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Y N R T Y P LT R P IVT L R G LTS FK IGGIIT DMDTESSKAN Q S N K Y N S S QLYTPRHLDGGALDEYDLLAI T D LD H DS KVSNKK

 SPYNSSQ LGK VIK LDD DGSRYEVVVVTDLDHDSKDATGNN
 SNYNYTYPLTRRI KTNTMHTFRI GII ADLDTNSKSEEKNT
 Y N ATYPLSPPQRTPEGLRYRIALIADDLDTGSRARAENT P Y N S T Y P L S P P E R T P H G V R Y R I AAV I T S V V D LiF R E QL L R S S L

 NSTRPYAPRHMED GS LEEYDLADAVTDDDNYTEVCNNN YNTTYPLTRPIVTSQGMTMRIGMITDMDVSSRSGNKYE ETTSSFKLMVVADLDKESRDVKDDKK
 Y N A TYPLTQFVYTGHEVLFKI GII SDPDKASKSDDS

 Y P L Q Q A K Y K P S S T HY S I T IVVA DMD K A S K T D D K K


PYNSTYPDSPPERTDGAKEYSIVLITDLDHESKGDGKK

 A D G S T T F DL LAVT DMDNHAKVESDNK YP $\square$ NEELLLP G S K T Y D F IVI T D MD N E S K V S E K WT $P N G L R Y Q L L A I T D M D K S T H A E Q W K$
 QETKEDGSTVFDLLIVTMMDNFAKVS QKWK
D P R P \T DHQVLDD GSSYRI AVI T DLDKDSRTDDGKK T K T A HSN GS $\square T$ Y NL L A I T D M D E E RE A K D K Y N SKYNSSAGTTP EKHSD G S A T H S L F L I T D LDD H D S K S E K K N T SVYNSTYYP SAPGRTPGGTRYRIAVGADLDTEPGAQEENT

 DGSTEYKLLIVTDMDKDSRAGEWTT M T S P WF S D R G T H Y R I $\underset{\text { I }}{\text { A L I }}$ T D D L D H A S K N D E K T

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 WFSYMRRGYLSVVES GDKVAVVEWE GDRVVLESHLSEKGRG WF S Y L K K K G Y L V L S D S G D K V S S V E W W S E E V ILL E T H L A E K K GR G
 WF S YMRRGHLLVS DS GNDVAVE WDTDTVVLESHLSEKGRG WFSYLKKGYLILSESGDKVTLEWDKNKSVLQTHLSEKGRG

 WT S HFKR GY L TVVHPDR TI S I EWDE K IVVVL S S T L S QK GR G



 WFS YFMM G Y L S Y S P T R R TVVVVTWDRS PVVKLTMSSYSGKGR G WVS Y LRRKGYLTGS D S G D K V A VV E WD R E H GVV V S H L A EK G R G
 $W V S K F K T G W L I M D R R S Q I F E V E W D K Q E T I L K G S L A Q S G R G$ Y N S Y L K R G S L T Y D V V R H TVVSV K WD T Q P A I L S S T Y S H K G R G W I S Y L K T G A L F V D IVECN K K V S L E W D Q D E L M L K T T L A Q G G R G WV S Y L K V G Y L TVV D R T A S E V D I E WE D K M I T L K S Q I A H G G R G
 WIS Y L H E G N L L T Y I I P Q A Y G TVVTVVSWD E G P K E MK S S F S L L K G R G
 WI S Y Y L K G N L V WN S D F K TVV S V Y WD K N P VT L K S S Y A L K GR G WV S Y L K V $V$ G $Y$ L V V V D K T M S E V WQSHLKKGYLTYRRSKPEIMSHWDSEPVVLESGFS LKGRG WR S Y L K K G Y L T Y L L P K K H E i Q i N W WD D G P V T L E S S F A L K K R R WRS RYKK GTLTWNSKS QTVSVVKWDEPTMLKKSKYSYSGRG











 Y Y S Y F K Q G Y L S Y N P K K L K V V I S W D K E P I QL K N N FA L K G R G
 WYSVMKK GQLTKQPNG TFSIVEWVDETKLYTKI SEA GRG

 WRS Y L R Y G N L K $\square F S$ D N S I K I N WK K D Y S I I K S H L A E N GR G WESTARRGGVLRMSADQKTIDSVEWNTSDDVLLSTCLVIDAGRG WR S Y I R Y G WL S F N N R T L S I S I K WEQD DVVEIVS GYSNH GR G WR S L K K G E L R K Q K D G T FT I H WLE D Q E I FTQQLSEA GRG

