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E


| $Q$ | $L$ | $A$ | $E$ | $Y$ | $R$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $K$ | $T$ |  |  |  |  |  |
| $N$ | $N$ | $T$ | $L$ | $R$ | $T$ | $K$ |
| $L$ | $A$ | $D$ | $L$ | $R$ | $Q$ | $T$ |

E | $L$ | $A$ | $D$ | $I$ | $R$ | $Q$ | $T$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| K | D | V | R | K | K | l |

ELK DVRKKI DSIDDQQI AVLLEERMNAVTEVNRLLKQTDK
EDALRAEI DRIDDEIHDLIVHRATIAAKVRAAKTGGGG


$K T$ L A Q L R D H D D D V D G QL I QLL L K L L R N E L T S S QV G E V K S Q T G M
Q P L S A KRKQI
D A I D QK
KLNTMRTQI

N
L E D M R

3619618 K

E S L EQS R R

$K$ D L S Y Y Y R Q | $E$ | $L$ | $R$ | $S$ | $M$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $T$ |  |  |  |  |
| $G$ | $E$ | 1 | $R$ | $G$ | $S$ |


Q E $\begin{array}{llllllll}L & K & E & \mathrm{I} & R & H & G \\ L & L & S & F & R & S & E\end{array}$
N N I D
LQPLREQTDQLDSELVELLARRA E S L R ELR R Q Q I D E CD DQI I DVLSKRMRI
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 $\square N E L R A Q \square D V I D A Q \| L D G V R R A A V A T E I G G Y K R T R G L$ $L R E T U D R I D G D I L D L A G Q R K K L G T E L A Q L K K E R G D$
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 DELUA L R QK TDLLDCQLVELFEQRMELVCQI AKLKQRQHT DTMATYRKRI DELDKEI I HLLGDRMQAARII GAYKMKHNL
 RASCAMEVAKTK】AQGG
 LDHTRQQTSSTDKDLLQLLASRRQLALSVADAKLAQNK DELACLRASI DNFDATLI HILAERFRCTKAVGQLKVRYDL NLSNURTQITQLDHDLLKLLAERHQLAFDVLRDKQITEI
 ELLEARAT\DNDDAALIH！LAERGRCASEVVGRIGTELGLL R G Dil DVI DNQLI ETLGKRMRISDEI GALKKQRNV
 D TLESLRTQI DNI DQSI I ECLVARMKIVGKVGDQKRLD QL E I I QKDAELQKSINEIDARMYELLMQRTELVKQ $R M Q V K E V G R K K K A N T$
 LKTLRKQLTEVDMKI I DLI HQRQSLSKKI GSTKRKEGK DQLSRYRQSIDNIDAALVYMLAERFKVTKAVGELKAKDDL EELLHLRQSI DNFDAALI HILAERFRCTNAVGII KAKFDLL

 RARLAQEI GQVKRKAGQ Q $\square$ N Q LRAS $\square D N \square D A \square L V H T L A E R F K A T K E V A R G K A A H A M$ EVLKSHRES DDR DDA $\square$ VVYTLMERAALVEKVAQAKAPDVS
 $L A R L R R S I D N L D A A M V H L L A E R F R C T D A G G E L K A R H G L$


ELLEEWRAETDTTNTKTVALLSERMEVCTEIAKYKYKYNV



E




K NLDESRKMLDEIDS QIVYLLENRMK』SEEIGIIKLNSNL



UniRef90_C5VNK1 UniRef90_Q2G8M7 UniRef90_UPI000362C9DA UniRef90_X1TCT9 UniRef90_A0LY84
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A

P TEDRAREREVL|AR|V|MDRA GDMEEYAFYFFSR|L|MS

 P VYYSP D R E K EVVFA RII A E A N E G P L P D R CIL V A I WR ELLMS G S
 A AFRP GREADMMRRLVARHE GAL P LDWTV EHDWREI D



 S V F D P D R E E R V L A R L R D L N D G P L P E DT L R A I Y R E I F S G S


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 <br> \section*{P <br> \section*{P <br> <br>  <br> <br>  <br> }A
A LLD S K R E E ELLLA KVVAS L VS QP D F K D T L L A TY S A I L Q E S
TSFDPFREHEKI D FVE QNDGVFPKSSAKHDFVEI FS
 $P$ IVDHDREQQKLDLAEASVPEHLKASTASLMRVLM $P$ V R D A T R E R E V L A R I R D G R A H GL S D S F A Q R L G E L L DE E S L
 PASDPNREEQQVVALRADAEAHLDPEFAEKWF

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 S F Y R P D R E S LV L R R I K D L N Q G P L P D D TAAVRFFR E L M S A C L PVYEPRREQDVFDRVRAANPGPLADAELLHVYERIDDV D F Y R P E R E A M I L R R R V M E R R N T G G P L A P D K E E M A R L F R E I M S A C L $P$ P R D Q K R E E E L L V S L D E R G K L G L D A Q Y V T K I Y H V I I E D




V

\section*{P <br> P

## P

## P

A



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 $P P A D P D R E Q R Q V A R L Q E L A D P E F E K K F L R F D V D E V I$ YRFDPVRERAMLDLI TEHNNGPFENSTLEALFKEI FKASL NMMQPKRIEEVLKKTIVAKENNLNPKYIEDVFKIIINE AVAAPERVAQVLARREQAAAAGLSPDVAEAVWQAMIAA $P P A D P E R E Q R Q L E R L R S L A E A G L D P E F A E E L$
 NVHDPEREAYLLKRWAGLGKKYGLDEKDI
TVVDVSRVERI I A RVRVMAENGADPALIERLYRGMDE SVRDSEREEQVVANNAKLDQNPADVPYYKDFIRSTMDVS PAADPEREKRQVKRLRALADPEFAEKFDAFIVAEVIR GICDSVRERELIKDKKDMCEGELS EYVEALFEKIMELS





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 TMAEVRTSTDDLDRQVALLGERMRFIVAAARIKP HRE ELUELRGHDDEUDSQUMLLSERFKSTEKVGUFKAKNKL DQLAEFRKQ DK DDDLLLQKLGERMAVVGKI GEYKRDNQV LKEHRESIDRLDA！LVYTLGERFKHTQAVGRLKASHDLL ELAADRDETDKTDAHTVELLAQRFKITNQVGLLKAQKKL QLRAMRGT：DNLDAVLVNVLAERFKATQRVGELKAANDLL
 DSREALRSKDDLVDRSVEGLAERMQIVRKLSDQKRLD KSLETLRREVDELDRQLFLLIAKRMAVVREVGDRKRSQGL QLLAHRQTIDNUDAALVHILAERFRSTNE：GVLKAQFSL RGRVVQEIGKAKEAQGV
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$\square K E H R K S T D R \square D S V Y$ RAGLAQQ GHVKG NG LKEHRKS $\square D R L D S \| L V Y T L A E R F K Q T Q A V G F L K A E H S L L$ पDTYRDQDD【IDNQ\｜LGLLAER T पEGVRKQ DDQ DDSELVNLITQRAECVKAAADFKTDH RAEVVEQiGQVKEKQGV RANIILQVADFKKEHGG RMEVVRQVGELKRSSNA IDDVRQR DDLIDREEVKLEAQRLKKLVAGVGEVKSRHGL E\｜EELRKETDECDRVLMKTFEKRME AQEMGKVKGQGV KRLEELRGQUAE\｜DQEILH\｜IERRARVAQELSKLRP RASLVQKi GQTKGTHGA DRTEETREKTGECDDIIDEQLAVRMSHIQEI ISYKKATGT QDLSTLREALDWVDGALMHLLKRRLEDCRDIGRDKKAAGL KTUDELRSEIDEIDDGLVSLFLQRLAVVKEIGKAKKTHSL

