V L A A L



 C A QLLEA L C H G L
 CT KL E Y M L Q F GQ Q E K R T Y WD Y FH D CL A K Q K GAN D GUR F V N
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QUERY

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 GMSSIKT QTGKVRAWLRQSLMEKRLSEYFRAMIENRPVLVW NLPELKK A VGRGRA WL Y L A L M Q K KL A D Y L K V L I D N K H L L S
 SMENVRSSRAKGRAWI RVALMEKRLSEYMSAALRDFKTTR D MP H L K T A VGGRGRA WL Y L A L M Q K K L A D Y L K V LI D N K H L L S

 SMENI STSRAK GRA WMRVALMEKRLSEYIGTALRDSRTTR
 NMENVRPSRAKGRAWI RVVLMEKRLSEYI SFALRDLKATR S L R H I A S D D V G R G R A W L R C A L N N E H S L L E R Y L H M L L A A D R S R L S S L R R H I
 DVGTLLTYPGKARA WLLRLAMMQKRLAA D L P G
QLIF I N T DVGRCRAWLRLALNDGLVECYLKLLLQDRARLP
 LQDKLKTPLGKGRAFI RFCLAHGQLDADALQLLCLLDSEFTR SMENI GTARAK GRAWI RVALLMEKRMSEYI T TAVVRDSRTTAR T L K EII NT DTGRGRA WL R SALLNEHSLDERYI HMILAD RTIIG
 S TS EI RTS L GRGRAFLRYSLVHQRLADTLQQCFMNTKDTS S L V K L K T P L G R G R A F I R F C L A H GQLLA E S L Q L C L L D P T F T R

 Q HI S S ELGGRGRAWLRCALNEHSLERSLHSLLADBSRLG
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 $N L P E \quad L N E$
$S L E K L R T P V G K G R A F D R Y C L V H R Q L A E T L Q L C V L D P Q M T S$
 NLPELKTAVGRGRAWLYLALMQKKLADYLKVLVDNKSLLS HLNFINSDVGRCRAWVRLAVNDSLMECYLTTLLREKSLLC S V A G V K T P G G R V R V W WV R M S L M H K K L HMESVVRSSKAK GRAWLRDALMMEKKL GDHLA TALDQNDKALAR LLLS NI T T N S G R G R A W L R S A L
 NMENVSSSRAKGRAWDRVALMEKHLSEYDSTALRREKTTMR



 S T E L K T S L GK GRAFI R Y S L V H QRRLA DTLQQCLLN QRATS
 S Q D K L R T S LGRGGRAF $\square R F C L A H Q Q L A E S L Q L C L L D Q A L A R$ D M P GI N
SLGENKTSLGRGRAFDRFCLVHQRLADTLQQCAVHDKTKD

L P NI T T DI GRAR A WL R I AL NE H MLD KYFG IF A R Q R LT



,
AKSEVKTSLGRGRAF
 NMENVSSSRAK VI TLGGLQKSRMR
QMDCPKTPQGKGRAWLQLSLMEKRLAEYMNEMLMQTRMLR

 SQDKLK TPLGKGRAFI RFCLARGQLAESLQLCLLSPELTR N L P H L T F I I N T D D V G R C R A WL R L A L N D G L L E C Y L K L L L L Q E K S Q L C

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 EWYDDYALVCSDEANVICGLLVSINVID GLNV EFYEYHALMMEEEGAVIVGLLVGLNVTDANDCVKGEDDDS EEYEPHALMLNEEAVIITGLLVGLNVVDCNLCVVKEEDLDS EFYEPEALMMEEEGMVIVGLLVGLNVLDANLCLKGEDLDG EWYDEGALLMNEEATVLAGHLVGGNCI DAHL
RFYEDGAIVLGEEANMLAGMLLGLNAIDFSFCLKGEGLDG RFYDSGA! MLREEATVLTGMLIGLSAIIDFSFCLKGEVLDG RFYSEGADMLREEATVLTGMLIGGLADVFSFCLKGEALDG RFYDDGA LLLREEATVLTGMLIGGSAIDFSFCLKGEALDG RFYEEGAIMLGEEAGLLADTLIGLNT:DFSFCLKGEGLDG TFYEDWAFVLDEERSMLPTMAAGLNSULFAUNUDNSDLN

