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## A

 ARITT H G I F T$\begin{array}{c:ccc}\text { A R } & \text { T A } S & V & Y \\ A & R & G & A\end{array}$
A
A

## A



| $A$ | $E$ | $I$ | $V$ | $G A$ | $I$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $N$ | $L$ | $I$ | $A$ | $G$ | $M$ |



| A | $K$ | $I$ | $T$ | $A$ | $S$ | $V$ | $Y$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $R$ | $L$ | $S$ |  |  |  |  |

## A <br> A

A R $\quad$ I $\begin{array}{lllll}\text { G } & G & V & A & C \\ G & T & S\end{array}$
AKIVGGIVGT
AK I I G A L F T S

A K V WG L G T

| $A$ | $R$ | $D$ | $G$ |
| :--- | :--- | :--- | :--- |
| $A$ | $K$ | $T$ | $G$ |
| $A$ | $G$ | $A$ |  |

AR I AGGI A A
A DV I WGLAT SHTP T

A
A
AHLI GSI STSHVPAI

ATIVGAI ASSHTPTI GFALDAEKQQDPVWAPDFAAYAPV
 AK I GGFA $\quad$ SHTPSMGDEYDKGMANGPRWQPWFDGTRPMK A E I I A GVAMSHSPM A RIVAGVASSHDPALGGVASDFDKTQEDYWRPAFAGFEWTK AKLVIGLAASHAPGITARVEEEPQ EVVARVYRNYDKLR A HVV GGFVVPHNPVMYFNPDGPDPQQK ETVQAA YRTIS
 EIVLGVGASHSTLMNTHWE ETYHKDRAERFRDALGQAR


A D $\square$ VVA A GTSH $\square$
$\square M S P N G \square E E A S D R V F D G M \square K V G$
 AKIVLGVGASHSTLMNTHWE ETTHKAEAERFRDALHATR

LVFA GVCSHGPGDTARSERAAPESKD K DDAAYARMR AEVVGGFATSH $\square$ LMSSSGVVEKAGRVTKGMAEDG AEI TGGVYAVSHTPVMTNMPDAPAPA RREAAFRQFTRVGG AEEVGVVFATSHV LIFG SPDGDAQALRVVEGMNEI G QIV GSFAMSHT LLGAPDG $\quad$ SEPQAERVFQGMREVG
 $\bigvee A L V A T S H S P L \square G L N D P T T E D R D E V R G V L D D A R A F V R$
 $L V Y A G V C S H G P G I T A R A D$ RADPELRDAFYANLGQMR CLSHTPGVGYVAD DPEPHVVLVAFVAGVIGAMAR
 AVVCLSHTPLVGFVV DPEQAVLDEVNGVIDAAR AVVTASHSPLMHTVEPHGDT RAAVDSAFAQAR
 CASHSPLLMEFASPQEKRKE ARIVGGISMSHVPGALGWPDAPPT DQRARLTADHETLR
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ASPPVARE $\square$ ER HRRH

APKNAPAN
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EDEPDAVQ
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UniRef90_A6TQ64
 AK\|VAGIGMSHAPGALGWPDAPSAS VRRRLLQAADRGG AKIVAGIGMSHAPGALGWPDAPSAS PEVRRRLLQAADRLG ALVCTSHSPLLEF NDPPPEVRTEVDRAFAQAR
$A E \square A$
ALLCSMSHTPLL
ELSQPPAELA
GLLPPPAQGGPG
a vetafean AKVVTA $G$ GNA ITNNLQDEAYWKPFFDGYPPVH LGWPDAP EMKDSVAAAHAECA VVAGVCSHAPGI TGRPAHLADPAVKDEFHAQFHRFGG VA\VCASHTPLMY

 $\qquad$ PGPSRELLDDIGSALAVAR DPAPEVVAEVERVQAAAR
 DVGRGQQVRIK
$H N P P A E E V Q A$ DPGQETTEAVEGAFAAAA

■ALCCMSHSPLLNL PGPAQELLDEEDQKFDE DK PGPSPELLDE ESALLETR CLSHTPERG VLAAFMV IVAAFMVPHPPMI 1pe E WNDPGAATVAEVDA UEAAFMVPHPPLIVPAV CLSHTPLVGYVDPP VTEGYAVPHPPLI I PEVGKGRAVLAEVDEVIGAAR LEAGYMVPHPPL ALAALSHAPSFGN DEAAFMVPHPP L

MSHSPLL
VAMSHTPLLHRVE VAAGTMV
ALAMSHSLLNVLEPP AELTAVLASTHHPFYYKATTSPDQEP IVCGVGVPHVPVFPK ILASFAVPHPPIIL

MSHSPLLNL $\square K A A F I V P H P P Y I L$ ALCCMSHSPLLNLPEDGRGE ALLAMSHSPLLEHAEDPA LVVCASHSPGMERDTEHVFGSE VLGAFMVPHPP MLPEVGHG
$V V A A V G L S H A P G A L A F P E T$ E
$\qquad$ EE ENTK Qporartedatrstg ILCSHSPLMLKEMPE TLPGSQAAFMRTMQDVA AK V VA AYVLPHPPLIVPAV GKGEEKKTQLTVNAYERAM
 $M V V C A S H S P G M E R \quad$ DTERVFGTDFRGGLAAAAA

 KNDPAADVGABDEAVANAR
 AEIVVGVAASHSPQLGVEWWENHGERDRNNPFQDKYERTQ E IVLAAKCTHVPTMLMSEQPGRLEGTVRKPADDGHREIA E TADAAKVTHVPSMYTSEDPGRGRGQEVQTTIDAYRTAA VAAYVVPHPPLIVPSV GRGEEAGDQDTIDAYREVA KLALAAKVTHVPSMY LVVCASHSPGKERDVER ETVLVAKICHVPSMYLSELPGPNHGCRGRRFRSALTSAA
$\qquad$

$\qquad$
 LLGG GAVPHPPIIL PAELARQDTPAGQDIIAARYAAVA LGYLMPHPPIVLDPDUGKGE VPEVGKGEEE

| TAARPDVLVIMVGSDHFHQLWLDNMP ${ }^{50}$ QFLVGKAPWF ${ }^{80}$ |  |
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| N7 ${ }^{\text {a }}$, |  |
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| UnRef90-F8J6M8 |  |
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|  | A PDYIIQFAPDHFNGFFYDLMPSFCVGAGASL |
| UniRef90-A3Q338 DFVTE FDPDLVVTFSPDHYNGFFYKVMPPFCVGTAQGV |  |
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| UniRe990 CPlooo36ccod D P R C in P |  |
| UniRef90-UPIO | A VN |
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| UniRef90-W3AKH6 KEISEL EPETVIITSPHSDMYSDYFHISPGH EEAN |  |
|  |  |
| UniRef90-B1J6Y3 ${ }^{\text {a }}$ ARIAAFDPELVVLFAPDHYNGFFYDVMPAFCIGMGATI |  |
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| UniRef90-F7V1V1 |  |
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| (1) KPDTIISSPHSVMYADYFHISPGHRATGS |  |
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| ef90-UP100046301B9 R VVRE FDPELVVTFSPDHYNGFFYKLMP P C CVGTAA |  |
| Q8L3D8 |  |
| F12786 REVADFA PQLIVLFAPDHFNGFFYDLMPPFCLGIARGA |  |
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| PDHYNGFFYKLMPPFCIGTAEAV |  |
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| UniRef90-W8 |  |
| 000464AF39 QE AEL KPDTTI S SP HS |  |
| FEPELVVTFGPDHFNGFFYDLMPSFCVGVAQGT |  |
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| EA KPDVLLVVANDHVTYMF E\\|I |  |
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| D FDPELVVTFSPDHYNGFFYKVMPPFCIMSATGVV |  |
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|  | DTIAADKPETVIISSPHS |
| UniRef90-D3D534 SFIREFA PDLVVLYAPDHYNGFFYREMPPFCLATAHAV |  |
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| UniRet90-U5W53 |  |
| ef90-UP | SEIAAL EPETIIITSPHSDMYSDYFHDSPG DRAR |
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| UniRef90-A6CW62 QMAKDLDV DTVVVL DTHWLVNAGYHTNSRDRFSGNYT |  |
| UniRef90 UPIO003A2CB32 RRAKERGV TV CFVVFDTHWLSNFGYHDNANALHCGSFT |  |
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## UniRef90_D5NZ20

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UniRef90_V2YCQ9
UniRef90_UPI000476AEF7
UniRef90_F7V167
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UniRef90- Q3A9V7 UniRef90-Q3A9V7 UniRef90_W8HH58
UniRef90_A6TQ64




200 YRRAYAFGAALRNAAEALDADDRVAFMATGGMSHWPPFWP


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D C

K V H F M L G R Y I R Q A V D K I DKR $V$

 $M A R \square R L M G E A L G R A A Q Q L$ $\begin{array}{lllllllllllll}H & Y & R & G & E & M & A & K & A & V & D & E & C \\ H & G & S \\ H & F & G & Q & I & A & K & A & I & D & R & S\end{array}$
 R A V $F \vee \vee \mid A$ GK
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 Y R R $\quad$ R K L G E A V G R F VA S L FADHYRAGRYI ARAAENL

T D $M K R V R A M G E A V G R F F A Q$ GRSVFIV

 $\square R R A R A L G A A V G G Y L T T V A N \quad R V L V V G S$

## PRRFVALGRALREMVESWDS

 $\square \mathrm{L}$E HY R F G K V I A A T C V E K L

 A A R | $V$ | $L$ | $F$ | $G E A$ | $A$ | $R$ | $F$ | $D$ |
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| $H$ | $D$ | $L$ |  |  |  |  |  |

PLAA REFGAEVGRFIAKL R R R G Y Q L G L CA L A R E L V A T Q F P EEGR G G GL SHDPPVPTGRNAVFVAS GDLSHKLGPYGDARVLVIGTGGLSHSPPSLE$D \quad L R \vee V A A L A B C$
GRRVVLI A S G D L S H K L G P Y G
MHRCRALGAAVGGYLATL DKRVLVLGSGGLSHSPPVPT

I E A S R KLGEA I T EAVVK E
$V R R \square R A \quad L G A A D G A A A A D$

| $L$ | $A$ | $H$ | $Y$ | $Q$ | $M$ | $Q$ | $I$ | $Q$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $F$ | $A$ | $V$ | $N$ | $R$ |  |  |  |  |
| $F$ | $E$ | $L$ | $Y$ | $E$ | $G$ | $G$ | $A$ | $G$ |

$V$ S RVVRA LGTAVGRAAA D L

E H Y HL L G QLI S E A V
L
YE QLYA AGGKLI QE SAKVL
IE S SRKLLGEAI REAI E E S S S
Y E QLY E FGVA I Q K A V E K
FEESR ILGEATRRAI DE

HY R A G QLV A R A A G Q L
PARCFAF GQAVVREA DES WD
F QRARLLGAAVGEFAR
H GESRVI GEAI REAVEA
$P$ L D H Y RL G Q C I A Q A V E S $L$
HEDSRRFGEAVKEAIGEK
K EA HRVIGRCVAEAASDL
F A D S R RMGEAVRRADEK Y
F A D HYK A G QLI E K A V S R L
GRRRVA E F G A E VV G R F L
EDSFTHGAAVRRAI EK
$P L Q L Y R F G L A A R Q A A Q K L$
LSAHFSFGQA IRRAAER
RNTQVLFGDCLRRVIDE
RDHHYALGVLI ARAAAELKR






FNEAGPQFDQNDTDTFRSGELDDLFAFDELFCEEAAECG LA TANPA WD HRFLE DD GWLLSELDQWSNALVAHE GGSSA Q
 LH PLNPAWDRAFLELLASNLGGVDAMRNDDDTRDAGMSAH

 YTPK GEVVFDRKLLDLLSEMKVEEVIGMDK GLIEAAA E C G $M \square P \square N P V W D Q L V L D T F A G G L E D V D S W T V E W M G A E G G G S G B$ FAKEGPEYDERIMDVCGSGDFKKLFEFDDDFCSKAA ECGH LD DANPA WD QRFLE I VD GH LDD DLDDQWSNSFVMHEGGGSA H Y A A E GPAYDRRIVMV CGRAAFGELDDFDERFCEKAA E C GH PAGYDP LF DEKGVVNALLKK F DLLEALRRSDEPS IVERA GECG
 SKEFNRQVDLDRVLELWA QRDYGTFLEMLDPDYANLACGEGGM PNGYSPKFDEKL MNLLGKMDVVGVINMDRNLIQEAAEC


$\square A T A N E A L D Q Q V G G G L A G D W D S F G D I E R K H M R$ IA ANPD WD RAL MK RLCRDWAA DDAYRNDEVSAAA GASAH FAPE GPEFDQQQLTELWQKGDHATFLKMLGEYADCCGEGSH

 AEQGMNAWTREFDEQMDHRVVVKLWRRMLPE YADYCY GEGH
 $L A Q Q N R E F D K Q V V E M W K Q G R F K E F C A M L P D Y A E H C F G E G H$ Y HPR GA EF DHLV R DLLVVQGDVP G LVVF I D D QLRRAA GECGW



P A GY D P S F D R L MVDDFT H G DP WEL LT DD K S FA A Q A G E C G
Y S P Y GEKFDRELL NNLEKGDVIKAFNMNKTMVEEA GQCG



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EKDPYVRLDKQALE
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G D D G R R