LEEVRSNTDATDQKTVSLDAQRGGFVMQAARFKKTTGE DGLQDIRHAIDSLDHQI IDLMRQMAYVKAAARFKP TES DEMSDVRATIDALDDELVALLARRQRQIERAAAVKPSLGD RMDISKEVAEYK DETGK RMKIVHKVGSLKAKSGG
DS $\square \mathrm{DEGRHE} \mathrm{\square DSVR} \mathrm{\| LLNSLL} \mathrm{\square R}$ LDEVRWRTDATDGELLALLDERAGLARAVGVKEEQG DPLASLRDEL DQCDSQLLQLLRRRADLVAAEVGKVKHKAGD
 DNIEAVRQVIDSLDAQLVSLIAQRSECVKAAAKFKKDS EEDRELRKA DDHDDEHDTLLVRRESADEIAEHKARRGQ DSLDEVRTNMDI DAALIHLLAERFKVTQAVGRYKAEHDLD


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ESLNDTR【GTDTLDKETVHILSQRMGYVKAAAQFKPDEK DSLDELRTALDEIDNQLLDLLNRRAAYVREATRFKS TRA QLEEARRV：DHVDRQMAALEEQRMEAVRHVAEFKATHGLC
 K乌DLLRQK乌DKUDAKLVELDGKRFYUSEQVGVIKKREGV


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 P TK KGRREEMVI ENWCEHAEYDLSEEMMKKMAALI DE PIVDEKREREI I AKMQEENQGPVTDEQVARFFSNLFQD
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 PVDDTARENAVMEANSALDDDEALKEYYDSFVRATMAVS RVKDSTREKEVLQRLTNLGEELLPSELVKKIYPIIFEV
 $G V Q D L K R E Q A V L E G I A M V V Q N R Q L V Q S I Q H I \quad Y E Q L L A E S$ DVRAPNRVEQVVAKVQAMNETGASPEVVEQVYRAMIAA VI YRPEREREII ARLNSLNQGLLNEAAI EALYLEIFAVS

 SVNVPSRDKQVIQGAVDAASSHLPQUVAKKVYEAIINSSID AVLRPEREAQVLQRMARANAGPLSNQGVTTLFTEIMSQC PPSDPEREAKQI ERDEDLAKPVFAKEFLNFI DAEVD



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 L
 PI YDDEREAKVLKR
 PHYDPAREEQQL RELEALNPGPFPASTIKTIFKEIFKASL DVKAPQRVEQVI SKVRALAESAANPDVTEAVYRAM1AA SIAAPERVAQMLQRREWAEQAGLDPHFVETLFAQTI PARVPERVDEVLARVAAASEEGLETELGQALWRALIEWSD K VF F K V R E E E KL R A V K A L T H N EFNSLGVVE EL F EQ I M S M S AIYRPDREKADI DRLNQENSGLLNRSAI EAA FDE: FADS SVMQPERVRSVLGRATEFADSGMNPYVLQDVYASLDKE MKFDPVRERNMLDLIAQHNNGPFETSTLQHIFKQIFQMSL TGFRPGREALIVRKLLAAPRTAASDALVIRRIWRELMSDSLL P 1 YVPSREAAMLARRRDAASLGVSPQLI EDVLRRVMRES
 TARVLARSEQEQLARRFRSA
AVRAPERVQQVI DKVREQAKNGDSED IIEQVYRTMDTA PVYDGDRERQKLESVKAMTDDSFQKQAVEELFSQMMTDS A V VQPERAQQVRARLQSGAADGLSPTELAALWK LVMDES PPADPAREDRQIERLRQLADPEFSEKFLRFVIDEVI
 PARI QSRVEEVIANACRVAEAELDPQLVECI WRDMVDWSI PARIDSRVEEVAANARRLAPAGLDPELAETLWRDMME AVVQPGRMA AMQERLQARFASMLDPQLVSDYLKLMTETATI N RYDPDREREMDNVLKDANNGPLPDGILEQVFKSIFMSAL
 KVVFDPEREQQKI A SVVKQLA H S D FN KVVGV E E L L F S H L M S V S SVNVPSRNEAVLEQAEQQA
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RGTLI KEAGKYK KEEGGL RGMLVQEVGKLKGVQGT
DALSD R DEDDNDDRQLDRLLAQRQULVEKAGRLKPKGDV DNUEKVRAKISMYDDEIIKGLSKRMDCDDEDMQYKKEKGL RAACSKEVGAVKAGAKD
RMNVCREVGDYKVKAGR
ECRAATDEVDAVLAALLEYRAALTSQVQRLKPVSGQ MSELRAEVDATDRALSALLGHRARLDSRAAALKEGNGW ELDEVRTAVDGLDQQLVQLLAARGAYVSQAARFKKDDD NELDRQF亡ALAAERKALSGEVARVKRATGY RAELVKETGQVKEKQGA EMFALRQSTDNTDNAVVSLLAERFKVTEKVGEVKARANGL EELEKERSRVTAADEK VVALDERMEAVAE:GRLKQREGL ELLSWRSSDNDDATLVYLLAEREKATQKVGFLKATHKL NLTQVRRDUDDCDSQLIRLLAKRQTLVEEAGWLKPKNDQ GQLKRSSDV RMKVCAQVGEYKDKNGK $\square A D \square R H A T D T L D H E M V T L L G K R M G Y V L A A S R F K P N E Q$ RSRINLI DFILLRLLQWRFRMVRIIGVKKRDQEG
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 QNLHCLQSE:DNLDKKLLQLLAARRDIATEDSNKKDEANL

 RMKLC
EETPDLRVETDATDAELLRLIKRRSEISQRIGLARMAAGG DQLTEVRSAI DALDREIVGLLARREEFVRRAGRLKADSD ETMSDVRANVDRVDRLLVALMAERLENYIIRAARIKPTRD MQELRVQLDALDAQLVAKLVARAGYIDRAAVLKQGENL LHDIRHAD SLDKQUDALGLRMQYVKAASAFKPDQA QDMTDVRYEI DRDDRLLVEDAERTTYYKAASRDKPDRDM ENGNDIRAGUDFFDRQILDSLQKRLRYVKAAAQFKAKNEQ RMDVVAEI A AVKKKAGH RDEVAKEIGKLKENMGY
K E
DDEVRSHTDATDDQTDALDGGRGQYAVQASAFKKDEEG LEEKRKAUAETDKE DEGDRAEDDAVDATLLETVRQRLEVCDRI GELKRREHD KLEKARGN DLIDQEMAKLFEKRMQEVNEVIAYKMEQGL IRRYDKEVVELLNARAQATLDLLEQQDAPRE
 DPGAHYRSLIDDVDLVLGDVLARRAADTVVRDHKRTVSS ILQTLAKRMRIAREIGTYKKEHGM T MGEVVRDDDRDDDMLVKLIAERGQYVKQAAGFKKNSD ESMHEVRENVDAIDRALVDLLVQRFAMMDAAARIKSDRG RLEVVAVGEVKGRHGL Q LiNDGRNKMDEVTDQMDKGLKDRTDIAKQ\|GEVKKNDGK MSQVRSEI DRIDNALVDLTTERYGYVDRAWQLKMSTRE TMTEVRAGVDALDRDLVALLARRFAYMDAAARIKPAR T ESUQHAREQ\|DALDTALVELEAARQFYVDQTTRFKKTET DHLKENRDKLDKLDYK!IALLDKREKFVKQUAKVKKRYNI