 WHSF LVRGYLVFHSDTNKYSVEDDPKPAALTSRYAEKGRG WVSYLVK GYLTLSDS GDRVAV EWD Q GHGVLESHLAEKGRG WQAVTR K GKKLTLLNKDKT QANVVWDAA DQTVVQSGLN YK GRA WRS TLLKSGTLTMNPETKKYTI AWDSEMDV TS SVFND GSRG WTSFAKYGVLRDSPDHAKVSVMWKANSDFLSTEDSSGGRAA WQAVTRRGKLTTLSADKK TVVTVVWMKDDKNITSSGFNNKGRG K G Y L S Y D P VKK Y V T V K WD NA $\square$ L L S S T Y S HK GR G WRS LVSRGFLGKVSSDQKHAE』HFDKDSEYFVTNDAAGGRA VF KF C GCSSGLHPSPD DEDEGALMNSLGFAGQG WRA LT RKGMAFMKNERSKVEVTWDSSDQNVTTHLNMKGRA WRALTRKKGQLFVKDELAKLVVTWDSSDQNLTTHLNMKGRA WRAVTRKGKLTLTADKKNVKVDWVQGSDQITSALNYKGKA
 WY S PMS IG T L A LSANRTTAAFI HWTSTHN YTS QL N HNGRG WRAVTR RGEGLTINDNRTKVEVKWKKEDQNDTSGFNYKGRG FRAITTRKGTLNLSNDKKTAQMDWDSSDRDIMMSGFSYKGRG WR AVKRK GQLTI S GD GEKDAVNWDSA DQNVTTHLDVVKGRA WRAITRKGKLTVDAEKKNVNVEWDTESDQIAS GLINYKGRA WRSYFRRGRLTVSSDFTHVSVAWDKDD DSLLSQVSSGGRA

 WRS LYKK GTLTWDKTSEKVDVVWDEEDRDLKSKYSYSGRG




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MELSD DIVFN GKLYSVD DRTGVVYQDEGSKAVPWVILSDG MELLS DLVVVNGKL Y S V D DRTGVI Y HI D GTKAVVPWVI L A D G $M$ M E L




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 MELL MELLS MELSELVVFNGKLYTVDDRTGIV
MELSELVTFNGKLYTVDDRTGVIYEV

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 MELSEELVVFDGK LLSFDDRTGVVN MELSELVVFNGKLLSFDDRTGLVYEVDGERVLPWVLLMDG MELSELLVFDGKLCAVDDRTGVVYHIVKRQMIPWVVLADG MELSELVTFNGKLITFDDRSGIVYKI EDSTAYPWLLLTGG MELSELVVFNGKLLTFDDRTGIVYYEIDDDDVIPWV1LMDG MELSELVAFNGKLYTCDDRTGUVYEUQENQVLPFALLSDG
 MELSELVTFDGKLLSADDRTGLIYVI ENENVYPWVVLLDG MELSELVVFDGRLLTFDDRSGMI FEIDNNKVVPWVILSDG
 MELSELVVFNGRLLTFDDRTGFI YEILNDHVIPWIILIDG MELSELVTFNGRILSFDDRTGLIYDUTNNKPVPWVILLDG MELSELVIFDGHLLSFDDRTGVIYFTEGEEVYPWVILMDG MEMSELVVFNAKVYAVDDRTGIVYEVDENRVAPWVILSDG MELSDLAVFDGRLLAVDDRTGLIYEVKEDKAYPWVFLIDDG MELSELVVFDGQLYSCDDRTGVVYRLKGDTPVAWVILPDG MELSELVVFNGSLYSCDDRTGVVYRLKGIVSVPWVKLSDG
 ME SSDGVVFNGKLYTCDDRTGMVFEVQDNRVVPGAVLVDG MELSELVTFDGRLLTFEDRTGLVYEVIDNQVVPWVLLDDG AELSELLVFNGKLLTVDDRSGLVFEIKGSKLIPWVKLNDG MELSALVRYNNRLYSFDDRTGLVFEVVNGKAIPRHILMEG PALSERPYNSTYPLSPPERTGVRYR1R R PRWGRGGG AELSELQVFNGKLYTADDRTGUDYEVLGTRLVPRFLLSDG MELSELVTFNGNLLTFDDRTGLVYELEDDKVYPWVVLADG MELSELIYFNNHLCALDDRSGVIFKI DREKAVPWVILADG $M E L S D L A V F D G R L L A P D D K T G V I Y E L T K G A A N P W V T L H D G$
$M E M S E M V V F D G K V L V V D D R T I V Y G V G N R I A P W V T L S D G$ MELSALVEYHNRLYSFDDRTGLVFELKGNKAIPRYILMEG MELSDLSEFNGHLLAPDDKTGMLYEIKGEKAUPWVFLNSG MELSDLTVFNGDILTVDDRSGTVFKIKGHKLVPWQILSDG MELSELVAFHGRLLAMDDRTGI HVHTPDEEAVPRYVLSDG MELSDLIVFNGKLYSVDDRTGVIYQTEGSRAVPWVILPGG MELSDLVNFNGHVISPDDKTGLVYEIKGNQAIPWIFLNAG ME SDVVFDGRLVGDDRTGLIYEIRDGKAFPWIFLND MELSDLSEYNGHLLAPDDKTGMLYEGKDDKATPWVFLNSG MELSELIVYDGRLLTFDDRSGMVFEVVNNKMVPWVILSDG MELSDLAVFNGKLYSUDDRTGLIYQISDKKAMPWVLLNDG MPLSDDLRFHPRWRADTQRTGHRLQVQAGAEEAFRRTAAG MEMSDLVKFNGHLLSPDDKTGMIFETE MEMSDLSDYNGHYLSPDDKTGMLY
 MELSDLTEYNGHLLSPDDKTGILF MELSDLSEYNGHLLSPDDKTGMLYEI K
 MELSDLVVFDGRLLSCDDRTGLLYEL $M E 1$ MEMSDLSEYNGHLLSPDDKTGMLYLIEN
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## QUERY

