QUERY
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UniRef90- $25 V T 51$ UniRef90-R7MYN2 UniRef90-D4JUY1 UniRef90-UPIO0047DB1A4 UniRef90_UPI000465BE83 UniRef90_UPI00047ABA5E UniRef90-15AW14 UniRef90-R5AAF3 UniRef90 H1C7T8 8 UniRef90-R6C8N5 UniRef90-R5CHA7 UniRef90-F2NVY1 UniRef90_C0E8X3 UniRef90-UPIO004135CA9 UniRef90_UPI0003B517EF UniRef90_V2Y5F6 UniRef90-G5GH24 UniRef90-R6CQ18 UniRef90-BOPHR3 UniRef90-R6N5V7 UniRef90-C4GAD4 UniRef90-C4Z6H6 UniRef90-V2YEA4 UniRef90-G4kW19 UniRef90-R9M7V1 UniRef90 H7EIT9 UniRef90-A6POY0 UniRef90-U6E9L3 UniRef90 R6PXx4 UniRet90_R61513 UniRef90-LOEHN7 UniRef90-G8QVA6 UniRef90_FOT6L3 UniRef90-R6TF04 UniRef90-R6ERK4 UniRef90-F6D1M6 UniRef90-J1H146 UniRef90-U2Q800 UniRe990_R5AJT2 UniRef90-R6YAN4 UniRef90_UPIO0047CDDF3 UniRef90 W2BWA4 UniRef90-F4XE04 UniRef90-W0FR28 UniRef90-R5HE74 UniRef90-R9MOU9 Unirefo - Plooo37D8177 UniRef90_-J3JGB6 UniRef90_UPIO0047C8B59 UniRef90_Q2NE13 UniRef90-W3AS71 UniRef90-UPIO003B3B54B UniRef90-R9SLR1 UniRef90-R6H2PO UniRef90-R7IE27 UniRef90 X8K482 UniRef90_R5Y4V7

1
G SHMYLGRILAVGRNSNGSFVAYRVSSRSFPNRTTSIQE N N S YPGRGIILGK SEDGAVAAYFIMGRSENSRNRVFVE NAYPGRGIVVIGKTKDGKKAAYFIMGRSENSRNRVVFV SNAYPGRGIVIGKTKDGKVTAYFIMGRSSNSRNRVFVTV N N S Y P GRGII I GRTPDGKVTAYFIMMRSENSRNRVFVE


 SNTYPGRGIVVGKTADGKHAAYFIMMGSENSRNRVVFVTV NNSYPGRGIVI GKSADGKVTAYFIMMRSSNSRNRVVVE NNSYPGRGIVIGKTPDGAVAAYFIMGRSENSRNRIFAQ NAYPGRGIVMGKSPDGKVTAYFIMGRSGNSRNRIFAV
 A Y P GRGIVI GRSED GAVTAYFIMMRSANSRNRVVVV N NAYP GRRGI ML GK S Q D GK V A VYF I M GRSENSRNRVVFVN NA YP GRGIVI GK S Q D GKVTAYF
 T N S YP GR GIV V G L S E DKKYA A Y F I M G R S V N A Y P GRGIVI GVVSEDGKVTA YF
S T
 NAYPGRGIVLGTSADGAVAAYF
 S G S N T S YP GRGIVI GTSSDGKYAAYF
 $N S Y P G R G I V I G B S Q Q D G K V I A Y F$ STPYPGRGVVLGSSPDGSVI AYF
 NEYPGRGIIVGKSADGKYAA YW

 | $S N A Y P G R G G$ | $V$ | $G K S A D D G K Y A A$ | $F$ |
| :--- | :--- | :--- | :--- |
| $S N P Y P G R G$ | $V$ | $G R S A D$ | $G K V I A$ |