|  |  |
| :---: | :---: |
| UniRef90-G8LRZ6 | ALLQKNRWEYI LNKSILLGKEGVSEEII EEIFKILHKESTI |
| UniRef90_UP1000465B0AF | A $\vee 8$ |
| Doz | P V Y |
|  | GVICEAREEQLRVRV |
| UniRef90-R6 | QV LD TAREAEKIAKVKEMVKDPGNRQGVEELFEQDMSMS |
| UniRefolo-DoLRS3 | P |
| UniRef90-C4s | A $V$ |
|  | DVKAPQRVEQVA |
| UniRef90_UPIO0037CB5C8 | Q |
|  |  |
|  |  |
| UniRef90-J3KK | SVNVPARNKQIVERAKREARLGMPVSVAKAVYETVLKAGI |
|  |  |
| UniRef90-D1BM65 | PLIDEERDESII ALHTQNCKDKVLAPYVENYITKTVVSMS |
| UniRe990-UP1000 | NRFDPVRERVMLDLIVEKNEGPFETSTLQHTFKEIFKANL |
|  | PVYRPEREKE |
| UniRef90-F8HG | AVQASDRVAQVIAN |
|  | PI LGP EREGKDVLEKL |
| UniRef90-D4LZ19 | KVYDRQREQEKLADVASKVDNDFDKNGVR |
| UP10004 |  |
| UniRef90_D0DB38 | P |
| HoJBQ9 | A |
| UP100037 |  |
|  | Y |
| - $14 \mathrm{MC39}$ |  |
| UniRef90 E7FRQ2 | GVKDVGRERKVLDRVGELAEGEENAEYVQETYREVM |
| UniRef90-UPIO00410 | AVLDSTRWHQILEKMLEEEQKGLSEEFILKLFKAVHQESD |
|  |  |
|  | SIPAPERVAAMVERRSWAVEVGL |
| UniRef90-UP100036A2DDF | A |
| UniRef90 Dol | P YAPHREAQVLGRALAANRGPLPARTVGVFRELMSGS |
| UniRef90 K0CB82 | SIPPAPDRVASMLERRRWAKENGLDSDFVESL |
| 990-UP10002880 |  |
|  | $\mathrm{D}$ |
| BOC242 | S |
| 㖪90-AOAO14LX | A M |
| UniRef90-W1rxo |  |
| UniRef90-UPI000465 | PLRDTD ENFILKAWLAEGQKQLDEYYTISRLCQMIVEEND |
| UniRef90-A0/ |  |
|  |  |
| UniRef90-Q7N1 |  |
| UniRet90-G5H119 | PVYDGEREK |
| UniRef90- A0A010Z | AVRAPARVEQVISKVRG |
| UniRef90-K2LPE2 | AVRDEDRIEDVITKVRAQCRDGFDEDMAERM |
|  | P |
| RRef90-UP1000374 | PMMQPHRIGVVQERAATAAEHGMN |
| UniRet90- |  |
| UniRef90-12BRS5 | DIPAPERVA AMLERRLWAVEAELDVAFVEKLYEQI। HWNI |
| UniRef90-89K6X6 | PVDLREVEEQKVKETLDRTS L NPVR |
|  |  |
| Unil | ESFDLLREKEILNKVLKINQKVFPEDALKVIYSEIIKA |
| UniRet90 A |  |
| UniRef90-M9 |  |
| Ref90_A4FOA3 |  |
| UniRef90_C1AZZ0 | Mo |
| ef90 |  |
|  | A |
| UniRef90-UP100035DB1D2 | P ${ }^{\text {K }}$ |
|  | KV |
| UniRef90-K9ET66 | AVLDQDREKQVIAKVQSFLTSDDSLKEETAD |
| UniRef9 | A |
| iRef9 |  |
| 36362 D |  |
|  | NRYDPVRERKMLDLTKEHNDGPFENSTVEHMFKQTFKAGL |
| UniRef90-R7X | P |
|  | T L L A Gry |
| UniRef90 ${ }^{\text {C3 }}$ | KADDPARVAEVRENARRHAVAGLEPDFYEELWAQL |
| UniRef90-UPI0003B | avrdearka |
| EC | DLVED |
|  | GVTDESREDNLREKVISLGQEGLDEKUATKFLNFLLNESU |
| UniF | P |
|  | GAVVQWRIQQV DRVKARAEKGMPPEMIEMV WRNMI |
|  | DLQSPERMEQVVENVKAQAQKGIDPVFI EHLYREMFQ |
| f90-K1XSU6 | P |
|  | P1 YVPQRESEMLQKKREAATKGL |
| UniRef90 UTFT13 |  |
|  |  |

UniRef90_R6GR71
UniRef90 G8LRZ6
UniRef90_UPI000465B0AF
UniRef90 DOZDP0
UniRef90 A4A1F9
UniRef90-V6AR42
UniRef90-R6C755
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UniRef90 C4SYG9
UniRef90-S6H488
UniRef90 UPI00037CB5C8
UniRef90 UPI00031CF307
UniRef90-Z4X6S6
UniRef90-R9T7Ys
UniRef90_J3KKS:
UniRef90-R5ZK54
UniRef90_UPI00046AF962
UniRef90-D1BM65
UniRef90 UPI0004737C95 UniRef90-UPI00046565D4 UniRef90-F8HGA0
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UniRef90 T2G9B5
UniRef90_D4LZI9
UniRef90-UPI000476EF84
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UniRef90 T1CCC9
UniRef90-N4WHY5
UniRef90-14MC39
UniRef90 E7FRQ2
UniRef90 UPI00041C81FC
UniRef90_UPI0004627111
UniRef90 G7ZCF
UniRef90 UPI00036A2DDF
UniRef90_DOLUIT
UniRef90-R5CYK2
UniRef90_K0CB82
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UniRef90 ${ }^{-}$A0A024JOL1
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UniRef90-A0A010ZWE9
UniRef90 K2LPE?
UniRef90-K2AZI7
UniRef90-UPI00037409B5
UniRef90-14KXV1
UniRef90 UPI0003644920
UniRef90-।2BRS5
UniRef90-B9K6X6
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UniRef90_B8DUS8
UniRef90-A4YHW5
UniRef90 M9SFS1
UniRef90 A4FQA3
UniRef90_C1AZZ0
UniRef90 U4KMM4
UniRef90 FOSRB8
UniRef90 UPI00035DB1D2
UniRef90-K1YZ19
UniRef90 Q0AN5
UniRef90 K9ET66
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UniRef90 J9BWM1
UniRef90 E6UIF2
UniRef90_C3MFT8
UniRef90_UPI0003B77A51
UniRef90 UPIO00255ECE
UniRef90 A9A22
UniRef90-R7EVN8
UniRef90 F8JHB4
UniRef90 UPI000287EC90
UniRef90-14ZQ41
UniRef90-K1XSU6
UniRef90 C6AMJ
UniRef90-U7FT13
UniRef90_UPI0003B48D76