EYYEPGALLLCDEAVIVLGLLLGLNVVDCNLCLKEEDDDS EFYEPFALLMEEEGMVLAGLLVGLNVIDCNFCVKEDDFDS EFYEPNALMMEEEGAVIAGLLVGLNVIDANLCMKGEDLDS EYYQATALLLDEECELLSYLQGLTSLTFQLSYKSAVLNE胃 KWYPRSPLVCPELQEDILDSLYALNGVAFDLDLQRPDLD QYYEDWSFLWDDERSMLPMMAAGLGSILFAMNIDNEELNG EYYHSPALLLDEEVEFLLSYLDGLSSLAFDLSYKSAVLNE QFYEDWAFLLDDERSMLPVMSAGLNSIVFAI NTDNEDLNG WYYARSPFLKPKLNSEIVGLLYELTEVQFDLVSRGYDLDS EWYPRSP VGCOLQEDLLASLYALNEVPFDLDLQRPDLDG
 E WY P R S P L L C P P E L Q E D I L D D S L Y A L N G V T F



 WY Y A R S P F LHQ Q L LRA DI LA C L Y E L D G V T F H L A L K R A D L D A $A Y Y$ Q P S A F L L N E E R E V L L S Y L Q G L A S L T F S L S Y K S A V L N E E F Y D P E A L M ME E E GMMVMV G L L V G L N V L D A N L L L L K G E D L D S E F Y Q L T A F L L D E E C E V L L S Y L Q G L T S L M F H L S Y K S A V L N E


 R F Y E D G A D WY S T K S L V K K E L VT E M I S H L Y E L N QL P F D LA PR G Y D L D A S F Y E D W A F V R S Q E A S I I L P N M S A


 WY Y A R S P F L K P H L S V D I I NY L Y E L N EVQQF D L A SR G H D L D S

 E F Y D F G A L M L E D E G S V $M \mathrm{M}$ G L L V G L

 WY Y A R S P F L K P K L S S DIV G QL Y ELT DVVQF DLA S R GY DL D A WY Y A R S P LVVK P H L N S D I I N H L Y E L L N E V Q F D V A S R G H D L D S WF Y D R S P F L K S H L TA D I I N N L Y E L N Q I H F D V A A R G Y D L D A TWY NPNSSLVLNP S L L G P L V N D L Y D L N D L Q F D L A P S G H D L D A

 Q F Y Q P GA L ML S E D A G LI S G L L I G L N V L D F S F DV R S Q N L D

 WGFP R S P L L CP E L Q E DI L D S L Y A L N G E F Y E P E A L M M E E E G M V I V G L L L V G



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| UniRef90-E9BZ68 |  |
| UniRef90-H0Y9Y8 |  |
| UniRef90-M3YKQ3 | V |
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| UniRef90-W5LA42 |  |
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1
MAEEAAKDTK
（ILDQRAAVSAGDGQGPVTDTSAELYR VVVERRGLNGLGKGCQTRFGGRSELATESDQLVFNL TEKQKLLEDLLAAAKNCHVRFGGRAELATESEACIAQL ERTNLLTICKLVIKK LLSSSLLNPS IPPFDNDHPLLKQF
 E $\square \mathrm{E}$ R
 $R$ F S V V K L L E KY T R A AEPI DDSSEELVNF

EHERREVVEELKSAVQGUVDEAVGESKSDTEQNSNVRRL ATEKEKLLEDVLVSAKECHDRFGGRAELATESEACVAKL」
 AETRQR DRNVKKEVKQIMEEAVTR SETRQRLLRNVKKEVKQIMEEAVTR




## ANEKEA $\square$ F VEVKQA VQSVSVA

GDVA $V$ RSTPESMRL
MASTRERVIKDLEN $\square V M E \square N A N Y Q A R G L P V T D G S R E L Q Q F$ EHNQNNSESIEDRNPHLLK KENDNNNLSSSVKQLQECALRSDDHVTSESYFAQTF KDSLKTHLSTSVVEMQSAHELGSDHVVISNCDEATSL A ETR QRLLRTVKKEVKQDMEEAVTR A DT

