UniRef90_D8HZD8 UniRef90_A4X607 UniRef90_U7JXB4 UniRef90-S3X091 UniRef90_UPI0003B3C28D UniRef90_UPI000381A602 UniRef90_UPIO00378EE35 UniRef90-E3H2V4 UniRef90_UPI0003F52B3A UniRef90-UPI0004112F3C UniRef90-R2RYE4 UniRef90-Q81C42 UniRef90-H5UV41 UniRef90_UPIO004079B5A UniRef90-W7YN75 UniRef90_UPI0003B32F29 UniRef90-IOROH1 UniRef90_UPIO0046D22B6 UniRef90-UPI0003B42D28 UniRef90 W5IJK5 UniRef90_UPI00047D3E15 UniRef90-F5L726 UniRef90_U7JGE4 UniRef90-W2E2S3 UniRef90-D5WQ16 UniRef90_UPI0003772CFA UniRef90-F2LVI7
UniRef90-W6M968
UniRef90_UPIO003B6C1C1 UniRef90-D2S9F9 UniRef90_UPIO00255830E UniRef90_K9EUI1 UniRef90_S2WFB1 UniRef90_W1N544
UniRef90-S7W2W9 UniRef90_UPI000363CD29 UniRef90-F3YAK0 UniRef90_UPI00047D3087 UniRef90-H8YYK2
UniRef90_H3NUG2
UniRef90_UPIO004737C90
UniRef90-S0J8Y7
UniRef90_UPIOOO262CD86
UniRef90_EODF64
UniRef90_U1 X065
UniRef90 E6KPD5
UniRef90_UPIO003FCF91A
UniRef90_R1CXJ7
UniRef90-C9RR95
UniRef90_Q9ZHE9
UniRef90-Q1JCG6
UniRef90_UPIO001E8975A
UniRef90 UPI0003644F5C
UniRef90-14X4W3
UniRef90-LOEOK5
UniRef90-B8E258
UniRef90_UPIO002624A14
UniRef90_LOGX07
UniRef90_A1STP2
UniRet90_N0BBBO
UniRef90_K8E059
UniRef90-UPI0003682F61
UniRef90-V6F7X2
UniRef90-UPI00037E7DE7
UniRef90-W2BTE8
UniRef90_UPIO004788A4F
UniRef90_W5WPQ6
UniRef90_UPIO0028821A2
UniRef90_Q07HS5
UniRef90_B2A258
UniRef90-D2QD41
UniRef90-W8VRJ0
UniRef90-B1GZT3
UniRef90_UPIO0036077FC
UniRef90-M2W447
UniRef90_R7WPK1
UniRef90_UPIO0036090B9
UniRef90-H0A4P5
UniRef90-UPIO003B5AEDB
UniRef90_A6WFI6
UniRef90-V4Q5C1
UniRef90 C5WCB0
UniRef90_C5WCB0
UniRef90_A6DME9
UniRef90_D1NSB2
UniRef90_C7RCQ9

624A14

20
30
MLRWITAGESHGRALVAVVEGMVAGVHVTSADVADQLARR MLRWI T A GESHGPAL AAVLEGMPAGVAVTTADVTEQLARR $M$ L R WL T A G E S H G P A L V A L L
 MLRWTTAGESHGQALVAVVENMPAHVELTSDDIAHQLARR

 $M L R W L T A G E S H G E A L V G I L E G V P A H V P L T R D D V S A A L A R R$ MRWLT A GESHGGALSSAI I E GI P A SVVQI T T A DIIDRHELERR
 MRFLTA
 MLRWL


| $M M R W L$ | $T$ |
| :--- | :--- |
| $M L R$ |  | $M L R W M T A G E S H G P E L I G V I E G L P A G V P I L D E D L Q Q A L A R R$

 MLRWQTAGESHGQALVAMIEGLPAGVTISEDMITQALARR

 MR Y L T A G E T H G P Q L T A I I E G FP S S NV R I D F D A M N V Q L H R R
 MI RWNTAGESHGPALVALFEGMPAGVRITGADIRHALWRR






## 


$\qquad$L
FRVVST S GE

| $L$ | $F$ | $V$ | $V$ | $T$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $F$ | $K$ | $V$ | $T$ | $T$ |
| $L$ | $F$ | $R$ | $V$ | $T$ | $T$ |
| $M$ | $L$ | $R$ | $F$ | $L$ | $T$ | SFGE S

