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UniRef90 B6QB61 UniRef90 Q0CM26 UniRef90－AOAO24RXY7 UniRef90－Q6FLM5 UniRef90＿Q6BPS1 UniRef90－R7T213
UniRef90 Q10295 UniRef90－A7TLQO UniRef90－B6K102 UniRef90－A1D1N5 UniRef90－S9RK42 UniRef90＿UPI0004624290 UniRef90－D8PQF1 UniRef90－12H6M1 UniRef90＿O9UW26
UniRef90＿C6HNM9 UniRef90 E9EUC6 6 UniRef90－M9MHS7 UniRef90－V5G508
UniRef90＿K9F4B8 Uniinefoo－C5MJJ3 UniRef90－C5HU27
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UniRef90＿W1QID5 UniRef90＿GORWU6 UniRef90＿G3ANQ9 UniRef90－G2X8Y9
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N L E V H D S
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 UniRef90_Q75DL9 UniRef90-M7NKY3 UniRef90-G8ZLX6 UniRef90-K5WJC3 UniRef90-WOT6X7 UniRef90-UPIO00444973D UniRef90-UPI0004409605 UniRef90-C5DQM5 UniRef90_G8XZ60 UniRef90-C5DGL8 UniRef90-G0V6G2 UniRef90-A5DJF1 UniRef90-B6QB61 UniRef90_A0A024RXY7 UniRef90-Q6FLM5 UniRef90-Q6BPS1 UniRef90_R7T213 UniRef90-Q10295 UniRef90_A7TLQ0UniRef90_B6K102 UniRef90_A1D1N5 UniRef90-S9RK42 UniRef90-K0K9U3 UniRef90-UPIO004624290 UniRef90_D8PQF1
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QTEEKQLSKYKRDTEENSQDT KDEKKCYDTTMYI GLDVNV $K T E D L A Q Y T E V D D N$
 TTDETNDPVHTAAAENGAEGVQDSRLI YTTTYYI GLELKP QTDK TNDPAHQAAAQDQUEKKGESWTIYTTTYYI GLEMKK

TVYSTAFY GLE

K K E D
KKYIKPSDEETS
TTDESNDPQHTAASQNGG
TAKLESEEPRHDATENGDTESKRPTKVFTTTHYI GLLELCK
EVAQRTQKVDAAEAAKATEGKEGHRMI YTTTFYIGLSIEP
QAKGTENAEVPAPAEGKVEGDNDGQTVYTTTYYI GGLEKP


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DGESNEQNGEQKEAAEGEAEKQTS
QGDEDASHFSTPKERKMEE

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TTDETNDPAHVAADESAN
DVKGRTDA
 EVVAKRTKVVAALPE GK K V E QVVK E G H R M I

 GVEVVAGTEEVKA A D G N G E E A A K K P N G $\operatorname{V}$ V K GET L L N K L K HVVK D T Q K D D Q K E D L K Q Y H L T K L F V G L D I D

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## S GE

S 1 GEVPAAVD
GEFYKTLTPYSAKRS

SGESFLSTLQKP
LA GQETDETPNPNGEGV

ETEP
A D 1
DVK GAKEVVDAADNDKEADGKVVV
NGDKHLEKLKVTESGEENAEVKN
SGQPFLDTLAKSDDSNKGE

SGETLLEPLKS EDVSDESKMSKKVRDTKYYi ALEELNR KTEPSDT ITEVKEEGGSSATMQETPEVFTTTHYIGLTLAK LVK DS QATDDASALKEEDTDVGSKKEVFTTTHYOGLTAKK
 QSEANGTAV SGEDFDRTLHSSSDSDKDDEEFK R SGGQNLI N S L E V V LIK N E G E E N K V V E R K V
 SVK T N LTN GEANGDANGKVSNGDSPTV$Y$ TTTTFY I GI E M K K K


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UniRef90 ${ }^{\text {Q0CM26 }}$ UniRef90_A0A024RXY7 UniRef90_Q6FLM5 UniRef90-Q6BPS1 UniRef90_R7T213 UniRef90-Q10295 UniRef90_A7TLQ0
UniRef90_B6K102 UniRef90_A1D1N5 UniRef90_S9RK42 UniRef90-K0K9U3 UniRef90-UPI0004624290 UniRef90_D8PQF1
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PDEVFDENEKRP PDYVFDEGERQP

 PD HVVYDE GEQRP PDDVYGENETRP PDNVFVEGEQRP PSDVYEEGEARP $P D H V F D E G E R Q P$ PDEVYQE GETRP $P D Y \vee F D A G E R Q P$ PDYVFEEGAK PD YVFDPSERQP \begin{tabular}{ll|l}
$P$ \& $S$ \& $E$ <br>
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\hline

 

$P$ \& $N$ \& $D$ \& $Y$ \& $V$ \& $E$ \& $G$ \& $E$ \& $R$ \& $R$ <br>
$P$ \& $P$ <br>
$P$ \& $D$ \& $N$ \& $V$ \& $Y$ \& $V$ \& $E$ \& $G$ \& $E$ \& $E$

 R $P$ S D E V Y D E GEAR P P N DVV Y V GE ERP P D DVVFEPGEARP PD DVVFP GETRP 

$P$ \& $D$ \& $D$ \& $V$ \& $F$ \& $E$ \& $P$ \& $G$ \& $E$ \& $V$

 

$P$ \& $D$ \& $D$ \& $F$ \& $G$ \& $E$ \& $D$ \& $E$ \& $Q R P$ <br>
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$P$ \& $D$ \& $E$ \& $V$ \& $F$ \& $E$ \& $P$ \& $G$ \& $E$ \& $E$ \& $R$ <br>
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 $P D D V F Q P G E T R P$ | $P$ | $D$ | $E$ | $V$ | $F$ | $E$ | $P$ | $G$ | $E$ | $E$ | $K$ |
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$P$ \& $S$ \& $D$ \& $V$ \& $F$ \& $D$ \& $\square G$ \& $E$ \& $K$ <br>
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\end{tabular} PDDVFEPGETRP $P D D V F Q P G E T R$