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R D A GPDDSRNFLEQYE

GPDEDRWF GAQCAE
GAQGDGAVDAKVDRR
RTA

GPDEAR $\square$ FSRR
$P Y$ VA $\square$ A RES $\square E \operatorname{VY} \square R S Q$
EYDESR
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 AKIVLGMGTSHGPMLVTPPETWGARVPRHAQCLAADEEMA

DERMRAAKRGVER $\quad R$
TE LGVLAAHVPS DCHRENVPEFQWDVVKKDDDGVERIIS $K L S A A B K D T V P S M Y L S E L P G R H H G C R A E A G R G H Q A I G$ AEIVLGMWTSHGPTLSTTPEQWPERERRAAGCQSADADMA

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MALLAAHVPS $\square$ C
】S HGGGPWPY DEDMRQRFAVTE
$K \square A \square A A K \square T H V P S M Y \square S E D D G P Q K G C R Q S A \square$ D GH HE DG AEIVFGMAQPHSGMLGQPPEDWLTNGERQARNHAADQKMK LIADDNGLAAAAVRARILRENLSRVR
 FFVPHGAGPCFFMDWNPPH $\qquad$ A WRQTRDFLEGVA VVSASLLPHPP ILL DED DGGPEDEKAKKTVQGFKKTS AKIVFGMAVPHSGMLGQAPERDRSNPEDWYRTYAEDEAHR AKIVFGMAVPHSGMLGQAPEDWPELEAHRGTVFEKFKRCR
$G Y \square L P H P P V L \square P E V G K G E E K K C Q A T \square D A \square E K V S$

 YFVSHGGGPWPY DDFRRNFDRGE

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FFVPHGAGPCFFMD
WQP ADTWEKMA

> ASAAPL

VYVPHGAGPCFFMDWNPA DA WDKMAAY LR A C K PARKFLESWR

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

AK $\square V F$ GMAVPHS GMLGQKPEDWPE $\square E A H R G A A F E P F D T \square E$ PTLFVPHGAGPCFFMQWDPV DA WDRMA $\nabla Y \square$ PHGGGPCFFMDWNPPH A WDKTAAY $\square R$ VVFAA $\square$ S PHPPVL $\quad \square$ PE $\square$ GTEE $\square$ AY $\square$ NKTKSSMQK $V$ A GRGEEHGA $\square$ NT T $\square$ EGMSR $\square \mathrm{A}$ VVGYY $\square$ MPHPP $\|$ V $\square$ PE $\square$ GKS $\square E T K \square$ NGTKQACE $L \square A$ D A WNAMG EA L R DCR
$\square V F T A \square M P H P P V S \square S G \square G N P R E D E A D E K T D H S F G V L R$ YFiSHGGGPWPWMKEMGATYDQLA

LF VP H GA GPCFFMDWNPP
$W Q P A A D T W D M A$
$P A R S F L K G W R$
TAWNAMADFLK


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 MF L E Q Y GK R PKA $\operatorname{V}$ LIFTA


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|  |  | KRPFDHGAWVPLSLMYPAAD QRPFDHGAWVPLSLMYPQAD

AWPVPHAYSFIYHQIMGDD
B
RTVRI GLLS GF

KRGFDHGVFIPLKLSFPDAD
$K M E L D H G L V P M Y Y L T E K A G D H$
1 PVVQLSLNVSLD
VPVVQLSLVVSRDP



QRGDDHAWVPLLHLMPAAD
DGFGDHGSLIPLCHLDCD
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NRGLDHGAWVPRRYMYPDAD
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$\square$

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 Y S P Y G A K K F D D S K R L L L P A GYAP E L D K K I V Q A lik D F D V P Gll V S L D P N L A E K G G E C G W LNAKPRQFDQILI QKLKDDFTSGFKLEGTKEWEDASPE GM FAPEGPEFDRIVTELFAHGNLEGLFGLDAALCDGAAACG MNNYTRE FD E QMD K R VVVK LWRE GRFKMLP E YA D Y C Y G E G H

 M NSYTREF DGHVVVDMWRK GNFK DFCKMMLPEYA EFCR GEGH SFEPSVQFEQYLYEA VVNSSSQQRNQALVDWARLVHPRED



 H HMPEQAMDNQFIEYLLNGDYNAAREMLNQYARIAGVESG WHAGPEPWAREFRDWMIQTLAS DDESALHDYRTLABPS DE
 Y LY P DVATD R RLFD ALK K GDDEVWRSYP LDA IVESGQQ
 P A GYNSDFDEKLL K YFK EK DFESSILLNF DSDLVVEKA GECG DEEFDRRI MK MLA Y DYEGLAAVDNRSYG
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 YFPGAEKF DHDFIVRHLGAGDLASLVGLEEKFVQDSAECG GHEPSRRQDAWLQQQTLVHS LERLLEWEKAPFARAAHP QED
 H H P WA LIEFDNW LK A AL LEGRKYEDVNHYEAPHARKA HPSPD

## P

HHMPEQALDKQFI NYIMGKNWNLAKEMLPQYAKVAGVEGG TAPEYEAVDHSVVDMWKNGDWGTFLDMLPMYNDKCGEGGH HAPWALEFDNWLKDALLQGRYNDVNEYEAPHARMAHPSPD $\begin{array}{ll}A & P \\ V & Y \\ V & P\end{array}$ FS A
A T S S D E F D R W

 WRA GPEPWAREFRDWMVEKLQADDEAALHDYRRQAHPSDE WHA GPEPWARAFRDWIVEKLARNDEAALFDYRQQAHPSDE Y AKEP DA WAVAFDDWLVEHMRKRDLLALGRYEELAPNRPE FGPD D D QF DA WLLKQTVVEAEPEQQFQQWEQAPMARQCHPAEE VAPWA A DFD Q WLETAL TNGSYEEVNKCEAPNWKLA HP WP E A H K $\square W S P$ F DE QVLLRMWDQREWKAFCEMLDPEYASKGHGE GH
 PYGFVPEFDAEDTRAMDQGDF LYYFLSVDPTFADTAAECG WQA GPEP WALLAFRDWMIDKLAADDTPALHDYRQRAHPSDE

 F GPVS DTFDDWLTEAVAERDAALTDWAEAPMARWCHPAEE

 Y N P M G P VIF D K T L V E A I E K G EY E S VV R M P T K $\square$ S E PA G E C G GASTHEAYVKQFAA WTA QALLTA GDTA QVLD YRRLA HPTDE GAYSYKEFDQTDTKHLQEGDVEADFDMNANMDEAAGECG WE QTE P E F D D WL I E K
F G P I
D D WHIIR P DMDRRLLYAALTEGDDLDTWKSVTGKQUVEAGQ H GHHAPAEYVTRFAAWTAEALAEHDLPSLFDYRRLAHPSDE PAGYSPKF DQDIIHFLGSNDEANMLGLQPEATAEAAECG A HGVVSQAFGD WLDDTAAVQSPQRLADDWAAAPSARMAHPREE PHRSVPRYVTAFQAWMQDRLKARDDAALLDYREQAHPSDE F TVVP S E DF D E WLLT NTVE A D S D A R F A A L T H WS K A P H A L D S H HAPWAA EFDNWLE EALTTSGRYEDVNQTKAPNWKDA HPWPE $\begin{array}{ll}F A P D S D & D \\ L & R E S \\ \text { L }\end{array}$ LR E S D S E WA E QFE D WL Q T T L T D WN V E D LA N Y R ELLAP H GT E

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EI RTWTAAFAALGGYRTVDRYYRPAPELIAGFADRTADPA HLIMMETM
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 LRPLFVVLGAVKPKKAEIIGYE VPYGGVSMLAVEF
LRSFQLMAGALEATGASELLSYEGPFGVGYAVAAFEDE MHVMLLGMLGWDKYAEKVEVLTDLLFASSGTGQINADF
E TRNWLTVGGAAEHLKTRWT EYUPAYRSAAGTGV
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HLIPLMVVAGAAGDSVGERIFTDTV
HLLPLMIAAGAGDDDKGARIFSDVV
HLLPLELALGAAGEHYAV
LRPITMMLGALDGLAVKSEVLSYEGPFGVGYMDATLTPL
LRSFIMGLGALDGYRVKGEVLSYEGPFGVGYLVAHLEPE HLLPLYFARGAGG
HLIPLMVVAGAAGDSVGERTPTDAV
G RHLAALLGVLDDKQRAEFWGY GQSSGSGNA!IDF HLLPLYFARGAGGP
$D T A M L D G A D G W S E Y D Q G V D \square V T P Y F G S S G T G Q \square N A \square F P D T$
E IKLYTSVMMALKDAGAKMTLVDYVPSYRTGMGFMYW
EMLNWFCLLGAMAELGKTLDEWAELVV
ELKNWIAAAGCLLFDTPLSGGIVDYQPCYRSEAGTGTA
HL LP LIMVAA GAAGNDSGEHVFSDRVME
LRPI TTMLGALSETN $\square K \square K L N S Y Q A P F G V G Y G T \square F \square R T E$
EI K LYVSVMKAVQETRASMTLVDYVPCWRTGMGFMYWKAD
EI KI Y STVMMALLQHTGARMTLVDYVPCWRTGMGFMYWD
HLLPLYFARGAGERMG
FRSI KVLLGAFEGYEDESRVYSYEGPFGVGYCVAAFYQK HFVPLYI A YGSGDPKPEI DHRSYEM

LS FVMMAGALSGYAVKPRVYSHEDATGVGYGDCSF
RSVLMLLGALD KNKFKGELLSYEGTFGVGYGVMNFDPT VRSIMILLGULHGKNQSFKMLSYEAPFGUGYLTGYFE HLIPLMVAVGAARDEPGAVTYH
HLLPLFVALGAADSKAVLRL
NSVLTLL GADDKSKGELLSYE GTFGVGYGVMRFNVL
HFYPLHVAI GAAGDDSKAKLIHSSI
$\square R P$ F F F M M VMGG LDMTADVLSYEGPF GVGYAVA DF TPN
DTAMLLGLLGGRDYDQGVEIITPYFGSSGTGQDNADFPVT HLFPLHVAI GAAGGNPKAKLI H
L R SLY Y LA GA $\square \mathrm{NSTNDSPKLLSYEGPFGDGYGVMEFTP}$
$H L D P L M V A A G A A G D D P G T R \| F Q D Q V M G S V$
HLMPLLVAAGAGGEEPGQKVYSERV
HFDPLMVADGAGGEDDGQKVFSDSVMETDSGF
E IRTWVAAFGAGGPYRASLDYYRALPEWUAGFATMHATPS
HFlPLLLAMGTGARKAELLHRSY
ELLPLMVAVGAAGNDQGKRVYSQQV
HLLPLFFARGAGGGGMRVEHS
HLLPLYFARGAGGPAMHVEHA
HFVPLYDAF GS GDPAVRELHRSYEM
HLIPLMVTAGAAGEDRGQNDFTDRV
HFYPLHVAMGAAGENWKAELIH
DTAMLLGALGWTGYDGAVDILTPYFGASGTGQLNAVFEDT HFVPLFDAMGSGDPAAKV1HRSYEM
 HLLPLYFARGAGGRFG
HLLPLFFARGAGGA
EVKI YSIVMMALDQQTGAEMTLVDYVPCWRTGMGFMYW
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HLLPLMVVAGAAGADRGRKAFSDRVME
HLAPLFVAAGAAEDEPGERVFADDV
LRPIMIMMGALDDRDDVGGVLSYEGPFGVGYAVA
$\square V P L F I A M G S G N G N Q P E L L H R S Y$
LRSIVMALGSVDSVATKPHVYSYEGPFGVGYMTAF $\quad$ VE VK
$H F L P L L D A L G A A G E T Y Q T R V L$
LRSIVIMLGTMAGKTGDLLSYE GTFGVGYAVMRF
HFVPLFIALGSAGDNPKVI HRSYEL
$H L L P L M V V A G A A S E G A G Q C V F S D R V$
$E M L$
$N W$
HLIPLFVALGAAGEDYRLRILEGGVAYGMLAMDSYLFSSA
V RSILI LL GULHGKKYEFDL LS YEFPFGUGYLTAKL
HLIPLMVAVGAAEQEPGERVYHE
HLLPLFVALGAAGEQSEARVWFSETNHQ\|LAMDVYRFE
$H \quad L \quad L P B M V V A G A A G T D Q G Q K V Y S Q Q V$
$H F Y P \quad H V A M G A A G E N A K A E L D H R$
$H$ L I P L V A A G A A G D S N G R K V F S D R V
$H F V P L V Y V M G A A D D E R T A K R L H$
$D T A M L L G A L G W D R Y E G K V E V V T Y F G S S G T G Q \square N A \square F$

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AVA A A A

P Q T GQH』PAAQASSA

G E D A

A GKTE

D T P E S Q A


40 $G Y L L P H P P \square L \quad\lfloor D K \square G N G E E K K C Q A T L D A$

MS HQRLPSVY $\square$ PHGAGDWPPAGTWDHMESWLR


FF $\square$ PHGGGPCFFMD_WRAMGGR $\square$ DEWDKTAAF $\square R$


 $Y T Q \stackrel{G}{L}$
PPLMEWADDEGAAAAGHRADLLEHDRRCR $\square F \square P H G G G P C F F M D \quad W P G D P H M W D R M A D \quad F \quad R$


VD S L A G Y L
LG Y F V S HSPT L LV
ENVKWKS T $\quad \square S S \square G$
 $\square$ A A K $\square$ THVPSMY $\square$ SEFPGPNFGC RDAA $\square$ NGHKE $\square \mathrm{D}$