UniRef90 B1K7P2
UniRef90-10K8T7

UniRef90-F5J2R8 UniRef90-UPIO003808B06 UniRet90_G4RBB2 | UniRef90_W5IGR9 |
| :--- |
| UniRef90 UPIO 035 | UniRef90 UPIOOO35EE8A7 UniRef90-R5P0S5 UniRef90 A7HW47 UniRef90-E2SHS2 UniRef90-B8JOH1 UniRef90-MOHC92

UniRef90-MOQLD2
UniRef90-F7KUA5
UniRef90- B3T784
UniRef90_UPIO00465C27A UniRef90-D7EAW8
UniRef90 R5TSK5
UniRef90-X1LVI0
UniRef90-D7DRN8
UniRef90-17HNW5
UniRef90-ROEIZ2
UniRef90-U4KGJ1
UniRef90_UPI00047E87B3
UniRef90 W4BS74
UniRef90-UPIO00479522E
UniRef90 Q65TK
UniRef90-L7KV97
UniRef90_UPIO0030B2729
UniRef90-E1SRY6
UniRef90-D9QKV5
UniRef90-E6U7N1
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UniRef90-A0JXD1
UniRet90-R6PQA6
UniRef90-R7A6D8
UniRef90-U2ZBU6
UniRef90 R7FWN8 UniRef90_UPI0003B7AF10 UniRef90-BONK76
UniRef90-D9PX42
UniRef90-K01X63
UniRef90_C1AEF9
UniRef90-UP10003B5C3BC
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Uniinefol J1 QNL
UniRef90-M4YMFO
UniRef90_O6LMX3
UniRef90_UP100047053AC
UniRef90-Q2NVHO
UniRef90-B4SHF4
UniRef90-UPIo004793AA1
UniRef90-V9X921
UniRef90-UPIO0041909CC
UniRef90 E4RQ42
UniRef90-UPIO00475BC5A UniRef90-W8F450 UniRef90 UPI000377659D UniRef90-D4L.J92
UniRef90-H5X7888
UniRef90-UPI000466A23E UniRef90-F7WZH5
UniRef90_UPIO00372120A
UniRef90_C9PQE2
UniRef90-R2RE48
UniRef90-R7PC02
UniRef90-TOD129
UniRef90-UPI0002626580
UniRef90-JOPCS3
UniRef9-OM3LJ4
UniRef90 C 7 HV 14
UniRef90-UPIO003B2EEOD UniRef90-UPI0003FB6A04 UniRef90-K0DAG4 UniRef90-L7VPB2
UniRef90-R7WKB7
UniRef90-F2RB77
UniRef90 AOAO23CGT9 UniRet90-UPIOOO3638489 UniRef90_UPIO0035C619B UniRef90-J2WQ20
UniRef90 C7NBL2
Unirefo_UPIo00478B77A

1
पPD DREA $\qquad$ 20
30 LDEVRMNTDKTDAELVRLTAKMSLVEKLIAEYKRDNNV EQILRLRGRIDQMDAELAALLERRALVAAQVQRLKPVGYF ETKDDVRAEI DRTDHALIELFAERHAYVTRMAEIKTDPH QLINTCRCRIDDIDHQVIALLAQRFAVTKLVGELKAEHHLG
TMPEVRSETDRTDRELVRLLAERQTYiEQAGADKGER S
LDDARKR1 NAI DADMARLFEERMQAVEDVIDYKQEHQM
LSDVRREI DSLDKEVVNLGGRRLDYVLAASRFKKNEE
 EDUDVLRGEIDRLDAVILAAUKRRSAVSKKIGAKRMASGG RMSICEEVGEYKVKNGR $\square E E H R K K D E \square T \square E M \square K L K T R T D I A K Q 1$ GDAKASLGM T $\square E E T R A Q \square Q Q \square D S E L D A L K K R V D L A E K V L D A K R K E N L$ RMKVCEDVGRFKVGAGR RTRKVFE:AEVKRKRKG KRDQTVRNSTNEDDEQDELMAKRTQLAPEDAKLKFSDDM TIEELRKQIEQTDADIIEKLAQRQELAKQIGALKAKEGK TMADVRQGVDALDRALVQLLTERQGFMDAAARIKADR S ESLNDIRVGIDTLDKEVVQLSKRMRYVKAAAQFKPDEGE
保 ELIADLRAELDGTDDRLLEDVRARLEVCTRIAHLKQRYTL QNMKDURAE

EVRQGVDALDRALVALLAER
( ELQLRSEDDALDRQLEQMIEKRMQVVGAVAQYKEKCGM T EEURNE!DLLDSRIISLIAERQAIAGRMAHEKYLAGL KDTQKNRDKTDATDNQTFELLDDRLDAVTTIGYYKKEEGF EQLAAVRVAVDEVDEQ\|VTLIARRERLIRDSGTLKGDDA RMDVCMEIGDIKTSEGN
MS QVREGVDALDRALVTLLAERQRYMEAAAEYKPSRDV DEKKRKEIDEUDSYITKKLLRRMQDCGEDGHYKKDNDI
 ETLKRSRREIDRIDREILDLISSR
$R \square D \square D G V D D \square L T L V R R D S A R A D G E \square K Q R T G Q$ QTMADVRRNDDALDDR\|VALVAE
$\square E D V R N R D D Q D S E V K M T A Q$保 AELRDEAD MT RQEVAVAVGKFKMTTHR $T L L T \square R D R \square S A \square D \square K \square L S L L A E R R A L A L D V A W S K D A S Q R$ K पnavrealnevdeqmba Lis raER VVRAGALKHDDA ELDDIDRTLLDGURALEVCGRAELKQRHGL LLHAUSERLTLADQVALSKWDSGK

 पDADREE पDWDDAE पRLVKRRAEVSKKVGAARMKAGKG RAKITAKVGKYKSQVGL SDLVDAAAQRLQVADDVAADKWQTGG LELLRNRTNYTDQKIIVLLSQRQSLSDDIANKKDRYGL LLPFREIINKLDKQLVDLLSRRLSVCAEVARYKKERGG $R L E L V R Q V G E V K H R H G L$
$R M S A V S E V T A Y K A Q T K K$ RMRVCREIGQYKKEHNM dgTAMYRTETDETDKRVVEVLASRFEVAKKVAALKRAWRK KSLAEVRARIDALDAELTGLLATRQSLVRAAAAFKADSQ LEDVRLGUDTLDEQURALGQRLAYVKAAAQFKPDEAA