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$P$ \& $D$ \& $D$ \& $F$ \& $G A$ <br>
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 S A DVV Y IE GE QR P 

$P$ \& $D$ \& $D$ \& $F$ \& $Q$ \& $P$ <br>
$P$ \& $E$ \& $D$ \& $V$ \& $F$ \& $F$ <br>
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\end{tabular} P E DVF QS GE D DVFEPGEVKP $P N E V V Y G E D D V V R P$ $P$ D Y V $V \underset{\mathrm{~F}}{\mathrm{~F}} \quad \mathrm{GE}$ E QR P

 \begin{tabular}{ll|l|lllll}
$P$ \& $D$ \& $S$ \& $F$ \& $T$ \& G E Q R \& $P$ <br>
$P$ \& $D$ \& $Y$ \& $V$ \& $F$ \& $D$ \& $G$ \& $D$

 $P$ D DVV F E E G E K R P $\begin{array}{llllllll}P & D & E & L & F & G & E & G \\ P & T & K & P \\ V & F & E & D & G & K & K & P\end{array}$ P D DVVF E G EKK P $P$ D GVVY T E D E V R $P$ $\begin{array}{lllllllllll}P & D & D & V & F & E & A & G & E & V & K \\ P & D & D \\ V & F & D & A & D & E & K & K & P\end{array}$ 

$P$ \& $D$ \& $D$ \& $V$ \& $F$ \& $D$ \& $A$ \& $D$ \& $E$ \& $K$ \& $K$ <br>
$P$ \& $P$ \& <br>
$P$ \& $S$ \& $V$ \& $Y$ \& $\square$ \& $E$ \& $G$ \& $E$ \& $A$ \& $R$ \& $P$
\end{tabular} P S D $V$ Y

PAYVHAGREPEP

PSDVVYDPDEERP $P D D V F E P G E V K P$ \begin{tabular}{lll|llllllll}
$P$ \& $D$ \& $D$ \& $V$ \& $Y$ \& $S$ \& $E$ \& $D$ \& $E$ \& $Q$ \& $R$ <br>
$P$ \& $P$ <br>
$P$ \& $D$ \& $D$ \& $V$ \& $F$ \& $E$ \& $P$ \& $G$ \& $E$ \& $V$ \& $K$

 

$P$ \& $D$ \& $D$ \& $F$ \& $E$ \& $P$ <br>
$P$ \& $S$ \& $D$ \& $V$ \& $Y$ \& $\square$ <br>
\hline
\end{tabular} $P$ D D L F EP GEKKK P

 $\left.\begin{array}{lll|lllllll}P & D & D & V & F & Q & P & G & E & V\end{array}\right) P$ | $P$ | $D$ | $D$ |
| :--- | :--- | :--- |
| $P$ | F E P P G E K K P |  |
| Y | Y T E E E V R P |  |

PNDVYVEGEERP PDDVYVEGEVRP

 P D DVVFE GEKKP PDDVFEPGEKKP PDDVFEAGEKKP PDNCF EGGVR $P D N V F K P G E$ SNDVY ED GE ERP PNDVY LIENET RP PD DVVYLDNETRP PD DVVFES GEKKP $P D D C F E P G E S K P$ $P D N V F Q P G E$


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RLDAQEGUQVTRPF DKGFERDYHCISDDERRAA
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$K L E M N D V I A S A R P Y D K P F E Q V Q Y C K N D E E A R K \square A N G E R D E$ NLEMTPKMKYAVPFPKSFSNLIH
NLERNQH $\square \mathrm{NL}$ L HVNPKCYEQ
KI ERKTYMLQCHPHPGDFPDKSRPFHSSYFMGLQRKQGVP NLERNEFTTLAHVNPQSFPGNRTQPKESD
 M ERDTSGKLCHPCPHDYDSSNQCSHCAFFMGLQRKQGEV

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NLERNQH LLA HVNPECYPGPPTPP
FLEQTPKMKFAIPFPKSFE
NLERNPHDKLAHVYPK S $\quad$ S P P S
KI ERDTGULQCHPNPRDYDSSKQCAHSAFFMGLQRKQGEV MI ERDTFGKLCHPYPQEYDASRQCAHSAFFMGLQRKQGEA $\begin{array}{ll}K I & E K Y T G M L Q C H P Y P G E F S D K S R S F H Q C Y F M G L Q R K Q G V P D \\ L & E R T E G K L Q C H P Y P H E Y D T S K P C A H C A F F M G L Q R K Q G E I\end{array}$
 NLERNEFINIAHVKPQSFPGNKEL
RLEDMDSLVLAARPFTKGFKRLHKCRNEEQDREVQKGSLKY



