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P PKDNGLDMDNY WAQTQEVDVTVYVPD
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 K C R D V V Y V
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 K GK D L VVVI EKK K KI S V A L K G QP P L L E GTMY N DVVKVE E S T W
 R G R DV I C N V D R K H I K I I G L K G H P LI I D G E TP K K E V K T E E T Y W

 R S R D L D D Q Q Q K K Y L K K V G L R G H T P I I D G E L Y N EVVKME E S T W R S R D L TVVI Q K N H L K A G I K N Q L P V V D D R L L H D I K I E E S T W K S R F ID CQI K K N HL KVVGLK GQPPII DGEL FK PVVPDDCFW
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 K S R F I I V E I K A N T L K V G G L K N Q P L I L D G E Y F K G V K V D E C Y W R S K Q T C E I K K K S L K L EIVK G S P Til I E G E L Y G S V K V G E S F W K S R F






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K T K DI K V D IT F K K L S I K V K N N

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| $K$ | $K$ | $E$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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K S R F V V CD
I D GELYKPVKVDDCFW RGK QLDV LI R G K Q L DV Q I K K K H V R V G L K G L E P V L E G E L F R E V K V D E S T W T S K Q L T V RARDVKI S L GAD KVVTVATNAE GEII K GEWNGRIKADDSMW R S R DLVVGGLK LDD S L KV A L K G Q D ALL L E G S M Y K P I A L D D S T W
 K GR D L DVVKI T K T S I KV A V K G Q E P I L Q G D FP H P I H A D E S T W R A R D L V V K I Q K K K L S A G L K G R E P I L E G E L C Q E I K I D E S T W R G K D L I V R A R D L I V

 T S K QLL T V K I E A C S L L V G L K G Q P P IVV N G QL F E K I Q S D E S T W K S R DLL V D L H K R S I KL G L K G K E MI L Q G E FP HEEI K VDE S T W K GKDVVVDVQRRTLKVGLKGHPPLI DGQLFNEVKVEESSW K GRDLDVVLTKTKIKVALKGQAPIIEGDFPHPIQADDSTW









 R GRD L D V V L T K T K i R V GL K G K E PII I D G D FP HP I H V D E S T W

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 K G R QV SVVSLQS G GVVRVAAKEDNVLMEGEFMHKINTENSLW
 R GK DLE EVVLT K T K I R V A L K G K EP PI D G S FP HP I HVD E S S W

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 D A L
EAKKKEQEEQSRL E QFQGNPDSYNGAVRQN AEEKQRKAAEEAEQAT L L EQDAL?
D GK QVP $\square$ G N G G VT D RYYWT QTVN EATVVYV


 P Y K WT Q T I G D $V$ V D I T I L VP $\mathrm{G} N \mathrm{~L}$



GMTNLIPCNSEYGGDYEQYSFGQSDSE P Y K WT QVI S E PYKWT QTI A D LDD V R I P L K I N FRA

 | V | V | V | K | V | P | L | P | E | N | V |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| L | D | I | T | F | T | V | P | G | N | Y |

GLTDLIPCNDQCGGDYT | $P$ | $Y$ | $K$ | $W T$ | $Q$ | $I$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $D$ | $D$ | $E$ |  |  |  |
| $P$ | $Y$ | $K$ | $W$ | $Q$ | $Q$ |  | $\begin{array}{lllllll} & V & T & & & P \\ V & V & I & E & I & P \\ V & D & 1 & V & A\end{array}$ PVASNI Y K WT Q T I G D





| $R$ | $D$ | $V$ | $D$ |
| :--- | :--- | :--- | :--- |
| $G$ | $D$ | $L$ | $D$ |
| $Q$ | $D$ |  |  |
| $N$ | $E$ | $A$ | $T$ |
| $T$ | $D$ | $L$ | $E$ |
| $K$ | $D$ | $A$ | $D$ |
| $K$ | $D$ | $L$ | $D$ |
| $S$ | $\square$ | $A$ | $E$ |
| $G$ | $D$ | $V$ | $D$ | $\square$ DESKGQAPVNNGGVCGNYRWEQSLG

 $\qquad$ | $V$ | $T$ | $V$ | $T$ | $V$ | $P$ | L | $A$ | $P$ | $G$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $T$ | $V$ |  |  |  |  |  |  |  |  |
| $V$ | $T$ | $V$ | $F$ | $V$ | $A$ | $V$ | $P$ | $K$ | $G$ | $T$ |