| UniRef90 B1K7P? |  |
| :---: | :---: |
| Refob ${ }^{\text {B/K7P2 }}$ |  |
|  | DVVAPDRVSSVISkVRTLAEEGLN |
| UniRef90-UPIOOO3808E | AGRDMERERRLVERMAEHAP RLGADRLAPI MDSVISAGL |
| UniRet90-G4RBB2 | EAYVPARDEAIVAKVRERALLADLDEDQAELLWRTLIDWNU |
|  |  |
| UniRef90-UPIO0035EE8A7 | SAFRPGREADMM |
| UniRef90-A7HW4 | AV晨DEARDEDVVAKVLAEAEAGLSPADAEPL |
| UniRef90-E2SHS2 | QV LD TSREQYV |
| UniRef90-88JOH1 | DIPAPDRVK |
| Ref90_B4W959 | DPARIAAV |
| UniRef90 MoH | TQEER |
|  | KVLDRQRERDKLQEVAGKVSTDFNKKAVQEDYDQLMSMS |
|  | EREDALRTQVTKLCKEDDLDKFL |
| UniRef90-UPIOOO465C: | AIDDPAREQTVLETVSQLAL DLDPAYVR |
| UniRet90-D7EAW8 | S1NDEEQNQ |
| UniRef90-R5TSK5 | KVFDRQREHEKLDDVASKVNGEFNKKGQELYAQLMSMS |
| UniRef90-X1L | TLYSPAREKRTLQRLIQHNQGPLPNEALLELMQLILKTSL |
| UniRef90-D70 | K |
| UniRef90 ROEIZ | KVFDRARIEDVVDKVKAAARAGLSEA A A P |
| UniRef90-U4KGJ1 | ERV |
| UniRef90-R6 | EAAAIKN |
|  |  |
| UniRet90_W4BS74 | A |
| UniRef90_UPIO004795 | MRLSLAREQRVLSRFRAAAKGMPADLTEDVIRRVMRES |
|  | EREAD |
| UniRef90-UPIO0030B: | SVKAPERFTAMLQRRVWAQEEG |
| UniRet90-E1SRY6 | PI YAPKREASMLAKRRAEAEAGV |
| UniRef90-D90 | AVHDDAR |
|  |  |
| 㤑 | DEAREEKNTREVSELLQ HV |
| UniRef90-J1L62 | PVRDEGRREALLDRVFNEAEQNIDPVMVRRMFEILMDMS |
| UniRef90-D3LWG | El FDPRREAAVLKR1AALANNGELAPYLQNI YRCIMAES |
| UniRef90 UPIO000105D85F | LDQGRENA YAKI DA |
| UniRef90_AOJXD1 UniRef90 U6PQA6 | EVVAPGRVEKVIE |
|  | K V |
|  | VHDDWRDEDVVAKVLAASEDAGLISPADAEPVWRKLIA C C |
| UniRet90-R7FWN8 | RVYDEAREKEV FERVKQATPEKM QEYTELLYETVI |
| UniRef90-UP10003B7 | $\square$ |
| UniRet90_BONK76 |  |
| iRe | DKYDPVRERDMLELIKKNNTGPFKNATIIHLFKEIFKAGL |
| niRe |  |
| UniRet90-UP10003B5C3BC | A |
|  | Q VDNARIEEF V |
| J1QNL9 | AVRAPDRVQQVI DKVSKQAEAGLPTVIIEKV |
| UniRef90-M4YMFO |  |
|  |  |
| UP100047053AC |  |
| UniF | QVhLQPEREKEVLNNVLNHADSP |
| UniRef90-UPIOOO47 | SVVRAPARVEQVISNVRGYAEKGVDPAVVEETYRAMI |
|  | DVLQPGRMEVVHRRAQDYA H G G S |
| UniRef90 UPI0004 | A |
| UniRef90-UPIO00475BC5A | a GrdLareralvarmaliraps |
| UniRef90_W8F450 | T L LQASRWNELEEHIQQGQRLGLTEDFILKYFDAVHLESI |
| UniRef90-UPI00037 | PIKDEKREMEINRV GIVSD GEKEIIKIC |
|  |  |
|  |  |
| UniRef90 K7ACX2 | EREAEL AKRRDAEQQNVSPVLIEDLLRRIMRE |
| UniRef90-UP | A EDPARVDQQLVKLATEAAGDLDPDYVRR\\|FADQUA |
| 990-UPI000372120A |  |
| - |  |
| UniRef90-R2RE48 |  |
| UniRef90 R7PC02 | AI HEES |
| UniRef90 T0D129 | A |
|  |  |
| UniRef90-O93LJ4 | PIEDFTREQNVFAEAEEEAKNGLDPHSITPF\RSLIMDAS |
| 90 |  |
| 90-C7 | K YDPKRERELLKKMKEES PEYGEYFLP FQETMDQS |
| UniRef90 UPI0003B2EE0 | VRDEPRDEQVVSNVLEACKEYGLAPEVAEPVWRLLI |
|  | PTVQQGRMTKMRKLLKYENSEDVTDDMIDKIMAILTDAAD |
|  | VTFFLEDLMTVS |
|  |  |
| UniRet90-F2RB77 | PMMQPGRVSLVKDRAARAADHGDDESFLVNDYDVITTE |
| UniRee90 A0A023CGT9 |  |
| 35 C 619 B |  |
| UniRef90 ${ }^{\text {- } 2 \text { WQ20 }}$ | AVRDEARKROVI DNARAEAERGAPGE |
| UniRef90-C7NBL2 |  |
| UniRef90_UPI000478B77A | EARMEAUVARVRERTQEGGVPDUMEAVYRQLMEECI |

UniRef90 UPI00041DBC8E UniRef90_T1BZY4 UniRef90_A5ULG1 UniRef90-K5XTU1 UniRef90_U2MPL0 UniRef90_G9EP36 UniRef90 V2TYG2 UniRef90_W4MA65 UniRef90_R6BEC5 UniRef90_F9YSI4 UniRef90-T0M183 UniRef90_G6DV74 UniRef90_17LL85 UniRef90_I3YKL6 UniRef90-J7QF62 UniRef90_W8A019 UniRef90_B5S9V7 UniRef90 B1GYQ6 UniRef90_UPI0002D6350B UniRef90_R5AEE0 UniRef90_UPI00036B332D UniRef90_M4S0U9 UniRef90-E8XLZ4
UniRef90-X1F394 UniRef90-A1W2Z5 UniRef90_U2IY47 UniRef90_UPI0001DD1020 UniRef90_G7V914 UniRef90 J4TCI1 UniRef90_D2Z6H2 UniRef90_R5GBS3 UniRef90_R6LK16 UniRef90-M9SI46 UniRef90_UPI000363FAB2 UniRef90_D4GES1 UniRef90 E4WIM2 UniRef90-S2WIN5 UniRef90_A0A024JYW4 UniRef90 UPI0003754E88 UniRef90_D5BJZ1 UniRef90_L8HDT6 UniRef90_Q04HC9 UniRef90_A0A016PCP0 UniRef90_X1C457 UniRef90_B5EQZ9 UniRef90_S5UBL0 UniRef90_A8AY06 UniRef90-K4MTH2 UniRef90_K0BDF2 UniRef90_G7SWH3 UniRef90_F8HDJ1 UniRef90-E1PKQ3 UniRef90_H1CYF1 UniRef90_E8LBR4 UniRef90_P43900 UniRef90_UPI000360ACCF UniRef90_E4T527 UniRef90-D7C852 UniRef90_D1W462 UniRef90_F4CQR7 UniRef90_C2M3V2 UniRef90_A0A014NKE9 UniRef90-A978P2 UniRef90_U1KMA5 UniRef90_T3QUF6 UniRef90_R7NMN0 UniRef90-J2EQ26 UniRef90_G8Q5H8 UniRef90 A6U5U8 UniRef90-J7SJX9
UniRef90 E6NAAO UniRef90 UPI0002EA0F7A UniRef90 UPI00047634C6 UniRef90_UPI0002625F56 UniRef90_S5VL53 UniRef90- X5KJX9 UniRef90-UPI0003B61B3C UniRef90_UPI0002F1A157 UniRef90_UPI00036A60AB UniRef90_J9YR58 UniRef90- X1T424 UniRef90_D9URE9 UniRef90 D9V285 UniRef90_A5P787 UniRef90_W6KMC5 UniRef90-E1RFQ0 UniRef90-T1BCB7 UniRef90_A3PM51 UniRef90_K0IB67