ENAYTRA L
$\square \mathrm{F} \square \mathrm{DHGGGPCFFMEWT} \square \mathrm{GPPDTWDRMAA}$ WLR $\square \mathrm{L}$ VPHGAGPCFFMDWNPP TA WNAMAEF $\square$ K FYISHSPT $\quad$ A $\square$ DDS $\square$ PA WKF L NS WKEEVFPHR

PHGGGPCFFMDWPDTWDRMA
MSMSKN I IF $\square$ SHGGGPMPLLGDDGHAQMEAHD F 1 PHGGGPCFFMDPPPKAPDAWKKMEAYLRGDS VPA LIVVSHSPM FALEAGETGP ESE $\square$ AET $\square$ RA YRA $\ M$

DTWDKHR
FF $\square$ PHGGGPCFFMDWSAMGGPA DTWDKTEAWLR
F F $\square$ S H G G GP WP WMPE WRA QFAP $\square \mathrm{L}$ P $\square$ RPFFETWR PAR
F Y $\square$ S HS PT $\square$
GKGEEDK LYYKTTLACNQ】A
S $\square D E S \square Q A R K F L Q S W K K D V$ WSDDHGKAAAEHRRQLVDGVSRDR PHGGGPCFFMDWPDTWDHMA YF $\square$ SHGGGP WP WVP P MREFFAT
E I IS GF $\square$ APHPPHLVYGENPPQNEPKGWEQLRWAYERAR

D Y T Q F L A
PAR
ADMWDGMAHFL
PARSFFESWL
MSKTTD $\square$ LI $\square$ SHGGGPMPLLGDPDHQEMVNFM
Y $\mathrm{T}_{\mathrm{N}} \mathrm{E} \mathrm{Y}_{\mathrm{L}}^{\mathrm{L}}$
TPQPS $\square Y \square P H G G G P P D P R G \square W R E M E N Y L R$
YF $\square$ PHGGGPWPFMDFPK DDQGKGPWDDAPAAWR
Y T Q F L
LFVSHAPD FADEPGQAGPRLAA
A IIFISHGGGPCFWVDGP HGAPDTAVADTQAAAF


VLF LPHGGGPLPVLGDKEHEKMVSFL
FF $\square P H G G G P C F F M D W S V M G G P A B D T W D K T E A W L R$
$H G A G P W P W V P E M H D W H A L M A$


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Y GFPEESYQ\|Q YPCPGEPA|L|AQEDYH|LL|AGAG|I|EAALDE


 Y GFP K E S Y E I E Y P A P G S P E L A A N R I F N L L G R A Gli E A K L D D YGFPK S M Y K L K Y P A P G A P E L A K R V K E L L M A S N F K V V E D K
 GGFPEFTYHL RYPAPGAPDVAARVGELLREADIDVRFDA




 EPNAWGWPDDFTDPVRGDAARARQLTNDLVRAGFDVAYSY



 YGFPPDSYTLTWP APGDPRLAARVRELLGAAGFQTAENA

 H GFPAPGYA VQYPAPGAPERARNI ARLLT DAGLPADVDP


 GGFDPK LR EMVVYAAPGDPALA E IVA GLLDSAALDAADVA GGFPPELY RMQYPARGDAATAVRAAELLTEAGIPFVWDR SGFPQ H TYR LA YPAPGDPALA DRDIDALLTEAGLABARADD


 | Y G F P R E |  |  |
| :--- | :--- | :--- |
| $E$ | $L$ | $L$ |
| $E$ | $E$ | $V$ | K VQPYAWGQPEDFELRGAPELGKSVATGLLEAGFDMSYAY YGFPP HTYQLQQ YPAPGSPALASTV CNLL HEAGMPCATDE












 E G D F A A F G P E I T V G $\quad$ D E Y D T D F V GGFPRA LHEMMQYPAPGAPALAREVATQLERAGLQQPVDA
 RGFEPAMYEL E YPAHGHPSSLAKKALDSLLDNAGWKPDADA GPWWMDEMFAVQYPAKGNKELALRDHNLFNQHDDQSELDA

## 

 Y GFPEHTYQL T T SVIYDFYGFPKTYPAPG GLIYD YYGFPPRYPCPGEPALAHRICQALQEAGDPACEDE

 $G M L Y D Y Y G F P A H Y P A K G D P A L A A T H V R D L L Q Q A A G D A S A E D D$ A LI Y DYYGFPPKYPAPGEPALADRVTRLLGQAGVAAQGNP GGFPEELYQIQ YPAKGDAEMARAVEARLAEHGIPSAVDT


 $G G F P A E E Y Q L R Y D A P G D P A L A G R V R G L L G Q A G Y T V Q E D A$
 Y GFPPP H TY Y E L K Y P A P G S P A L A E R V V


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GSYHYNMGRALA LRAGAAL LAAGRAL
SVR L GWAMRKAVEE
APLRD
A
EEHLALGRALA
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LEETQEWGRVI GQVLRES
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GTHHYNTGKALA
SAR GWALRRADED QVRVGQALAG

PhRDEGULVI



## TYH Y Y EMGKA

PDRCFEMGRALAATDR
AA A ${ }^{\text {D }}$ A GAAL
AEHHYRLGQALAADREQPLRAQNVLIVGTGMTYHNLRHFM
AADHTALGESLQT GSDDGLLVIGSGFSFHNMREFF
PKTHIAI GEALA PLRDDGVLIIGSGMSFHNLQNFY
REVYDLGTALRGDRAQ GGGLVMGSGSMTHNLSEFF
LAADRALGQCAEAKAP
LAAGRAL

AAH FAMGRALA
GTYHYNLGRALA
AHHLKLGEALRPLAE
DRQLYY EFGMALGQEAVKQLLL
DEGVLI APDVVI GSGTYMAVMM APLRDENVLIGSGVPSHNMRVNN

GVLII GSGGTVHPHCPNG PLKNDGVLIIGSGSATHPLDETP HYNDGKALA PQRCMALGAAVARAMRS SGKRVAFVASSSWSHAFLNDK AMEDRTMTALQPDRAQ LIKDEVVGGTGMYHNDAP ADHDA 1 GRALR AQTHAMLGQAIAAAAEQL GRRTICI A
EEEMDVLGKATREAII
PA A QLALGRALA


ATHV
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A ATHYRGGQA A
AESHLEIGKALQS
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PKAAWQLGRSLAPLTA
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## CSSLD Y T EA

ERAE FAKEGVEFDRLLVDLLQKSNDKGLYDDEPGFSERAAECG WADNGESWALEFDEWLS LHLKK WDLDSLFNYEKQAPNGNE QGGSQPDFD GWLAETVADKDYEALANYLAPHAKLAVPTAE ARAMNESFEQWLDDTCEQREQRQKNWASAPAARYCHPRAE
PNPWAYEFDTWLKEALLDGRYEDINHYEEPHAREAHPWPE SPAAVEPFDAWLTDAVARRWESLAHWDKAPSARLSHPREE AAVASGEFEHWLTESVVHSAQRLLDWAQAPSARESHPAED WSPF LERDDRQV DEMWQNGEWQDFCAMLDEYAVKGHGEGH A $\square \mathrm{KPSNAFDAWLQELLETAPAERSAWDKAPYARDCHPRED}$ TWH VVPEADLRLYELFAGDWERWNQTTTAD VVD SGQH QNWPNQADDKEFCQRLVEGDLKAATEMLPSYARAAESGGR GGAREPEFSRWDEDALARGDMAALYRSQAPHAHRAHPTED QGDREAPYVRPF DEWI ERRLQHDDLAALLDYRRQAHPSDE WGNQQGDANQWFDDWLKNHLHTWDTQSLFRYDSDAPNGNE WHAGPEAFRDWMIERLASDDEEALHYSLAPHAVRAHPSDE SWH\|VPDADEKLYEAFQ AEDWAAFTAPTVEHIVGAGQH WRAGPEPWAGEFRDWMVERLRQDDRAALLDYRRQAHPSDE PAYKDAQFDDWLANMATQEEAARQHWQDAPHARQVQPHPD PAGYSPKFDQKLIELLEKKSYRKILKLDKGLIEKAGECG SGRENDAFDHWLI ETCEEREQRLI EWERAPFARFCHPREE
 A $\square$ PHAEAFDAWLTDAGVTRGDVEQLENYLAPYPQRAHPYPD WHAGPEPWALAFRDWVVDRDQEDDQAALMDYRHQAHPSDE WNEWAVEFDNWLIESMENNDTETLKQLAPNAKRAVPRQEH FK K K P RPFDHLLVDLLKEGKFEEVLKAKEDYWKEAMPEG WRAGPEPWAKAFRDWMVDRILEADDEAALHDYRRQAHPRDE AAPWAVEFDNWLKEALLEGRYEDVNHYEAPHAKKAHPWPD WS PFLETMDHEVVRMWQS GEWKAFCEMLPEYAVKGHGEGF WQAGPAPWALLAFRNWVVEKLDQNHDAQALRRDYRTQAHPSDE YDPFLE QVDRRVVELWEAGDWKTFVGMLPMYADKCWGEGH NPQFTPAFDDWLSRAVEASPEQRWAWSHAPHAYQCHPRGE
TDAEAPDWVVAFSEWMQARITAGDTEALLDYRDLAPHAAE WDDPPEA WAVAFDDWLLGRIREWDLPALFDYERQAPGGNE FAPVADAFDAWLVEALDRRHEADKAWGQAPAARDAHPREE
 PRNPPPPWAVDFMSWLKSSLEVNQYEEKAPYAKMAHPWPD A GFSEEPYVRPFDGWI EEKLAAGDVEALLDYRRQA HSDEPEEWALSFDAWVAETLESRNLQELFQYDKKAPHGKE QWHLMPDMDRALYRALVDGDLDTWLRVRGDDLAAAGQQ NGQAAQEFDTWLVKAVTAPPVERLHWASAPGARVCHPREE SPEPAQEFNEWVYQQLTDNQRSALLDYREQAPELAHPSEE SDDHNQAFEAWLEDVCTHRLEELRQWHTAPNAEFCHPRAE GA Q $\square$ A K K F DAF L HEADGLDPQALAGWDNAPGARDSQPHED GGPYVAEFSRWVESALQRGDVEELYRSRAPHAVRAHPGDD
 RAMHGTDFDRWLSDAVT LDDTASRDAMLANWARDAHPREE $V A V E S A A F D A W L T E T M E A R V E R L L A W E D A P F A R V A H P R E E$
$V$
 ARVPSEAFDAWLNDAL ALDPEALMNWEQAPYARDCHAQED HAPWAAAFDSWLRKALINGRFENDYETKAPNWKLABPFPE GPNAEP DWVK SFGDWVVTALAEGRVDDLVNYRRLAP NAA
M K Y GEEF DRQFLNHLKKGELLEELFELDKEVVYQVAECG P HP WALEFDNWLKDALLEGRYEDVNHYEAPHAKKAHPWPD
 S D AVSREFD T WLA HAVESPPEALTQWTHAPGARDCHPRPE GGGAAP DFDAWLYHSMMAAPDAMDD WEQAPAARDCHREED
 AEGKDAPY VRPFIDWVEQALRREDLAALLDYRRQA
 WRDNNKAFSQWVREAVLENDQARLINTLAPHARRAHPTTE

 WGQEEPE WAVEFDD WLIRHTLERDT DTLLFRYETLAP HSAE
 SRQKTPAMAEAFTDW』AHKLENKDHEAVVNFLTDAHPTDD APETPEAFEDWLEDTCSNQNRRLIDWEQAPHARFCHPREE
 WN A GPEAWALEFQS WMLERLAAGDVDAVLDWERQAHPTAE R R DAADHEFDD WLTA AVEPDPDARAADRNPDADACHDPD H D F GPVS DAFDA WL G Q AVVAAP A QRHQA L A D WAQAP GAREE WN A S QP D WALAF D QWLERHVKAWDLGSLGQYEALAPHGNE F GASSSPAYVRRF A DWFGDRLAAGDTAALLD YR R QA H P S E E
 $D R D V T P D W V A R F V D W M G D R L V A G D R A A D A D Y R R Q A H P T D E$ $M P Q D A P P F Q A W F A Q Q L Q A G D V A A D W E R Q A P G A R L A H P H D D$ $R T Q T P L P Q A Q Q F S D W L G E K L A A R D L P A L L D Y R R Q A P H G E E$ GRGENEAFDNWLLIETCTHHPAQRDIDEWEKAPFARFCHPREE ATRPSADVFDQWLTGAVEATPKERETQLSHWAEAPAGRQSH

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R|L L J H WS V A T G A RYCHPREEH
$F R S \square K V L I G A F D G Y E \square E S K V Y S Y E G P F G V G Y C V A$
HFVP L F YAMGAA DDAK KA S LLLHR
HFVPI F $I A \operatorname{L}$ G S GEDEAQVIDRSY
H L L P L HVVA GAGGA DPGLVVFEDKVMGS
HL L P L HV CY G $\square$ A GTAA K KA LEF E
HFYP L HVAMGAAGENAKAKLDH
HLLPL HVCVG MAEKPAST』FNDYワ
HLI PLMVTAGAGGDDAGTKPFTDHV
HLI P L MVAAVGAAEQDTAARVYHE
D TAMLL GALGWSNYDAKVEVITPYFGAS GTGQDNALFPDT
HLIPLMVALGAAED GKATCVYHDE