NTYPGRGIVLGRSEDGKVIA YF
$N P Y P G R G V V L G R S A D G A V A A Y F$ SNTYP GRGIVLGKSQDGAAIAYFI NS YPGRGI I LGKSEDGAVVAYF A Y P GRGIVAGMSEDGKVSAYF HPYPGRGGVEGRTA DNKAVA YF SNRYVGRFLVVGSNENGYYVAYRVSSRSFPNRVAKIFK NPYPGRGIVLGRSADNAVAAYFIMGRSENSRNRVVVP NEYP GRGIVVVGKTED GKVVAYWTMGRSA GSRNRVVVVE NRYPGRGIVLGRSKDGSKAAYFIMGRSENSRNRIISR ANSYPGRGIVLGRSADNKVIAYFIMGRSENSRNRVFEA $M Y$ G R L A AV G S N E T G N F V A Y R V S S R S FPN RVTRRTFP
D N A Y V G R Givi GK T A D A K AVVA Y F I M G R S E N S R NR V F DE
NS Y V G R GIV V G K S A D G A C TA Y F I M GR S A N S R NRII F T E

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

NS YPGRGGVEGK SAD GA V TA Y F I M GRSENNSRNRVVFKA $M Y$ LGR IL AVGNTEKGKFVSYRVSSRSFPN RDARS FE
SNSYPGRGIILGRSADNKVIAYFIMMRSENSRNRIFEK
N GYPGRGU L L GK T P D GA YAA Y F I M GRSENSRNRVVEVR
NP YPGRGIVLGMTPDGKVAVYFIMMRSANSRNRVFAE
DNSYVGRGIVI GKTEEGAAVAYFIMGRSENSRNRIFKE NSYAGRGIV I GKSANGKCTAYF I MGRSANSRNRVVF

N A YPGRGIVLGKTEDGSAVAYFI MGRSENSRNRIFSK

 DNTYPGRGI I I GKTPDGAKAAYFIIMGRSDNSRNRIIFTE A N S Y P GR GIV L G N T A D G K VA A Y F I M G R S E N S R N R I F V NNSYPGRGIVIGKHADGAVIAYFIMMRSENSRNRVVVE NA YPGRGIVIGMTPDGTVQVYWIMGRSENSRNRVEIQQ NTYPGRGLMMGTTPDGSVMVYFIMGRSENSRNRVFTE MY DGRFIVIGPE V G GAYRVVSRSFPNRQVVDRD
T NA YPGRGI II GLT P DASVQVYWIMGRSENSRNRVRVP $M Y L G R 1 I$ SI G S S K D GVVAS Y RVVSRSFPNRKSVVNN NNEYPGRGII, GKSEDGVAVAYFIMMGRSANSRNRVFTE
 $M Y L G R \| L S L G M N V D G K F V A Y R L S S R H F P N R E A K V F G$ NA YP GR GVVLL GR S E D G KVI A Y F I M GR SENSRNR R I F V E
N N TYPGRGI CL GVDESGAVIVYFIMMGSVNSRNRIFEE NSYCGRGIII GTT GNQKCAAYFI MGRSDNSRNRVFVK
N A Y A G R G I I I G T S A N G AVVTA Y F I M G R S Q N S R N R I F I K

## QUERY

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UniRef90_D4LE66 UniRef90-R5P9H9 UniRef90-R6RZP1 UniRef90-UPIO0047EC43B UniRef90-N2AGS9 UniRef90-R5WIH6 UniRef90_D4L8C4
UniRef90 D4J327 UniRef90-R5VT51 UniRet90_R7MYN2
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UniRef90 E3GXU2 UniRef90-G4KW19 UniRef90-R9M7V1 UniRef90-H7EIT9 UniRef90-A6P0YO UniRef90_U6E9L3 UniRef90-R6PXX4 UniRef90_LOEHN7 UniRef90-E7MKS7 UniRef90-G8QVA6 UniRef90_FOT6L3 UniRef90-R6TF04 UniRef90-R6ERK4 UniRef90_F6D1M6 UniRef90_J1H146 UniRef90_U2Q800 UniRef90_R5AJT2 UniRef90-R6X6N9
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UniRef90-R5Y4V7

