## QUERY

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F

 I R T L L A V E R L L E P L V T Q V V T T L V NT S N K G P S N K K R G R S K K
 $V$ S R L V I L H E EA E $\quad D$ GNAMMPDLT



 $\square$ Q N E A D E R DI L P M S V QL C H L L I S M E R T D V A N E A F A S L E
 M
 HE E GEVD GK A $\square P$ D $\square$ T
VRTFTVEKLLEPLI DQVTTVVNCKNPSKKKKGCSKRAR

 $\square T Y$ NK N I E R I I S S MVA QL C HL I I S M E R R DVEN E T F A GLLG

 | $V$ | $K$ | $T$ | $K$ | $N$ | $I$ | $E$ | $R$ | $I$ | $V$ | $P$ | $T$ | $A$ | $A$ | $Q$ | $I$ | $S$ | $H$ | $L$ | $I$ | $I$ | $L$ | $S$ | $Q$ | $W$ | $Q$ | $D$ | $D$ | $S$ | $D$ | $D$ | $N$ | $F$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $I$ | $D$ | $L$ | $E$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $K$ | $T$ | $K$ | $S$ | $V$ | $E$ | $Q$ | $T$ | $L$ | $V$ | $P$ | $L$ | $V$ | $T$ | $Q$ | $I$ | $T$ | $T$ | $L$ | $V$ | $N$ | $F$ | $K$ | $E$ | $S$ | $K$ | $K$ | $R$ | $S$ | $E$ | $K$ | $A$ | $L$ | $R$ |
| $S$ | $A$ | $L$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


I T DTV KLI EPLI DQVTTLVNCVKKPLRSERALLNALV V F H T K V I Q S I L
 V H T K S I E A V L LP A D QVGEL MILDERAR HE GK G $\square P D L T$

## MI

$P$ V F



$\square S K T K W D E V V V A P \square A A R V S Q Q I \quad I \quad L S E K A E R S N D A D P D M L$
 M IPP F N RI T T L I NHK D K P K R S E K T L R A I Q

 PVFFHTRTIE S I L E P VA Q Q I S H L V I M H E E GEVVD G K A IP D L T


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




 $\prod R T L A V E R L L K P L V T$ I E N K A I QRI L CPMAT
 $\square K$ T R S $\square E$ Q T L L P L I K Q I S S L V


UniRef90_U6PK89
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UniRef90-UPI0002659A32 UniRef90_A7SKI3 UniRef90-V5GV37 UniRef90-K1P339 UniRef90-T2MH95 UniRef90-S4RC73
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UniRef90_TFJK9
$A P V A A D-50$ 60
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70
QT TEDQ KRDMPPAFIKV $R P V G A V S R A V D N L I K V G Y D T C H S S D D Q L L Q Q D M P P A L Q R V$
 N P I M A V G A A V A N L V K V

 \begin{tabular}{ll|ll|lll|llllllllll|lllllll}
$R$ \& $P$ \& $V$ \& $Q$ \& $T$ \& $V$ \& $K$ \& $L$ \& $A$ \& $V$ \& $D$ \& $N$ \& $L$ \& $V$ \& $K$ \& $V$ \& $G$ \& $Y$ \& $D$ \& $T$ \& $I$ \& $N$ \& $S$ \& $S$ <br>
$E$ \& $D$ \& $Q$ \& 1 <br>
$E$ \& $P$ \& $V$ \& $N$ \& $T$ \& $V$ \& $S$ \& $A$ \& $A$ \& $V$ \& $N$ \& $N$ \& $L$ \& $V$ \& $L$ \& $V$ \& $G$ \& $K$ \& $S$ \& $T$ \& $V$ \& $Q$ \& $T$ \& $S$ <br>
$K$ \& $D$ \& $E$ \& $L$ \& $L$

 