HFLP I F F AL GAA GD DLHANYLSREVMYSMLSMDAFALEP
$H L L P L Y V A M G A A G G$
HFVPLF YAMGSADHEKSA $\square$ HRSY
H LL P L Y F AR GA G G
EMLNWFCLLAGACAESGLELNWSDLV
HLLPLFFALGA
$H L E P D L M V A A G A A G S D K G R R D F E D T V$
L RPLI I MLGGA DQNDE L DVD DMS YEGPFGVGYAVVEF
$H L L P L H V C Y G$
$H L \operatorname{L} P \mathrm{~L} Y \mathrm{~V}$ A L G A GNGDQARRLL
$H F M P L L V A L G A A G A R G K \| I D H S W Y$
H L LPLMVVAGAAGSDRGTTAYN
$H L L P L F F A L G A$
IV PMF 1 A M GS GNK DK A K LLLH Q GYA
ELNTMYMLDMGDKP KRAEV DDF D VP WT GVSMLA HL L P L Y F A R G A
HLYP L HVAVGAA GENSKAK LIHS S $\square$
$M H D T A M M L G A D G Y D G H G E V I T X Y F G A S G T G Q \square N \square V F P V T$ $H L L P L F F A L G A G G A$

E H L M PLMV
H LMP LYAAMGAGGDAPRGER $\square H$
$H F V P L F Y A L G A A D D Q V Q E L H R S Y$
$H$ L L P L M VA A GVGEASA GVQVLVD
H L L P L Y V A M G A A G
$H L L P L L V A A G A G A T S S G R K V F A D R V M E$
HFFPLVVAMGAAGENAKAKVVHD
HFVPLFYVLGAAGGTKAQRMFQAY
EMLNWF CLLGAM
H LL $\quad$ P L MV A A G A A G Q D K G $\square R T$ Y S D $\square$
HFLP L L S VL GAASEGAA ER DH
HLMPLLVCAGLANRAASSAYTGVP ILNKSAAMDEW $H L D P L M V A A G A A G A D R G V R D Y Y D H V$
$H F L P L$ F FALGGAAGEHRAPAY LSREVMHGSLAMDAFALGPG LNGLWVLAGVLDRTAMEARLHSYEGPFGVGYAVASFTVT HFIPLHVVAGAAGADRGDKTLEDHV
HFLPGMVVIGAAGDDPGHRNYHEE
$H L L P L M I A A G A G A D$
HLYPLHVALGAAGKNPKTQLIHR
HLAPI FAALGAAEQDETTRI YH
HF Y P L HVVLGAA GEKWKAELLD S
LR S MK IM S G A M D G GKYE GNVLA Y QCP F G VG Y G T VK F
HFYP LHVA $\quad$ G A A GEDAK A KLI HS S $\square$
$E M L N W F C L L G A D D E L G$
HFFPDHVAMGAAGENAKAKVVHD
HLLPLMFAAGAAGTDRGVRDYSDTV
H L V P I F VAA L G A A E N E PA ER $\square$ Y Y H HT S EMTG $\square$ T V
$L N G L W V L A G A L D R A V L T S R L H S Y E G P F G V G Y A V A S F T V T$
GAF T WMHAAMQYPN LIPAELDHGYGTVIPFGTGNAVVEW
$H F L P$ L LVALGAA GE T A QA $\square H$ R S WH GS FSMAS Y $\quad$ VF K P A
$H L L P L M V$ I AGAAGA
HFLPLLVALGAAGPDAR
$H F V P \frac{L}{F}$ I A L G S GEPEREAKVIYR
HF L P F F V A L GAARDK Q G DVLSFSHGSLSMASYA
HLL P L M V TV GA A G S D K GRKV Y S Q QV
HFVPL F LALGSVERTPRVIYRGYEF
$H F Y P$ L HVA L G A A G DEAKAEVVG
HF LP L F A A L G S G D G Q VEK I H
HF L P VAVLGASGD DAVRIH QS W
HLL P L HVVCYG LA GKA S DEHLS AT LLRKRSGM
HFI PLLI A M GAGD H
H L L P L MVAA GASSSPGRQ
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HLV P L F VA A GAA GTDKGVRTF N
$H L L P L M V V A G A A G Q D L G R R V F S D R V M E$
HFAPLLYAMGAADDTAALLHRSY
$H$ LLD L FVVA L GAA GDEPYASRLHAGDDDHALAMD IFAFEPG
$H F L P L L I A L G A A G E \quad H V D T R V L D G G V S Y G V L D M D S Y$
$H L L P L M V V A G A A G D A G R R V F R D A \square M G K A \square S G F A F$
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HL L P L F V A L GAS GE

$H L L P L M V V V G A A E Q D L A R R V Y F E E$

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PQADCSVLPPAQASA

P VT GKA $\square \mathrm{P}$ QPQASSA
PLPAE

A A A A
GADE

GRDERRDYADQ

VG A P G P


A WS A MAAF L R $K \square K A A L Q Q M P$ | $L$ | $Q$ | Q M |
| :--- | :--- | :--- |
| $Y$ | $T$ | Q |




WA GWDKMEAHLR
$P T L Y L S H$ GAPPADDPVWPGA
Y F LS H G G GP WP Y VE GMRQQFAK TE
$\begin{array}{r}\square D \\ \square \\ \hline\end{array}$

$R Q L A$

A $\square \mathrm{F} \square \mathrm{SH} \operatorname{HPLLG}$
WGCLAPHPP I VPAVGQGREREA


A K WM
GRGEEKK $\square E K T$ T L A CNE $\square G$ A Y T S FL LFVSHS PM FA LEAGETGP A LTRWG $\square P H$ GAP D LA $\square$ R P E LE A H Q F L
$P R V L F M S H G G G P L P L L G D E G H R E M V E T L$ DEGHKMLVDALKSHR

HRAELVTNLTRVR
M N H S
$L F \square S H$ G G G P L P L L A E P S H T GMCD A L $\square$ A F $\square$ S H G G GPMPLLD DPSHAELVNY L

E F TK
F F VSH G G GPWPW $\square$ D T L K K Q Y R S L S

ERFL
PHGGGPCFFMDWPHVWDRM ${ }^{\text {G }}$
$\square$ D E T $\square$ P A R S $\mathrm{Q} \stackrel{\mathrm{Q} \text { L } \mathrm{A}}{\mathrm{F}}$
PATAFMQS LG
LF $\square$ PH G G GPWP F M H G T E G QLP D D D P WK E LE $\square \mathrm{F}$ LK
$\square V S$ A F LVPGSPLP QLRPDVAP


$M L F I S H G G G P M P L L G D P G H Q E M V F Q L$ AHD F $\underset{\text { P } A \text { R }}{\text { R }}$

MPKAPTYFFSHGGPDVQYNTTHP母YPVLQS $\square G$

A L F LP H G G GPCFFMDPGGPPDPMWRPMQA Y L A A AMATRTPVLYLSHGAPPLGADDGHQQLVAADRRHK A A MATRTPVLYLSHGAPPLADD ATVTRQLADWS

UniRef90＿UPIO0047B9195

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50
QSLGVSLNKPKAIVLIFSA EKIAAQIPKPDALLVVSA EKLAAQUPKPDALVVVSA AWSRDLPKPKA：LIVSA
RSIJGARLPTPKAI LVVSP GLAGTLARPPRALLMSA SQLGKQLSAPKAIVMIFSA GFASALPGRPDALLVSG RSLAELGGTPKALLMVSG SFASTVG
$\begin{array}{llll}R & P & R & A \\ R & P & D & A\end{array}$
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RWSAALPRPRALLIVSA KRLGAQLPRPSAILAISA RSLGAQLPKPAGIVVESA KQIR
 －PKPRLIII！SA DF $\square \mathrm{DAHGGRPRAIL} \mathrm{S} V \mathrm{SA}$ A WAADLARPKAL LMVSA GLI RGLAVRPRAILMVSA DALGGALPRPAAVIAVSA PKAIVVVSA

 AKLGASLPRPKGIVIFSA ARTGQNLPKPKALI MSA
QALLRARPGLRGVVIMA KNロEKSEGVPKAVLMISA SKALVIS ${ }_{\mathrm{P}}^{\mathrm{A}}{ }^{\mathrm{H}}$

60
70
80
HWESSVQKIVSNVKEFKTIYDF HWEEKIPTI TSGQSPSLI YDY HWDSPEQLITVDGQHETLHDF
$H W E E A P L A G A T V P L V Y D F$ HWETQTPRVGNDARQRVIHDF HWLDEAETVMANPAVGAGRQP WEEPEFTVMANPKPPMDYDYY
HWEARTQK
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HWMARVPAVGSSPRPATIHDF HWETRVPTVTTAEKHSLLYDY HWEDAPLALGATRTDPLVYDF HWESGTLNVSTSAHPETIHDF GHWEADEFTVSSAEYPPMEYDY HWDTRVPTVSLASQPETUHDF HWDTEFPTVNTVLRNSTIYDF HWETAEPEVNAVAVNDTIYDFY HWESRSLEVNTGURPETWHDF HWEEPVFTVQSNPHPPMRYDY
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 NT DTRFGRPRAUVAVSA RELIASRIDRPQSILVVSA AATLPAPPTALLVVSG RSLAR SRPD CVLVYS KKISETTEKPDATVVISA GLDSLPRRALLVVSA KLTME M ${ }^{\top}$ DPETVVVMSPH QLGRTLBRPAAVVVVSA AF $\square R D L G R R P R A V V V V S A$ HKPKSILVISA KEDTQ K $\square K P K A V V V F S A$

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GGFAPE
SGFA A E Y M M H Y PAP
S G A A



$Y P A P G A P Q M A K S A A C L L Q Q A G G P V V R D D$



 AF A WTSSFPR QAYYKATAESWFVSRVVHEAVTRYGLVNVEDD GFPE ESYGDE YP CPGSPPLIA QK H Q L L E A N E S R LD P YGFPEESY KFRYPVPGNAPLAAAIVNALTVGGFHAA MD GGFPPELYTLQ YAAPGSPELAARVQALLAESGIAA ERDP Y GFP P R E L Y QL S Y PAP GAPDLAAMAI A A R L Q A A G L A P V G V D R EVVAFFWWGKRD DF E DHGDVSGGARQL T DGGLDERGFDMA Y S Y
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$\qquad$ C YP CP

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 T RAMNQAFDQWLLI T T CS D DLDDEEERTQRLENWQEAHPREE AHFNREEAGRKF GDALTS ILLCKNEVATGPEDRLKAMEREH MPQNAPPYVPAFQDWYARNLAAHNVPALLDWAMQAHPHDD IDD DPAPS WVVDFA D WVHKA A DE GRID DLV NYRRLAP H LWHMRPEADMRDYK ALLED DFALMRNYTSAEVVDAGQ H NPSPETEASK LIFNEWW KTTAT KL S R WE QAP GARVA HPRE E K G P $\square \mathrm{D}$ Q GYNRQFEDWL DY T L Q A PMSEKQRQ
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 SKRWAE EFDNWLLDDKI SQ WNLK ELLFS Y HAPHHQLADPR S E RADPP P D WVS DF D T WL HENLISGGHHDEDRDYRRRAHPTEE A DEHSRQFNTWLH QAVTSSFPSALAS WEDAPFAKECHPEAE F R K IN E D WA IEAD SKMKK WILEGNHRNLIDDFNKQG

GS GVP SWSV EFDEWGRRALLESHDWDGLLDD LLEKA HPRTE PHDAPPDFDTWLKDS LIDGGRYEDVKRYKEPQAEVAHPSPB QA GV P GWSSSEF D DWGRRALAAAEDVDA LLD F ERKAPA G G E
 R R D A DHE F D D WLT EAVVADEA E RLA A WKDNP DARAA HVPD H A A M R S K Q F D E WL Q H V C T D P S Y E KARA E V L
$\square$
$\square$


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HFIP I FYAMGAADDARKALHRSY
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$H L L P L F F A D G A \quad G Q R V S V V H Q S$

| $V L N S$ |  |
| :--- | :--- |
| $V$ | $Y A L L G V M E G K K G E L L S Y E \quad G T F G V G Y G V M K L$ |

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VA VSHGPGBPLWLLSSGFDEMRRDSRPAAELLS ALYVSHSPMD A IEPGPVGP AFDALG

FF $\square$ S HSPT $\square$ S
$\square D$ D T LEARQFFK
LVFAA $\square$ VP HSPSTLPGMEAPG

VVGAA VSHHPGLMQCEEFRVLQGAGADDLIPGYARDR $L V F A A L A P S S P L L L P S \square H K E K G V K G Q K T L D A M K K L G$

## पF APHGGGPCFFMD

QPVIWDRMAA | $A A A R F$ |  |  |
| :--- | :--- | :--- |
| $Y$ | $L$ | $L$ |

DRWTREL | Y $D$ W |
| :--- |

 $Y \square A$ $R H^{Y L}$
$\square L A G F L A P H P P H L V Y P P Q N E P R S E G G W E P \square R W A Y A Q A R$ $P \nabla Y P Q \square Q R \square G$
SRTPVYF $\square G \square G G P N F M E D T K H P A Y A Q L A S V G$