## B

50
60 $60 \rightarrow 70$

70
YNCTR VVGDTAVVNGS ${ }^{80}$
ERVAVVPVEGHERDVFRNPYDAYNCVRMVGGNTAVVSNGSH



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109
$$

Y A P $V$ V R V L G N K T I $V$ V T N G D Q Y A P $V \left\lvert\, \begin{array}{llllll}R & V & G & G & N & T \\ R & V & T & N & G & D\end{array}\right.$ $\begin{array}{lllllllllllll} & A & P & R & V & L & G & N & K & T & V & T & N \\ G & D & Q \\ Y & A & P & V & R & V & L & G & N & D & T & V & T\end{array} N$ G $D$ \begin{tabular}{lll|lllllllll}
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $D$ \& $T$ \& $V$ <br>
$Y$ \& $A$ \& $N$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $R$ \& $R$ \& $V$ \& $G$ \& $N$ \& $K$ \& $L$ \& $V$ \& $T$ \& $N$ \& $G$ <br>
$D$ \& $Q$

 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $L$ \& $V$ \& $T$ <br>
$N$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $D$ \& $T$ \& $V$ \& $T$ <br>
$N$ \& $N$ \& $G$ \& $D$ \& $Q$

 Y A P $V$ V $R V V$ L G N K T $\quad V \operatorname{T} N \mathrm{G} D \mathrm{Q}$ 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ \& $N$ \& $G$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $N$ \& $N$ \& $K$ \& $T$ \& $V$ \& $V$ \& $T$ \& $N$

 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $N$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ \& $N$ \& $G$ <br>
$Y$ \& $D$ \& $Q$ \& $V$ \& $R$ \& $V$ \& $L$ \& $D$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ \& $N$ \& $G$ <br>
$Y$ \& $D$ \& $Q$

 $\begin{array}{llllllllllll}Y & A & P & V & R & V & L & G & D & K & T & V \\ Y & N & G & D & Q\end{array}$ 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $L$ \& $G$ \& $K$ \& $K$ \& $T$ \& $V$ \& $T$ \& $N$ <br>
$Y$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $A$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ \& $N$

 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ \& $N$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $V$ \& $T$ <br>
$N$ \& $G$ \& $D$ \& $Q$

 

$Y$ \& $A$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ <br>
$Y$ \& $N$ \& $G$ \& $D$ \& $Q$
\end{tabular}

 \begin{tabular}{lll|lllllllll}
$Y$ \& $A$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ <br>
$Y$ \& $N$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ <br>
$N$ \& $G$ \& $D$ \& $Q$

 Y S S P 

\& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $D$ \& $T$ \& $V$ \& $T$ \& $N$ <br>
$Y$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $D$ \& $T$ \& $T$ \& $V$ \& $T$ <br>
$N$ \& $G$ \& $D$ \& $Q$

 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $D$ \& $T$ \& $T$ \& $I$ \& $V$ \& $T$ <br>
$N$ \& $N$ \& $D$ \& $Q$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $D$ \& $Y$ \& $T$ \& $I$ \& $V$ \& $T$ <br>
$N$ \& $G$ \& $D$ \& $Q$

 Y A P V R V L G N K T I V T N G D Q 

$Y$ \& $A$ \& $V$ \& $R$ \& $V$ \& $R$ \& $G$ \& $E$ \& $Y$ \& $T$ \& $V$ \& $T$ \& $N$ <br>
$Y$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $P$ \& $V$ \& $R$ \& $V$ \& $R$ \& $G$ \& $N$ \& $A$ \& $T$ \& $V$ \& $T$ \& $N$
\end{tabular}





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

 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $V$ \& $L$ \& $G$ \& $N$ \& $K$ \& $T$ \& $V$ \& $T$ <br>
\hline \& $N$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $K$ \& $V$ \& $L$ \& $G$ \& $S$ \& $K$ \& $T$ \& $V$ \& $T$ <br>
$N$ \& $G$ \& $D$ \& $Q$
\end{tabular} $Y$ A P $V$ V $R \mid V L$ Y A P $\quad V \operatorname{R}$ T Y G F Y T I V T N G D Q $Y$ HPVRKVGNK TVVTNGDQ Y S P V K VI G N K T I I T N G D Q

 | $Y$ | $A$ | $P$ | $V$ | $R$ | $V$ | $L$ | $G$ | $K$ | $Q$ | $T$ | $V$ | $V$ | $T$ | $N$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | $\operatorname{G} D \quad Q$