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 D GTV GK GFKAE WLS V VK DE QL YVVGGLGKEWTTTTSGVVLNEN D GSVVAK GFKAEWMTVVERHLWI GGLGGKEWTTTTGGEFVNNY
 D G S V $V$ P K G F K A E W WM A V D G S V E K GF K A E WMAVV DEHLVVGGGLGKETTTTTGEVVNEN

 D GT E K K GF K GE WMAVVK S K T L Y A G G L G K E WT T T E GVVF Q N H N NGKSSK GFK SEWAAVVKDEQLVVGSMGKEWTTASGEFVNNN D GTV GK GFKAE WLAVVKDEHLYVG D GKVAK GFK GE WM A L K D Q L L Y V G G L G K E WT TTTTGEVVNLD
 NGKANKGFKCEWATVVKDHRLYVGGLGKEWTTGTGEVVNLN D GKNTK GMK GEWMAVKDQHLVVGGLGKEWTTDTGELVNLD DGRTTKGFKSEWATVKDEILVYVGSMGKEWTTPSGAFETNN

 N GHVV E K GF K S E WA T V H GRRVAK GFK SE WA TVVK D Q S L Y V G G L G K A WT TP T GEELVNY H A GEAGKGFKSEWATVRDETLYVGGLGKEWTDNKGRVIVHD D GHTSK GFKAEWATVVKDQVLVYGSMGKEWTTAAGEFETSD D GKASK GFKSEWATVVKDQVLVVGSMGKEWTTAGGDFENNN D GNTPK GFKSEWATVKNNRMYVGGLGKEWTSDEGVVENLN NGESKKGFKSEWATVKDEHLYVGSLGKEWTTPTGELVNHD NGKSTKGFKSEWATVVDNNLVVGSMGKEWTTSKGEYVNHN NGEAPK GFKSEWATVVREGVLVI GGLLGKEWTNSKGHVINHD WTT TGVQNFW NDHSAKGFKAEWATVKD QQLYYVGSMGKEWTTSAGEFENEN
 NGHNEKGFKDEWATVKDKVLYVGSMGKEWTTAGGDFQSYD NGTDFK GYK SEWATIVYNSDLVYGGMGKEWTSSTGEFVNNN