EVVGGGLLSHVPTVVL PEAVRREDNNGEESTL
$F F V S H G P L A \| R V P H Q Q P L I D L C K E T A W V L D G C K$
E F VR
TPHTPRQPVLF LPHGGGPCFFMDWPETWDHMA AVIALAH GGGPMPLLGDPESAQMDKSMRERVP
$\square V A A Y A V P H P P \square \quad A M P E V G R G Q E R A \square Q D T \square D A Y R E V A$ AFDFFA
$R E \square A$
D A WNK L A GHQHMV
 $\square F \square P H G G G P C F F M D P G G P P D P M W R P M Q A \quad Y$ L DFVNGWRKVG

MSDMPVLY LSHGAPP LADDR W WTAE $\square$ AA V $\underset{R}{S}$
A Y R R S W
WACLVPHPP■I $\square$ PEVGRGNEKEAVRT $\square$ QGMSDLT
PAH

PAH
DAHAAAL
MSAPT $\square P T \square F \square P H G A G D W D P A D T W H R M A D W L R$ $\square F \square P H G G G P C F F M D A S D P D H P H C D P M W Q P M D Y L A$
$M Q R$ V $G$
MDPADPDRPHSDPMWHPMQA Y $\square$ A

PA $\quad \mathrm{Y} \mathrm{Y}$ S H G A P P A D D P VWP G Q $\square$ A A WS A T

|  |
| :---: |
|  |  |

GPFP 1 LK P $\square$ DDPRHGSTRAF LDERVA
A $\square \mathrm{CV} \mathrm{S}$
GGGPMP LLGEPSHKNMVKS WEN $\stackrel{P}{R} V R$ $P \vee L Y$ LS HGAPPLLADD QTWTRQLDADWS

VYVS HSPML
A】DPGQTG
A AFDA C G
KTEEEAM

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 QAWHDFGGFPPRYDAPGSPALAGRVKALI EAAGIPVALDE
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 RGFPP E LY E D RYPAA GSPT LAAE E I LSS LFA DA G DA A HANS S DEMP WY L H GVP Y DYR GHPDLAALEDRAMVSREHGYNRVI NH $K F D V S A F G D L F N K T L H P D D E T I D R L Q R S L R K Q N Q P D T L T T$



 $P L I Y D F Y$ GFPR H Y Y A E G S P E V A A Q K V M A AL G E N G I K T Q G V
 GFPPESY E EDAYPAPGDDALSQAVRDALAARGLPCRGQEP

 $F P V P G E P L P K E V Y D A P G D P E L A R R I K E S A E K Q G L E A E L D E$ GFPQDLY EVVYPAKGDSNLTKEVQKLL GNSVSIND

 S GSFAS F G R D DVFSANNAVQFVVQALVGACKEKNVIVIDETP





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 Y GFP K

 WGFPDRYY ETTYWSPGVPDLATTRMAASMMPDGPVVAHDQ GGFPAA LFA VQYPAPGDPALAATLGKTLGARLV
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 GGFPAPLYALQ YPAPGDPALAARVAALLGQAGHAVADDD Y GFPEELY QL Q YPAK GCPKLTMQDVCQLL GNA GK R Y $\square$ S W W Q K L K K Y P A P GA P D L A M K T K E L L E Q A G F P V K E N H

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 D MLGYDYYGFPPKHDAPGSPEVANLVEAALKDAGIECEKDA


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HLLLJP|L|
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$H L L P L F V S L G A G G E K A T V Q R F H$
H FMT FIVAAGA
HLLPFFVALGAA
HLLPLFTALGAAGADA
$H L V P L F \square A L G S S S E L T P R V I F R D Y$
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EFRTLVLLSGALSSAG KSQVLSYE $\square$ AHGSGLLVAQF
HFAPLFFAMG
HF $\square$ P L $\square$ MAVGAASA
Y LQMLGAMGGA DCRARGVALSAYENARGTGNVHMWFDGE
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HIAPLFVALGAGRSGKAVMLHESH
HLLPLM
HFAPLFVALGA
H L LP L MVALGAAGGD $\square$ ATRDHRS $\square V L G W V V$
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GAFTWMHAAMGYPELAGRLHGYGTVI GTGNAVIEWNLQ
HLLPVFAALGAAPDDYA
HLLPIHTAVGAAGEDPGKQLW
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FTPFLVTAAAGGYDPGRK L
$H Y \square P L I Y \square M G A S E S A K P T V Q T Y N \square G S \square S M T G F \quad \square F E D E$

HLLPLMV
LNSFLI LS GMLDTQYLFTSDLLS YQGT F GVGYAV
$H F M P L A V C A G A A G D G V A K S Y V D E Y \square$
HYLPLPFAYGAAQPGAKVEVL
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HLMPFYVALGAATDGYTADLIHDSYEFGNDAMTADRFYDQ HLLPLFFALG
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HFAPLEVSLGA
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$H L L P L M F A R A A A G D A T V A R \square A A E D V R Y G \square L G M D A Y V F$


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ASEATA

D A G L A G LT P A T Q S A

D

N R E

D N T K A A A

K T


WQSMVP
E

$A Q Q R R A G L F T$ WY T R GT GVT A AVQVNGAEHE
 WATTVEFVTTAHDRRAGLYT WF T R GTGVTAMTQPPTIHDF
 HWLT N GWWL T A MT QP K TIIH D F A H WESNGFEI SNAAKPDMIYDY


 $\square G D N L P$ K P T A L S S S

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 SEEDPRGMTRRHYDFPGDPELAHLIASKKDEHGTWUTAUDD
 VGSFANFGAPTVINFENDVEFVETL DMQSKEFFKGLNP SGSFSRFGAGQVLSFETDQQLVETIKEEDPDA FPV M $\square Y D F S G F P R E L Y E V Q G S V E W A K R V Q H H L K H V S P D V N D D E$
 KGDLKKFGEYNTMEDEVDKKLTSKDYEFAVQKNDPCVMAT

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 YGFPRALYAMARYAAPGAPALAGQVABALTMADGQAVABDTB
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## W




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WQSVPYPWALRFERFVRDNLSQQSAFARHPDATLAHPTVE VPQWASDFDTWLEDSLMGGRYDDVNRYDEPYGKVAHPSPE YSPYGEVFDKEFLDLLQKGD
S DP SNRPFETAMEEKCEKMDKWREEFPDSEAVHPSGKSEH WDGAAPAFDRTMRDCLLADDRAQAAMTDGPDARLAVPTTE DWTPNPGWSREFDGWAAEHFAAGDVDGLVDFRSKAHPTDE PEFSPADWAMAFDHWMSDKLLTADRAALLDYRAQAPSATD GAGASQQFDAWDRQAMADPPEQLLAWESAPGARQAHPQED WGKMNEDWADEANETMKNFDHSGDHRSLINFRSQG PDATPPSWSEEFDAWAHERFAAGDVESLIDFRRTAHPTVE FGPVSDTFDDWLTAAVEAPPAERELRLTHWAEAPAARLSH PDAPAPTWSKEYDSWAAERFAAGDVESLVRFRTEAHPTVE



 E LRD DEEADCERIA WFKEGRHDKVLDTMDEFWKYRPEAA QAEPNHVVDDWLSEAVADPDSETRADQNPDALACHVPDHD FRRPETPWAERFNETAKALILAGDHDPLIDWAEASINSAE WEQEAKPFD DEFDEWDKQKLIERDFNSLA
PAGFHEDFDTE $\square R N F L T K E D R Q S \square Q T M D Q E K \square T N A D E C$ FDGKPHDWADEFDQYVADQLDNRDFKSLADLLRMANPTLE DAPYVASFDNALKEAVEADPERMAAVSKRPDARQAHPWMD WGQHSAPFD
PDQTAPDWAQRFDED $\square$ AER $\square$ AA GHHEGMLGYETLG
APT WSQEFDAWAHERFAAGDLEGLLRFRTEAMPYAHPRDE APAASREFDQWAAERVATGDVDIDWETKAPAADEAHPRSE WQKLINEDWANEANDKMKKFILEGNHQALINYSKQG
SRSPARAFQSWLDETLKERREELIHWQDEPASRFAHPTPD WSHDDTDWAQQADDRMKKY DMDGNHQA LIDDYKKQG SGIMNDPWSEAVLDAVTTLDAEERGWKMEAWRQWPGAGAD WGRQGFDWAESVNEQVKQWIKAEDHRSVIDCEKLGGPTPD WQMRDYEWAGRFGDYIRGSIASDTPANLIDYTSQSVPHPD WHGENTPYPNEFVKANLNWQGDAQAHPLVNYLEHEGPTPD TMPYTVTFDDALKVATETKPGEQRDENMIGLARQAHPTFE MSHEPVAFQNWARK $\ A D E G N L A E A K Q P H V K S V H K S H P T S E$ WHGENTPWAESFNNYVKANLQWQGLDEQHPLVNLAHEGGE WRGRVGE WNKA LA DVVLSGDPRHREEGGLQRWRELPHSEAE HGRPAA EFAA WMDAR VVAGPA LRDYR RLAP YAAAE HPTEE

 APGYGYDWA LDD $\operatorname{CNEKMKNHDAEGNHMALVNYENFGLEGTP}$

 WN N A A D R F D A F
F S A A P D DV
T FRNDN T DWA HEAREKSNNWLLDGDFKQLI DYEKQG
WDQPNQRFDDAAAEQQLLRDPAD ILLKLAAEHPDFAAADVTPD DPSPEP GWSAEFDAWVGERFAAGDVDSLIDFRAQAHPT E
 WDK LNEEYAD WA DEA
PAEWA $\square E F D K Y V A D A \square R D K K H E D L I N Y K S Q A A A L A D P T D E$ PA GYSPF FDEQVVHAIKMSDPE ILLDDPSRTDYEAGECG
 DNPQPMPFDNALKEAVEAKVVERADVCKRPDAKQAHPWMD
 ELL
GF A Y A E S F D M ALLKE A WHNSPYPWATSFNDFVKANLRWQEQHPLVNYLDHEGGSPD WDKL $L$ EPFD WALEM
Q $\square$ R D HE A A D P A HI E A R A A DEER $\square$ A WLT R GD HARDTMPEEA WGNAPYPWASSFNDFVKDNLMWRGDAAQHP LVNYAAREPE


 WE M $\square N G G G Y D W A L Q M$
F D K WAEEFDRY IQQNAVRRFDDA DHYGRAGECAKLAFPTPD WY D WA QRFDQDAKERMLTDPTEFTT LDAHPDYRTAAPTPD WGTPNS GWAQTFHD HIASSADAEDRPADVIDYERMAAP G GYDWAE EARE D DQVLARDNTADQAFRDGNRALQA $\square P T D E$ F Y NL L A EF DEYMRQAL E S RNDKTDF QNK GE DAKLAAAPSTE


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HFDP LLTVL ${ }^{250}$ G WD GRERQQV
260
HLLP

HLMPLYFVLGAA
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HFAPLFVTLGAGEADSGTLRS
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HFMPFLVAAGAYGGWGADNHLSYATYAYGT
RFGHYLMMDGADGETAPSRQYGEYENSVGTGQVHDWFD
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$H \underset{F}{F} \underset{N}{L L} L V C A A A A E D E V A G V Y K D E$
FNSIMVAlGVVDKKPLHNEVLSYEAPFGVGYLVATL
H SLLFALGAREGA $\square K V L$ SYEGPF GVGYLIAE $\square F$
HLAPYWIA YGAGDEAPRVLFRYEY
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HFHPLHVALGAAGDESKAELIHR
F VPF V V G I GAS GNDVGKKL
$H F L P L L Y A L G$
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DHLMPLFTAAAAGNAATKDHESYAFGGSMSAYGFA
$H L L P L M V A L G A A E Q E A A$ HVVYHEEDFFGALAVSSFRFG
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$P$ L H
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HYLPLLYVLGAAGEGEPVAFFNDRV
HFLPLLYVLGASDGKKVTT HYVPLLYAFGA
RFFHYLMMAGA LGEQARARQYGEYENS $\square$ GTGQVH TVWFD HLVVPLFVASGAAGSDAGRQVF
$H Y L P L L Y V L G A A G$
$\square Y R S L L I L C G \square L S E M H C S F E E Y A Y E A P F G V G Y \square T G Q F H V$ HYAPALTIA GA
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HF L P LP \A LGGA A GP R P K T E R LH
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\(H F L P L L Y V L G A\)
HF \(I P A L Y L A G L A G A D G G E R T D Y A Y G S L S M T A Y T \square G \square T C P P\)
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## $H F \square P \quad L \square Y \square M G$

HLEPI FYVLGAMKPE
$H \bar{Y} \square P L F V T L G A A$

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KTD PTPRADVISA HWLTNGTYVTAMEHPPTDHDF QWAK HTKPKAILIISAHWEEKDWTHHITYFLYYSDKP[L
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$K E V V N \quad K P K G I I V I S A$ KQITQTFEKPKAILMISA ESLAAGLPRPRALLMASA RLVHDLPPAPEGVLILSPH



