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 HS F R P DLVR Y N DL D P Q K S DR N L K S A F Q I A E D HLLGI S T I L E
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HRNRP DLV D WR S L K N R G I R D D R L E SAA F N I V E R E Y G V HRHRPDLLEFDSLSKDNVFENNRLAFEVAEKELGIPALLD H T Y L P A HIP F HQLGSHDRKRNLTLAFQAAESVGIKSVLDL

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S L K R K I L N WCR A VT


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 S S C Q S L L SAKEGLLLWCQRKTAPYKNVNVQNFHПSWKDGLAFNA L

 | $K$ | $N$ | $L$ | $L$ | $T$ | $W$ | $C$ | $K$ | $L$ | $Q$ | $C$ | $D$ | $G$ | $Y$ | $D$ | $R$ | $V$ | $A$ | $V$ | $S$ | $N$ | $F$ | $T$ | $S$ | $S$ | $W$ | $K$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

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 HR Y R P DL I E WS Q L T H T N I Q T N N Q L A F DAA A E Q H L GI S P V MT
 HR H R P D L I N F S A L R K E N I Y E N N K L A F Q V A E E Q L G I P A L L D
 D A IIK K $N$ N L V



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 HR HR P D LMD F D S L D QA S G G Q N A R L G L D LA E Q E L G I C P L V










 K T IIE P G L V D M R R A L E R S S S R D N I R E A F R V A H L HS H R P D L F E W S V L K Q Q S A DIE K L D HA F S TAA K Q H L G I E R L L D H K H R P D L L D F H S L S K H K A G E N M R L A F S V A E R E L G V P A M L




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## L $\mathrm{N} W \mathrm{~V}$ RK QL

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PETGVHNFTN
WNS GI RLLA AL
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 H H F R P H L I D M S S L D E S S CVV H N N Q La F S V L Q K E L G I P P V M S
 HR HFPDDDI R F G S L N P Q S R A R N F E L A F G V A E R R L DV E R L F D HRYK P H F F D Y S K A A S R P P K D V L L D F A F R






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D D Y C C HECPGLVPHWRLNRQDALQNCRNAMDI AEREFNIPQVVS
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| UniRef90-B4KBT4 | PEELVDPNVDEQSVMTYLA Q ${ }^{\text {P }}$ |
| UniRef90-T1PEF9 | ADDMAAEVPDRLSSILTYLS QYY A F A S |
| UniRef90-T1PLL7 | AKDMANPEVEHLGIMAYAAHL |
| UniRef90-E9H6J2 | YEMAQLADVPDKLS MLS Y LT QV HEDFR |
| UniRef90-E9HE03 | P EYLLA SPYLDDLS GMTYLSYFMK |
| UniRef90-H2Y433 | QELQDMAKPDERAVMTYVSCFYHAFS |
| UniRef90-K715L4 | VDDMIMDRPDWKCVFTYVQSFYKQFR |
| UniRef90-J9E0J1 | PEELISPAVDEKSVMTYLSQF |
| UniRef90-G5BLJ3 | VEDMRLAVPDSKCVYTYI QELYRS |
| UniRef90-UPI0002657111 | GDMDASEVPDKLTMVSYLTQVYE\\|F |
| UniRef90-UPI0002A47B81 | EMLKEGGPDWQKVLGYVERIFRHFE |
| UniRef90-UPI00029D904C | V MTYLCQL |
|  |  |

[^0]UniRef90 I1CK33 UniRef90-UPI00042BCE7F UniRef90-UPI0001927192 UniRef90-D3B8A4 UniRef90 UPI000441C33E UniRef90-E4YKJ2 UniRef90_UPI0003C27FCF UniRef90 UPIO0021A490D UniRef90-I1FYB4 UniRef90-UPI0002C3E461 UniRef90-A0A034VCC3
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UniRef90 S4AAM UniRef90_Q6BUZ3 UniRef90-V5GYH8 UniRef90-X6M0A1 UniRef90_R1DLJ1 UniRef90-A3GG62 UniRef90_L8GGT3 UniRef90-B4PMV8 UniRef90 A0A058ZAP8 UniRef90_Q1ZXJ2 UniRef90_I1EIL4 UniRef90-B0X6K7 UniRef90_UPI0003AF3F4C UniRef90-L8H283 UniRef90-T1FH46 UniRef90_A7S3X3 UniRef90_K1RFR0
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UniRef90_M2RGT0
$A K \square A L L C W V R \square Q L E D Y \square T V I I Q D F$
S LKK QL L L EWCR QK GYE HVD L L K WVQS K I KENLLKWCQE IT E GYPEKQVND F S K S WK D GTAFVVVL IK QMLLDWCRAKTRGYEHVDIQNFSSSWSDGMAFCALV $R$ S AK D A L L L WS QMKTK GYPNVVQVKNFTKKSWK DGLAALNA I Q T P K Q R R L L G W $\begin{gathered}\text { G } \\ \text { S T }\end{gathered}$