110
10
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40
ENGGD REGLDDLDRQ\|VAILKHRMAYVRAAAQFKP TEE D S L D R I R Q Q I E RV DR S IVMML A A R DATAQRAMRLRAGHDR
 $L$ A E V $V$ R Q G I D A V D K Q L L L L L A K R A A Y V R E AT R F K A T R D RMRISSREIGQYKKEHNM
 $L A E V R Q Q I D Q D D R A L I E L V A A R Q A Y V D Q A V A F K S S R A E$ $M N D V R E A I D A \| D Q Q V I R L L G E R R H Y V E A A A K F K \square D A A A$
 E E L S G L R A K I L L N N S D DA

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

Q T L A E VRTG G DE LD GE LI R LLLAS RQEELVRAAATAFKS DE Q $L \vee R S L A D R L A A T A D Q V A L S K W D T G Q Q$
 E L L P L R R E M D R QL E S L R G E Lid A L D A R I L L E S I R R H R

 MAE V R A R $\square$ D A LDD D $\square \mathrm{LV}$ P L L VE ETMAEVRLGVDTLDRELMRLIDA GGYMTQAALNKPRE $R M K V S E R \square G A!K A E S H L$ RVEAARAIGKLKGKH
$\square D E L R H E \square D R L D A A D L A A V Q R R T Q V S Q A B G K A R M A S G B$
 LLE L YREELANCDAKI TEAL KERYAII EKI MAYKE E Y GM
 LSRRALHERMLLMK DVVAR F A K K T H N K K $L 1$ S ALSERLAI A DAV A A A K WG T GK K RMLLLSACEI G K L K K K A N NV
$E L V D A A A$ Q L Q V A E A V A A YK WN A HA $R M Q L$ VT QV T A YK K T T GK








 D ALSTALNERMQVMKAVA GYKAQHHL K E L A D L R N S VR T $\square$ D K E L A A L F E K R
 N M D DI R A EI D LL D R A V V S L I GQRHQYVLAAARFK TS AT D E I R H Q I D RLL RVCREI GQYKKEHNN
 QSMAEVRAGVNALDDDLVPLLVERSGYMTQAARVKNDEGL E DE DL R Q DL L E N T K S L A L L E K R R E
 MED DR REDDRLD QAVI K L L GERFRYVLDAASKFK TS ET


 TMAEVRAGVDALDRELVALLDRRFDYMDAAARIMPTRD R A E LVLKVGELKK S N K L
 $L V D A A A Q R L Q T A D P V A A V K L R T G G$ $\square E T L R G Q \square D A L D T A L A R L V A E$
 RMKI AEKI GEYKKNNDI RMGLILEVIAFKKKHRL
 DASLPELVLRRLAISEGVAAAKFGAGR
 $N L E E S R S A \square E G \square D R D D V A L I A K R Q E Y S A F I A A E K K K S ~ G S$ ELLR LRRARMAEADAS LLRAVHHRMEVARALGERKSREGLL


UniRef90_UPI00041DBC8E UniRef90_T1BZY4 UniRef90-A5ULG1 UniRef90 K5XTU1 UniRef90_U2MPL0 UniRef90_G9EP36 UniRef90 V2TYG2 UniRef90-W4MA65 UniRef90_R6BEC5 UniRef90_F9YSI4 UniRef90_T0M183 UniRef90_G6DV74 UniRef90_I7LL85 UniRef90_13YKL6 UniRef90_J7QF62 UniRef90_W8A0I9 UniRef90_B5S9V7 UniRef90 B1GYQ6 UniRef90-UPI0002D6350B UniRef90_R5AEE0 UniRef90-UPI00036B332D UniRef90 M4S0U9 UniRef90-E8XLZ4 UniRef90_X1F394 UniRef90_A1W2Z5 UniRef90 U2IY47 UniRef90-UPI0001DD1020 UniRef90_G7V914 UniRef90 J4TCI1 UniRef90_D2Z6H2 UniRef90_R5GBS3
UniRef90_R6LK16 UniRef90-M9SI46 UniRef90_UPI000363FAB2 UniRef90_D4GES1 UniRef90_E4WIM2 UniRef90 S2WIN5 UniRef90_A0A024JYW4 UniRef90_UPI0003754E88 UniRef90_D5BJZ1 UniRef90_L8HDT6 UniRef90_Q04HC9 UniRef90-A0A016PCP0 UniRef90-X1C457 UniRef90-B5EQZ9 UniRef90_S5UBL0 UniRef90-A8AY06 UniRef90-K4MTH2 UniRet90 KOBDF2 UniRef90-G7SWH3 UniRef90-A6NXG7 UniRet90 E1PKQ3 UniRef90-H1CYF1

UniRef90 E8LBR4 UniRef90- P43900 UniRef90-UP1000360ACCF UniRef90-E4T527 UniRef90_DC852 UniRef90 D1W462 UniRef90-F4CQR7 UniRef90 ${ }^{-}$AOAO14NKE9 UniRef90 Q978P2 UniRef90-U1KMA5 UniRef90_T3QUF6 UniRef90_R7NMNO | UniRef90-J2EQ26 |
| :--- |
| UniRef90 G8Q5 | UniRef90-A6U5U8 UniRef90 J7SJX9 UniRef90-EGNAAO UniRef90-UPIO002EA0F7A UniRet90 UPIO0047634C6 UniRet90_UPI0002625F56 UniRef90-S5VL53 UniRef90-X5KJX9 UniRef90_UPI0003B61B3C UniRef90-UPIO002F1A157 UniRef90-UPIIO0036A60AB UniRef90_J9YR58 UniRef90- X1T424 UniRef90-D9URE9 UniRef90-D9V285 UniRet90 A5P787 UniRef90_W6KMC5 UniRef90-E1RFQ0 UniRef90-T1BCB7 UniRef90-A3PM51 UniRef90-KOIB67

 $N L T D R K Q E R R V L A R S R M W A Q D G V P P A L V E D L F R S L I E E$ P V Y DKKREDSI HK K $\square G E L S E$
$P V R \square P D Q A N A V L D R A T\left\|E S T N G L D P A P \square R D \prod F Q\right\| L V R M S$ $T V D V P S R D E Q V I E Q L E G A D R Y R L P Q V I A K G V F S A I I N A S$ $T V L Q P A R Y N E I L D K R G A Q G T L G M S A E F T A R I X F E N I B E E S$
 A P A P QRDVEQVIA QVR QHAEA S ADA D LVE KL YR QMI Q S VQ A P E R F K A ML R R I WA E N N G L L A A DVVME K L Y T D L P I Y H P Q R ER QVI E K V R A LTTKA E Y A D ALLE N I Y N CIIM Q Q S
 EVKAPNRVEQVIAKVTVLAQ
 CAFRPDREAQMMRALVERHQGLLPLDAVEGVVRVIVS
 SVYDP EREAKVI A NASGMAPAGLTADDVSSVFTDQMEA
 AVKAPERFKNMLQKRKDWAEENLDNDVI AKISYTDL
 $P$ MMQPGRVGVVQDRARAFAEHGLSEDFLTSVYDLLI AVRRDEARKA QVIDNAAVAARVGVPPALVRALYEQLVEGS $\square$ P I R DKEREAEELI NT LI Q E GKK G L D G H Y I T RVVYQLI I E D S
 P I V Q P E R Y R A L I E R L S E G R L L
 QVLDP $\square R E$ QEVI D RTVVK ICS G LDD K GIIEAVMKEV I S LC T RLVHSREMKVI ERYSELGPEG P I Y D P V VRE E R I I R R F S E M N P D D D R E S L S T I H K E II IS L C
 P I L QPE QE EK QK K RL M F SLH N DK H R DE I Y DVVFERI QRNS
 P I E DLLA RE QDVL A EAKEKAKA GL DP Q S V T A FF Q GLLMD A S PIDDD A READVL R A VAE QARGGLDPARVTQDFRDQ\|EAS