> HWETVGTKVTA

HWOSSRD
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 GIYOFYGFPDYMYKEEFNTEFANETKQELEKNGFNSNUDT SEEDPRGMERRHYDFAGDPELAHLIASKAANHSDTPDDDH TGFPQEGLFDVQYPSPGSPEK
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GGFPQE पFDVQYKAPGDPALAKETASLFTST DVELDH GFPRELYG VKYSSPGSPDIARLTCATVRK VQVKCSN GGFPKELFA VQYPAPGAPAIADEL TALLQATAPVRKNF LIFYDYYGFPKSLYEELRGDKALANHIVDLLKHAGLLARLLTH GGFPYQALLFDVQYPAPGSLTVAKETAALVHKTGQVGLDH DLDYDFYGFPDKYPNRGSPQLASHVLDLLSQAG1 KAEGV GNTRLDVGERVHMRRVVDQAFARALGVASNSASLPMAVIN GGFPEQALFDVQYPAPGSPELALATQKLVTSTEEVVHLDD GFPPELY QDAYAPPGAPEVAARAADRLGAA DRARDP HGFPPHTYTLRRYDAPGDPALAQRIAGLLHDAGLPSTKDV
YGFPRE LINEEYPAAGAPELAAEVAEAVKPTWVGADQD GGFHPRYYTLQYYEPDATELAQRVAGALGYS GPAVHQFT DGFAQRYY EVQYRAPGAPVLADRVA ALEMPDGETVAR T
DFPDEDYNTKTPD
G GGFP QALFDVQYPAKGSPELALETKKDLEPGVAVDLDE PLIYDFYGFPQYMHSECDDSVANDVVNTINHSGLKAKLS GFPEALY QVQYPADGLPELADKLITAF PNIHBRSDQ DLIYDFYGFPPKYPNRGSPEIAEMVAGRLEAAGI QVERVN GGFP QALFDTQYPAPGSPELAARIQQALPPVAVYADDK YNFPEQMYQHKYPAPGAPQLARRVKELLIKSGFSVDEDT促 GFPEESYNI KYPAFGNPELANKLYSVFNNGIPSKDDF SGFSPELYRLQYPVKGAPEQALAVQALLKAQGLAVKVNF PVIHD FYGFPFDYPAPGSPELAREVAE VKKPGFIGLDRD LIYDFYGFPDHMYKEKSSFSVAKSVQSQLQANGFQSDLV GGFP QALDFDVYPAPGDAELAAEI PGLVHSTHT GLDH YYGFPKWMFDLSFPSKGSSKVAQQVLNCLESNNIAAAVSG RGFGEA LQSFVWPAPGDPLRAASLVTRLRAAGLEARPDA GFPREAY DVVYPAKGDPAFARKVKEQLEKSNI QAKLV GSWLGGEGKELPGEWKTDDEVAEKIYRAEKEAGUPDVDVN



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PGAKPFPWALSFEQFVRDSLTSLDEPHPALGREDGPTPE RDMWSSEFDAWSTEALRGDIDTLADYRRAPGMPYAHPTVE WQNAQAEWATSFEQFVSDNLHSHESPHPLALEREDGPSAE WGCAPYDWSQRFNDYIKQ
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H पMPLIVAAGVAHSSPAK【I
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HY $\square$ P $L I Y$ A $\square G A T D R N E S V S F F C E E \square$
HFVS $\square Y$ VAAGAADGQVKVLNGDYGПPT VAFGV
HF $\square P \square V V A G G \Pi A S T G N E N D K E \square Y N A A S Y S \square G W G V$
KFMHYQMMMGAIGETAPGRQYGEYENSVGTGQVHLWFD HYDPMLYAL ALLAEKDEEDSFF
HFYPLHVALGAAGENATAERDHDE
H $\square \mathrm{LP} \square \mathrm{Y} \nabla \mathrm{A} \square \mathrm{GAGSNSRGKQ} \mathrm{\square F}$
$\square R S V L A L G L A Q G$ PLEVFSYE GPFGVGYATALWLPS

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HL $\bigsqcup P L F F A M G A A Q G R P G R$
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HYLP LLYVLG
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E HLMPLLTLA
EHFMPLVV
HYLPLLYLGA
HYLPLLYVLGASGE
E $\square R T W \rrbracket S A F A A M G P Y Q T K V R Y Y K Q A A D \square \square A G F A \square$
HFVP DY VAA G
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T $\square E H Y \square P M T Y A \square A L Q K K D D H \square$
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WQA LVLAGAVPPSARRPRLLSYERPTYFGM
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E EHLLPLMVVAGAAADDAGQRVYA
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HFVPLLLTMGAANDPTTARTVFNRV
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HF $\square P \square A Y \square A G A R A A S P A E V V E G G T \square G S \square T M T S Y V L D R P T$
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 ELDRYY A A WR
# $H P G L L W P A G L P S M M D W G \square G G P G G P Q S T F Q Q$ $H S P S T M P D A F L G H G T P M N A D E H N R F T Q A W A$ MTAAHSSPALYVSHGAPPGLFDDPADEMNRDQLFAWAA A LIPNTPVMPVIVGHGSPMNADQDEFTQAWNKVG 

A GLVFACVVPHGPDI PDLSDDAEGALA TRAAMEEVG $L I S$ A A MMPHNPVL KPEDEETRK LAEVLKEEVG



V VS A F L VP G S P LP QLC P D V
P NWQRFQRAMQQAG

## VLA P H S P DLLS S WMK G DERE <br> $M \begin{array}{llllll}L & E & A & N & R & Y \\ L & T & A \\ G & K & F & V & A & L \\ R\end{array}$ <br> LF VPHGGGPCFFMDHGGPPDPMWRPMQA Y L A

VP S VM P A A F VG H G S P L N A $\square E S$ N R Y T A A WK
F F $\square$ S H G G GP WP WLP D WR A QF A P LE

UniRef90_S3E965
$\square V A S V V L P H G \quad T M \square F D G D P N S S N E A C R Q R D D D G M K T S G$
PHAGYVFSGYTASR
AD $\$ I ANFVMPHG
G $\square$ A L D P N S T A VK Q A WE LD R A CVEVG

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70 HWEAPLSLLSASAAATPLDYD ${ }^{8}$ SMGREM PTPKALLVVSA HWLTAGTHMTAMPAPKTVHDF
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DTILTNKEEHV AE TTS R RPKG VVES

K $\qquad$ | $R$ | $P$ | $A$ | $A$ | $V$ | $L$ | $V$ | $F$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $A$ |  |  |  |  |  |  |
| $K$ | $P$ | $R$ | $A$ | $I$ | $L$ | $M$ | $I$ |

$P R A I V V L S A$
$A D L P T P T A M L V V S A$
SFGESVPA PRAILVISA QE LGS S K Y E $\square K A A L I V V S A$ RKLGNTLPRPKADVVA Q I GK E I K V VK P R A V V V F S A A LLGQAVVPKPRAILVISA REL GERLPVPRVI LAIISA

 QT IIDQ D DK P K F 1 $A L I D A S A H W Q T G V P R V G S S A L P Q T I H D F$
$R R C A \quad A A R P D V L V V A T P H$
Q QLEA

HWLT
GTRVDNTICLASVARG
REL
E E L R D I D D E DE NI L CI S S N WV
HWESPS KE IKA GLWYFLLIN



AQSMPKPRAIVIVSAHWEDAPVADSSAAAGTPLVYDF
 QELFSRSSEVSAVI AFTPGWQTRNDTAVDPAPEHCSSRDF DFLRELGRRPTCIVCVSARWDETEEVKVMSSPSPKTVHDF GLI A S L P E R R P R A A L RF GQAVPRPRAILVVSA HWYINATAVTAMPHPRAIHDF VVK SAVVVFS A H WQENVGPDEI HVNNAEKT
 $R S L G D S V P R P R A I L V I S A H W Y D N A S A V T V M P R P R T I H D F Y$ $R \quad A A B T A D P D A L I V I T P H G D R A E G Q F T L S A S A Y M E G E M V$




$E \square S K Q \square P K P E A \square L A \square S$ G HWVT D GT R $\square$ N D DP HP E $\square$
 EFGRSV PRPRAI LVISAHWY DNATAVTAMARPRTDHDFY QRL PVPRSILIVSA HWESAPDSLSATGAATPLVYD
 A Q S MP KP K S L L I V SA HWETA P VMLSSSAAA RTPLVYDF LG Q S L P R P N A L L V V S A H WLTTK GT Y DT T K K QP E T PRPRAILVVSAHWY INATAVTAMPRP ARARPQ LI L CVV S A H W L T R G GWF LTMMAAPRTDHDF AFGAAV PRPRAILVVSA HWYINATAVTAMPRPRTDRDR
 K Y IR R NLLN PDFLIVVVA HWQSNLKMDTVEDNKLDASENE A ALGASLPRPKAILVI SAHWLADGSYDTCTDRPRMDYDFY AF GEAVPTPRALLVVSA A H WY
$\square$ N A T A V
QRWGAS $\quad$ PP RPTA LLVVSAHWLT RGSTGVTVNDKPATIDHDF KA $\square$ Y E DS L P E T FV I I GPNH

SA HWLTE GVYLECSERHRTVHD F
 ALD GKP D T I I I L G P N H

V VMMGAHWDCSGLNKIQVAMNPKPNKS


$L L P R P R A D L A V S A H F V T E G S V L T G Q E R P E T V H D F$ QRTD DTLVTS P H QLNL LTTVK NKLQVHLMQD PSTVVILGPNH
$H$ GFGAAA
T GLGS P $\quad 1$ TYKA $\quad$ KF D G L P E T F V I L G P N H KTAASADGIPETFVI I GPNH $P \bigvee A G A V I S R \square D T F I I L G P N H$
$\vee \vee I M G A H W D C \square G D K G R G K D$
 V I MMGAHWDAPGDE


|  |  |
| :---: | :---: |
| UniRef90_L8DIM5 | $N$ |
| UniRef90 M7N1E1 | GGFPAR |
| UniRet90-M2A6N5 | GGFP QALHEFQYPAPGSPELAKATASLVPKT PVA |
| UniRef90-T5A106 | DLVYDFYGFPDHYPNQGSPELASQTMAML |
| UniRef90-J300 | PRYYGFPPEFYQARGSSELTQR |
| UniRef90-H1VP30 | YDFSGFPLHYYSATGSPALSARVCTLV |
| UniRef90-K8WBZ4 | PDA LLFQVEYPAPGSPELAGQ |
| MTWLY8 |  |
| B2W |  |
| A0A059 | GGPPRRFYEVYAPGAPDLARKV |
|  | 俍 |
|  |  |
| UniRef90-Q21FP1 | FEHALYQQQYPAQQPAWLTDELSQALRP |
| UniRet90_B2VGK2 | SPELAQQVADTLAP VAV |
| UniRef90-C4JL75 | EGIDYDFYGFPEKYPNVGSREIADKVIDEAI |
| UniRet90_W9DKJ9 | YGFPQD LTFVEYPAPGDPEVA |
| UniRet90_Q7N0 |  |
| UniRef90_Q2T | EMPNAURQLP YDLAGDPELARALAELATRRACWI |
| UniRef90-UP10003711 | PEEYY KVYYNAKGSPEAAHEVKK凹VP |
| UniRef90-O6COOM | DFYGFPEYMYHENDDSLAKE |
| UniRef90-G8SKN4 | GGFHPRYYTLP YASPDATGLAHRVAGTLGRTG PVVGPFV |
| UniRef90-M5GB17 | LLFDYFGFPSELYQLKGDSQVTDQIVSALKKAGYNARASE |
| ef90_G2 |  |
| UniRet90 ${ }^{\text {D1C }}$ |  |
| UniRef90_UP100042 | SNFPKE LIFDVQYNPKGNVPLAKETRDLIKTT QVGLS |
| UniRet90-H3ZKK9 | AGVQLPGEYKTDKELARE |
| UniRef90-G4CM25 | GFPPEYPAP |
| UniRet90-X6N7A3 |  |
| Ret90-x1Q19 |  |
| 1P1000477A |  |
|  | DENWHEFGE |
| UniRef90 UPIO0047B1D59 | G |
| UniRe90-T0Z5 |  |
|  | A |
| UniRef90-UP1000381E12A | YGFPQE YRDMOYPAPGAVDVARAAADLCAAGHAVGEEA |
| UniRef90 A0QNH3 | GFPRELFDVEYPAPGLPELAEEVSDLVHPTWVGAD |
| UniRef90 ${ }^{-12 A L}$ |  |
| UniRef90-ROEV | TGFPPETYQ1 TYPAPGAPDLA |
| et90_G9NL | FPAEAYAL KYPAPGHPEVAQEVKAALEAEGLQSELDG |
|  | GFPPELFA VDYPAPGLPELAEEVSAVHPTWVGADVD |
| UniRef90-C8WUB9 |  |
| UniRef90_W6JTY8 |  |
| 90_G4HTT0 |  |
| UniRef90 J2KOY8 | AGF HPRYY RLLRYDTPDASALARRVA AMMPHDEPVAQHP |
|  | $G F P Q A L F D F D$ YPAPGAPDVAQE |

VHDMYGFPRELYEVKGAPELAHFTKDLILGN VQTDN LLYDYYGFDRKLYDIKGDPRVARRVVELQESGYSKARDS GFPRELFEFD YPAPGDPELAGEVAE VVKPTWVGSDTD FGGFAARYYNERYETPDASALARQVAAVLPDTE PVBVHP GGFPDQ LIFQMQYPASGNKALVEASIAALNMTGQVQEDH
 RTIHDFFGFPQQYPAPGLPALAEEVSDIVKPTWVGADID GGFPREWLKEQQYAAPGAPAVARALAAELRATGRPLGVDE
 YGFPREGLFDVQYPAPGLPELAEE:SDTVHPTWVGADVD GFPGELY HVQYGCPGAPSPAQRTVES