$A H V A S$ <br>
$V L S S A A$ <br>
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\end{tabular}

 | $V L V A A$ |  |
| :--- | :--- |
| $P F$ | $D$ | KPIQAVSAAVNNLAKVVTMD

 RPVKAVSMAVANLVKVGKETINSSDDALLKQDMPGSLKRV

 V L V A A V DK A T E K F I E K G E EI A H E DP D DE R R E MLQ A V E E V SNAESVMRATEDLVQVSQRLVRETDDEELKREMPRACEAV A HVASVEQATENFLDKGDKIAKES $K V A E D L A N A S E E F V H V A S R L A G D S$ ALVATVERATE DFI ERGQDIA Y R P V D A V S R A VENLV QVGYDTIHLS A HVLAVEQATQNFLEKGEQIAKDSQD | E E |
| :--- |
| E N |
| D D |
| Q | $\begin{array}{llllllllllll}Q & F & K & E & E & L & V & A & A & V & E & D \\ E & W & K & E & E & M & Q & P & V & V & E & S \\ \text { L } & \text { L }\end{array}$ D I L $\quad$ K Q Q D M P P A L

 $E V G K A V N I A V N R F T A V G K A \| A N D N P D \quad K D E M V D A C A$ RVGQAVHLAVVEKFVAVGETIANDNYD I REDMTAACREA
 V L S A L V K K A TE T FI DK GEII AK D Y P D II I D D M M A A I D D C R PVQAVSLAVNNLVKVGHETIESSDDADLRHDMPGALHRVV $K M A E D L A K A S E A F V Q A A R R L A A D S$ $K V G Q L V N \square A V E R F V V V G E S I A D$ ALVAAVEKATDDFI ERGEQI AYENPD
 KPAEE L L A K A S E E F V V H HV A S R R L A A G D S $R V G Q A V N \square A V G R F V K V G E A I A N E N W D$ VLSAAVQKATENF NSGVEIAN
 ILLAA S V E EATWNLL DKGEKIAK D S K

 $R \vee G L A V G S A V D R F V S V G Q S I A E E N P D$
 TMAEELAKASEQLAHFAKRLAGESDERELQQDMPPALQRVV

 K I G S A $V$ V A A A I E E R F V V V V G E T I A D D




 A PVAAVQARVSNLVRVGKETVQTTEDQULKRDMPPAFIDK $R V G Q A V N D A V G R F V K V G E A D A N E N$








 GPAQAVMKAAENLI KIGKERANNSPDQDYQRQMMSACEDL




 G A A Q GV A K A T E E L A A A V A C R Y
 VLVISVLEEKA I A N F I QK G Q Q I A D $R \vee G Q A V N L A V G R F V K V G E A$ I $A$ A N E N W
 ENAEKLAKATDELASAARRLAEQS EN A E K L L A K A T D E L A S A A R R L A A E Q S G D K V Y Q E E T H L L T A E S




 D NLLEVK Q DMYEACKEA ENPQVA QEMSTVI E E I EATVLLQEEL A S A LLGDV Q FL K E E L VA G V E DV D $\square$ I R R

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 $\square L K B E E M D D A D V D Q V$ I \begin{tabular}{llllll}
\& $V$ \& $D$ \& $M$ \& $M$ \& $A$ <br>
$V$ \& $D$ \& $E$ \& $V$ <br>
\hline

 

$D$ \& $Q$ \& $L$ \& $K$ \& $R$ \& $D$ \& $M$ \& $P$ \& $P$ \& $A$ \& $F$ \& $D$ \& $K$ <br>
$D$ \& $V$ \& $L$ \& $L$ \& <br>
$K$ \& $R$ \& $D$ \& $M$ \& $P$ \& $P$ \& $A$ \& $L$ \& $D$ \& $M$ \& $V$
\end{tabular} $A \square$ R H D M P G A L H RV R A E MEPA A TES

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| UniRef90_F2UM91 |  |
| UniRef90_A7RIF5 |  |
| UniRef9 | - F6Y9E7 |
| UniRef90 H0YZ35 |  |