KEKLL WNVKKEVKQMLEEAVVGR


## SPHSR

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| K F |
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RDSLQKQLNTNVMEMQSAPGAADDGVVGNCDESMSLL RESLLQKQLLNDSVVMEMQSAPVEENDTVGNCDES MTL

 AE T R R Q R LL L R S
 KDRI I DNI SKAA K GIVQEYQSKDPVVAGSDRACHKL AETRQKLLRNVKKEVKQUMEEAVTR KFVHADSSHU1 SF


## QRII R DLQDAVTELSKEFKEAGEPITDDSTSLLHKF

AETGKVLLNELSKCTQNCLNRFAGRSELATEDDDR\｜DQL E GLLKECRLKTKRMLVEKMGHEAVDTEENTLI ASLL $L$ RE LQQVCVDNCQHRFGGKSELATEDD IRIVNL
$R K V L I G E L L V A V R D C Q R H Y G G K T E L A T E Q D P R \square R L L$ EIIKAA LTKEFKLAVKNGCDEA DDNGSDSDDLT QT D KEKLDWNVKKEVKQIMEEAVTRAKFVHEDSSHIIAL
 ESERKH LRDR LLDA $\square$ K QCQ $\square$ RFKEGQD $\square$ ATDNDSTVICL

EKLLKDCKAKTKRLQAR A K K ETGKAKTKRLLAKLGAEGVILSEENTGAS EQLLAECKQKTKRMCVEKMGHAEAIEEENTLI AGLL KKSITDHLLSNSVKADQENGLDKAEDVTEAS NTL
 LLNVLPTAVRVCILNFQGSSSPYTDTCPHLQSF
 H WK L L A S K K T TVVDGLVSA A N KGRILQELTKAVKLVYAQSLYGTVVLDGDS
EHWKLLSSNLKTTVEGLVSABM
EDKHEKLLR【LKSQVKADMEEAVTK


EGLLKECRMKTKRMLVEKMGHEANDT KESLLKECRMKTKRMLVEKMGHEANVIE ENTLI ASSL K DNMVVALSGAIKSLQDRSKDTPKVISNNNLQLHD
EHSRLLDSLKTTVEGLVS GNSRNVWSKYGGLQRL

$\mathrm{K} \square \mathrm{K}$ L L REELATLLKKLKE
SERRQRLLRAVKKEVKQIMEEAVTR

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C G C L E LL L Q V
CRSLEAVLNHGPQTQTTGRTFLEKGGATVPF $\square$ TMHYA ${ }^{80}$ AAMLEQULNSHRFKGQRCFWHYVKQACHNKHELERFSS


 CEHLDHAFLHGLRNVTK GYWVVVPHFTR KDAIKQ R Q
 SYKLE YLLQRDLGNRKDYWDYFCACLAKVKGANDGIRFVK CAQFEAVLQHGLRRSRG $L$ ALTAAA I KQAAGFSSKTE
 C A A V E A CV L CAAVEACVLHGLKRRAAGFALFTKVAKNFPPAEELCRKAQ

 CRYLESULRHGWGERRDYYHYLMENLSGLVNFEQVVKRVQ


 CAVLEAVFLHGLMPQPSFWGPL CAAVEACVLHGLKRRAAGFLDRSNKDAALFTQSLQSQDSIR



C

## ,

 CAVVEACVLHGLKRRAAGFLRSNKLAALFQTSQDSDRKQP CRALED FRLGLQRNHGHWVF RKF GDKAGPGLFHLI K FVK CRDMH G LY L G GLCQQRDYWHFVKDIR WLS P NA A H HVEKFI





RTNNSLWSY
CEKWER WSHGLQGKSALWSHLV T A L WQ




 CSSTERATGHGDREPVFWYYVREVLNK GSHELQRFY CSS ERALGHGLRPHSSLTDMVRGLLQTDPGSSELYSFIQ


 CDLLER IWSHGLQVKQGKWSHLMHYPAQRVSVVQDMRHDQ CEHLDHALLYG CRDMNNDLLHGLCTQRDF VYWMDRALRHGGLCTVERDFWPFVKHVRWVCPHDSCHMDQFE CRDMKGILYHGLCQRNDYWQFVKDDRWLSPHSADHVEKFQ