 NGNNAK GFKSEWATVVKDGLL YVVGSMGKEWTNGLGDFENEN NGKNSKGFKSEWATIVKDEHLVYVGSMGKEWTNPSGVFEHNN NGKSSK GFKCEWATVKKDEHLYVGSMGKEWTTASGEFQHNN D GTK S K G L K GE WM A V K D Q QL YV G G N G K D WS T T D G I M L H R D
 $N G L E S K G F K C E W M T V K D E H L Y V G G L G K E W T T P D G V V L N H N$ A GNTTK GFK GE WMTVVK D G N L Y V V G G L G K E WT T T E G V V F V N E N A GNETK GFKGEWLTVVKDGELWAGGLGKEWTTTEGVVVNRN $N G H L S K G F K C E W M T V K D E I M W V G G L G K E W T S T K G V V E N L N$ D GKKAK GFKSEWATVVKNEVLYVGGMGKEWTTASGEFQSND
 D GTVGKGFKAE WLAVVKDHLVVGGLGKEWTSATGEVVNDN DGNNDKGQKTEWATVKDGKMYVGSFGKEYTNPDGSIKNTN FCTSSSSGFKAE WMAVVKDERWTVVGGLGKEWTTTSGEVVLNN S GNREK GFK DE WMTVK D N H L WI G G I G K D WT TAAEGEFVVNAD D GKNSKGFKSEWATEKAGNLYVGSSGKEWTTKEGTNENYN D GTVVAK GFKSE WAT TMKD DHLIVGGFGKEWTSKTGEVENVN
 D GNTTK GQKTEWATVKDDAILAGSFGKEYTNADGSIANTN
 D GLQEK GFKAE WMTI K DNYLYVGGLGGKEWADSNGKIVHRN P G DA S K GFKAEWATIK DNRLVVGGLGKEWTTGKGVVVHTH E GAGRSRKLAKR L LREK HSFEHGVGTGWPVPWES DPG
 $P G N T S K G L L K V E W T V K D D H L Y A G G L G K E W T T T E G E Y V N D N$
 NGQNEK GYK SE WATVVKDE LYVGGMGK EWTTAS GQFQSYD $P G N V I K G \square K G E W M T V K D T E L I V G G \square G K E W T T T D G E Y V N D H$ PALPQRRFKAEWMAVK DERLFVGGLGKEWTTTSGEVLNNN
 $P G N T T K G M K A E W L T I M D G L L Y$ A G G H G GREFQNDK GEVVVSED PGNTTKGMMKVEWLTIK DNLLYAGGHGAEYRNEKGDVVSED D GYQETFFKGEWLTVMKD GYLYCGSVGKEMTTNDGQFMNDN $P G N T T S G M K V E W L T I K N G F L Y A G G H G C E Y R D K Q G E V V T E D$ P GNTTKGMKTEWLTIKRSFLYAGGHGVEYRDDKGVVESED PGNTTNGMKAE WMALK DGQLV VGGGHGTEYRAKDGSIVVSTD P GNTTKGMKVEWLTIRNDFLYAGGHGAEYRNENGDVVSED P GNVVKSFKGEWMTVK DAHLYVGGLGKEWTNPQGEYINDH PGNTTK GMKAEWLTVVKD GLLYVVGGHGTTERNKTGAVVSED
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200 P E WV KVVGPKGSVEHENWVASYSALRAAAGIRPPGYLLHE


 P E WII K V I G F R G DVV R H E N WVVP H Y G A L K N A A V Gil N P P G Y M I H E

$P L W V K V V$ S S R G E I E S L N WIS N Y K R L R Q A V NI E Y P GYMI H E
P E WV KVVVGFRGSVNHENWVASYNALDRAAAGIHPPGYLI HE

P E W V $V$ K V I G Y K K G DVV S H E N W V


P M Y V K A I T P K G QV S HL L S WV N E Y K R I R E V L G I Y WP G Y M I H E

$P$ Q WI K V V T P G G R V V HR D WRD N Y LIK L C S A A Nil EPP GYMi H E

P Q Wi K I V T P G G R V

P Q WV K S I G P G G DV R HEDWHVVYYNNMK K A ADI Q F P GY II H E
P M WI K KI S P A GEVESIDPWEENYKTLRAKLGVYFPGYMLHE




P M WI K AVNMH GEVQHLGWVREFKSI RRADGI EWPGYMDHE

$P \quad L F V$ K S I D S
Y WP G Y M H E

P L WVVKV I T P R G E V Q S V N WI S N Y K R L R Q A I N
P L WI K I I S P R G EI Y S L N WI S N Y K RL R Q A I DI E Y P G Y M I H E
P Q WI K I I E K D G A V K H L N W WV D N Y Q A M Q R K A G Y D A P G Y II H E


P M WVVKRI TND G CVVRHVNWEQPYKRLREAVGUIHYPGYMI HE
$P$ QWTKSVGY LG DVQHHNWVDVYNKLRKFGGFELPGY LI HE

P E WV K VVGHRGNVEHENWVSNYNALRAAAAGUQPP GYLI HE
NMWI S I I D S NGHVEHEDWTDRFNKLRRAAGCPYPGYMI HE




NMWVSVI HNTGEITHENWTDRFNKLRKAAGCPYPGYMIHE

$P$ QWI K Q I D GT G R I R H L D W WK P F Y D A M R A S T G T S F P G Y L I I B E




P M WVVK HVVSAH GAVVH HEN WK DVVF DR V R R A A G I E Y P GYM I H E
P E WV K VI G S N G DVVE H Q N WG P KY N S L R S A A GI E P P G Y LI H E