ENACTKJVQAA QMLQSDPYSVPARDYLIDGSRGILSGTS D
 EESSMLLVQASKLL ERSSSKLLEEAS QMLLKD DPF S
E
 ENACTKLVQAA QMLQSDPYSVPAR
QVASESLGKAAMLI SADPFSVEGRE\|LIKGARGILQGTSD RKT GE NMMVASSSDFA D DPCSSSAKRATMMVRAARALLLSADVR $\square A A G R S M L M A V Q R$ L Q A E P L S E P A R D N MV T A A R R L L E T T M K K S S A D L L L D D S A K LI E E E D E Y S K Q Q G R E K L I A G S R G I L Q G T S D R S A GA GMS E T A R Q F A E E P C S S I I K R A A MV R A A R S L L RSTGEEMRVASSEFAEDPCSSVVRGSMVRAARALLLSAVTR GMAGKN I LLAA QRLELETHSKEARKDMVKSAKDVLEGTMK $R K Q V M L M K S A S G E F A D D P C S S M K R G T M V R A A R A L L S A D T R$
 E T S S R L LEEACYVLR D D P Y S S QGRK K LI E GSRGI L Q GTS A

 $R L A G S N I T D V S Y D A T G Q M T S P A G K G N M V R A A R G L L E A M$ TAR $R \mathrm{R} D \mathrm{G} E \mathrm{~V}$ MS K T S H A F A D D P C S S M K R G S MVVRAA R A L L

 R K T G S A A M S SVA A R E F $\operatorname{V}$ S

 K QA GETI T DVTKRSHLESDGQTDKTGVVQAARLLLSSVTK RKTGD IMGQASSEFAEDPCSSMKRGAMVRAARSLLSSSVTR RKESEALGSASAREFTN DPCYYLPKRKAVVQAARFLLAAAVTAR ENACAKLIQAA QMLKDNPYAVPARDYLI DGSRGILSSGTS D RKESE LL RLTAK DFTD DPCCLDPKREAVVQAARALLAAVGR

 E GS S K LLEE ESS Y SLLKHDP Y SVPAARKKVI DGARGILQQGTSA
 A MS GKGI LMAA QKLAF QPALSEHRNELI TSAQNILQGVMQ
 RNAGTSIQUHLTSVDATSHTNSAEKTAMVRAARQLLSAVTK $K \square A D V Q M T D E Q T T D E T A R S \square A E K T A M V R A A R Q L L S A I S R$ RKEGEVMRVTSREFTDDPCALPKREAVVQAARALLAAVTR
 QAAAKLFMDAAIELKLDPLAASSRSLLVQAARGLLDGTTN

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UniRef90-W5QIC9 UniRef90_K1QC64 UniRef90_M7BL50 UniRef90-T1IXC7 UniRef90_V8P305 UniRef90_UPI0003C19ACC UniRef90_E5SL03 UniRef90_UPIO00350F24C UniRef90_F4W708 UniRef90_M4A9B3 UniRef90-UPIO0046C96A1 UniRef90 D6WCC8 UniRef90_UPI00044384BB UniRef90_UPI000333F4A5 UniRef90-G5BDP0 UniRef90_UPI00035063B8 UniRef90_N6UAG2 UniRef90-V5GCG1 UniRef90_-T1GS06 UniRef90_R7V6A7
UniRef90_T2FJK9
 RNSGGQLCQSSLEFSQAPCSSESRVKMVQTARTLLRDVTR


 ERSSSKLLEEACEMMLLRDP YS QPARKK LI E GS R GILLQQTSS
 $K$ QAGETI A ALLTDVGSLLNPES DTDKTGVI KA ARLLLLSSVTK EASSRLLEDACHMLKADPYSGPARKKLI EGARGILQQTSA
 LLLS S R N I T L V A Q K L H L Q L E S Q S H Q E E L V T T A Q Qi L V D TM K $E N A C T K L V Q A A Q M L Q A D P Y S V P A R D Y L I D G S R G I L S G G T S D$

 RKESEALVKVSAERFADDPCY LPMREAVVQAARALLAAAVTR K T T G Q D MVEAA A EFS K D P T A S A L R V A M I K A A R S L L S S V T R VLA GRHVLLAAARELCAHPD DPSHRER LAAVAAKRVL