 CFQI E LFFLTHKLKLKYGGFATI WDULQLLKGLREQFEYI D CDLLERI WSHGLQIKQGKWSHLHQYQSLGPERRHDMRHIQ CDLLERIWSHGLQVKQGKSALWSHLLHFQESEEQDMRHAQ IILEA I F LHGLKI FKSAWKAVAGVEEKKPQPS CIQLDRAFCHGLSLRAGKNGFWKYLHGVIPRGKTVQEDE
 C NTVVEALEIHGGLYPEPNFWP FVSKYTHKA C GAV A ACL LD GLKK RS LG L LA LIF QK T S KYCKA AS QVAKKVM

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UniRef90_V3ZSC8
UniRef90_A7S496
$S|L| S Q|K T P| L|G K G R A F| I|R F C| L|A R G Q| L \mid A E A L Q L C L D N P E L T R$ LK K V V WT DV GK GRA WL R S S L NERSSLNRYMQSLLSSM DDAL N M E N I S T A R A K G R A W W R V A L M K K R M S E Y li T T A L R D T R T T P EMNDI R S P L G R L R G WL R LALL M Q K KL S E Y FVLL L Q H K D DL R

 $D L P T V R T H I G R A R A W L R I A L M Q K K L A D$ NMENI STARAK GRAWI RVALMMERMSEYDTTALRDTTRTR
 S I P EVVRVRI WX GRA


E

## 

 GLSEVVSSQGKGRALVRLCLNEQLLADCVQTSUSNVKKTK DQRHVATLLGRSRAWLYLALNENSLESYLRLFQENQSLLE

 D CTR
$K L K L$ $\qquad$


 | E | L | Q | Q | Q | V |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| K | L | P | K | L | P | S |
| C | L | G | Q | I | R |  | $C L G Q$

$D C T K$

T TS QVT TEVVGYRAWI RMALNEGLLASYFCAIMRDNSALK


 $N$ L K HV LT N I GRGRA WL F VA L NESHL E GFL NSFQHNPS IVD
 RGSGL TPQAGKLW RTALTEKVLDKIVLVLVENS DNQKAMTDQGRGRLFI RACLVKKDLASLVQKLRDDTAFIE S L H QRN A DRA DA ELLWL Q H S L Q F H CLL S A QL K PL LDE N K Q Y V R $Y$ L T N V T T D L G K G R A W L Y A S L N E G L L E S Y Y V R L L G E N E K L V K



SQDKLQTPLGKGRAFDRFCLVHGQLA
 NMSEI K T DVGRARAWI RLSSEKKLLS QHL K QLGSRQPRTR LS HI NTPL GYFRAFLRAS L NERSLERYLQSWISH GLLA
 $H$ LD F V N T DVGRCRA WL P L A L N D G L M E C Y L K L L L Q K Q A QL C A AK HI K S DIGGKARA WI RIVLNNEDALDEHYL NLDFWHDPDSMC
 ALLNS ES D I K K C R S WV R L M L V K GLL L F S FL S DI QK HP GLLG N
 AL R H I A S DV GR G R A WL L R C A L N E H S L E R Y L L H MLL LAA D R S R L S $M L K N V S T E I G G K A R A W I$ R CTLLNEHTLEKYCGKMFQEKPKLE
 A MEEVKTDI GFARAWVRLSLEKKCL SRHLKTLLAN QELLLR $H L S Q I T S E V G Q C R A W I R L A L N D C L L S S Y L M T I R R D P S S L K$ NMAEI K T DVGGRARA WI R L S L E K K L L S Q H L K QL L S N Q A LT K
 N M GE I K T DVGRRARA WI R L S L E K KV L S Q H L K QLL L S N Q A L T K C S W S V G R A WL Y L A L N E N SLL E S Y L R L F Q E N L G L L H S CSS SART DQHKA QR WL QHS L Q F HCLLSVQL K PLLSS Y N F SR

 D
?