 $\begin{array}{lllllllllll}Y & N & P & V & L & L & G & A & T & V & T \\ N & G & D & Q \\ Y & A & V & R & L & D & M & L & V & S & N\end{array}$ | $Y$ | $A$ | $P$ | $V$ | $R$ | $L$ | $L$ | $D$ | $D$ | $M$ | $L$ | $V$ | $S$ | $N$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Y$ | $G$ | $D$ | $Q$ |  |  |  |  |  |  |  |  |  |  |
| $Y$ | $A$ | $P$ | $V$ | $R$ | $V$ | $L$ | $G$ | $N$ | $N$ | $T$ | $V$ | $T$ | $N$ |
| $G$ | $D$ | $Q$ |  |  |  |  |  |  |  |  |  |  |  |

 SY N C I Rll V D V A V V S N G S H Y H P V R E F E GK T I V T N G D Q Y H P $V$ R R A GR G L $1, V T N G D Q$
 Y A P V K GF E N R LI V SN G D Q Y H P V R V V D G TTIV $T$ T N G Q

 Y S P I K K WE N K L I V TT N G D Q Y A A V R N Y E N K I $Y$ Y P V R Q S G GA H $V$ V $\operatorname{V}$ N GD Q | $Y$ | $S$ | $P$ | $V$ | $R$ | $K$ | $L$ | $G$ | $N$ | $T$ | $L$ | $V$ | $T$ | $N$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Y$ | $S$ | $P$ | $V$ | $R$ | $S$ | $V$ | $G$ | $N$ | $F$ | $L$ | $V$ | $T$ | $N$ | $G$ | Y

 $\begin{array}{lllllll} & S & P & R K & L & G N R & L \\ V & V & V & \text { G D Q }\end{array}$

 | $Y$ | $N$ | $P$ | $V$ | $L$ | $K$ | $C$ | $D$ | $G$ | $K$ | $T$ | $V$ | $T$ | $N$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Y$ | $A$ | $P$ | $V$ | $R$ | $V$ | $G$ | $G$ | $E$ | $V$ | $V$ | $T$ | $N$ | $G$ | $D$ | Y H P V R QM G R G L 1 Y A P I R K L D GK L $\quad V \operatorname{T} N G B Q$ Y A A V R R F E N R L I V T N G D Q


 Y H P V R K V G D T L V V T N G D Q Y E P V R E IGGE T TVVV TN G D Q Y A A I R S YE N N LI V T N G N Q
 $Y$ H P V R V F G V V T V V T N G D Q

 | $I$ | $Y$ | $H$ | $P$ | $V$ | $R$ | $V$ | $Y$ | $G$ | $G$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | $V$ | $T$ | $N$ | $G$ | $D$ | $Q$ |  |  |  |
| $S$ | $Y$ | $N$ | $C$ | $V$ | $R$ | $E$ | $V$ | $D$ | $G$ | $K$ |
| $A$ | $V$ | $V$ | $G$ | $N$ | $G$ | $S$ | $Q$ |  |  |  | $\begin{array}{lllllllllllll}S & Y & N & C & V & R & E & V & D & G & K & A & V \\ V & G & N & G & S & Q \\ I & Y & Y & P & L & R & H & E & G & G A & H & I & V \\ T & N & G & D & Q\end{array}$





 \begin{tabular}{llll|ll|llllllllll}
$Y$ \& $H$ \& $P$ \& $V$ \& $R$ \& $R$ \& $A$ \& $D$ \& $T$ \& $T$ \& $V$ \& $T$ \& $N$ \& $G$ \& $D$ \& $Q$ <br>
$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $A$ \& $L$ \& $G$ \& $E$ \& $Y$ \& $T$ \& $V$ \& $T$ \& $N$ \& $G$ \& $D$ <br>
\hline

 