P M WI KTI NRRGEVK S DDWRDVVFSRMRTAAGYPAPGY L T HE

Q M WI K VI SRRGEVRSVNWKDAY VKVVREYAG $\square K A P G Y M T H E$
S M WI K I V S A D G A V Q H K D WT K N Y E K I R D A A GFPPAP G Y L T H E
P M WI K I I T K R GEVVRSKNWNRVFSRVRNEAGYPAPGY L THE
P M WV K RI D P WGRVE H L Q WT DTYK KV R R S M G $\quad$ VE Y P G Y MV H E
 $F$ TRAGQVGHGGCAGAACSVSTLRRDLAALGLCF
A M WVKRVNRYGNKTNDNWQNNYEALVRKLKVITYPGYMWHE PMWI K TIT I R R GQVRSVNWKDVFSRMRTKAGYPEPGYLTHE
N M W I K T V T $\quad$ P A G E V
N M WI K TVVTPE GEVTNVVDWDVVYNNARNAVGISEPGYETHE

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UniRef90 F2UK77 UniRef90_O96559 UniRef90_B3RQ38 UniRef90_A0A016VF09 UniRef90_F7AAL8 UniRef90_D8MAA1 UniRef90_A0A016TTT7 UniRef90_E4XUD0 UniRef90_S4BHP7 UniRef90_I3LE43 UniRef90_G4WZX8 UniRef90_L8GI98 UniRef90_U6P152 UniRef90_A0A016TSS7 UniRef90_G6CSX3 UniRef90_A8XPQ1 UniRef90_UPI0002A49B7F UniRef90_G4WZYO UniRef90_G4WZX4 UniRef90_A0A016VPW2 UniRef90_A0A016TPK2 UniRef90_A0A016TLF5 UniRef90_A0A016VT56 UniRef90_G4WZX9 UniRef90_A0A016T7Z5 UniRef90_H3DSK5 UniRef90_W2SL11 UniRef90-H3EL25 UniRef90_UPI0003AEC8BC UniRef90 T1H8D6 UniRef90-A0A016T712 UniRef90_U6PBS3 UniRef90_D6PAH2 UniRef90_C3Z7U3
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SACWSDTLQRWFF LPRRAS QERYSEKDDERKGANLLLSAS
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 SACWS DALQRWFF L PRRASHERYYRSA G $\square$ WS DV H QLWWF F L P RRASHEMYNEKDDEHRATNALISCD S GAWSNIHRKWFFLPRRCSKEQYNETKDETMSCNVLLTAAD SASWS DTLLQRWFFLPRRRASHERYNEKADERRGTNLLLSSS
 S GVVWS DVVHKKWF F L P R RASTTETY DEVVKDEKRATN L MF DA D S GVWS NI H QRWF F L P R R A S T E KYEETADEHRATNLLFTCN



 AVA WS HQ F GE WF F L P R R A SVEAYNDVADEEK GTNLLL RTN

 SAVWS DI HK K WF F L P R RMSHES YNEDK DETQQGTNLL LTCCD
$\qquad$ F GEWF F

## p R R A

## R A S

ASTTA
S GVWS DVHQQWF FLPRRASTETYNEVEDEEKGTNLMLRT D GVWSSSQNRWYFLPRRCSREKYNEVADEQRASNVMFRAD
 A GVWS DI H K K WF F L PRRMSSY $\square$ Y NEKTDEEMGTNTLLDAS S GVWS HIT QK WHFLPRRCSHEAYNETKDEVMGCNYLI TAD SCAWS QI HK RWF FL P R R S S SK QYNDNDDEHMATNMLI SAN AVMWS S K N K R WF F L P R RMS K L K Y D D K S D E H R G T N V LI S C K S GVWS DVHRRWF FLPRRCSKEQYNDSLDERKGCNVLLSAD

 S GAWS DI HK S WF F L P R RCSHDQYNETKDETMSCNILLLTAD
 A V Q WS D V H Q K WF F L P R R A S H N K Y T E A E D E T R G T N L L I I A D

 AVSWSAVYNQWFFLPRRASREVYTEEDDEQRATNVLERS D S GVWS DKHQRWF FLDPRRCSKE PYNESDDE HRGCSVLISAN SACWSTYHKRWFFLLPRRASHESYNDVVDDEHRGTNILLI TA D SACWS DTLQHWFFLPRRASHERYSEKEDERRGTNLLLRSA A $\square$ S WS P H RK Q WVI L P R RVS K K P Y D E NLDERRRGSNTVI LA S
 A ACWSDKYNKWFFLPRALSSQEAYDSKKFETQGANVII SCD A V V WS N I H R K WF F L P R R A S H N K Y D D V K D E R R G T N TTL I S C T
 A I M WS DI R R Q WV ILPRRRVSKEPYDEKEDEKRGSNVVMLAS