S L SCKTAMGRGRVVI

 NMSEI K T DVGRARAWI R L S L E K KLLLS NMSEI K T DVGRARAWI RLSLEKKVLS QHLKQLLMFNHSSLIK
 GLLANVSS DI GK GRAWLHLILAAES SLES YLRLFAKND IHKR RNCENISEKDNGKLWLQHSLQFHCLSAQLKALLGNRQYTR NWTR



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EWYGPRSPLLCPEREDIIDDSYALINGIVAFELINLQQPDLDG VYYHEWSLLLDQELSTLPNITAGLSSVFFA!GINEKKLNG QLLIKDEVLM
PFYEEWAFLLDQESSVLPNTAAGLGTLLFA DRTDNEELD DПYDEDSLMMCEDALQLSGLLVGLNCLDCTFVVKQCNLDD PFYEEWAFDMDQEKSVLPNVAAGLGTLLFADRTDNEELD

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## S <br>  <br> K

EESAQGALIL WYYARSPFLKPKLSSDVVGQLVELTEVQFDLASRGYDLDA
 E E Y E P P H A




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i
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 PFYNRSAFVGCDSEILDEMAQKLIGGLETVQFNLPINSSLLNQ

## K


 KYYN H WA YV R R D P D L L V E EVA Q Y Y M E T L L D H V
 , KYYEK E ALL L M D P D GP I L A S L L V GP C A L E Y QF Y DEDAFL RAEHSERIRGLLKPLSSLPULAATNSSFLNS
 P Y Y N R S A F I R D T D L V E V A Q R L I ELLDN I C F KL A C N S S L L N F KYYEKEAELLADPVVFGPILAS LL G

$K Y Y E K E A L L A D P V C P D L A S L L V G P C A L E Y$ E Y Y L S H A I L S T P QL L L L Q S L M C G L E H V N F S I E P D V H Y L D
 M WY D S T S I L R D D L S E I F L S L L A E V Q NilP F




 D WY P R S P KLYKRYAFLCEEEREQFLYHLLSLLNAVDY FCFTS


## 

## K


V

## \section*{} <br> 

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## 


KFYSDSAFLLD
K Q Y F S H A LVVRD A D K T Q L VN L L A G L

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

S Y Y D R D S L VAA D S D G C I L S S L L V GP C A L E F
NHYDEDSILRKD DS DVVRSILVPDETIXPGQDYNDSAL

 KFYSESAFLLDEAAHVAAMFQCLEAVE





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| UniRef90-A0A034VH38 |  |
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## UniRef90 G3P363

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VKA $\square$ MEEAVTK KFVHEESTHVLRL


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CGVVEACLLHMLKRRAAGFAIMADVCKKVQELQQQVESRK

C DLLERIWSHGLQTKKGKWSHLLSYTHRRRSSQGRDEKIUQ


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 SK R1 T

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 SSLKVKTDQGRGRLLIRMLLQNKCLDNLVHLMNTQPNFLD

 A MT D I K T H I GY A R A WVV R L A L E K K VVL S R H L R T L L L S D A A L L R S L G E H K T S V G K G R A L I $\quad$ R F S L V K H H R L P D S I Q Q C I V N G K V T R A A F L L S E T D V G G K A R R C W L


E WYPRSP LLCPELQEEI LDS LYYALNGI AF NLDDQRPDLDE
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LQRKES
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QCYFDGAFLCS

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ASCEDWALLRCAEGSI FVQLLTYDGDLHFR $\square P \square$ SDL
T WY S S S NFFDP DQTE IIISVLKQMNELQ $\square K$ FCVDNQSFDT ATYDDNALLRCQEGTTIMTQLLSLKELAFN
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R D E|LI KVI|RDN|V|QDCEKKFGGRTULATEAEPS|V|MK|I MDYKERLIASVVKKEVK QLMEEAVTK KYVHEESSSVTSLL

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> EEAAT R K F VHEDGSHVIS F MEEAVTK KYIHEESGSVTSL

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NVDENVTDSS

## $\square 1 H S \square K \nabla C \square V Q \square Q A E$

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ME DE R G N L L A A T R F VI R E L LD Y A L L H Q L S V N Q D S S GL S R L