$Y$ \& $A$ \& $P$ \& $V$ \& $R$ \& $A$ \& $L$ \& $G$ \& $E$ \& $Y$ \& $T$ \& $V$ \& $T$ \& $N$ \& $G$ <br>
$Y$ \& $Q$ <br>
$Y$ \& $Y$ \& $P$ \& $V$ \& $R$ \& $K$ \& $H$ \& $G$ \& $Q$ \& $N$ \& $L$ \& $V$ \& $T$ \& $N$ \& $G$ <br>
$D$ \& $Q$
\end{tabular}




## QUERY

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UniRef90_U6E9L3 UniRef90-R6PXX4 UniRef90-R61513 UniRef90-LOEHN7 UniRef90 E7MKS7 UniRef90-FOT6L3 UniRef90-R6TF04 UniRef90-R6ERK4 UniRef90_F6D1M6 UniRef90_J1H146 UniRef90-U2Q800 UniRef90_R5AJT2 UniRef90-R6X6N9
UniRef90-R6YAN4 UniRef90-UPI00047CDDF3 UniRef90-W2BWA4 UniRef90-F4XE04 UniRef90-W0FR28 UniRef90-R5HE74
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 MHLENGTYNYAMS K KNNGNDACNRYTEAYENPVAGE MHLENGTYNYAMSILKSNNGNPDACNRYTFAYENPVAGEG
 LHHEDGGYNYALDSILKSNDGNPDSCHRYTYAYEKPVAGEG MHIVENGKFNYAMSILLKSNNGDPSSCNRYTFAYENPKAGEA MHVVNGTYGYQMSILKKNNGDPSQCNRYTFSYDNCVAGEG
 MHI ENGNYNFAMSILKKSSDGNPESCSRFTYAYEKPLCGEG MHLEEGEFHYDMSILKSNHGDPRACNRYTFSYENPLAGEA
 LEVENGNFNFSMS VNNSEKGLNFSLSILKSANGNPNSAQRFFYEYENPDNGRG MHVIT GDFDYSLS VDIEKEKDHFRMSILKKNAGNPDCCNRYFYEYEGAPAGWG VEGFDYKLS ILKS L H GDNGEMNYAMSILLK

NNNDSSSTRRYFFEYTDPKAGEG保 V R LK K G FS YQLS LLK SANGNPDSVQRFFFDYAQPES GVGG LEEDGOM MKPDGTY $\operatorname{L}$ SILKSLDD $\square N N K K G Y \underset{F}{I}$ G IVNTK

LYFADRDF VRADG




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| M T P P G G |
| V |}

$T$ L S Y $\quad$ Q $M$ M

TPDPGEG YDAPIVGQA Y A ATA GLG YEQPLA GF G VTE
 $Y E Q T K P A Y V$
 LGPNG $\quad$ S Y K L S I L K A A D GTGRRRCLRQTFEYP G QP GTG LTHE E G GF SYYEM S LS P D G S Y L S L L K A $\quad$ A D E A G T G C L R Q T F E Y P GP G L G $V$ D DED D FTYKMMS I L K S ANAE GTSCNRYFFEYE G LA A G Q G
 |LTFGDGDFTYQMSILKSADAEGSACNRFTFSYABPLNGLG


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

 V D K Y E A Y I G I V T D S K I S S V E K LIE Y G K A A Y D $V$ RVA D GKAS Y KL S



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| UniRef90_A6P0Y0 |  |
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| UniRef90-R6PXX4 |  |
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| UniRef90_UPI0003B3B54B | $\underline{L} \mathrm{~F} \vee \mathrm{R}$ |
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| UniRef90-R7IE27 |  |
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 Y P GRGI IL GK S E D GK VFA Y FIIMGRSVNSRNRI F DV ANEYPGRGI AVAKASDGRFIGYFIMGRSENSRNRVFVP