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| UniRef90 Q6C | 俍 |
| UniRef90 ${ }^{-}$W3WQH7 |  |
| UniRef90-G7DWE3 | ASTPEISARTEDDIKDVEGAVKLHTSNFYi |
| UniRef90-14Y5T3 | EVKERSKKPEEYENKEAEDGU HRVYDST |
| UniRef90-M2MZI | QVKQSDTDGVEPHAPNGDASKQESQKVYTTTYYLG |
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| UniRef90-M4FF | KVKQENGETPVKQENGKGEESEEAPEMYTTTHY। |
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| UniRefofo-L8FUY6 |  |
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| UniRet90-M7SVG9 | EVKGDDDSEDEQTIKEEDGAKTDTSKIYTTTHY G |
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| UniRef90-992W2 | IVTSENGRGDEQVKSENGENGRVVKPEVYTTTH |
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| UniRet90-A8PWLO | MQDLPEGEAAKEKDESVQTVYTTTFY! GL |
|  | EAADPTTGEPAGDEQAKSGVPVWITT |
| UniRef90-U1HTG | NS |
| iRef90-G2QE | KHESGASVKNEAPEAKGEDGVTDYTTNHYI |
| UniRef90-W2RL | VDGDATGASGGDSPTPNTYTFYLG |
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| UniRef90 ${ }^{-}$K4CLJ7 |  |
| UniRef90-B2WJI |  |
| UniRef90-N1PV | QVAKTKTVDESADVKDLNDTKQDGPCGY |
| UniRef90-E6QY03 | DRTEEDVEGKEHRKIVTKSF |
| UniRef90-M38B12 | ANAADDGT T IEKKDNTITEWTTYFY |
| UniRef90- В3МН88 | GNEDDLKQSQGSQSSVTSAP FCSMWF |
| UniRef90-H915 | WF |
| UniRef90_F4NW65 | V |
|  | SLDYMIPVSQVPAAGT TED H |
| $\begin{aligned} & \text { UniRef90-M3D } \\ & \text { UniRef90_A0AC } \end{aligned}$ | KATTTEETADAKQQAAAEGDADV1 WTTTFYL |
| UniRef90-B4KRJ8 | A AVTTA |
| UniRef90-J3P7P5 | GEVPVKQETAVKVKDEKPEEVPMASFY |
| UniRef90-E5A | WY |
|  | AAEVKNDKGEIVANV |
|  | TDPELVTTNGDGAADTDAHTVYTYTFYUG\\|DT |
| UniRef90_COPQ2 | VYTT FYTGTETGR |
| UniRef90-UPIOOO32AF88A |  |
| UniRef90-MOVK89 |  |
| UniRef90 B9HE14 |  |
|  |  |
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| UniRet90_V4TTU3 |  |
| UniRef90-V7CQJ88 |  |
| UniRef90_UPI0003EADD8 |  |
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| UniRef90-Q54J73 UniRef90 G1 G1314 |  |
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| UniR | WKEGEHENSATTपNGADGKPTPFCSLWF口GLEFER |
| UniRef90 UPIOOO2C31 | VKEGEH |
| UniRet90-G1KQ | OQEG YVSLIWFLG\\| IVFK |
| UniRef90-MOT7 | $\begin{aligned} & \prod Q E G \\ & 1 \\ & 1 \end{aligned}$ |
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| UniRef90 C9SR64 |  |
| UniF | VWFIGIIFKK |
| iRee900 A0A023F1U6 | LP T S M WF |
| UniRef90-D3BU83 |  |
| UniRei90 ${ }^{\text {AOAO2220146 }}$ | VQEG |
| UniRef90-UP100032 | Q |
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| UniRef90-U5D4V1 | E |
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| UniRet90_w9WTH |  |
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|  |  |

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160 SLLDLISYQVVENFKALLCTQWE KYDAALINSLINVQHVIRSFNLL RLDLLAPCQEFYRTCRSFTD YNEDMHSIFIDSVK

L $\quad$ E G Y Q P G I N D L A I T
S LDLS F QVNE FK DLCFS W D K Y Q A E L N F L K L D L S YP TCEFTKLVRRW








S V N
S L D L S Y Q V D E F K E L C T S W W G K Y K D D K E D DV


| $K$ | $L$ | $D$ | $I$ | $T$ | $P$ | $V$ | $G$ | $E$ | $F$ | $T$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $M$ | $K$ | $Q$ | $W E$ |  |  |  |  |  |  |  |
| $R$ | $F$ | $D$ | $S$ | $Y$ | $P$ | $T$ | $L$ | $D$ | $F$ | $T$ | $Q$ |

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QF D||RSTVED F K R DVVY

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SLY FLKRERK


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MI ERMGGVLQCRLYPGDFS
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Ki ERDTGMLQCHPNPCEY
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MI ERDTMMLQCHPYPQEYDT $\square K Q C A H S A F F M G \square Q R K Q G K E$
KLENDPN TQTRPLPGFF KGEDS
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$G V E F S G A M M A H G V K F$

VQE G


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A Q E G E
Y LCR R W I G LTF VK
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SQEG
SMWF TGLQFNK
DVK G R T R A


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N N R T

## A AEPHNEPRRRRR

 VGEV SFQEPGWE

Y A S S MLV AL N F A Q DPA E E GQSPRYVCRWFLGLSFKP N $\square E$ T P T D R K N DVK E T S K Y GACFYVGF D $\square D R$

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ET Q $\square S N A \square R E G Q D P S A D P A K P T K F G V C F F V G F D \square D R$ NNSNSNNGSSSTGVTGDSNSSGTAPVV.
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VA E
KDENSHVT LF LGGLFPSSLKKKE E QPRNDPL

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E
S LQ NPRCR DWF RGLVV $\begin{array}{llll}\mathrm{L} & \mathrm{P} & \mathrm{V} \\ \mathrm{L} & \mathrm{Q} & \mathrm{V} & \mathrm{V} \\ \mathrm{S} & \mathrm{V} \text { VP Q F G S G Y S } \\ \text { A D P S }\end{array}$ DKSLLTHNNCSFFMGLLS

EWE Y A S S A F F A L K C LS N D K S G Q G S SKSDSTEQHCTQWFTGLTFS Q | $H G G C M W$ | $G$ | $G$ |
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S K E C
K G A Y $\square$ S WF F VA LD F Q R P E D K R Q N A Q E P E L $\quad$ T TGGEAPANEQSNGGTPAQPSKFGVCFYVGFDDDR S T M WL