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P
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S AK Q VL MD F V Q Di M
 SKTAALLQQWCKI NTS GYKSVNIITSFTTCWNDGRLVAGLV
 ES $\square$ H E RIL K WCQR K TAN Y G V S I K D F G S S WVD GKALL A L V $N$ S E K I L L S WVRRQCTRRYP E V N V L
 N S E K I L L S WV R Q ST R N Y P Q V N V I N F T T S W S D GLLALLN A L I K S A F
 PKKLVVMAI QSVL PELKLTNFRTNWNDGRALSALL SRNALLEWVNSKIAPN KINNFSKDWNSGDTLAQLI






T A KEA LLR WARRSTARYSGVRVSDFTSSWRDGMAFSALV $A \square R S L Q Q W C R Q Q C E G Y R D V N I C N M T T S F R D G L A F C A A L$
 T P GQDL L E WCKEVTKEYPNVKVTNLTTSWRNGMAFCAI I SKRNALLKWCQKKTEGYP

EALKDWCVER AQRFEVQ EALLAWTQRVTNGYHGVKVNDFTKSWRSGLALKALL WVNEKVQGY GL HVVNPSTSFGDGRII LALV ETLLSWCQRVTNGYSHVKI RDFTKSWANGLALCAVI TVKD QL L Q WCQRKTMGYENVKIENFSTSWSDGMALCADS
$P S D V I L S W V R S F E D V E E L K A V M D L T Q A W R D G R A A L F A D L$ KEKNNALLEWVKKVTTGY GLEVTSFKSSFSDGEVFLAL」A

REAEENLLKWCSTM
S GLSIN QFKTGFRDGHAFLAMA RL L K WF Q C H L E S F K DVVEVT DLN CSWRN GLALLCSLV A V C A A H EDALLAWVR QTTEGYPGVNDSSFKQSFNDGKAMLADC AENNLLLKWCSNLTTGUNVTQFKNGFKDGMAFLSMA

N A LLD WVN S
F G L N V S N F S S D WK D GVA LVK L T
K Y V L LA WCK SVA E S DES LK IAA N F D R S F G T G LPPLCALA K QI L L E WVNLI VR K K GL NQVTNFDRDWRPDLI F L GI L
 S PEERLLHWCNEHLLPE

A N N
$K S \square L L G W V N D \square L A K R \quad N S R V S N F N K D W R P D R \| L A D I L$
 S A K N AIL Q WVS S R R REDVK

F S N
 SAKKALLGY $\quad$ KNSK $\square \quad$ PEKNIGKDFTSDWNDGTADAALV

> NDFTSSFKDGKVLSY LV SKTSTASHTALGALV

RRR【LTVWQQTL PSHNVEDFSFSWNDG VLCALL


LLR WVKK Q L K E N QF VQLS DAS QCFT NGRVLCTLI KSEKMTLLLWCQIICSHY EVKVENFTVSFSDGDALCCLV LLEWCRVVCANY NVPIRNYTASFADGKALCLMV
ELLLLSWCQLVCAHYK $\square M V D N F T V S F S D G R V I C Y L I$ EALKDWCVERAQRFEVQISDFISSWRDGYALNAIL KLLMAWVNAVCRFY NI KVENFTVCFSDGRVLCYLI
KKILLDWVNSI I I K K DLLRISNFDRDWRPDLIL WA L
$K L L M D W V N A V C A F Y D K$ QVENFTVSFSDGRVLCYLI
$E G \square M M W V N A L L D G \quad S G \square E V E D F S S T$ FRDGRAFAY $1 \frac{P}{I}$