TNSYPGRGIVLGQSDDGKFAAYFIMGRSVNSRNRIIEE $M Y$ VG R F V TIIGK T N G R L WA G Y R V S S R S F P N R Y A V L G D
TTDYPGRGIVAGVNPSGKKDAYFIMGRSANSRNRVFAE $M Y V G R F V V V G P E \quad V A A Y R V S S R S F P N R R V V E R E$ MYI GRFLVVGKTQQGKFVSYRVSSRSFPNRKAVDNN $M Y$ I GRFLVFGKTEEGPFVTYRVSSRSFPNRLAVMDD $M Y$ I GRF $L V \operatorname{V} G K T E N G K F V L Y R V S S R S F P N R K A V L K N$
GNNSYPGRGILVGMTKDNKVVGYFISGRSENSRNRVERA


NTYPGRGVLI GKSADNAVAAYFIMMGSENSRNRIFEP
T NP YPGRGIVVGTDRSGPAVYYWIMGRSSNSRNRVFVA $M Y$ VGRFIVVIGPD F GAYRVNSRRSFPNRQVVERD $M Y \mid G R R L V V G G K T K E G K F G A Y R V M S S R S F P N R E R K L N E$ $M Y V G R F V V V G P \quad Q V G A Y R V S S R S F P N R R A L D R D$
N N Y P GRGI II GMSPNGKVQDY WI M GRSENSRNRI FQV MYTGRRLLSIGMNCEGKFVAYRVSSRSFPNRQCLKFD
ANPYPGRGI I I GK S GNDKLCAYFLSGRSQNSRNRILEE $M Y \operatorname{IGRFIVVGPD} \quad V G A Y R V S S R S F P N R K A V A H G$ $M Y V G R D V S V A K T K D G K L C A Y R V S S N S F P N R H A V E V E$ NP YPGRGIVL GTSAD GKVQVYWIMGRSVNSRNRVVEI ANPYPGRGIVVGRD MY $\square G R F L V A G K T K N G P F I A Y R V S S T S F P N R D A K I N G$
NE YPGRGIVLGRTPDGAVI A YWI MGRSANSRNRVFEA NP YPGRGIVVGTSATGERVAYWIMGRS DNSRNRVFTL $M Y V G R F V V V G P D \quad V A A Y R V S S R S F P N R E \| R D R D$
N N S YLGRGI II GK S ND G KVCS Y F I M GRSSNSRNR』F S $M Y V G R I V G V G R D R K G D V A A Y R V S S R S F P N R N A E K L G$
 $M Y V G R I V A V G C S G D A V W V G Y R V S S R S F P N R R A T A S G$

 $M Y \vee G R F L V A G P G \square G$
 A Y RVSSRSRPHRKVVRRD AVY RVSSRSYPNRQII SRD AVAYFIMGRSENSRNRVFYQ

NPYPGRGILVSKN $\quad L V Y Y F I M M R S A N S R N R I F A P$ $M Y V G R F V V V G P E G G \quad A Y R V S S R S F P N R A I T A R D$ $M Y\|G R F I V V G P G \square G G A Y R V S S R S F P N R R\| T D R D$
 $M Y V G R F L V V A P G \quad L A G Y R V S S R S F P N R K A V E R D$
NSYPGRGIVLGRNEDSWUVIVWIMGRSSNSRNRILAH


 $R Y V G R T L G I G L N N G K P F A F Y L L C S R S F P N R R A V V K G$
 $M Y V G R F V V V G P E T \quad A A Y R V S S R S F P N R Q I T D R S$
 $M Y V G R F V V V A P \quad R \nabla G A$
 $G G K R Y V G R M L G V G L K D G K P F A F Y R L N S R S F P D R K A V D K G$

S N
 Y P GRGI MI G L S D S GTVI A Y FIIMGRSENSRNRKFDL S NPYP GRGLVLGRASDGWIIAYWIMMGSEQSRNRRFTV
 $T Y T G R T L G V G L M$

NA YPGRGLVVGRSEDAWLMDYWI MGRSEHSRNRRLVI
 NQRYF GRGI IVGRAPKSPFLAYFLMGRSAQSQNRFFSLL NTYSGRGLVVGRSEDAWLMDYWMMGRSEHSRNRRLVV NTYPGRGIVLGRSEDGKVIAYFDMGRSANSRNRVFTAA $N V Y P G R G \| V L G R N H E N S W I V Y W D M G R S S N S R N R I F T H$