 A I L Q T K R WNEI L K MVLE GEQH GLSE E FVVLK LIF KAVH QE S $\square$ $D V L D S S R R E S V V L A N A R A S A V A N G G P E Y V$
 P I E D PVREA QVLE QVVRRQAAA GVDA EAAVA IFR DQ\|TAS ELLDPTRNEAVAE GMAQR
 SVRSPDRFKAMLEMRRE WAQEGLNP DALAKMYS DL T RLVLSRETEIL RRFRA
 QI ND GTQN QVVLERATMAAERNLDTS SI KE $\square F Q \square L I M R M D$ GVTDEDREDILIRRKVISLCNSIELDESIATKF
 A IVY D P E R E Q A L L D K VVA A S VVVN P D Y Q E A V V A SF A D I M K H S P V LD A A R E R R V V E A RTA MVVED A A L K A DV A E L Y A S I M A DS

 DVERE QQLLQELVQFAENENYQLEAQYI TSIIFQKI I E D S AV R A T ERFAAML AQRRRWAE EGLINADAIERLIFSDLVS VVA Q D RKDHVI K V RGEWAENHLLDKDTEEQUYR PI DDPERERQVLEAVAE QARAGADPEATVRIFRDQDEA TVLQ S N R Y K E L E K R G K Q G E Q G I S A E S V A NI F E E I H Q E S $P V E D P A R E Q V V L D A A R A G A T G G L D P D V V A A V V A D Q D A A S$ A I LQ N QRWHEI L G K V DE GE QH GLLNE EFI DQL F K V I H Q E S $\square$ $V R D E A R \square Q A I V D R V R A E A Q G G N P D L M E R L Y R A M M E$ P I RDAE R ELLRVKSELCSNNP
$P V Y V P S R E T E L$ DDA RRS QAAA GVVS E LVEDVLRRLMRES
TILQKDREEK
PILNQDRENE LLDDV LVRGGEYGYAAQLLFSNDMELS AV RAPERFRAMLLQRREWAQAELSADA DEKLYS DLVQ SVQQAPERFKAMLVAVWWA EAEG L N P DADEKMYS DL



 $A V V H T D R E Q A L L A R L C E Q N S G P L Q M E M V V Q L F Q H I \quad I D$ RRVHLSREMEI L GRYSEA
 TRIELGRERAI I DHYRSA
$P$ VFD A K RE Q QV L A K VA E LAN D S A $\quad$ L P Y $L$ Q K $\square Y Q E \square M H C S$ T I L Q T S R WNEI L ERAT K KGEA GLSSKEF I T K YY DAMVMES $\square$ PVLDNNRENEVLNNVLKKVQNHQFDDVIRATGKDIMTES K IV QPKREMEII ER IVKNKST DFEKESMEADWKE I DSAS $R R V N L S R E M E V L S H Y R D A$
$P$ VDDPVRE QRELVRVRSLAETGLDPDLAAAFLSDQDAAS





UniRef90_U5VVN5 UniRef90-F7UWG1 UniRef90-F0E917 UniRef90 UPI000478DF54 UniRef90- I2N0S2 UniRef90-W9DPL3 UniRef90-UPI0003126F7C UniRef90-UPI000471A083 UniRef90_UPI00036071BA UniRef90-U4GMM8 UniRef90 XONAP1 UniRef90-J3II19 UniRef90_D0RNW4
UniRef90-F4XEG0 UniRef90 ${ }^{-}$X1QZI6 UniRef90_UPIO00417B7BE UniRef90_K9NIR5 UniRef90- J9Z2M6 UniRef90-R5IFX6 UniRef90-U7FRZ1 UniRef90-A3QBU1 UniRef90_G8RPU6 UniRef90-D4M0Q7 UniRef90_A0A037Z899 UniRef90 A0A023XZV2 UniRef90 UPI000468DD43 UniRef90_L9RDH9 UniRef90_UPI000365E9A3 UniRef90_UPI000314D7EB UniRef90-S9PAW5 UniRef90-H1YYZ0 UniRef90-X1NY98 UniRef90 L1QFF9 UniRef90-S9T9X4 UniRef90_B1YUY7 UniRef90 ${ }^{-}$L8GTG4 UniRef90_U1HAE4 UniRef90-UPI0003711736 UniRef90-UPI0003606B06 UniRef90 UPI00024901F5 UniRef90-A0A022MFT5 UniRef90-X0S7Y6 UniRef90-UPI0004722074 UniRef90 U3BLZ5 UniRef90_UPI00036B3B94 UniRef90-R6QD93 UniRef90-H2A551 UniRef90_UPI00042170EE UniRef90_UPI0002D2BD8B UniRef90- C6BVT0 UniRef90_UPI0004766D93 UniRef90_UPI0000E0F7DA UniRef90_UPI0003818AD9 UniRef90 A0A011Q5S9 UniRef90-N0CX15 UniRef90-C2GII9 UniRef90-F3WYY1 UniRef90_A1UGL7 UniRef90-A1B6E8 UniRef90-U5PB56 UniRef90 UPI000476E1CC UniRef90-D7N4F3 UniRef90_L8ESV4 UniRef90-A3CNB5 UniRef90 R5FGK6 UniRef90-UPIOO0429042E UniRef90-E1VAB3 UniRef90-F8WYV0 UniRef90_W8A1K9 UniRef90_C1DAG0 UniRef90-J7PR84 UniRef90 F7RR15 UniRef90-D6A9U3 UniRef90-B5GYW4 UniRef90_V5UGR1

A SLLVIS ${ }^{20}$ SAERTLI 30 SALLDNDRAGHSLVI RGLKPDAHM SALLDN $\quad$ LE R RLAALA E AVA L HK WD T GQ $R M R I S E A I \quad G M Y K Y Q N N \square$ T $\square K E V R T E \square E Q \square D S E M Q L I H K R V G M A A K V A A A K K Q E K D$ L L N Si A E RL E I A D QV A L S K WD S H K L I A L A S QRLALAEEPVARWKWANRQ MSEVRDGVDRDDRVLVRLDAERSRYMEAAARDKPGR E K S L G D V R Q A l D T I D K Q V I Q L L G M R K G Y V L S A A Q F K A T A A IRDARRRiDDLDGR GLVQERMAVSAVIQRERIAS G G
 RMEVSKEVAA