 $K Q A G E T I T D V S G L N H L E T D G Q T D K T G V V K A A R L L L D S V M T K$ RKESEALKKVSAERFTDDPCYLPKREAVVQAARALLAABVT QKQGDLMKSAAGKFADDPCLAVKRGHMVPAAQLEL VLAGRHVLQAARQLQGKLDSPTHREALAAAAKGVLTETVG ERSARLL EDASSRLKVDPCSAPARKLLIDESSGGILQQSTKK
 ENSAQLLVEATSMLKNAPSSAQARKKLID GSRGILQQGTSAA


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| UniRef90-T1FP92 | LLLAFDE |
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| UniRef90-K1QV87 | LLILAD |
| UniRef90-F7FVB3 |  |
| UniRef90-E4XRA6 | LL L A F D Q |
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| UniRef90-UPI0002654B54 | SL L I S D D |
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| UniRef90-K7IMW4 | L L C F D E |
| UniRef90-UPI0002659BF7 | L L L $\downarrow$ A D |
| UniRef90-W4ZDA0 | L L I L A D |
| UniRef90_UPI0003F0B448 | V L V S D |
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| UniRef90-G3H000 | VLLLED |
| UniRef90_G6CM18 | LLILAD |
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| UniRef90-H9JV06 | LLLCFDE |
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| UniRef90-V4AVU9 | VLLLAD |
| UniRef90-X1YNE0 | L L I L A D |
| UniRef90-L9JMG4 | VLLLED |
| UniRef90-A2AP89 | V L L D D |
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| UniRef90-V9K798 | L L T F DE |
| UniRef90-H3A4W3 | LLILAD |
| UniRef90-A4IIR4 | VLVLAD |
| UniRef90-13J199 | VLVLAD |
| UniRef90-UPI00035932AC | V L L A D |
| UniRef90-G0PHD5 | L L CFDE |
| UniRef90-G3WWD9 | I L L I ED |
| UniRef90-M3YKK2 | L L L La D |
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| UniRef90-K1R8L9 | VLLLAD |
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| UniRef90-I1GJ73 | L L L V Y D Q |
| UniRef90_U6IM92 | $V L \vee T F D$ |
| UniRef90-F2UM91 | VLMTFD |
| UniRef90-A7RIF5 | L L CVA D |
| UniRef90-F6Y9E7 | VLLLED |
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| UniRef90-Q3TEB0 |  |
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| UniRef90-G5BDP0 |  |
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| UniRef90-N6UAG2 | 1 R L |
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| UniRef90-T1GS06 | L L C CLD E |
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LIKTSSDEQLMAPFAAQLCYLKLLSESED EPEQFTQLE PE T L K S E H TLLPPLVKQI STLVAHRERPFCTERTARAMA IRTLSVERQLEQLVKQVTTLVSGKPSNYRKGQS KS GA VLPFEERKT LVGKSKRAS $\square R T \square T V E R L L E P L V T Q V T T L V N T S N K G P S G K K K G R S K K$ VSQLAI I HEETEA GKS IPPDIT $M \square Q N K A \square E R \square I S S M T V Q L C H L L I S V E M K D V N N K A F A S L E$ QI STLVQHRSEQQHSEQKMRAI G PIVTMVNHOQEKRRRTEKACRAVQ

 MDQLLEAVSDAVSSIVLYSVEADESNAA $\square$ PNI L


MDQVLEAVADAVAQLVMFSVEAEENNSILPADV VRTASVEKVLEPLVTEIALLISRTDSADRPKGLSQNKP

 NKA IQGILCPMAVELCHLLLALDREDGDCPAFPNLG
 P VF HTKT $\square E S \square L E P \square A Q Q V S R L V I L H E E A E D G N A M P D L A$



## S L IT PHND V V QLVIQNEAYDEGETAFPDPV

$\square R T L T V E R L L E P L V T Q V T T L V N T S N K G P S S K K K G R S K K$
$\square R T H S \square E D A \backslash R P \prod A Q K V Y E L Q R A A M E \quad Y Q S T R A P V N \| I$ TVDEVLEAIADCI LQCVLFSTEADETGAKLKSL ISTLVSHRDRGNCCERTGRVVA
 I TTMINHKDKPKRSDKTLQA I Q
I Q T F TVEKLLEPLI IQQTTLVNCPQPSNKKKGCSKRAR S A M S $\square$ Q $\square$ S T L I S HRERP $\square C S D R S \square R A \square A$
$\square K T C S V E K A L I P L I A Q \square S\|I V N N \square K K V S D H T S R K\| L D$ KCTSVYDLLEDLIKHFRFLMEDNPSPLQKGVSRPAQV