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 KINLECSFETFTNDI NSLAS DIYDEG MSLSVACLRREDL
 $N$ N L T Y E I Q M F E N KV H T Q A VK $\square$ M M K V DL T SVI Q E FA F VV D Q WE QR H G G M D L Q V D H L M R E Q I
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## SDFFSRYK LF VEVLAMS TSEEGFAKWEGYVESK TRILAS NFFQKYKY <br> FFFRYRHYVVVIV TGSAKRSFLELCGLVESRLRVLVS

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UniRef9_UPIOOO3835351 UniRef90-M4BFR3 UniRef90-G7Y9V8 UniRef90-B2AWK7 UniRef90-C5KMT11 UniRef90-T1IT92 UniRef90-TOQOC0 UniRef90-11K5G3 UniRet90 UPI00046CCB84 UniRef90-S7W766 UniRef90-H2VQ999 UniRef90 W7TSN6 UniRef90-TOLOW5 UniRef90-V9FDX4 UniRef90- G5DYX2 UniRef90-U6LXK7 UniRef90-K3WW93 UniRef90 U6L053 UniRef90-E1ZEM3 UniRef90-АОАо24TSM9 UniRef90_F2U4M8 UniRef90-M1VGH8 UniRef90-A9VAW0 UniRef90_C6KT92 UniRet90_G3NS21 UniRef90-GOPCX2 UniRef90-D2VDZ6 UniRef90- U6IFI4 UniRef90 W4FNF7 UniRef90-L1JEZO UniRef90-U6LGQ7 UniRef90-M4BV94 UniRef90-D7FWT4 UniRef90-K4DJY44 UniRef90- J91AJ1 UniRef90-W6KQ07 UniRef90-K0TEB9 UniRef90-G4LZL5 UniRet90-E3LGT2 UniRef90-B7XHP5 UniRef90_L1JEA5 UniRef90_E3MJZ3 UniRef90-R1DRR5
UniRef90
L8GG84 UniRef90-D7FQE0 UniRef90-GOUQ29 UniRef90-LTJXN9 UniRef90-Q09995 UniRef90-A0A024U1S2 UniRef90-FoWY48 Unireso A0A059F UniRef90_A2E7X0 UniRef90-U6FV16
UniRef90 E9BC08 UniRef90-C9zsW0 UniRef90_D8LVB3 UniRef90-A0A024UMJ6 UniRef90_L2GTC3 UniRef90-lOYR37 UniRef90-GOTYJ3 UniRef90 ${ }^{-}$A0A024GJ28 UniRef90-KORRG6 Unirergo_Kurrab
UniRef90_K3WVK2

K L E T L E Y $T Q \square R P \square P G F F K F E D R$

RTKRELSEEVQLPPPTNV ${ }^{80}$ RDKRELSEEVQLPPPTNV VLENNSLTTEAHVFTKTYPGLELNTDKAS
GIEQSDSVELVQPFNKGIDRVHECKTDEDRENTDAGSDDC KLELHPSIALARPFNKGYDRVHRCKTDAQVEEUQTGNLTY KMENIEDVSFAYPFPQPF
KLEMHPDIVLARPFNKGYDRVHRVKDDRQLEEVVGQGSGA MLEKNQGGKLAHDNPKKYDPSKQCAHRAFFMGLQRRPGEL KLENLENTSLAAPFPKAFTGRSC KLETVELKMRPYPKFYGRVYKDKFY
QFEHNTGVLLAHVNPEQFSPDEEHGDGVESFWVVGDEMNK NLERNEFITLAHVNPQSFPGNKEHHKDNN
RLEQMEDVDIA PFFARYDDPTDDQTDTATSSTSTG
SLAYNPQLCRLRVHPKKFPLSFASDPDDEKHG GTY RLENL GNTHIRPDPGFFKFEDDNWDYASSAFFAFKVIDSG QLEVMEVVTQVRPWPRKVD VKTDGGAGVEGAGVEGA GIENCTGQMLAHP
KFEDSGLVKYLRPYPEGFSDNPEDPA