 A A Q WS D DHK RWF F L P R K Q S K E I Y D E AK DE T R G S NLLLI S T N GIR WNAALRRWFFLPRRVSTDPYDEALDESRGSDTVI SMN AVQWSNIHQKWFFLPRRASKEKYTEAEDETRGTNVLIIGD AVQWS S I QKMWYFLPRKASRTAYNETVVDEMGTNLLI LAE S GVWS A V N K K WH F L P R R C S H E S Y N E T R D E V M G C N Y L I TA N

 AV Q WS D KLLQQ WLF L PRKASKT FFDES EDEKKGTNLLI RGT AV Q WS EKLLQK WF FI P R K A S LTTPFVVDSEDETK GTNLIMI K A D
 AV Q WS DI H NRWF FLPRKASTTMYDEKADERKGTNLLI TAD AV Q WS KV H H R WFF I PRRHSKK DYDE EA DERRGGNKI I SA D AV Q WS EKLLQ Q WLFL PRKASKTPYVESEDEKKGTNLLI KGT AVQWS DVHKKWF F L P R RVVRETYDEDADEGRGSNVMVVAD
 LLVGCLPRRASHERYSERDDERRGTNLLLSAT A V QYS E K Q GMWY F L L P R K M S R K A Y D S K K D E K K G T N KL I T S AVQWSAARRRWF F LIPRKESKTSYVEELEDETKGTNLLI MGY AVQWS ETQQ H WY F L P R K E S K TVVYVE E E DETKGTDLLI DGN SGVWS D I H QRWF F L P R RAS QLSYNEADDE HRATNLI I SCS




1

SFGLVIVADLDKKSRDSSKPL
DGCTEYKLLIVTDLDRASKAGDW T
TWDILLISDLDKKSKVDDKKQ
LEFP LLVADRDKASKVTDDKQ
YNDTYPLSPPQRNPEGVRYRGGGIADLDTASRSSQEHT


SFEDGFVADLDKASKVADSTT

## Y G L T R P D S $\square \mathrm{G}$ <br> GGKSFNFAVI A DLDKKSVSKTDNN

NK LYY P $\square$ TAPVT TGDGTKFR $\square$ AVISDDDENSKKGDKN

TYRLTPKLYSKDSPFFKVAII SDLDKASKTNKK

K S APPGVEYHFGLI ADMDKKS DSSDRNT

EAAPRADRFPFAVI ADLDKDS IKDAGKQ
YNDTYPLT TPVQLPDGTRFRLALVADPDKASQVSSSA
EAAPRPTRFPFA LVADLDDKSRPSNEKD HFATVTDLDKLSVVTDSKK TFAFALIHCAPPGVEYHFGMIADMDKKSUSSEKNT KSYPKNAPD $\quad \square R$ VALVSDLDKASK EGQM FGVVVADLDKNSRVSKGDV
H LDPDPQQYDFALVADLDKGSRDPKKFE QAAPPGVEYHFGLIADMDKKS IASDKTT $P \square A D R Q R T S D V D T Y T L A I I T D E D H A S Q V E L E D A$

YNSEQTQYTDALI TDEDHASQVTLDDA

YPESMSTYNEKSSAFQLIYVTDNDKYNT DGNN PAAPLTRNFENGPWVI GVI TDLDCESRYQEKNT
 GLI ADLDTRSRGPQEHT VVF $\square$ A D $\square D$ VQSRDDASGK

SPYNSSQ $\square G K V I K \square D D G S R Y E V V V V T D L D H D S K D A T G N N$ QYSPESKMFQVIVVSDDDKYNLDSTKKQ
SWSNDNY KPK $\square Y$ TSEPNEYRFAMDAD DDKDSKYKNDFK PANFRYPTSMAEYTNTSTПFQVMFIADNDNNNKDASDKR
KYTKNAPVLRVAIVSDLDTASK DGKV
NDTYPLVAFQRTPGRDQYPVAVIADLDTGSRAQEENT
YN TYSLS STKFQVIFVSDNDKYNKGLDTYG
PYNATYPDTKP IVYGRKVRYKFACI TDDDTESKLKGENT
YNHSQ $\square H N T R T L K D G T V E \square D L L A V T D L D H D S K V S N K K$

KKVN $\square \mathrm{DGSK} \mathrm{T}$ Y QLLAA $\square \mathrm{T}$ DMDKSAKAGDK
S $\square$ K S D Q K S

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## $\square$

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UniRef90_R1EHA7
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60
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80 FTS VVKYGELLK DNGERYTLLSWKSENDHYFTRYSYNGRGA W IS YL Q $\square G R F S \square A S D C H C D Q V E W D P V R K E \square K G G \square A Q E G R A$
 GLNYKGRA GLNYKGRA
YFSFLQHATLKDTKNKDEYSVKWGEKRK FTTGTMNEAGRG WRAVTRQGLLKLDIHRNHVSIKWDSDRN LTSAMNVKGRA YRSVLQAAALTRDPATKKFSVEMGEATD LFSGHNEAGRG
 WK SVLLK GLLKKRNE QTGAYSVSFNEKPWEINGGLVE GSRG WFSYLKK GYLVLSS S GDKVMVEWDKDESMLQS HLAAEKGRG FTS $\square V K$ K GELLK DNGERYTLLTMKSENLHYFTRYAYKGRG