 SGFSRELYELEYPAKGDPELCGKVARVLGGR YGFPGQALFDDAYPAPGLPELATE:ADVVHPTWVGADRD PVAYVHPSKYVDYELNPDLELGQACTELLRKDGFDASADE HDHPSKWLYKFNFSLDTNVELAKQLHQKLLDNKDQAKTTY $\square Y D F Y N F P P H Q K F T S H G D A K L V E V I K Q A L K S A A D P Y D L D N$ GDVQVDEKLCKSLDKASFESNVGA GGFPDA DFRVRYPAPGAPELARRAAALVGDGAAVVD ATLLEENWAKLKYPAPGAPDLAKRTKELLEQAGFGPTHRD ALYPEGEWLTPLGSVP DVVRLSQLVQKHVPLADVEPEMSA SDMTEGAWKTPLGEVEIDAELAKQL LLATSGLLEEDS VAYVD
HGFPEEMYREQFHSKTHDGLAQHISDTINDAGHGLSVLV ADTDNCNCPPCCYNVTVNVDLGYRNVSGLSGYGPPGGSSE GKSPVAYVHPSKYDYKLNPDLAERCI GLLRDAGFAASGDA VI NLLRAYQUDAQPDQ




UniRef90 L8DIM5 UniRef90- M7N1E1 UniRef90-UPIOOO4632A39 UniRef90_M2A6N5 UniRef90_T5A106 UniRef90-J3Q0Z0 UniRet90-H1VP30 UniRef90_K8WBZ4 UniRef90-M7WLY8
UniRef90
B2WJM2 UniRef90-A0A059MPL8 UniRef90 F6EHF8 UniRef90-A6GLK4 UniRef90_UPI00034741D2 UniRef90_Q21FP1 UniRef90-B2VGK2 UniRef90-C4JL75 UniRef90-W9DKJ9 UniRef90-Q7NOC9 UniRef90-Q2T8R3 UniRef90-UPIo00371044F UniRef90-UPI00047B62FD UniRef90- Q6CT67 UniRef90-G8SKN4 UniRef90-M5GB17 UniRef90-G2T6S5 UniRef90-D1C6V3 UniRef90-UPIO0042864E0 UniRef90-H3ZKK9 UniRef90-G4CM25 UniRef90-X6N7A3 UniRef90-X1QT98 UniRef90-UPI000477A4CB UniRef90-B1J704 UniRef90-UP100047B1D59 UniRef90_TOZ5X7
UniRef90 LiJZE8
UniRef90-UPIo00381E12A UniRef90_UPI00036247CD UniRef90-A0QNH3 UniRet90_B2AULE UniRef90-ROEWK6 UniRef90-G9NLB2 UniRef90 UPI0003620C30 UniRef90-C8WUB9 UniRef90-W6JTY8 UniRef90-G4HTTO UniRef90-J2KOY8 UniRef90-F5TBG7 UniRef90-A0A031IZM9 UniRef90-L5W981 UniRef90-I4D318 UniRef90-G7E683 UniRef90-K6VWD3 UniRef90-UPI000381084C UniRef90-N9QE18 UniRef90_U5VYE4 UniRef90-18S6T1 UniRef90-U5VSR2 UniRef90-UPIOOO3D3C1B5 UniRef90-Q23Q23 UniRef90-D9T1X3 UniRef90-X5KIU3 UniRef90-F2QQ20 UniRef90-A717E5 UniRee90-UPIO00255F74C UniRef90-UPIO00479BD08 UniRef90-UPI00047EF8A3 UniRef90_H3ZLS 1 UniRef90-A8UU77 UniRef90_UPIOOO36B7684 UniRef90-X0YR78 UniRef90-B8LWM4 UniRefofo-17M150 UniRef90-F2BAE2 UniRef90-UPIO003F49BC2 UniRet90 - XoWJ46 UniRef90-B4UFW0 UniRef90_R7WBY8 UniRef90-Q39U88 UniRef90_C5A7L6
UniRef90
B1L5N2 UniRef90-XORXE5 UniRef90_Q0CJO7 UniRef90-G8JT45 UniRee90-UPI00035984C7 UniRef90_G2R511 UniRef90_17M6D3
UniRef90 C3Z7W2 UniRef90-B6YSTO UniRef90-A5N523 UniRef90_S3E965

SGDLNQPFGDWALEM AHNTVPAWSVDFDVWAADALARGDVDA乌SDFRAQAHPTVE P岛PYSVSFDNAVKEAVEVDPDKMAEVCTRPDARQAHPFMD EWQFDKQFEREIVNASEATPERFQRMIALKKLDRKAHPRED SGPEPLPYAVSFDDALKEAVEAGVDERQEKMAKQAHPWMD WQNADVEWARSF EQFVCDNLRSQGSPHPALEREDGPSAE SFSPAAAWEKA VDAVAVKDPKARHRALLSLVRSAHPREE DGTANQEWSRSVGDAALTVDEGERERKFLGWREWTGSGAE APGWSAEFDAWAAERLAAGDVDGDFRTRAPGMPYAHPTDE MRPYVREFNAWIQERLQAGDSKAIMAAVFEHFA RAHPDDD TGDMTPGWEDDYDQWLKKQLDERNIKNMINYEKLASPTPD RNGDTPDWAEEFVYWLHQAVTNKDYTALLAPHAAIAHPTDE A WP WAGSFNQYVRDNLEGDVSQHVNFMQHEDAALSNPTPE
FTFGDPSFDEALKEAVTGAPADRQKALRDLLKRPDARQAH FTFGDPSFDEALKEAVTSAPADRQKALRDLLKRPDARQAH RQDPNAEWAESFNHYVRDNLTSYEQPYPHADDREDGPSP VTPAARAADERRTAWLEQGRHDRVIDAMSEFLREANFG QKMWEAEYDAWDKQQ DSRNFANLINYQHKLGKLAAPTPD WFDWARRFDQDAKERMLTDPTEFATLDAHPDYGDAVPTPD SAHYSEEFTSVLNDLLTKQHNKDDKFKAEDLFKAHPTDD DPGHTRAFDAWAADALARGDVDTDYRAKAPGADVAHPTAD AAPPYHAWDKAVDDALAFQSPRERKKALIDLDARLAHPRAE GQAANAPAANDFAQWMAGK $\square$ AA QDLDALLAYRRAAHPTEE
 ANGKPYDWALEAKEKFNQFDVDKNHKPLLEYANNADPTPD PGHTWAELAHQUILKWLKNNNLNSLLDDSHYLRMSMPSPE NTNAAERFDAYAYEWMCT DDDKALNKALDPEAWSCGLCGM AGFHPEEFDKK\|VEDISSSDLEELFKLDSRLIDDA WHTEEDAWNRQVLALIEAGDVDGGREALDPYAARABPTAD WDRPDSAWAERFDDVMRDDPAGSLRLQSHRDFVLAVPTPD RGREDP
FGDPNPAWADEAWDARSSKLCSWNKHKDDNTRПAAHPTRE VTPVAREWDDALVAAVTDPDARVAAWETLPYARFAHPEAE ARLPDSGFD WATRFDDAAADLLTAAPADILRAAAPTPD
PRDWAQRFDEAAAARLLDSABEVATLDAHRDALAVPTPD LAFGQPQFDNALKEALVEQPDAEKRK
WSERTGRWNNALEQAVGAESKEWREFPHANEMHPPRRGEH WELADDAWARRFRERMLTAPTEFAADDGHPDFPAAVPTPD YHEDAARLDAEVERADAAGDLERLADFPDEMDENARPDG APAASAEFDHWAAEAMAEDLDALLDFGHAPAARLAHPRTE PALADKGFD WAQRFDDEARAQLESAPGDVVRL
PDMWSSDFDTWAADALLRGDVEELSAWRDRAMPHAHPTPD GFNWANKFDNYDKDSITNKNIENYNNSSFDY HHSVPTPE WDQPNAAFDERFDDAVVAQLAD
MNSYTREFDHQMDERVVKLWREGKFKMLPEYADYCYGEGH WDMKGYDWAVEFDDFI KETISEKKYRSVIDY RLAGVSAE ADADYHEWHKA DNS ADSRAALLALTKHRAFRKAHPRED GYDWAQRFDDAAREAMLGDPSGYPALAGHRDYAKAVPTPD FFNQVPGWSADFDAWAADALARGDVDALDANFRRAAHPTVE WDKMDDP
REMWSSDFDAWAADALARGDTDELAVTKAPGMPYAHPTPD WNMEAKEWAVHFDNUVKEHLVAGNHQPLIEYKKLG
RNMPDDGFDQRFDETMLDDPLNAAR DDAHRDFRHAVPTPD PGTWANAFDLRVVDQVQSGRLEGLAQFQQWMAQLAHPTHE KPGFTEQWEKWL
WALADDGFDRRFDERMLTDPGEYATLDAHGDFRRAVPTPD GAQPDYDWAQRFDGAARAQLTDSTVDAHSDYHRAVPTPDH ASMQYPKFNEVLRNLFKKPSELQSFKT LTNEEKSHPSAE MDAAPPAWAVEADAWMRDR\|IAGEHRKLFTYPWEGGSAAS WRRTDDGFDEDAKERLLTDPTEMPTLDAHADWDHAVPTPD WFDWARRFDERARQLMAETPHEAASLAAHPDYRAAVPVTD RGMAARDWAQQFDEAAKQALLAGNHEALVAYARMAVPTPD YGYVPREWDFRVIQKLEFDYKGMFDEIRKMDHTMCGPGG LNPEPPEWAVEFKENVKKSVLRRDDDSLLGYRRLAHPTEE AENV
WAPMPEDWAMDFRQAVEDARRATTRLMKHPKFREAHATDD HPQWSKEWEKY IEDVTNKDEQKRRDA VITKQHKHHSDD WAYPWADLARELI NKWARRLDRLLDEAHYPIVRQALHLDQ SGRGGTYTRPFLDADTHPLETTLTLFRHPLYKSAHPTPE
KDपARKADLT LESLKRLDPAYFRLTNT\|LMRRGACGEA HAFDAW
RDQWASDFDAWLRDSLLAGRYDDVNRYQEEHAKTAHPSPE ARAKDE YPHRDKEWDFRLI RRLDFDVDGLFRELREMRHTMCGPGAV
 ARKKDTQAIEALLDLNEDELLKRIVDKLNUSMC GYA WAPMPEDWALEFRQAVEDVRRAMTRLMKHPRFRDAHATDD PMPYVHEFDKLLRGDLINDNDHRDKSDTRGDFYKAHPTDE YSNTSEPFDLALGKWASNDPEATTAASLVDRALSCGFTGM WMPMPEPWALEFRQAVEDVRRAMTRLMKHPLYRDAHATDD EALVDEQFDGWCKKVIEDRQAKDMEYFKHPHFNKVHPTQE DNPLYQPNPRWNM AVEPDYASMFGRCSEGWAKSA YGYVPKEWDQK DLDFDVKGMFGEDRKMDHTMCGPGGVGTA WEMKGYPWADDFNYKNKOTERQYDNVVNYSLAGGSSPD
WGQMMLDFRQEEDATKHSGFALRAGTMLMRDAHGTD