VGEES $\square$ RK $\square$ RPGASEV NLERNEFINMVHVKPQSFP NFELNRYVK MDENTPGDKSVRPWPEEMPYV VAEESDEKDGPRMEGM VFDKNQFVKVARVSPKTYPGDDVAGDGNE
RLEQVPDVQI FP FARVFDLPPEVLEEGCSGG
GMLQCHPHPGDSSDKSRPFHCSNFMALQRKQGVP SFDRNPNTTLAHTNPKSFPSLKPEADE
K KELMENITSIPLFPKSFNMLEHENNKDPFDDKFVPSKAL SLERNQDILIAHNDPNKHKPSPQAKFD
ILDREPDFKSVHDFPRAFPPCHR
SLERNQDIVIAHNDPN
KI EVLDEVLNAYPFPRAFEDFNEKDTNFSFKD
NLHHVSPVSRVHAFPCYFP SLEKNEFLTLAHVNPQSFPAPGENTEKEEFR
SLERLSHGSS SSSSSFNSSNNAR SVQHVTLVSRVHAYPTYFPHTSNGSTPGSCMFDG\|EFHCR ALERSSLNMLIRPLPNVFPFQDPEWPESSSMLIALLKFASP RFEALQEL R $\downarrow$ HPFARFFDFVET
TLAHNPQLRRLRVYPKKPDFFV
SLEFHPAVTYALPIPKAFRRS
RLEVLPPVS VHPWP
NLQYTDNVAYAMAYPKAYHEKKE
NLERHVYVKRAHTNPQSTSGSSCAKDDQSTKWLIGNMGES AFERNRGIKLAHLNPK KCQPTSKSQ
KLEAVPGLTI HIYPDYFH NNQGG
NLESIRYVQLAHVNSRSYGRG PRDEEAEF $\square K K W F \square G \square$ GLQHVEGMCNVHALPTHFPHPVGN
KLTSQGLYUVHPCTRHFPAEHLGGGDPERHMKASGQSVD SLERLSHQMTI RPLPLITFPSQDPEWAESSSMLIALTFASP RLEALPEL QUHPFGRFFD
NRFRMESV GHATSRGFHRPGMDVMATAKSWKATKTGGP GTAESRGYADEHVRDRLNPRRYEAPEEVETRARLLKKTSR IIERNSQVKTAHINPR
 GLESDE IRAYPFARFYRR
NFEVNRYVKMAHVNCHAYGKG PSDDDANFVRKWFDGM LLERNSQVQIAQVNTRKFKAPFSPGK
KFEAVESUQAIDPFPKPFDKDETCNFF VGDE LLKTGSQ
KLTTSQGLYIVHPCTRHF
IMERNCQVKLAHDNPKKFKSVQNA
ALERYGRLERLHPLPTAV RVEPPPAVLRQMQLMPAAAAA DLEKNPQTYARPFPGTFVNLH CLDQDDMVEAYPFVNPLPNPYपTNAETGAVGN
SI ESFPHI QL HDNP RRYEAPEEDEARARLLKKTPR KLETVEQLDSAPPFPQTFDM
TLEDYKQLLYLNPRRYEDPELVLLRQRLCKKMSSSTTR ILEKNQVI QVAQINPRKF
GLQHVKGVARVHALPTHFPVHTPTNQDDVDASVLRQCVFT SLEVAlP RSVHPYP KLEEI ESITYADPFPKCFNDFDE
SLEALERVKCAPIFPSSFDRENNNK
SAENNRYVKGAHVNCHSYPFVKKWF DGMEFDRNPASSTS D
 MIEGNKSI VIHVYPTSFD
ALQLTNHVLTVHPFPTYFGPPHH $K L E T V E Q L D S A P P F P Q T F D \quad \square C D F S V C H R \square D F \square P K N S L C S$ RVEPFVTVRPWPK
SDESYKHVRLQLNPRRYEAPEEV EARSKLLKNVRGSA
KLENSEGFS AVPFPQSFVYNDFVH




UniRef90 ${ }^{-}$G2RBI1 UniRef90_J7MBS7 UniRef90_T1J065 UniRef90 F9XLA4 UniRef90-F8MKD8 UniRef90-ROMRL0 UniRef90 G0S6X0 UniRef90-G5EBX5 UniRef90-K4C7S2 UniRef90_L2GKI3 UniRef90-A5K288 UniRef90_UPIO002C33B80 UniRef90 A0A024TBD6 UniRef90 ${ }^{-}$TORTD7 UniRef90_Q4UG00 UniRef90-A0A023AZ41 UniRef90 Q00V38 UniRef90-R7QAK9 UniRef90_W4GGY7 UniRef90-Q2H9R8 UniRef90-I6UBB5 UniRef90-UPIO003835351 UniRef90-M4BFR3 UniRef90-G7Y9V8 UniRef90-B2AWK7 UniRef90-C5KMT1 UniRef90- Q8SSG2 UniRef90-T1IT92 UniRef90-TOQOC0
UniRef90-I1K5G3 UniRef90-I1K5G3 UniRef90 UPI00046CCB84 UniRef90-S7W766 UniRef90-H2VQ99 UniRef90-W7TSN6 UniRef90- TOLOW5 UniRef90_V9FDX4 UniRef90 G5DYX2 UniRef90_U6LXK7 UniRef90-K3WW93 UniRef90_U6L053 UniRef90-H3GVV7 UniRef90_E1ZEM3 UniRef90_AOA024TSM9 UniRef90 F2U4M8 UniRef90-M1VGH8 UniRef90-A9VAW0 UniRef90_C6KT92 UniRef90 G3NS21 UniRef90-G0PCX2 UniRef90-D2VDZ6 UniRef90-U6IFI4 UniRef90 ${ }^{-}$W4FNF7 UniRef90-L1JEZ0 UniRef90-U6LGQ7 UniRef90_M4BV94 UniRef90-D7FWT4 UniRef90-K4DJY4 UniRef90-E3MZY3 UniRef90 J9IAJ1 UniRef90-W6KQ07 UniRef90-K0TEB9 UniRef90-G4LZL5 UniRef90-E3LGT2 UniRef90-B7XHP5 UniRef90-L1JEA5 UniRef90_E3MJZ3 UniRef90-R1DRR5 UniRef90-L8GG84 UniRef90-D7FQE0 UniRef90_G0UQ29 UniRef90-L7JXN9 UniRef90-W6LE86 UniRef90 Q09995 UniRef90-A0A024U1S2 UniRef90-FOWY48 UniRef90-A0A059F115 UniRef90_A2E7X0 UniRef90_U6FV16 UniRef90-E9BC08 UniRef90 C9ZSW0 UniRef90_D8LVB3 UniRef90_A0A024UMJ6 UniRef90_L2GTC3 UniRef90_IOYR37 UniRef90_GOTYJ3 UniRef90-J9D7L9 UniRef90- A0A024GJ28 UniRef90-K0RRG6 UniRef90_K3WVK2

90
100
110
120
KPEPHDDEAKVKLEDPEKEAQPEDMETYTTNHY TGLQLAK KPEPHDDEAKVKLEDPEKEAQPEDMEIYTTNHY GGLQAK V VE G Y

CLWF I GLLFDN
 MVKPTDTAANGNAKNDSKVEDK

RMEGSK $\square$ NPKFVCCTAFFVGFELTK Y LYKAANEADKVKGMSKPEPKQDAT

KAAKDPKK
S VWF $\square$ GLQFDK
VQEC GAASTGSKSSG $\square$ SNK $\square E E Y F T \square F Y \square A V D V S K$
 E G