$T F G E S$
$T W G E S$
$T A G E S$
FRFTTFGES


MRYF TAGESHGPHLTA A L F R R V T S W W E S H G P A $\begin{array}{lllll}L & L & R & W L & T \\ L & G & E \\ L & F & R & V & T\end{array} T^{W} G E S$

| $L$ | $F$ | $R$ | $L$ | $T$ | $T$ | $F$ | $G$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $F$ | $R$ |  |  |  |  |  |  |
|  | $R$ | $T$ | $T$ | $A$ | $G$ | $E$ |  |




## QUERY

UniRef90_D8HZD8 UniRef90_A4X607 UniRef90_D7GDR4 UniRef90_U7JXB4 UniRef90_S3X091 UniRef90_UPI0003B3C28D UniRef90_UPI000381A602 UniRef90_UPI000378EE35 UniRef90_E3H2V4 UniRef90_UPI0003F52B3A UniRef90_UPI0004112F3C UniRef90_R2RYE4

## UniRef90_Q81C42

 UniRef90-H5UV41 UniRef90_UPI0004079B5A UniRef90-W7YN75 UniRef90_U4WYZ1 UniRef90_UPI0003B32F29 UniRef90-IOROH1 UniRef90_UPI00046D22B6 UniRef90_UPI0003B42D28 UniRef90 W5IJK5UniRef90_UPI00047D3E15 UniRef90-F5L726
UniRef90_U7JGE4 UniRef90_W2E2S3 UniRef90_D5WQ16 UniRef90_X4QMB9 UniRef90-UPI0003772CFA UniRef90_F2LVI7
UniRef90_W6M968
UniRef90_UPI0003B6C1C1 UniRef90_D2S9F9 UniRef90_UPIO00255830E UniRef90_K9EUI1 UniRef90_S2WFB1 UniRef90_W1N544
UniRef90-S7W2W9 UniRef90_UPI000363CD29 UniRef90_F3YAK0
UniRef90_UPI00047D3087 UniRef90-H8YYK2 UniRef90_H3NUG2 UniRef90_UPI0004737C90 UniRef90_S0J8Y7 UniRef90_UPIO00262CD86 UniRef90_E0DF64 UniRef90_U1X065
UniRef90 E6KPD5 UniRef90_UPI0003FCF91A UniRef90_R1CXJ7 UniRef90-C9RR95 UniRef90_S4CZW3 UniRef90_Q9ZHE9
UniRef90 Q1JCG6 UniRef90_UPI0001E8975A UniRef90_UPI0003644F5C UniRef90_14X4W3
UniRef90-L0EOK5
UniRef90_G4SZA3
UniRef90_B8E258
UniRef90_UPI0002624A14
UniRef90_LOGX07
UniRef90_A1STP2 UniRef90_N0BBB0 UniRef90_K8E059 UniRef90-UPI0003682F61 UniRef90_V6F7X2 UniRef90_UPI00037E7DE7 UniRef90_W2BTE8 UniRef90_UPI0004788A4F UniRef90_W5WPQ6
UniRef90_UPI00028821A2 UniRef90_Q07HS5 UniRef90_B2A258 UniRef90_B0K3V6 UniRef90-D2QD41 UniRef90_B1GZT3 UniRef90_UPIO0036077FC UniRef90_M2W447 UniRef90_R7WPK1 UniRef90_UPI00036090B9 UniRef90_H0A4P5 UniRef90_UPI0003B5AEDB UniRef90_A6WFI6 UniRef90-V4Q5C1
UniRef90 C5WCB0 UniRef90_A6DME9 UniRef90_D1NSB2
UniRef90_C7RCQ9