FES $\square$ F QRA $\quad$ LKRHVDGSSYSVMF RDSETFSTTLNEAGRG WYSPMS $\square G T L A L N A N R T T A F V H W T S S H N \quad Y T S K L N Y D N R G$

FQSYLQKAVLHRKDDKVEYTVSW KDVAPFTTS LINEAGRG FKSIVKLGGETGQVGTKYDIVMKKEDREDFTKYAYRGRG



 WYSTMRYGALAFS QNRTASFDHWWGGGVNITSNFNFNQKS FK S Y A L K G QL Y R H P R S GRF H FRF SP DEVV L Y GS H NV G GR G FNS ILLK LDELLRHNTRTGRYNFVIDRDVKKPVSTREGYKGRG

 WESRLLLATLTRSPRGGYSLAPVVFKPRSPPKAEA

 FRSTLLPGTLTRDDKTNRYSIKF EQHRTLVSQHNEAGRG

 WHS IMMQKATLRRRNER GN FTI EWGETVIVK LTSTVAN KNRS
 WDA YFRRGELEYDARGNRSTIRWHEPAVRLTTQQSEAGRG



$F \square S K V H F G M \square S K V G N K W S F T E N \square Q K S F Q Q D T Q L N Y G G R G$ WVS YLKRGlFSLNAGPEGSSVEW LDEDELSAHGNFGGRG

 WFSYLKKGYLVLSDSGDRVTVEWDKDESTLQSHLAEKGRG
FK S Y A $\square$ K G QLYRSSRA GSAET DWSD GFDVLY GSHNDGGRG W $\square$ S Y F K E G H L T Y K P S DEK $\square$ S $\square E$ WD D F E D R L K T N L S VNGR G
WYSYVKRGVITDNKELTKASVVWDGKETTLRSSLAAGGRS $H \square C K V H F G L L L K E K D E W T F N E S T S K G F D V V G S N Y L Y K T R G$
 YTK V HF GLLSK VDGQWTYAPRDSKD DTVY SEYTYKGRG
 WFS YLKRGYPTLSDSRDRVSPTWRKVE R G VSKVGFGHDEFKD GQWTFTPN DAKKFEVKALYQYNKRG Y YCQI Y LGGI H IT DK GWEYE ETSHSKF DSKFNK GKR G WIS Y L QHA VVVTITAN H SVVTVKWDKPPDVILRS GLNEMMRG
 WTSFAK YGVLVRISPDHAKVSVMWKANSDFLSTEDSSGGRAA WR A VARPGE LT $\square$ F P D GK R VE $\quad$ K WE K LDD T N $\square T S G F N Y K G R G$ FTS S V V Y GELK DNGDRYTLS DK SENDHYF TRYAYN GRG



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90
100
110
A ELLSELLDYFNDKLYTDGDKTG\|V|FEVHGGDLI|PWVILSNG
 FELLSELAWFNGKLLAFDDRTGIVVRLQHLQAVPEHIVMEG MELS DL SEFNGHLLSPDDKTGVLYEIIKDGKAIIPWVIFLNS G M E L S D D L E E F N G H L L S S P D D K T G G V L Y E E I F E $\operatorname{L}$ L M E L L S E L I D N Y R G S L L T DVD D R T G I V M E L L





| $F$ | $A$ | $P$ | $W$ | $V$ | $F$ | $L$ | $N$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $F$ | $A$ | $S$ | $G$ |  |  |  |  |
|  |  | W | $V$ | $F$ | $L$ | $N$ | $S$ | FELSEELAWCRGDLHTFDDRTGLVFRLEDDRAVPVTIVVEG