VT S S S C
F LAF DVDK $\square K \square R$
NSKE ${ }^{\text {S }} \mathrm{H}$


VAENS


RVEGAGVEGARVEGAGVEGAGGTRDWEHAAQDYVGVEVAR GTARYKDPEKEENTHLGLSKK KTFFFGLVIHPPSPASRAAAGAGTRM
SCCFV V G L A F H L PDNA
Q
FLGLSLKK K K
KK QELCKQGE LV
R TNHYGLQLAK GAKATADEQHNGATPKPPSKFGSWFLGGEFKK EFDRNPNSLTTVVN HACTEKPTL
QKDGNDGEVK LADDPEKKQE LEEVFTTNYYDGLQLGK K K


VN D G G
N A T $\square$ N F L A LD F SE $\square \mathrm{K}$ Q M $\square \mathrm{S}$ S VRPENK RVTVWF 1 GLEFAK KHKPSPNAKFDVSPENK KHKPSPNAKFDVSPENK PNVK RFTSGFF GLLENK G $\square E F H C R R H Q T \square Q P K D D P E V K K T L E Q$

D LQMT $\square R P \square P \square I F P S Q D P E W S E S$
 RQHQNSMMMMAPPLLPKDDPEVKSNLEQTDSMLIALTFAP KAGEAVC

KEVT PECSSKSEVHTSWLFDGLGFAP QQQQQQQQDGGGGGSVADPPAQQQPRCF YFMGLSKKK NES DP LDDQDKK PEKDPSTLEDEDTHERPPEYCTLWFIGLVFDP EADERGTSVF FYFGLRLEA DPVADKDGTEATTGPWRTAWY LALAEPS KRQK $\square$ DMTFP $\square$ MSFTDT $\square$ YS $\square A D S C K V Y K E G M T 1$ AFSSUYFY I GLLEF F D K PGQSATSVNHLATNHTNNNNNNSTDSQSSDHH FTQPVCSS $\quad$ S LRSDSPSPPSLLPPSSCYSLSFFPCVALVY KAGEAVC

F VETK DVVR DDS $\square T K P Q C V Y T S W \square F \square G L G F T V$ AVKKEDAATPTVSPPTPVEAEAEAVSV
 GTTRN $\square$ TTNTVATQRPGSGSVGGSPMDFTAHYF GMTVETV EFDRNTNSLTSTVHNSNTSNEKPTL

SQWF पGLEFAK
GP $\square$ PAEH $\square G G G D P E D G P W Q N \square F \quad F Y L G L K F D Q$
AAAAAPAAAPPPG
GKGKGKQQLQAKQTRETLELRSNFP GTGTAENTGPTSSLPAA DNRSTTAPAVFSSHYYFGMSVDT
 KDVKDPKKSDWF GGLEFVK GLEFKCAPGSSRRQTDADDPHLATTDDQT IRFFEATDMQ GFEVENRKRGCKSNTLCEEAK ACTVSAMRYFDATEVD KDKFGFNAYKKGSA

YQGS $\begin{gathered}\text { F F F } \\ \text { F } \\ \text { I }\end{gathered}$
TNHSSTATAAVAASATSQSTDLSAPPA RTSGQLGDGGVGSINAKDSSAPSGPTWFTAHYF DGMAVDA PEGGAQGNSSSVSSAVGGGSAGTAVKSFSRHYYFGMSVDM

 HDGGADNAGSVSTGAAGAGNGNNSSAVFSCHYY GMSVDP GFEVQNTSQVTESTTLCEEAKECTDSA MRYF ATVEV位 AYT $\square$ SPSTKSEMAKTCA $\square P D V \quad R Y F M G T E L A$
UniRef90 G2RBI1 UniRef90_G2RB11
UniRef90_J7MBS7 UniRef90-T1J065 UniRef90_F9XLA4 UniRef90-F8MKD8
UniRef90-ROMRL0 UniRef90-G0S6X0 UniRef90_G5EBX5 UniRef90-K4C7S2 UniRef90-A5K288 UniRef90-E5S3Y7 UniRef90_UPI0002C33B80 UniRef90-A0A024TBD6 UniRef90-T0RTD7 UniRef90-Q4UG00 UniRef90-A0A023AZ41 UniRef90 Q00V38 UniRef90-R7QAK9 UniRef90_W4GGY7 UniRef90-Q2H9R8 UniRef90 ${ }^{-}$I6UBB5 UniRef90-UPIO003835351 UniRef90-M4BFR3 UniRef90-G7Y9V8 UniRef90-B2AWK7 UniRef90-C5KMT1 UniRef90-T1IT92 UniRef90-TOQ0C0 UniRef90-I1K5G3 UniRef90_UPI00046CCB84 UniRef90-S7W766 UniRef90-H2VQ99 UniRef90-W7TSN6 UniRef90_E3MQS1 UniRef90-TOLOW5
UniRef90_V9FDX4 UniRef90-G5DYX2 UniRef90-U6LXK7 UniRef90-K3WW93 UniRef90_U6L053 UniRef90-E1ZEM3 UniRef90_A0A024TSM9 UniRef90_F2U4M8 UniRef90-M1VGH8 UniRef90-A9VAW0 UniRef90_C6KT92 UniRef90_G3NS21 UniRef90-G0PCX2 UniRef90-D2VDZ6 UniRef90-U6IFI4 UniRef90-W4FNF7 UniRef90-L1JEZO
UniRef90 U6LGQ7 UniRef90-M4BV94 UniRef90-D7FWT4 UniRef90-K4DJY4 UniRef90-J9IAJ1 UniRef90-W6KQ07 UniRef90-K0TEB9 UniRef90-G4LZL5 UniRef90-E3LGT2 UniRef90-B7XHP5 UniRef90_L1JEA5 UniRef90_E3MJZ3 UniRef90_R1DRR5
UniRef90-L8GG84 UniRef90-D7FQE0 UniRef90_GOUQ29 UniRef90-L7JXN9 UniRef90-W6LE86 UniRef90_A0A024U1S2 UniRef90-FOWY48 UniRef90-A0A059F1I5 UniRef90_A2E7X0 UniRef90_U6FV16 UniRef90-E9BC08 UniRef90-C9ZSW0 UniRef90-D8LVB3 UniRef90_A0A024UMJ6 UniRef90_L2GTC3 UniRef90_IOYR37 UniRef90_GOTYJ3 UniRef90_J9D7L9 UniRef90-A0A024GJ28 UniRef90-K0RRG6


