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> HTA TKTWNAR A 1 KWKMEIGEDEHADTVRAEARLHGDGTQRTGVGLA SDQGTKSCHDDVLVEEREEKTRAKARLSWAGSTLVGVGVA EHTA TWTMN


## SDHVLQHWTVD

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EHQAK
WT ME AVDE
QTVEWKVGHYY VE
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MQTLVGWHIEMDFRE
AMHT
A A CVVKKWTVEVSIAE KTWH EMD R KSWSVN:A1DE

DHTEK VGWHVDMEDEHDAQTRSTARLHTVESTIVGVGLIA WKIDLYLEEEGATKARAVLDTATTQFTGHGDA EWTVGLELVEEGGRTDAEARLSTGTSTTTGHGTA MKSTVEWRLNLYLSEHDPDTTARUVLDTGDNVLESCAEA MATLAGWHVELEFDEDGHRTGAAAMLRLGDGEMRARGYA HTA EWKVRLYLFGDDHTTKARLELDTGTNRLTGHGTA MHTMKRWN EMMLEESERTWADAGLHADGTDLHGRGMA
HTT KWNI EVSVV

M HQDKD

tokgntraitarlirdothivgsgaa SMPATKQWS G VCVDEHDDHTRATAWLVGDTRDLTGSGVA SMPATKQWSVTVEIDEEENTTLARADIRTTGREVTGVGKA AMQTTKRWNVDVVVAEDSARTWAEVGLVADGTALRGHGMA QWTVGLNLVEEDGTTKAQAELDTGTSTLTGKGTA
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TEQWVV VYM DERDDRVQAEARLMKPGPEMVGNGIJA MHTTVGWHVELEFEEDGRHTRAVALVRLDGTETKTQGHA AKQWTVQUHLTENGDDTHARAVLTTRAGQLTGAGHA HTG QWSVRLHLFEDDDTTKAHVTLDTGTTALTGHGTA TMRRWTVDIEI DEQEGTTRAEARLHADGEEMFGHGTA MDATKHWSVAVELDEHDDTTRAQARLETAGREVRGLGHA

STEHWSVDIYDEDERTAEARLHTDATDRGRGA
 EHTT EWRIRLDLTEDGGTTKARAVLDTGATTVTGQGVA

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 KTWSVEI VI DEHDARTRAQARLRTRDTTLVGVGLA

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HTA
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            KTWSVEIVI DE K WWTVRL QDKRWSVEFLNE
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HTM EWKVRLDLFEDDGATKAHATLDTGVAQVTGRGTA TKHWTVDVYFDEDVDHTHAEARLQAAAGDLHGKGSA MTKTWNVAVTLTEEGGTRAEAHLHGTGTELRAKGLA



50
R LD P A DEPVA RRNPRDMNVPEI QRHPS DPGQLRV HRNPADMDVPEI

RRNPKDEDVPVI $K V N P H D Y D V P E$ $\begin{array}{lllllllll}R & R & P & P & D & E & N & A & E \\ R & L & N & P & A & D & A & N \\ P & E\end{array}$ SRHPSDANQPRV \begin{tabular}{lllllll|ll}
$R L$ \& $N$ \& $P$ \& $A$ \& $D$ \& $T$ \& $N$ \& $V$ \& $P$ <br>
$R$ \& $E$ <br>
$R$ \& $N$ \& $P$ \& $D$ \& $D$ \& $E$ \& $D$ \& $V$ \& $P$ <br>
\hline

 R RCNPADENVPD $R$ LD P A D P P V A A I $R R N P R D T D V P V$ 

$R$ \& $L$ \& $N$ \& $P$ \& $S$ \& $D$ \& $D$ \& $D$ \& $V$ \& $P$ <br>
$R$ \& $A$ <br>
$R$ \& $N$ \& $P$ \& $A$ \& $D$ \& $R$ \& $N$ \& $V$ \& $P$ \& $E$
\end{tabular} $R L N$

$R C N$ NRHPSDPEQLR V H C

R R C S PDDHEVV P E RKHPADEDVPE $R \square$ RLNP A DPEQERVV RLLDPA D R S | $R$ | $L$ | $N$ | $P$ | $A$ | $D$ | $S$ | $D$ | $Y$ | $P$ |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | R R

 $R R N P Y D P A$ P A SRHR T D A S QPR
MRHPS DP E QL R C RKHPFDSDAPE RCNVVSD NVVPQ HCHPADANVPE HRNPADTDVPE

 RRNPVDRDVP | D R | N | $P$ | $L$ | $D$ | $P$ | $N$ | $V$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $A$ |  |  |  |  |  |  |  |
| $R$ | $A$ | $P$ | $E$ | $D$ | $P$ | $D$ | $V$ | $P$ |
| $R$ | $V$ |  |  |  |  |  |  |  | R R R C N P S DV D I PA

SRHPADANQPR $R R N P \square D R P I P P E$ SRAPVVDANVP LI HR HRNPRDVNVPE RCHPADENVPD TRHNVDVNQPR R R NPADASVPE HANPEDENVPA33AA7E69 $\mathrm{H} C N$
Y
R $\begin{array}{lllllllll}K & R & N & H & D & R & D & V & P \\ Y & E \\ \text { Y R } & P & R & D & P & S & A & P & M\end{array}$