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S LTT D P L LK S L K Y L I E E F L S VGE N VC D E S P Y L E Q F

MEEAVTK K FVVEESTHVLRL K Y I HE E S S S V T S L $V W N T Y G G L T R L$
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K F V HEDSSHI IS F E GLLLKECRMKTKRMLVEKMGHEANITEENTII A S L E GLLKECRMKTKRMMVEKMGHEANDTEENTR AS E GLL K E CRMKTKRMLVEKMGHEANITEENTILIAS L

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K F VHEES G S IT S L

LI K E L K F A T K F L N E S P P K P IT DE DKNVRS F ETQLQRII RDMQDAVTELNKDFLGAGEPITDDCIILHKF RQFLLERLLDAVKQCQ\|RFGGRKEIASDSDSRVTCD E Q K K A L L V G I S A S V E K L I AA H F N T A A R S L V D V S Y L L L N T L



E D $\square \mathrm{K}$ Q K L L WNVK K EVK Q IMEEAVT R
E ENVQI GTL



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ENERVVARDEQAVMD\VADF贝AKDSPDHE GAL HTLL K E L L K Q L K D H I F DLVRRHCLLVLS KEALLIAAVSTAVDKI DAHFSTARNLVDVGYLLLHTL FQVKQ TMEEAVTRKKVHADSSHVISF EHWKLLYS LLKTTVEGLLS TNNPNVWSRYGGLQR L

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H Y Y A D D A LI R DEKLR D ISH HLR ALMKFSFNLALNSSLLN A T YED T ALLRCQEAT\|MLQLLSYVKELTFKL
E S Y E S WA L I R D GEFA GL L N MA A GLL R T I LIF A I S ID A P E L N A
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K Y Y E K E A LLLMDP D G P DL A S L L V GPC A L E Y
 K L R K L T D WL L Q Y E
SH


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S Y Y T T S ALLFRQ NET QMFQSSLLLS SLL D K YCF T FMMVD D P RLLD
A RYKNYAFIREDDEMEQF LI HLLLSLNANVDF
K Y Y EK D SLLVA D P D G S L L S SLLL V GP C A L D Y S
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K F Y T EAAFLLS GAHVTAMLQCLEAVE


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K F Y EPRALLYKYEDARIASFLSALNGVKFLLA
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## ARQDGEQFRLALEKAQ

K WCDKGAF LLSEPH VS AMFQCLDAVE
$K Y$ Y EKEA LLAD P VGP $\quad L A S L L V G P C A L E Y$ F F Y P F E A L E C
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sol25
sol5
sol0
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jpssm



A LYMPTAFL
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A HYHPWGFL
KWYHSWSFLRSPGWVQTKCELRLLSKFSFNDS
RLYYETAFLEQQLFSDLLVAVQPLAQLPFNLD
ILHYSPTAFLGSLTEKPELLLLLQQPLSVVFTFSLDCD PSYKRYAFLCEEEKEQFLFHLLSLENAVDY KHYQERALLLRDCAASKFVTLLTSLANLD AMYCPSS
 A LY $\triangle$ P T A FL
KHYGPDSLVVRALLDTLLAS LEP LKKLPFS LDD TYYHSWGFL

YYEKEALLADPVCPDLACLLVGPCALDY
K WY H P WS FL R S P GWVQI K C ELL RVLSK KAFS L S
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K WY HP WSF L LS PGWVQ LLY LDP TSFF
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KWYYPWSFLRSPGWVQIKCELRVLSKFSFNLTDNWE KWYHPWSFVNSPGWVQUKCELRLLNQFSFNLSPDWE $\mathrm{V} H \mathrm{Y} Q \mathrm{P} \mathrm{V}$ GFLC
L L Y Q P TAF
LLY L PTGFF
RFYHVDMA L $\square P H A C T R D C D \square L Q R \square E N L H F H F E D Q S$ K WY HPWSFIVSPGWVQLKCELRRLSQLSFNLNPDWE LLY $D P T G F F \quad S L A R A G C P S L S T V T F H L D L$ T AYYYP WSYVATTGYQDSLRSLEALTPLKFDLPVD


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