160

$K \square Y$ VNQPVEEF VGF $\square$ NDYERKT
S S MS $\square \mathrm{E} \square \mathrm{K} \| \mathrm{L}$ KRREV
N $\square D \square T K D \square Q Q F K N \square D Y Q A K S V K D \square E A N C A V E F S Y \nabla K R S D L$ QFDI RGTVDEFRHQVNMY
K IFVGGEPI GDF LDNFVNSWEGKD PEMKDEDNSKKKKED TFNLSYAI RDFI DIVLNWPQKSKYPNSYKINISYQKKSQV N DDLTSADI QSFVDSIRQADNSDVWRQGMKVEAKYRRRREL

$S V D F T A A V Q E F A A V L D L W P Q R T S D$ MDLQVHYVRRTQL
 PVDFRRAI GDF LDALI HGWNDRPAHSNSVNDRVTYVPKQSL $K E N L N P A V E Q F Q M Q V T S W M D R A T G E P G M Q A M V R H V K R K D L$ SVNTVPVTMWKAQVNSWADKT PAMHLQVMVMRSANL
 KVVVEQQVVKEFMEFIK EYEGKESSMRIVEVNSLKKKDI


 TCDLRNCTSGFFDRDNEWSEKDTYHGQFEMDIA A I K R R K KL KVIVEQVKEFDEFVREYEGRA GSGMRIEVNSLKRKD SVVDLTAA V Q DFAAALVLDTWAGRSSD QFDURATVVEEFKHSVN GYTGW
NDDXTS DIVKSFVEETTERQAKKINN D DSMSDDDRVLKRKEV

 SLDLT SEIGRFKTNVEDQASGVKGDGTVEIDMFYVKRNKL
 SVDLTYD TQQS T DTVY
K ADLRPA IAEFVELINGWPERPK LIGS DQ DRDRHLRRSQL F E D
 KVDLTSVI REFAYYTDQWEAR HGGMDMQI DHVTRAEI





NMDLTREDDNFKWNLNVQAKQ


 $S$ VDLTSVI RDFAFYTDQWEAR HGGMDMQIDHVTCTEI
$K D D L A S W R A F H G \square V R Q \square R Q Y K E$
NLDLTSEI EGFKNMARQQSKGI VGQDQLDATYVKRSDL



 SVDFTQPVKEF LLGIHTTDPT NLDLTAEIEGFKKNVEKQANGI QUTLDATYVKRSGL SLDLRDAAEEFVDLVAGWEQMPRLCPSGQVHLCYCRQPELC A EELNGPTVDFKSLFDSWRD K KPNGNDVTVTPDMR PVDLTPAWRDFMMRVELWGDRRRRREGMEVDVKAV
 K V F
 QFGVVAP QCTE LI DEF $\square \mathrm{KT}$
KVI IGPLDEEGKKVNPSAADKKYDEEDYKLTNRPDNRKK】
 Ki DLAPAIRTFHTVVR ELLRQYREGVTRLVITVVDMARII K V DLAPSIRSFHNIVRQLRQY
PLDLSLATRQFKN
TTGTTYP PCDRSATDSYMTWQDL K TF TDAP DEEFKEMVFDWDRRTED MDLVMRAMKRKD SVNLNNPVQEFKNQVMG Y $\quad$ SSWE GMHVLITHQMQKA $\square$ KI DLAPSIRGFHNVVRQLRQYKE
K IVIIDKPVNDF LDRILNDW DKKDEGS EDSDKDNKKKED $R Q C T E$

| UniRef90 G2RBI1 | P D DVF E P GEVVK ${ }^{170}$ |
| :---: | :---: |
| UniRef90-G2RBI1 | P D DVFEPGEVKP |
| UniRef90-J7MBS7 | P D Y I |
| UniRef90_T1J065 | C H Y L |
| UniRef90_F9XLA4 | P D DVFA D GEARP |
| UniRef90 F8MKD8 |  |
| UniRef90-R0MRL0 | H N F L |
| UniRef90_G0S6X0 |  |
| UniRef90_G5EBX5 |  |
| UniRef90_K4C7S2 |  |
| UniRef90_L2GKI3 |  |
| UniRef90_A5K288 | L E F L |
| UniRef90_E5S3Y7 |  |
| UniRef90_UPI0002C33B80 | H H Y L |
| UniRef90_A0A024TBD6 | P R W |
| UniRef90_T0RTD7 | P E F V F E D G G K K |
| UniRef90_Q4UG00 | P D Y V |
| UniRef90_A0A023AZ41 |  |
| UniRef90_Q00V38 | P G F V R E E G Y VK |
| UniRef90_R7QAK9 | P S FVV |
| UniRef90_W4GGY7 | P S WII ${ }^{\text {V R P }}$ |
| UniRef90_Q2H9R8 | P D DVFEPGETK P |
| UniRef90_I6UBB5 | Q G F L |
| UniRef90_UPI0003835351 | H Y F L |
| UniRef90_M4BFR3 | P ESVFEE |
| UniRef90_G7Y9V8 | H Q FV |
| UniRef90_B2AWK7 | P D DVVFEPGEVRP |
| UniRef90_C5KMT1 | P E HL |
| UniRef90 Q8SSG2 |  |
| UniRef90-T1IT92 | C N Y L |
| UniRef90-T0Q0C0 | P A WVV |
| UniRef90_11K5G3 | P T F V F P G S VR P |
| UniRef90_UPI00046CCB84 |  |
| UniRef90_S7W766 | G E F |
| UniRef90_H2VQ99 |  |
| UniRef90-W7TSN6 | P A NVFES GEK |
| UniRef90-E3MQS1 |  |
| UniRef90-T0LOW5 | H K F L |
| UniRef90_V9FDX4 | P D F V F Q S G |
| UniRef90_G5DYX2 |  |
| UniRef90_U6LXK7 | S N E I |
| UniRef90_K3WW93 | P E F VFPNG |
| UniRef90_U6L053 |  |
| UniRef90_H3GVV7 | P E WVLE |
| UniRef90_E1ZEM3 | P E WV |
| UniRef90_A0A024TSM9 | P E SVVFEE |
| UniRef90-F2U4M8 | P T WL H A E A K VK P |
| UniRef90_M1VGH8 | P E |
| UniRef90_A9VAW0 | $P G Y$ Y $\quad$ P P G G V V P |
| UniRef90_C6KT92 | LE F L |