| UniRef90_L8DIM5 | H F T P L F V T L G A A E |
| :---: | :---: |
| UniRef90 M7N1E1 |  |
| UniRef90-UPI0004632A39 | H F T P LF VT LGA A |
| UniRef90-M2A6N5 |  |
| UniRef90_T5AI06 |  |
| UniRef90_J3Q0Z0 | HF\PI Y I A A G A G S D Q GS T T I S D $\square$ H G CQ T $\square$ A F G V A |
| UniRef90_H1VP30 | HLMPV HVAA G A A G D |
| UniRef90-K8WBZ4 | HFLPLLY |
| UniRef90-M7WLY8 | H F VPL Y VA Q G A |
| UniRef90_B2WJM2 | HFLPL IVCAGAAGSTKGKSYADE |
| UniRef90_A0A059MPL8 | HFAPLFVTLGASSD |
| UniRef90-F6EHF8 | H Y LP L L Y $\square$ A G L A Q D E P LK P LVV G HEA G S $\square$ S |
| UniRef90-A6GLK4 | HY L P L PFAMGAA |
| UniRef90-UPI00034741D2 | H Y V P V LY S LG LID Q K D ELKHFYE |
| UniRef90_Q21FP1 | H Y SPLLVAA G A A Y G N T G K P $\square$ H N S Y |
| UniRef90-B2VGK2 | H Y LPLL Y V L G A |
| UniRef90-C4JL75 | P T F D HL |
| UniRef90-W9DKJ9 | H Y LP L L Y IA G LA Q E S P LD L L VD G HAA GS $\square$ S MAA Y |
| UniRef90_Q7N0C9 | HFLPLLY I M G TWDRK |
| UniRef90_Q2T8R3 | H Y L M M G A I GARA C A A R A R R F S E Y E N G $\square$ G T G HVVHLWF GPV |
| UniRef90_UPI000371044F | HYVPVL Y S L G L D K T DEDK HFFEGEP |
| UniRef90_UPI00047B62FD | HFIP ALY L A G L A G A D D G DVD GY A Y G S LS M T A Y T $\square \mathrm{CMHCPT}$ |
| UniRef90_Q6CT67 | HFVPII VA L G A A E P T |
| UniRef90_G8SKN4 | H Y V P L L L T L G A A D |
| UniRef90-M5GB17 | HFVPLYI A A G A GENGKSKVLL |
| UniRef90_G2T6S5 | HLMPLYVALLGA A G D GA $\square$ G QRL H D SV |
| UniRef90_D1C6V3 | LWQTLMLA GAMAHTPRGELLS YEAPSYYS M V VATFEPV |
| UniRef90- UPI00042864E0 | HFFPLLYVLG |
| UniRef90-H3ZKK9 |  |
| UniRef90-G4CM25 | HFWP L L Y V L G V R K G K E Y M E $\\|$ F N D E $\square$ |
| UniRef90-X6N7A3 | L I L N Gl |
| UniRef90 X1QT98 |  |
| UniRef90_UPI000477A4CB | H Y VP L L LTM G A A N D P S S A R TVFD R F VFS N |
| UniRef90-B1J704 | K HFHWL L G A L G GRFQGAKVHHYGALLYGSGAAVVQFYP |
| UniRef90_UPI00047B1D59 | HF $\square$ P LLY L S GA A S GES T DVLI Y T Y GA |
| UniRef90_T0Z5X7 |  |
| UniRef90_L1JZE8 | HFLPLLVAS G S G G P R |
| UniRef90_UPI000381E12A | HLL PL MV |
| UniRef90_UPI00036247CD | HFIP ML Y F A GAA A D T P A HVLVYY T Y G S L S M S Y V V |
| UniRef90_A0QNH3 | HF $\square$ P F LY F A G $\square$ A S A S T D S V S GY T Y G S L S M T A Y |
| UniRef90_B2AUL6 |  |
| UniRef90_R0EWK6 |  |
| UniRef90-G9NLB2 | FMPLIVCA G A A LE GEK A G LY Q D K Y LGA E $\square$ S |
| UniRef90_UPI0003620C30 | HF $\square$ P ALY FA GLA G A D P VLVD GYA Y G S LS M T A Y T LGATCPA |
| UniRef90_C8WUB9 | MWLVLA GAVP K D E R H P R VLS Y ERPTY F G M |
| UniRef90-W6JTY8 | HWAPLYV ALG A A |
| UniRef90 G4HTT0 |  |
| UniRef90-J2K0Y8 |  |
| UniRef90_F5TBG7 | H F Y P L LI A L G C A C D Y K K VE $\square \mathrm{F}$ N E |
| UniRef90 A0A031IZM9 |  |
| UniRef90_L5W981 |  |
| UniRef90_14D318 | HLDP L F Y I L G A A DEH |
| UniRef90_G7E683 | H F VP L Y V A A G A G Q E G N A R VLA |
| UniRef90_K6VWD3 | HFLP SVY L A G |
| UniRef90_UPI000381084C | HF TP LTVVTLGA A D |
| UniRef90-N9QE18 |  |
| UniRef90-U5VYE4 | H F T P LTF VT LG A A D |
| UniRef90_I8S6T1 |  |
| UniRef90_U5VSR2 | H F LP L L Y LA G LA G G A DVLVD G Y A Y G S L S M T A Y |
| UniRef90_UPI0003D3C1B5 | HFLPLLYAA GAVEPGG E A VRFFNT GF |
| UniRef90_Q23Q23 |  |
| UniRef90_D9T1X3 | HF $\quad$ DP |
| UniRef90-X5KIU3 | F LPMYFA G L A A A A E T P VD T L V S G Y |
| UniRef90_F2QQ20 | $H F L P$ LVVA GGA GEKE EVE ELV C |
| UniRef90_A7I7E5 | R A V P T L |
| UniRef90_UPI000255F74C | HF I P SL |
| UniRef90_UPI000479BD08 | H F LP LL M A A A A ERPAKT LVEGY S Y G S LS M T A Y |
| UniRef90_UPI00047EF8A3 | H Y WPLLYALGAA HGSGPARQVFE |
| UniRef90_H3ZLS1 | VATAIVFSRLLS GAVEAEVLH Y |
| UniRef90_A8UU77 | HLIP LIF Y F L G S L Y E E E E $\square \mathrm{EVVI}$ |
| UniRef90_UPI00036B7684 | HYLPALY LA GLADA A G |
| UniRef90_X0YR78 | TVVM FI ACE TLLGAKKAELLLKY |
| UniRef90_B8LWM4 | HFMAALFVAGAVG |
| UniRef90-17M150 | HFMPLLVALG |
| UniRef90-F2BAE2 | NFYPMLYPLAAAGAKEPVEFFNDE! |
| UniRef90-UPI0003F49BC2 | HLLPL |
| UniRef90-X0WJ46 | A I I A G M A A VRDLGADKAVLLEEYEVR P Q TVVGYGAMAFVK T |
| UniRef90 B4UFW0 |  |
| UniRef90_R7WBY8 | HFYP LHVALLGATGDEPKAEDIH |
| UniRef90_Q39U88 | TVM LVITAKALLGASKAELLISY |
| UniRef90_C5A7L6 |  |
| UniRef90-B1L5N2 |  |
| UniRef90-X0RXE5 | P AVVSLISAAKELGATRAELVRY |
| UniRef90- Q0CJ07 | HFMA AMFVAGAMGD |
| UniRef90_G8JT45 | HFMP $\square$ VVGL G A GE A L Y G D |
| UniRef90_UPI00035984C7 |  |
| UniRef90_G2R5I1 | HFMAAMFVAGAVGGDE |
| UniRef90-17M6D3 | HFMPVLVA $\mathrm{V}^{\text {V }}$ A S G S CP GK |

UniRef90 L8DIM5
UniRef90 ${ }^{-}$M7N1E1
UniRef90-UPI0004632A39
UniRef90 M2A6N5
UniRef90 T5AI06
UniRef90-J3Q0Z0
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UniRef90 M7WLY8
UniRef90-B2WJM2
UniRef90 A0A059MPL8
UniRef90 F6EHF8
UniRef90 ${ }^{-}$A6GLK4
UniRef90-UPI00034741D2
UniRef90 Q21FP1
UniRef90-B2VGK2
UniRef90_C4JL75
UniRef90-W9DKJ9
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UniRef90-G8SKN4
UniRef90-M5GB17
UniRef90 G2T6S5
UniRef90-D1C6V3
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UniRef90 H3ZKK9
UniRef90 G4CM25
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UniRef90-X1QT98
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UniRef90-B1J704
UniRef90_UPI00047B1D59
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UniRef90 A0QNH3
UniRef90-B2AUL6
UniRef90-ROEWK6
UniRef90-G9NLB2
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UniRef90-C8WUB9
UniRef90-W6JTY8
UniRef90_G4HTT0
UniRef90-J2KOY8
UniRef90_F5TBG7
UniRef90-A0A031IZM9
UniRef90 L5W981
UniRef90-14D318
UniRef90_G7E683
UniRef90_K6VWD3
UniRef90-UPI000381084C
UniRef90-N9QE18
UniRef90-U5VYE4
UniRef90 I8S6T1
UniRef90_U5VSR2
UniRef90_UPI0003D3C1B5
UniRef90 Q23Q23
UniRef90 D9T1X3
UniRef90-X5KIU3
UniRef90-F2QQ20
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D G G WT RAETRAEREA
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G

S G G D G VIP Q P P A

PHAGYVFSGFTASR

VVA GQF YP A S P S QLK EMDQGMVDDKVEKEPHAGY $1 V A G A L L P G M P H L L A D E P A \quad P S W S A L A D A A R D V G$
 HAGY DYSG $\square V A G A L L P G M P H L L A E K P A \quad Q C W A D L A A A A R E V G$

| UniRef90_E6N576 |  |
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| UniRef90-X1JC23 |  |
| UniRef90-J3NM14 | V IMMGAHWDALGGDSR】DVATNPNPGKS |
| UniRef90-M1PW74 | AEDGKPDSVVI LGPNH |
| UniRef90-W9CDG0 | VVIMGAHWATGNEDEVASNPNPEKSPVA |
| UniRef90-G1UU08 | RTLVVLCPNH TGRGQAL |
| UniRef90-O59292 |  |
| UniRef90-K2S532 | 1 I MMGAHWDADGDRVEVAMNPNPGKS |
| UniRef90-X1N697 | ATTSRTKFK DTFII IGPNH TGMGKPL |
| UniRef90-UPIO0037A2C56 | ARLRRL EPDVVLLLSTQWFTVLGHQFQCDPNPRGRHVD |
| UniRef90_C7ZE69 | 1 VMMGAHWDAPYDTVEVSMNPNAQKDP |
| UniRef90-F3KL18 | ELFI I VGPNHW G G G S S V |
| UniRef90-F8A978 | HVA GAVYSRPDTVVILGPNH T GLGHPA |
| UniRef90-UPI0003811347 | R I A A A AYKKPETVVMLGPNH $\quad$ RGVGSSA |
| UniRef90-F4FAQ1 | D RLRRLL KPDVVLLLSTQWFTVLGHQFQCDPNPRGEHVD |
| UniRef90-W2S147 | I VMGAHWDCKQDHAVQVAMTAEPV |
| UniRef90-F9CU44 |  |
| UniRef90-D5E7A6 | PKADTYVI FGPNH TGYGSAVALSTQAWS |
| UniRef90-B4U9M1 | LS S H WLT E EPM\|ISENPYPIMY D F Y |
| UniRef90-TOLWW2 | $\square \mathrm{E} \square \mathrm{A}$ DRSDVIVII SPH GMTIKDHMAVINTEYF |
| UniRef90-B5YFB0 | PDVAII GPNHNGLGYPSADYSEGIWTT |
| UniRef90-Q2H198 | VI MMGAHWDAPGDE V V (VATNPNP |
| UniRef90-W9XH75 |  |
| UniRef90-E6ZQ77 | KEVRALHQQGVVII FISAHW QPEDLR Q GVYVNVDEKN |
| UniRef90-F7XLP0 | GPNH TGYGSPISASADTWS |
| UniRef90-I6UXR0 | K K $\square$ GEELK DVESYVLI T P H NVRSSE |
| UniRef90_Q5AY84 | KCGAEALARKGVVI ML Q GA W WD A A D A $\square$ EVSMNPNPGKS |
| UniRef90-A8M7W8 | ARL LAAEPDRIVLVGGGPATTTF GAAE |
| UniRef90_M1PGK6 | GVAAETLGRPETVILLGPNH TGKGAPVALSTATWN |

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FHSDGPRFDKA L $\quad$ KF L KEKD K K F L K LDEMFPQAGECG WA PMPEPWALEFRQAVEDVRRAAARLFKHPRFRDAHATDD PQQMAETKDRKAVEKI QDLNWKGLFETVSKENMSVCGYG WYQMLMYRDNFAME SPPDAAMLEFRQEFEDAMTKNSGP $T V E K D A D A L E R A D A C D P E$ GLLAAVAARERDSMCGAGP PFRGRPEWDMRLDRRLDFDLDGMFSEDREMNHTMCGPGGV WAPMPEPWALDFRQSVEDVFRALTRLMKHPQYRDAHATDD AQWK DSQADEAI LDELNEDELLKRVDEL RDSMCGYA QDRDHEQWNTRRLDLLTAGKVDEALAVREDFARQA QAD WQWMDREFRQAVEDAVTQNRRAVTRLMKHPRYKEAHGTDD AH EQDAALIELLKLDVDRFYDVLNKKD DSACGYGA
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DTTEDWAYEFHDVLNHDIKS LKNFKHHRYANDAHPTDE PYGYSEDADKY LI A AVRNNSLDPLYNDDQE VVNRGKPDS PHEDAKQKDLYA ESULNDDEEF UKRVDEKDISDCGVGP
 $H S K F A A D F E K S I D D I V T S N T G A D L A A A L V R I T Q E A H P S N D$
$N G S F S T S Y S A G F L K A L T E A M E A P P A A Q D E V R W S K A H P T P E ~$ SAD $\square$ AYD TDQYIIEAIEKDVSE DYRRIMEKNASACGFGP YAKESKEYDSLIYRLMQNMDFSRLLELENDFDEKAKPDSY WGPMPEDWALEFRQAVEDVRRAMTRLMKHPRYRDAHATDD
$P G Y D D P P Y D Q A V A R A L A D A D A G G L L G L D A E L S S A G L K A A$


$\square R S F S F L L G Q L E A S G \square D E \square L S Y E G P F \quad G V G Y L V A$ $H F V P L L F V A G A V G E E$
$P$ VASMMVASKGLGASRTELYKY
ELRRALTMLMKLP
L\ALADLAAALGRARAELTAHD
GAGIIYSRL MKAKEAELLHYSRSPDA\|VGYAS\|IM
HFMAI MFVAGAVGDE
PAVSLISAAKELGAKRAELVRY
SQFRALAFAAGAGAATGPAHLHAYGPDWGTGGAA $\square$ S WN $\square$ T
HFMATMFAAGAAG
$\square A S T M D A C K E L G A T K G E L L K Y A T S G S S V V G Y G S \square I F T$ $P$ TATSLIAARALGAKGAELVKY


ПASTMDACKE $\square G A T K G E L L K Y S G D K S S V V G Y G S \square I F T$
I 1 AMYTAAEYMGANTAELLKY
$H F I P L F Y F D G A$
F WN MM L K G $\square$ M NES G $\square K M \square D Y H Y V A V Y \quad F G M M L A H$
IVITMUAVKLLGSKRAKLVEY
HFYPLLVLAGALYD
$H F D P A L V A L G A A D E Q G V E T F A D D Q G P$
$\square A A M I T A A K L L D A T K A K L L T Y S T S M S S V V G Y G A \square T V E$
W SLLIAHGVMQEVKKVVHDSYACPTYY GMLSALF
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