LEPDAAPRHLEMSGEQKLMAYK
$M \square Q N K A D E R I I S P M T D W L C H L I I S G E R R D M G N E V L A S D E$ VKTKRVEQLIAPLIQEVTTLTD PGSLYSLKKSGKSGA TVSRILSLLVDKVTTLVNTSNKGPSGKKKGRSKK QI STLVVSAKDKALRSEQAVRA VKTRTVEQLIAPLIQQV TVNMNGMSLKRSGKS GA
$V \mathrm{~T} T \mathrm{~L} V \mathrm{~N} T \mathrm{SNK} \mathrm{GPSGKKKGRSKK}$
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UniRef90 E4WZ84 UniRef90-T1GK55 UniRef90_G3NR72
UniRef90_UPIO003946D91 UniRef90-B3RLT1 UniRef90-HOWOB5 UniRef90_Q7PST0 UniRef90-C3ZT92
UniRef90 F6UT71 UniRef90-UPI0002035ADD UniRef90-F4NXT8 UniRef90_A7SPP3 UniRef90_F4PK68 UniRef90_C3Y5U7 UniRef90-E9CAF5 UniRef90_T1GGS3
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UniRef90-E1G4D1 UniRef90-V8P3.J1
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 KMAEELAEASEEFVQVAERLAEDAE RVGQAVNLAVERFVTVGETI AD RVGEAVSFAVDRFVTVGQAMGDQ VIAA S E A T WNDLGKGEKDAKVS VLLAS VEATWNLLNPEDKQDMYDACKEA $N K \underset{A}{\text { I }}$ K QEMYDACKEA EAAVLRGETCHGCCRNV

 PSAEQVMNTLEELVSAAQKATQESADEELLVAMPAACEML
 PGAQAVQGAVNALVDIASQMAQRGSEPK TILDLIKHSIEDLLRYAEDIVTGCPD EAAAAVAAAMRRLAAVASRLAEESEDD AHVASVETATENFLEKGEKDAKES
 H T GQSVNDSVERFVTVGERI AD $R V G R A V Q A A V E R F V L V G E T I A D$ HDAEAI GMAI QNLVKVGREAMLQG GQAVNLAVGRFVTVGEA $\square A N$

 $\qquad$ TSLL $\begin{array}{llll}R V G Q S I & N Q S I & E R F A A V G E A D G D \\ P G V E L I & Q Q A V V G M S E A A E E T L G L I\end{array}$ TTAEELAKATEEFSCDARRLAEES RVGQAVNLAVERFVSVGEAI AD | $R V G Q A V$ | $N L A$ |
| :--- | :--- |
| $V T A$ |  |
| $V$ | $T$ |

$\qquad$ GAGG DNTETKQDMYDACESA
 $R Q 1 Q E T$
$R L A G D S$
S QAQSVFEAVEKLEQAATDQLEVLEQPDYKQSLDTAYKQS NTDALLHAMKFLADLATKKAAMWGDKKMEQEMLSSTKELD $R V G Q A V N V A V E R F V T V G E S D A$ SDVPELREDMYRACNQA $R$ VGQAVHLAVGEFVVAVGETAASMSYDEFRREDMTAACREA $R V G Q A V N L A V G R F V T V G E A I A N$ ENRELKEEMSDACDEAA VLLASVEKATWNLLDKGEKIAK EADVFKEELNAALNDV
 RYASGTDDEELHVEMSSLLESV SALPNLELSVCKFSDDGHEDGNS DTDIRDEMLEACDUA
 GHSLNLAVERFITIGGEII A E ENVDAKIKGDMYEAAKEA $R V G Q A V N M S V D R L V T\|G E\| I A E G F Q D \quad I K G D M F E C C K D A$ KMAEELA $V L I A A V E R T \square E N F D E V G R A S V R E C \quad P \square A K Q E D S N G L Q S V$