 NADSYNGAVRDTYTWSQDYT DLEVKVVDSK S N G A V Y E K Y R F T Q T $G L T D L L P C N G Q C G G D Y P L Y S F A Q T$

PYEWNQTTSE
 SEEKDCSE $\square$ YNGDDRGNYRWS QTI H DI DVVFIPVKKD I R

 SHLIK P N S GNGADLAN Y Q WT Q TLQEVEAKI PI NVGFAI
 QANPLTYNGA EREAYFWS QNDTEVVDVRVVVPKSIVV
 E EFQQDAESWNGADRENYKWAQHI HEDEI RVVVMQNDK A S S K VESVNFNGVQ $V$ P YKWT QTIA D


K Y TVNTWNGAVTEKYAWSQTFKE
GKLKPNVGNGADLANYRWTQTLSE


EKQRDAAERAEQEKLD YQWRQTLQDVTVVVPLPEPDKT


QANAE CYNGGECERYKWSQTLLD

## PSDCKNGACFDT <br> MAEKLAPGSHNGQTV P■D YKNGAVVAS K D P L

$\qquad$
F E WD Q T L E EVV N $\operatorname{I}$ Y I K L P P N

PSDSYNGATYEHYTWDQT LEDV
STYNGGETEKYKWS QSIND



A E A A K G E E D S Y R N G A A E Q S K F S P S D Y N G D V MAE K L AP E K H N G Q K V $\quad$ K F E WD Q T L E E E



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UniRet90 ${ }^{\text {M1WGVG }}$ UniRef90-U4LJD1 UniRef90-F8N141 UniRef90-UPIOOO26596FO UniRef90-G5E040 UniRef90-A7EHC6 UniRef90-D6WJD1 UniRef90-GOTWN2
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## K A

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 K P S EI KVVEI TNKHIKVQQVLDEVVLE GMFYEEVNKQECVW K G K DVVVVDITSDRISVSLKDEKVLMAGKLKYNIKREDSMW AKRDVACRVTSGTVSCGVRGEAPLVSGEFYARVRADEAMW AKK LHTSIQAQHIKVSSKHETDILEGNLSQRIKHKEAVW KGKDLDVNI SRNALKVGTKGQEPLIDGELPHAIHVDDSTW KLFHCKIQPKHLEVGIKGNPPYLNHDLAYPVKIDSSFW NSKNVSVLMNKTTLTVKILDK VLVDGELCRQINHYDSVW KGRDVKVDIGRKHMKVSYVDQQALVDGELSWDVHKDEAFW RGKQVKVDFSHTHLSVGINENKILMEGDLSWKVNVENSCW


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F T Y ${ }^{20}$
40
EKEKTEANR

E Q C
 CGTPWGRWYQTLEEMF
 ${ }_{\mathrm{C}}^{\mathrm{C}} \mathrm{C}$ C


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R Y FWQQTSENITVHVRMP EGV
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EDGK】A

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KVHITKD YEWEQTLEDVTVYV AVPPGT
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GKEGRDK FEYDG
$A \stackrel{R}{F}$
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K Y K WS QTSED
L T K F
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EMEEDSSNGAKQPAY STPWGRWQQTDDEVEI
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K A S N WD $V|\mathrm{~K}| \mathrm{I}$ G
50 A G T L $|K| V \mid G K \stackrel{60}{G} Q$
70
80 K K M K Y K K D L T K E D I H V S F S P N H L S V A L K D Q F P $L$ L K G D L F S L I D H E S S T W
 R A K DVRCSLRSRHI SLAVSGQE


 TANMI LCEDISANHVALGLKRGTDKFLNHDLSSSVVVAESYW TKEEVQFRLSSD DVSVGVRGFPPLLEGQLFASVDPEASAW R A K QL D D $\quad$ K I T P P R E L HV A L D GVK V

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GKELQ

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 T K D D I Q I Q FP P E G I IV A L K N Q S P L LE

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

$\qquad$ R GK DVV K C V I I K P SYPIKESELVW
 SAKEVRCRIGARDVELHVKGKE II KGKLIETTVSDEATW
 T K E A I Q V H F F P D R L S V T L K D P N P L V E G T L F S Q I D H E S S T W
 K A D R I E CKI T P R HI CL GLK G NPPF $\square$ DEDTGGPVVVEESYW

 P K S H I S K R D I A L S L K P D R L GV S Y K G E A L L E G E L Y G S V R S WE S F W
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 N S K QL K I E I K S D S I S V G L K N A K P Y L K E E LIA S T I N K A D S V W









 K G K QV T WR TS G A GARVVTVLRA GPVIDE E GFRPS L SVVH T S L P



 K S R F V V V D I K K N H L K V V L K G Q P P I I DV S N Y N N




 $R G R D V Q V D M K P A S I G V A V N K N P V M Q G E L L H S V I V D E S T W$




 K K S D I Y F I I K P D Y I E L GI K N N S H L L Y G K L Y R T V D T E A C T W



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[^2]


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