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UniRef90_L8GGT3 UniRef90-B4PMV8 UniRef90-A0AO58ZAP8 UniRef90-Q1ZXJ2 UniRef90-11EIL4 UniRef90-UP10003AF3F4C UniRef90-L8H283 UniRef90-T1FH46 UniRef90-A7S3X3 UniRef90-K1RFRO UniRef90- W4ZJY3 UniRef90-S4R9L7 UniRef90-BOX1S3 UniRef90-T2M988 UniRef90 AOAO24TRX6 UniRef90_Q4T8G5
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HRHRPDLVDFNSLLATASNTANLENAFKQAE $H R H R P D L V D F N S L A T D S N T A N L E N A F K Q A E$
$D N C A P G A C G A G$


 H H Y R P D L L D Y N T I K D E D P A K N N QL A F D I L E K E L G I P P P M
 HRHNPAYIPMDLTEKNTWHQLLRLAFDLGTNKMGDQAYLD
 HS H R P D L F D WNVVVR Q Q S A T Q R L E E H A F N N I A K Y Q L G I E K L L H S Y D K K L I N L S K TA E M S A DD R I E N A F GVVA E K T W N V P R L L S D K H R P G L I



 HRFAP QAFDFASLVPENRQANFDLAFRVADTVF HALNAE LLPDVVAE QSSPVENLATAFGLLEKHFQDPALLN
 HRFV V D SFDFDKL NPRNRRENLELLAFRVVAE
 HRHRPDLI NFNALTKENQYENNK LTLE I $D N C A P G L C P W Q N W D P N Q P V Q N A R E A M Q Q A D D W L G V P Q$ HHFEPSIMLDWDT VLRHP K EERQQRLREEARRDI

K R N L L L A F Q A A E S V G I M
 HRYRPDLIDMDAVARQSNRENLEQAFEI AE SLGVTRLLD
 HS Y R P DLLA G D F D A T M N G R K S N V V K K A L A A V A $\quad$ R A HTYRP ELI DYE S LDD DSNSLT DQKSNUQK GLDAASMMGLT D PFPSRSLLYFTKLTPQQRRHNFTL
S R R R R A L L D F D S L S K D N VFF E N N R L A F E V A E K E L G I P A L L D A R IT GM DS H A P PVV Q HFISSNKS F D F E E FK E K P T E E IL D K A F TVVA Q E N G I P R V L E




 S P T L L F Y S R D F D S


 N A R E E E R L S Q D D I E D M E P D D L L


 $D G \square A P G L C P E E T M D P K D A L A N A Q H A M K L A E D W L S V P M N$ M K K Y N N R Y R L LD TA A F N





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PYD DANGNVDEKSMDTY YA $\square$ FRSA
PSDFTTDGVDPEK IETY $\quad$ S C $\square$ Y HYHKK

$P E D L R \quad G N V D E K S V L T Y V S M V Y Q$
A GVIAT LPDRHEI QNFLTELR
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PEDVAGPHPDERS DMTYVS DYYHYFSRL L E 1 I Y L R C Y H Y


NDMVSMSVPDCLSTMTYVSQYYNHF
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PDMVSMRVPDS LSIMTYVSQYYNHF
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VEEVK
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A E DMALKVPDRLSILLTYVSQYYNYF
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VEDCD
DVCSSESHDDETSMMDYVACLHQRF
S EDFTLFVPEEKCIVTYVLEWFKVF AEELAESQCDEKAVRADVSRL
ATDMVSMRPDEKSVMTYVSFFWK T DDFAVLVPDEKCIVIFLVELYKVFE
 ADVLVTPKPDDMSCMTYISAY
AEDLVNGNADDRTVMLYTSMFYNAYE
AEDVDVGSPDEKS $\square$ MTYVAQF $\square$ HKYPDV
VEEMSVEEPDSLSSVMYLSQFYQLLK $V E D F L Q G T D E R M L A T Y V S Y F R N L I R N$ PEEMCNKS DDEQSMMTYLSQF CDVVNTKDPDE DS IMTYYVSSLYRCLK

PEDMVNPAVDDGSMMTYLSAFPKA
S GMTI T GLI D WRYMMNTVLVLYK


 PSFMSNT IPD DEKVTMVFVSYLCA RF P
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ADDF LGPDTSKRDI ATLLATMFNLLE SDMVLLADPDKDTVMTYLYQURAHFSGL


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lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
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    jhmm