 MELS D D LVTFNGRLMTCDDKTGEVYELDNKEVLSFAHLNNG


 $M E \operatorname{L}$


 A DMSEMI YF ND KLYTLN DETGTIYEVKGGELIPWDTL K N D MELSELTITNNRLLSFDDRTGTVFEILLSTPVVPRFVITEGG

 ME L S E L VRM S GS LL L GMCDSTGIVVYEI KGGGAFPRHAI A D G





NELSEVVQQFNNLYVFDDKTGVVAQLEYKKFYPWIIIDDG MELSELEWFNGHLLTPDDRTGTLFEI DASKVVPRAKLLDG L
 MELSELVVFNGELLTFDDRTGUIYR DKNNEAVVWVFLN S G A E LS E L VT Y N S K L IT LDD D K T G Y L Y L I Q N K I LE P WVK V LA G MEG MELS D L A DF D GNLLS DD DRTG IVVK IVGDKAMPWVLLVDG NEMSEI I QF Y DKLYVFDDKTGIGHQI KNKKFYARVIMADG
 VE TS E I V Q F F D K T Y V F D D K T G I A S ELLNKK E Y Y S R M I M A D G
 MELSDLNVSGGK_YSMDHGRGVTYQMDGSKAVSRVILSEG TEFSEI I SYNGELYVFDDKTGI GHK LDNKKVYPRII MADG NE LS E L V WY NK KL Y G F D D K T GI G Y E I D R QE LYP RII F NE G
 MEELS D L V V F D G R L L VGG D D R T G L I Y E I



EL V D I L N F K D K T Y A L E K K N G I V F E M L N T QL I P R L I I P A N
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A L WVV|K|VI|DHNGEVVTTDNWENQYKK|V|KVAMGMSS GFVVHE PMWIKI ID SEESRVRH FWKD DY DKLRAAVGDEYPGYMIHE NMWVAI MDHNGDVRHEDWTANFAAVRSALGCDWPGYVVHE SMWI KI FTKVGEVRSKNWKKVYSRMRNKAGYRKPGYLTHE SMWIKI FTKVGEVRSKNWKKVYSRMRNKAGYRKPGYLTHE NLWVAVMDKHGEVHAEDWTSNFARVRTADGGAWPGYVVHE NMWVKTVTSKGEVTNKNWDGVYNKMKASVGDPE EGYLTHE PMW KT I TKAGKVKSENWTDVFSRI RWAAGYPAPGYLTHE PMYIKTIDNRGHVEHVNWVSNYKKMLRAVGDKTTGYMVHE PQWVKVI GYKGDVSHENWVTNYNMLRAAAGI RPPGYLIHE
 NMWVAIVGDNGAVRHEDWSHRFAKVRAKLGCAYPGYVI HE

AMWIKTITKTGKVTSHYWKNVYNTIRNTAQFPAPGYLTHE NMWVSILSKDGVLRFEDWTDNFAKVREFVGCGYPGYLDHE
 PMYVKTITTAGTVLSVDWSHNYKRLRQAADIIWPGYMIHE



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 NLWVAMLNDRGEL RREDWEDKFNFVRKLVGAAPPGYI DME SQWIKKMSKDGTVTSEDWSADYQKIRNAMKM PNGFVWHE P LYYVKQUS CVWVKTLDRCGKI TSHDWTANYKALRVATNTTFPGYLSHE L WVKKIT K DGVVTSHDWTDKYRKI LKA LN M P NGFVWHE ALWVKRI APDGVVEHLNWTNRYERLRRAAGTAFPGYLEHE EEWI KVLDRTYTLQSI NWQDNYQRI RDALGVDAEGYVIHE EEWVKML GRNYGVRSVNWADRYQRIRDALGVGPDGYVI HE NLWI GILNAEGELRREDWTDQYNVVRKALKALSPGYLIDE E EWVKILNRNYSLESQDWRENYQRIRDALNVGKQGYVTHE HRWVA QLS S LDD RI D HVNWSARF DAVQQTALGAS GYV DHE
 K Y Y IIQ KVVNK E GS F F Y E DW S N V Y N S I L D A L S i P K WV K I I D K N F QVSHE D WS GRF DR V A A V A G V T F P G Y L M H E P L F V K RMN EN GRVVY E D WGKR Y Q DI N L R L NFWVARDESNGSVEK DNWKGQYNRLRELTRTSYPGYMDHE P Q WV K VI GYKGDV SHENWVTNYNALRAAAG R P P P G SMMWI K TI TK K T GEVK S EN WK D IY T N M R N KA GYSAP GY LT H E $N T W V V I I D G E G R I \quad S R E D W A G V Y$
PQWI KIVTPGGRVE HRDWQDNYRK LCSWANYGPPGYMDHE LN WV K TIIDK SENVVH HLDWTENY QKVLLAAMNK DSRGYMTHE $N L W V A V M D R A G D V R H E D W T S H F A A V V R T A G G C D W P G Y V V H E$ $P$ M WVVKRIT ND GCVR HV N WE QPYKRLREAVG\|HYPGYMIHE K Y Y V Q KVVKNGVYETVVFSFVYKTIDNLLGVSSPGYTSME


 VEWMRVAGHKGSVDHKNWVCSCNAPRAATEIRRPGGCLTLE

 $P$ QWI K V VT P H
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[^1]:    $\xrightarrow[-]{+}$