50 60
$R L G Y G R G A R M T F E R D A V T V L S G D R H G S T L G G P D A D E D G N$ T RLGFGRSPRMGFETDHI E F L L G GVVRHGMTQGGPVAVQI ENA
 RLGAGRGARMKFEADEVTMLAGVRHGETLGSPIAVMIMNT RLGYGRGARMKFEADELSLLAGI RHGKTLGSPIAIIMIGNT $R L G A G R G S R M K F E A D E V V V L T G I R R H G S T L G S P V A V M I G N T$
 $R L G Y G R G A R M K F E E D E I R F L G G V R H G R T L G G P V A I V V V N T$ $R$ L GYGRGARQNFEADKVTILGGIRLGLTQGGPIAI QVGNS $R L G Y G R G A R M K F E E D K V R I L G G V R H G L T Q G G P V A L E I A N T$ $R L G Y G R G S R M K F E Q D K V R L L T G V R H G K T L G S P V A V V E I A N T$ QKGHGRGRRMQDEKDQVQI KSGVRHGKTTGAPITLVVENN QTGYGRGGRMLI EKDQVKILSGVRHGKTLGSPLTLVVENR
 $R L G Y G R G A R M K F E A D Q V T I L G G V R H G E T L G S P D A M Q V G N T$ QKGHGRGRRMLIEKDTARIVGGVRHGYTTGAPVAIVVENK QKGHGRGRRMQLEKDTVQVVSGVRHGYTTGAPVTLVVENN $R L G Y G R G A R M K F E K D E V T I I D S G V R H G V T L G S P V A I I H I A N T$

 RLGYGRGARMKFEADRLSFLGGMRHGVTI GSPLALQLINT $R L G Y G R G T R M L F E Q D K L R I L S G L R W G K T L G S P L A L E I A N S$ QK GHGRGRRMMQIETDEAQIVGGGVRHGKTTGAPVALVVENK




 $R$ R GK S R H T T Q R R E P D E V R
 $R$ RGHGRGARQKFEKDELTVL S $\begin{array}{ll}R & L \\ R & \text { Y G R G A R Q K F E Q D }\end{array}$ T L G Y GRGARMKFE Q G G Y GR G GRMK $\operatorname{ll}$ R QL GY GR GKR M T Ap K P GTSRFTTQRKEPDEVVQILS GVFEGMTTG QK GH GRGRRMQDE T D QVELVVSGVRHGYTDGSPI ALVVENN

 MKGHGRGRRMQDEKDEVKIVGGVRHGKTTGAPICLVVENK RLGYGRGAR QK FE A D E V T I L A GV R H GVVT T G A P I A I R I G N S $R L G Y G R G A R Q K W E A D R V R F L G G V R H G H T T G A P V A I L I E N S$ QK GYGRGGRMK DEKDKVVELSGIVRGGKTDGSPVVLLI KNR RP GQ GKVVT TARNEKD QVVI LIS GVVE GKTTGTPI SFVVVNE


 KPGTSRYTTKRREADEVRILSGVFEGKTTGTSIGVLIINT Q G GHGRGRRMQDEKDLVEIVSGVRHGKTLGSPVALVVMND

 Q $\square$ GYGRGKRME $Y E R D E V E \|$ $R P G Q S R H T T Q R Q E K D Q V E I L S G V$

## R

 APGRSRYTSQRREPDRVRILS K P GQNRFT TQRQEA D QVRI L S GVVF D GVVT T G

 QS GYGRGGRMK\EGDTVNFLGGVRQGVTTGAPIAFQIFNK

 QKGYGRGQRMCDETDTVKVFSGMRHTVSLGSPIAMYIA $K P G Q N R F T T Q R Q E A D L V K I V$
$R P G Q S R I V T P R K E Q D E A E ~$ R LGGYGGARMKFEADEVSI L
 $K P G T S R H V T Q R R E P D T V E I L$
 R PGMSPY
$K P G Q S S V$
$R L G Y G R G A$
$R L G Y G R G A R M K F E Q D Q V R M L T$
$R P G Q S S I T M R R D E S D Q V Q D M S$ ReGQS ST T R R DES D QVVQ\|MS GVVVGMT T G