ND Y P GRGVVMGRILDQNHWGGYWDTGRSANSRNRCFRY YPGRVI I LGRDRSGNVVVYAITGRSPSSRKDEFEK

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UniRef90 A5ULV UniRef90-J4TCK3 UniRef90-E7QNQ4 UniRef90-A6DS23
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T 90 100 TT 110 110 YNTPRIAA $\frac{120}{V}$ TNTVYDGLIAGKTF SQALTSRAFEPDYPNTPRISSM
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| $P$ |
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\section*{T <br> | $T$ | $D$ | $A$ |
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| $V$ | $D$ |  |
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ПDQEKSSVT पAK $\square G K S D F S D E H S V$ YHFYRYE $\square K S G \nabla G$ VGEDEATVGVVRRDALLVEAVDE RTLVATYEEDRPRAF I EDNDGKMDMNMS LKKSDDGDNSSGRFTYSYENPLAGKG LDFRKPWLSSLRKSQLVKSESDHA LTYHYRQFAKAFG
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UniRef90 - O5JD29 UniRef90-B9LU81 UniRef90-LoIG60 Uniinef90-V4XWS9 UniRef90-UPIO0046E692F UniRef90-MONC19 UniRef90-H3ZM84 UniRef90-K9EFKO UniRet90_-_ORSS1 UniRef90-K1U3VO UniRef90-C7GYU1 UniRef90 D6TJW6 UniRef90-C6CZZ5 UniRef90-B5JEU5 UniRef90-GOHLQ9
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DFDAADAETAASAAYD GEDEHPVCGVGVARDENDFS DFHVESADEACDYILGKGVFADDEKPISAVCAIADGDKFQ HFISTYETDGKPIPSFNGFPKSAEETLKAYDALNADNKVS Y IS TYQGDGSPLPSFSGEPVEVALPATAREVLNDDNKVS HFISTYAKNGSPIPSYAGEP $H F I S T Y L K N G S P L P S Y A G E P$
$Y L I S Y Q G D S P L P S F A G E P$ EFEASAAAEAAAEAYD DEVTLPVWSA LDADKVS HFIHTYLQDNNPLPSFYGEPKKDE ALCADDDEF
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GFEPTTASAAAK TALAADFEHPVCAAGVHV GDSVG EF STDVGSASELLTAVWESQPADLRVAADAV