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UniRef90_UPIOOO44228B1 UniRef90-E9C3V9 UniRef90-K7F3E9 UniRef90 W5L2B7 UniRef90- X1WXF2 UniRef90-E4WZ84 UniRef90- T1GK55 UniRef90 G3NR72 UniRef90-UPIOOO3946D91 UniRef90-B3RLT1 UniRef90-HOWOB5 UniRef90-Q7PSTO UniRef90-C3ZT92 UniRef90-F6UT71 UniRef90 UPI0002035ADD UniRef90-F4NXT8 UniRef90_A7SPP3 UniRef90-F4PK68 UniRef90-C3Y5U7 UniRef90-E9CAF5 UniRet90_T1GGS3 UniRef90 L8HOZ3 UniRef90-U6IQB1 UniRef90-W5NII4 UniRef90 UPIOOO3595741 UniRef90 UPIO003AFE369 UniRef90-W6URE2 UniRet90_UPIOOO3956C42 UniRef90 Q3HM45 UniRef90-E9GV61 UniRef90-A9V3M4 UniRef90 G1N625 UniRef90-UPI0003598684 UniRef90-TiKB08 UniRef90_D3B317 UniRef90 V8P701 UniRef90-B7P409 UniRef90-N6TVN8 UniRef90 R7V4P1 UniRef90 UPI000333AFF0 UniRef90-UPIOOO440B679 UniRef90-UPIOOO2A4A8C7 UniRef90 H3AU51 UniRef90 -11F4T2 UniRef90-L8GRV7 UniRef90 A0A023F4F3 UniRef90 UPIO004546B90 UniRef90-W4YK33 UniRef90_M7B7J3 niRef90 UPI0003889D52 UniRef90- G6DG78 UniRef90-A0A026VXH0 UniRet90_H3DGR8 UniRef90 T2M3Z5 UniRef90-E4XHR6 UniRef90-UPIO0026579FF UniRef90 B4MRM5 UniRef90 UPI0003C399D6 UniRef90-s9×3C4 UniRef90 F1KVEO UniRef90 G3WTU6 UniRet90-V5HWK5 UniRef90-EEG4D1 UniRef90-V8P3J1

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RKQGILIRIAAVWLHA
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RRAGET $\square$ A Q $\square$ TVASLDPESDTDKTGVVKAARLLLSSVTK
RTAACDFEQDCDDTADNSRCYSDQRGDFRGARNLLSSVTR KNAANQLHSDAVRARDDPWNRVPQKDATKSAKMILQKVVL LVSGKNI LLAVQKLLIQPDACNSVEELAVSAKRILVGTIVK RAAGTTI EQLCDVRIEEGTEASDRGAMARAAKVLLASVTR RQAGAAIEHICEETNEEKGALDRSLLIRAAKCLLAALTR EVSGCELVISARRILVEKFRPESRRHFI R DAKDVLERTLK KQAGE
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KRADEEM
RKETKA
RAAGRADERV CTGADGSGM $\square$ SAARALLASVTR RLAGEYISDTTDRTK AVSGQHVLLAAQKLSLQPALPEHREELTAATQRAFLGVVK SRACNKF VTELINHENFN KSTLTESSRMLLSSITR DHEGKNFYTAAHTFTSDPLNVEKRQEMISASRTLVREVTR RDASNVVEQHCDRPGDDDVQEPCRMKLARAAKTLLSSVTR RDAGKS ERLCDELCRHDEPLKDYGAIVLAARSLLSSVTR QAAGRNGTQLAQKLHLRRPECQRHLEELVTTAQQLVVATTK EDAGNEMVVSGREFDHETSSSQRRARAVRAARSLLTAVAR RKQGTL
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| UniRef90-E9C3V9 | $\mathrm{V} \mathrm{QAFDD}$ |
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| UniRef90-H3AU51 | 1 L L I ED |
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| UniRef90-T2M3Z5 | 1 L L L A D |
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