 M A E L R $\square E \square D$ T $\square$ D S K L I L L L L A E R C Q Y Viv R A T V V QLE $\square$ LRES LG QCDE $\qquad$
QL V D A A A
1 I L A A L M

 E L T A L R D Q i D D V
 LMEARSRTEEDDMK\ISLISERSDDADKVARTKAEAGQ
 $R L A D A A Q V G K A K D A P T G$ DK WK QL IT QWD G $\square$ N Q Q L L D $L M N E R A R M A A E I V Q E K N K Q G \square$ $T \square D C V R T P \square N Q \square D D L L V A L A S Q R \square A L A E P V A R W K W A N H K$ $R$ LAVDRGFV K E $\square$ Q Q Y R K E $\square$ D R LD K V I I E S $\square$ QRRTAA SQA GKTRMGS G G RARTVSDIVAAKGPSPS $R L K V V R Q V A D Y K K N H N M$
 E QLDDLS Q Q MDSVDKELVDLLLR $R R E V V S Q K I$
 RRQMSIEVAKSKMGDV RMKVASEIAGAKAEKNL LA A VR QEDDK IDE HLIT Y LAK R R CLVVEEAGLLDKPKNDT EI Q Q YREEINRLDRLI LDAVGRRTKM SKA IGKTRMGSGG RMSLVDEVITAKAEENK Q S L LD E I K E LD A R L L S LVSRRN Y L M GKAAS KRK Q K G L $\left.\begin{array}{l|lllllll}V & R & A & R & M & S & G & G \\ V & A & R & T & K & \square & K & N\end{array}\right] \square$
$R$ LDEVVQKVGEYKKAHDL
 $M G E V R T N$ I D R I D D Q L L RLLMAERSRYVA QAERFK TSAA ALVDAAAERLSTAEPVAANKWNTKA
 K E $\square E T$ Y R K E $\square D K M N D \square I L T A V K R R T E V A Q A L G K T R M S S G G$ $\square A D L S A Q R R L T A D D V A A A A K W G T G S$ $R M N L V D Q V V A L K K L T G T$ RMQIVTGI AKYKKLHNL DEARETVDG LIDA QVEQRLS I AAPDVAMAKWNSEA D R L V T L L A E R L D TAA T TVAA A K WA T A P
 ET I K E Y R K L I N E I D F K L I R N I K A R N L I V Q S I G K DK S D K K D TDESRERTNETDVQLIELIKKRQEISGSIQLHRLESGG


## UniRef90＿U5VVN5

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50
PIIEDPVREQQVLDQAAGLIATVDTEDTVAFFRAQПEMS GLYDPKREEEI FAKVNSYNEGPLYNENLRETYASTLKV PVQATLREQQVLANVRAAAPGHLAPQRAEAFFADQMEA TI LQSRRYDEIMDRIERAEKRGLNPDFTTRDFESTHEESD
 PVEDKKREQEVIASVVAQAPSYLAPATVEQFFSAQIEA AI TDKPREEALLADVQKRAAADLDPAFARAFFQDQIDAS AVRDEARTEDVVAKVLTTAKTDLPAEDAEPVWRELIERS $\square$ EIPAPERVAAMLARQUWSKEAELSEDFIVPLY RRLSLSREMEVLAHYREQ
PVEDRQREREVIAGAVALAPAKMSNEAVEQFFSAQTEA I VDPKRIGASMI KRITKGKKLNI ESFIVKRIWLTMI EA PTLDAGRERALLGKVGEQAGEEL ADYTQSVYRTILAA PVYHPAREENLISHLRNQAEAGLDSDYTEELYRRILRQS TVLQTNRWNALLERAFAKGEQGLSKEFVTKYFDAVHMESD PVQDNAREAQVI ANARKQAQRKLDPDDVADLIAAQDEAS
 PPRTEDRDSEVLEAVRRRAQAGLDETHASQUWSMLDDW PHYAPQREASMLAKRREEAKMNVSPQLIEDILRRLMRES PITDPERANKVLDAAADATAHGIEPEYVRAVFTDQIAA P：DQPEQEARQKE WLEEKRMEKKRHKAEVEDVFGSMMDAS PILNNSREQEVIKKNVNYLKNKNLQRYLTDFFIDKLMDAS SVRAEERFNAMLATRREWARAELNPDALEKMYSDLVK A Y ا R
ALVQW RVDEVAAHARELAAGDMDPDGAEKपWRAMM RRVNDSREMEVL
PVPDPAREDAMI ASRRAASERGLEPDGVEAMFRAlLRFS AVRDEEQREKVIARADDKAREGLDPEPVKEIFELLI PLRDRQREKEVVEKWCERA
PHLRPDREQAVQARLLKQCE PENREAVEHपWRETVGWGL SQAEPVGNQQLLKELATHS A DEDQPREAALLASVEKRAQSGVDPAFARTFFEDQUAAS DV的PSRE
SAFRPAREASMMRELVQRHRG $\square \mathbf{L D D T} \square E G \square W R V I I S$ TRLVHTREVAIINQFREQ
ATIVPAREGAVLTRRLDAHEGLLPPT\｜VTHVWRSVISA PVKQTDRMDQLVKRLID KGDENLTDDFUAHLYGVIMEHAD TRTVLAREKLILDRYA
P UVDRTREGKVYERVREDAERGDDPKGVEKVFREVVDLC ESLQVSRWQQELDAWLQREDTQMDSGFVKSLMEAL PVRDAEREQQLLVKLIGKEKYQLDAPYITKIFHTITEDS
 AVNTQERVEEVIERARAANS TRLVHTREVAI I NQFREE
NVYDADREYFILEK KKKKTEK DQYEPADHS TYKEDMKRS PLGDPDMERRI FETWSAEAHKKFDLKTARRVFEQL RRLSGNREMEILNR
DVRDPQREEQLLVKLIQEGQKGLNAHYVTKLFHVIIEDS PVFDPVREKVVIQKSKEQIHDESLKKDYGAWIQKLMDDS PIFDADREDAVI SKNVERLSNPAFKQEDEDFYRSLM RRVNLSRETAVLSHYRDA VRLVHTREVEIVNQFREE TVRDETR RQLLTRIREKARQGVNPD TAEATFRAMVE PI EDPARVEQVLVTVADASARGVDPDRVRRMFRDQISA SI PAPERVRQMLERAAWAAEAGLAPDFI GPGFGQV PI LDRAREDEVLANVAGLVQDKRYEETI LATYRDLMKRS TRLVHTREVAII NFFRDEADGVD门ANALLRL AVSAPERVAQVI ASRRAYAQKGLSPEVAEAVWRSM川DA PVDDPVRERQVLEAVRQAAELGTDPRRTARIFRDQUEA PVSDGEREYQILERLIEK FGEHNRPYIEDLYYTVFAES E：FHKGREEVVINKNI NRLIKNKDYKVELEKFFVGMMEVS PVVVEREAQLKRVVEEAQHGVDHQLARAFFQDQFDAS VI DDPAREATIYDAMTRDAQHGDPAPWVRQIFEGQDE ALADRQRLAPAISRARALSLSGADPDTTERVYLAMLAA N MQEDRUSGMNERKELARKQUDQEFDEDIFKLIVAQS NKSDTSRENEVL
RRVNLAREMEVLEHFRDA
PVQDPPREQALLDNVGERAQFGLTSAQARTFFRDQDEA

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UniRef90_L8ESV4
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lupas 21
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jpssm


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