 $R C S P Q D P D V P T$ $\begin{array}{lllllllllll}R & R & H & P & A & D & A & E & I & P & K \\ R & R & N & P & K & D & P & N & Q & P & M\end{array}$ R R D P H D LD VP L HRHRSDDNQPRI $\begin{array}{llllllllll}R & R & N & P & D & D & T & P & D & A \\ H & K & \\ H & P & D & D & Q & V & P & R\end{array}$ $\begin{array}{lllllllll}R & R & N & P & A & D & T & E & I \\ P & E \\ H & C & H & P & D & T & D & V & P \\ R\end{array}$ | $H$ | $C$ | $H$ | $P$ | $T$ | $D$ | $T$ | $D$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $P$ | $P$ | $E$ |  |  |  |  |
| $R$ | $P$ | $A$ | $D$ | $R$ | $P$ | $V$ | $P$ | R L N P K D T DV P Q $R R N P S D P A V P L$ Y R N P R D A S Q P MV

Y R H P K D A S Q P M HCHPADTDVPE RRNPGBDRPV A R R CHPNDADVPA $\begin{array}{lllllll}R & R N P H & D & E & P & D & M \\ R & R & 1\end{array}$ $G$
$G$
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## G G G

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G

60 G D E L A V A R A L S ELL S H RLL LHAAAAEDV E GV G D E
 G D E L A A G R A M H D L G R QL V DV A E R D I E GVV
 $\begin{array}{llllllllllllllllllllllllll}G & D & E & L & A & V & A & R & A & L & S & D & L & G & H & R & L & S & V & A & A & V & G & D & Q & Q \\ G & H & E & L & A & V & A & R & A & L & S & N & L & A & D & Q & L & F & A & I & T & A & A & D & V & N\end{array}$
 G E E L A A A R A L N D L K E Q L L T K A H D E I D G A GDELATARALSDLAHRLLDAAAGDI E EVV

 G D E L A V A R A L Y D L A N QL FA A T S T D I Q A S


## G D E L S V A R A L S D L G K

GDELAVARAMS SLSHQLLNTAATDIERH GEEI A GARALMELAS QLLQKAHKEI DEVV
 D E L A A GRAMHDL GE QL LIDA A E R DI E G A
 $G D$
$G D$
$B$
$B$
$G$
$G$
$D$
$D$
$D$
$G$ GEELLA A V S R A ME D L A L Q MKRAA Y GDMQA A G DELLA
 G D E L A V S R A L S E L S S H GLLLDDAAARREVI S Q I G D

GDELAAASRAMKDLATQLMRAADRDMEAA

GE E L A A A R A M H S V VR QL M R A A D R D L E A V


G D ELL A A GRAL H D I A G QLVVRAAT Q D I A S R

GE E I A G A R A L N EI A M QLL L T KA HVVE I D D D


$\left.\begin{array}{lll|llllllll|lllllllllll:l}G & D & E & L & A & V & A & R & A & L & S & E & L & S & H & R & L & V & L & A & A & A & E\end{array}\right]$
G D E V A A S R A MH DV A G QL M SVA D R A L G Q A

 G D E L A A S R A M R DV A A QL M S VVA D R E L E S G





 G D E L A V S R A L A D L A E R L ALDT T QR D I A A S

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




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RRRPSDREVOELGELATA 60 $\qquad$
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80


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 $\begin{array}{ll}R R N P A D P E V & P E \\ R R N P E D Q P V & \text { PA }\end{array}$ HRSAEDNAVPE
 RRNPADPAVPE $R R N P A D R S V I P E$
$R R N P A D A N V D P E$
 RKDPGDEEVPV $R K N P D D R D V P L I$
$G C R P R H A D T V Q V$ GCRPRHADTVQVGDELAAARALADLSHQLIVEQTASDIESS QAKPGDEYDPVI GHELAAARALSDLAYQLLYQGARDDEAA

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 RRASADAVPEIGDELAAGRALEDLGRRVQAAAAEDARGR RKDPADAALAVVGDEIAAGRALRRLADALLGQAEADDTAS RLD S SHFDVVTI GKQLAVARALADLSHQLFE SASECEA
 HSQLEGRGLAHVAGYLAAGRALCDLSQELLEAVATDVDAA RRNPDDRSVPEI GDELAAARALADLAGKLMAATSQDIAAV YRNPKDSSAPMI GEEI AAAARALDALGTELLHRASSQIEQV EAGLRASSNSQI GSYLAVTRALSDLTAELLETVASDVA HSHPADTNVPEIGDELAAGRAMVDLAHQLLETAERDIQGM ARHPDDPGEARVGEELAGARALVDLAEQLAAKGGHE NRNPDDPAQPRVGEEI AAARALNNLAHRLISKAGGDDEEV RLNPADRDVPEI GDELAVAR YRNPKDPNEPKi GEEI AAARALDALGTELLNSASMRDEEG
 HRSRQDPADPAIGDELAVGRALTALGQQLIHH $R V G N R N P R L V A L D D E L A A A R A L A D L A N R L T A A G A H D M D T V$ SCHSRHGTV QVVREMAAARALTDLAHQLEELAATEDAAA ENGPRGLHLPGIAAELALARALSDLTEELLEAVASDDDT PCRSRHAGTVQVSRQLATARALTDLAHQLFE
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| UniRef90-J1R142 | GAAP |
| UniRef90-UPI000377B7F4 | VR |
| UniRef90-G8WMP0 | TH ${ }^{\text {P }}$ P |
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| UniRef90-UPI0003643A4D | S GR |
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| sol5 |  |
| sol0 |  |
| jhmm |  |
| jpssm |  |