$P$ CLV Y P N N D R
P TI CFDEGGK
$P E S M F P N G R V$

DFFTRHKTYFMI ALAACDNPKEFSRFMGFAETRVRMFAQ
FFVRHRKFVEVLVVACTEEKVYTEFMKFVETRVVRFMAD


RYDHHVAlELRAPSEEALAEWSSFVASRTRKLVE
FFSRYKHY円GMLSAY乌SSDHGYTLWR F LESRDRLLVQ
SSFFVRYDHHVAGELRASN EESLAEWSSFVASRTRKLVE
TKHTHFLQULLTADNDDELQ EWVGWVKSR1 RGLLL
SSFFVRYDWYVALTDQ $\square D S G E N Y$ K K L

FFDGYKQFLQUEUGGAS ELSHKSAEGLVNSKLKPKLV
LeTkTLATN KNDYTVWKghVESGLRKLTR

EFLTAYSSYVKVHVYWGLSLAKGKMLLGWLESRCVRLLEN
EKHHQFLRI ALCAPTFAELRDWAGWVKSRFRFLIL
EFLTGYKSYVKVDVLSSSKGAQF
VGWLESRCVMLLV

UniRef90_S9UWT8 UniRef90 D5A854 UniRef90-I3EJH0 UniRef90-A2DYJ5 UniRef90-G5A3V0 UniRef90-D0NZ07 UniRef90_S9TVB9 UniRef90-A0CKLO UniRef90-H3GWB8 UniRef90 I1J143 UniRef90-A8X8P1 UniRef90-M4BGQ3 UniRef90_FOWCX5 UniRef90-M0TUU4 UniRef90_A0A059EGU9 UniRef90- A0A024G5U6 UniRef90 D8M9H0 UniRef90-C5LBH3 UniRef90-DONNY1 UniRef90 G0QP64 UniRef90-A2DFN8 UniRef90_F7VRW0 UniRef90 C5P835 UniRef90 A4I4T6 UniRef90_K4A318 UniRef90-V7BQQ2 UniRef90-A7UWL1

$K \square D \backslash A P A \square A A F H D E \square R K \square S Q Y K E$
150

KMNLKKPVLEFKSSLETYEQEEDCE GMRYEAIPMKQKAL
 AAAEKKPGMEVEI NYRSWNDL K 1 D LS GPDRVFHNDワK
 QFDLRETAEEFKREVYM YVSWRPGMEVEVSHNRRKDL N LDDLT S E DQ R FRTNVELQASGVKGQGQVE I DMFYMKRTRRL RNCIASATRYF LATELNAATEKKCGMEVADSYSSWNDL

K V I I G P L I DEF $\square$ K T
NAQSGGSVSKRMQTTSVLLKWDDL
TLDLSQCVNDFDD V VRQQQPKTARLG LRIRY
GMDLRPAVREFIELATQMPE YKAGGMDVRVRHVAGPSL MEDKQPD MTADAKVMSWAEL S $D$ N LK E A CVYF VE QLEMYPMNKVLE SMNDQCSHLLRSEL
 SLDLMTRVLEKFKTQ】QEETKYFDPTTAWDDVTHVKQSEL K

KED $\square$ QTA $\square$ QRFEEA $\square$ RS DEKYFDASSSWMSAS $\square V K R S E \square$

UniRef90_S9UWT8 UniRef90 D5A854 UniRef90-I3EJH0 UniRef90-A2DYJ5 UniRef90_G5A3V0 UniRef90 DONZO7 UniRef90-S9TVB9 UniRef90-A0CKLO UniRef90-H3GWB8 UniRef90_I1J143 UniRef90_A8X8P
UniRef90-M4BGQ3
UniRef90-FOWCX5 UniRef90-M0TUU4 UniRef90_A0A059EGU9
UniRef90-A0A024G5U6 UniRef90 D8M9H0 UniRef90-C5LBH3 UniRef90_DONNY1 UniRef90 G0QP64 UniRef90-A2DFN8 UniRef90-F7VRW0 UniRef90_C5P835 UniRef90 A4I4T6 UniRef90-K4A318 UniRef90-V7BQQ2 UniRef90_A7UWL1

PS F
PSFMFPNGE RP PSTVFA G G $P S A I F P G G$ PQFIKDEGYT
P
PNA $\square \mathrm{FAGG}$
PSYVLE
PNA $\quad \mathrm{FPGG} \quad \mathrm{RP}$
PDFVFENG
PEFVFENG
PNTV
PDFVFQSG

667777777889
B ${ }_{B}^{B}$