| UniRef90_D3DZL1 | 1 S |
| :---: | :---: |
| UniRef90-R6SNN2 | L Y V |
| UniRef90-R6TQ58 | L F V R Y L |
| UniRef90-J4TK25 | $\underline{L} \mathrm{~A} \mathrm{~V}^{\text {R }}$ |
| UniRef90-D4K2V7 |  |
| UniRef90-UPI0003644BF8 | $\square \mathrm{A}$ |
| UniRef90-D8J4G9 | R A $\square$ |
| UniRef90-R6QB62 |  |
| UniRef90-Q0W6S4 | LG VY |
| UniRef90_J9FI48 |  |
| UniRef90-W0K262 | TA V |
| UniRef90-A6UV34 | LG T |
| UniRef90_A4FWM4 | LA T |
| UniRef90-F8AKH2 | TY NK |
| UniRef90-R6FKU5 | LYY V |
| UniRef90-A6UPV4 | $1 \mathrm{~A}^{\text {T }}$ |
| UniRef90-Q3ITS6 | $\checkmark \mathrm{G}$ |
| UniRef90-R6BCS5 |  |
| UniRef90-E1QYJ9 | LY A |
| UniRef90-E4NSU3 | V G F Y |
| UniRef90-C9RE12 | LA |
| UniRef90_C7P0Q4 | T A $\square$ Y |
| UniRef90-R4K360 |  |
| UniRef90-A5ULV3 | $\square \mathrm{G}$ |
| UniRef90-J4TCK3 |  |
| UniRef90-E7QNQ4 | LA V |
| UniRef90-A6DS23 | $\checkmark$ A FK D |
| UniRef90-C9RNY2 | L M VK |
| UniRef90-G5F2Q9 | L Y AR |
| UniRef90-N6UUN8 | LA V |
| UniRef90-D1PMN7 |  |
| UniRef90-U2TWF8 | $\square \mathrm{Y} \mathrm{V}$ |
| UniRef90-R4W655 | T A I |
| UniRef90-R5L9R5 |  |
| UniRef90-J1ST44 | A A T |
| UniRef90-U1QDS8 | T T |
| UniRef90-A0B9N7 | $\mathrm{L} A$ VY |
| UniRef90_C7NVD7 | T A I |
| UniRef90-M0MF13 | TA 1 |
| UniRef90_Q5UZ65 | $\checkmark$ V V Y |
| UniRef90_V4HB76 | FAV |
| UniRef90-U3AEE2 | TA |
| UniRef90-U1N1C1 | $\square \mathrm{K}$ T |
| UniRef90-X8IQ86 |  |
| UniRef90-U1Q518 | M G |
| UniRef90-R5BIB3 | LY |
| UniRef90-D3SVC2 | T A I |
| UniRef90-U1QBX8 | Y A I |
| UniRef90_U2TEW7 |  |
| UniRef90-D7DRR2 |  |
| UniRef90-G2MHT1 | $\square \mathrm{A}$ I |
| UniRef90-E0XUT3 | $L \mathrm{~A} V \mathrm{RE}$ L |
| UniRef90_G7WRA6 |  |
| UniRef90-F8AI85 | $\square \mathrm{A} V \mathrm{G}$ |
| UniRef90-D5VRQ5 | 1 K 1 |
| UniRef90-F4BTC3 |  |
| UniRef90-Q5JD29 | LS |
| UniRef90-B9LU81 |  |
| UniRef90-LOIG60 | TA 1 |
| UniRef90_V4XWS9 | $\square \mathrm{L}$ A V |
| UniRef90-U1P7J3 | TAV |
| UniRef90_UPI00046E692F | VA T L |
| UniRef90-MONC19 | TA |
| UniRef90-H3ZM84 | $\square \mathrm{G} V \mathrm{~K}$ |
| UniRef90-K9EFK0 |  |
| UniRef90-FORSS1 |  |
| UniRef90-K1U3V0 |  |
| UniRef90-Q8TZ52 | LEA R |
| UniRef90 C7GYU1 |  |
| UniRef90-D6TJW6 | L A V]K |
| UniRef90-C6CZZ5 |  |
| UniRef90-B5JEU5 | L A V K E $\square$ |
| UniRef90-G0HLQ9 | L A V |
| UniRef90-W015G5 | $1 \mathrm{G} \\| \mathrm{R}$ |
| UniRef90-UPI00029B4BC0 | I E V |
| UniRef90-W4L4Q3 | $\square A \vee K$ |
| UniRef90-F8KRT3 |  |
| UniRef90-E7AAQ9 |  |
| UniRef90-I3ZRC2 | $\square \mathrm{A}$ |
| UniRef90-W4M4M0 |  |
| UniRef90-G9RTC6 |  |
| UniRef90-Q6SHX7 | L A V R E L |
| UniRef90-E0XUE7 |  |
| UniRef90-V4Y5X1 | V A A Y D |
| UniRef90_R7NP86 |  |
| UniRef90-UPI0002627EC5 |  |
| UniRef90-UPI00036A5ACF |  |
| UniRef90-U1PSE7 | L A T |
| UniRef90-F5XJI8 |  |
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UniRef90_L1KKH0 UniRef90_U1QNY3 $G E L T V V P V G{ }_{A}^{50}$ SEREVVVQDVGGGA

lupas_21
lupas_14
lupas_28
jnet_
conf
sol25
sol5
sol0
jhmm
jpssm


```
lupas }2
```

lupas }2
lupas_14
lupas_14
lupas_28
lupas_28
jnet
jnet
conf
conf
sol5
sol5
sol0
sol0
jhmm
jhmm
jpssm

```
jpssm
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lupas_21
lupas_14
lupas_28
jnet
conf
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