## QUERY

UniRef90 D8HZD8
UniRef90－A4X607
UniRef90－U7JXB4 UniRef90－ $\mathrm{S3} \times 091$ UniRef90－UPI0003B3C28D UniRef90－UP1000381A602 UniRef90－UPI000378EE35 UniRef90－E3H2V4 UniRef90－UPI0003F52B3A UniRef90－UPI0004112F3C UniRef90－R2RYE4
UniRef90－O81C42
UniRef90－H5UV41
UniRef90－UPI0004079B5A
UniRef90－W7YN75
UniRef90－U4WYZ1
UniRef90－UPI0003B32F29 UniRef90－IOROH1
UniRef90＿UPIOOO46D22B6
UniRef90－UPI0003B42D28 UniRef90 W5IJK5
UniRef90＿UPIO0047D3E15 UniRef90－F5L726
UniRef90－U7JGE4 UniRet90－W2E2S3
UniRef90＿D5WQ16
UniRef90－×4QMB9
UniRef90－UPI0003772CFA
UniRef90－F2LVI7
UniRef90－W6M968
UniRef90－UPIO003B6C1C1 UniRef90－D2S9F9
UniRef90＿UPIOO0255830E UniRef90－K9EUI1 UniRef90＿S2WFB1 UniRef90－WTN544
UniRef90＿S7W2W9
UniRef90－UPI000363CD29 UniRef90－F3YAK0
UniRef90－UPI00047D3087 UniRef90－H8YYK2
UniRef90 H3NUG2
UniRef90＿UPIOO04737C90
UniRef90－S0J8Y7
UniRef90－UPI000262CD86 UniRef90－EODF64 UniRef90－U1 X065
UniRef90 EGKPD UniRef90 UPI0003FCF91A UniRef90－R1CXJ7 UniRef90－C9RR95 UniRef90－S4CZW3 UniRef90＿Q9ZHE9 UniRef90＿O1JCG6 UniRee90－UPI0001E8975A UniRef90 UPI0003644F5C UniRef90－14X4W3
UniRef90－LOEOK5
UniRef90－G4SZA3
UniRef90＿B8E258
UniRef90＿UPIO002624A14
UniRef90－LOGX07
UniRef90－A1STP2
UniRef90－NOBBBO
UniRef90－K8E059 UniRef90－UPI0003682F61
UniRet90＿V6F7X2
UniRef90－UP100037E7DE7
UniRef90－W2BTE8
UniRef90－UPI0004788A4F
UniRef90－W5WPQ6
UniRef90＿UPIO0028821A2 UniRet90－Q07HS5 UniRef90－B2A258 UniRef90－B0K3V6
UniRef90－D2QD41
UniRef90－B1GZT3 UniRef90－UPIO0036077FC UniRef90－M2W447 UniRef90－R7WPK1 UniRef90－UPIo0036090B9 UniRef90－HOA4P5 UniRef90－UPI0003B5AEDB UniRef90＿A6WFI6 6 UniRef90－V4Q5C1 UniRef90－C5WCBO UniRef90－A6DME9 UniRef90－D1NSB2

100
110
120
EWPK WETVMAADPVDPAELADVARNAPLTRPRPGHADYAG
EWPKWEQVMAADPVDPQILEGLARNEPLTRPRPGHADLPG
EWPKWRTVMAPDPVDSTELAGQARNAPLTRPRPGHADLAG
EWPKWEQVMSPDQVDPEVLASLARNAKLTRPRPGHVDLAG
EWPKWETI MAANPVDVDDPE IAKRGAQLTRPRPGHADFSG
EWPKWEQVMSPDEVAPQTLGSLARNEPLTRPRPGHADLAG
EWPKWEEAMSPGAVPAEVLAEQARNAPLRPRPGHADLAGG
EWPKWDRVMSPDPVDPAELEGMARAAKLTRPRPGHADFVG
EWPKWERVMSADPVPEEEI KDDARNAPLTRPRPGHADLVG
EWPKWTEVMSADPLD HELLPDGRNAPLSRPRPGHADLTG
DWKHWTKIMGADPIISEDEEKEMKR TITRPRPGHADLNG
DWKNWTNVMAAEDVD EKYKKRRQVDHPRPGHADLVG
DFKHWTKVMGAEPISEKESKDMKR TITKPRPGHADLNG
EWPKWETVMSPDPVPAEAPKEDARNRPLTRPRPGHADLVG
EWPKWETVMAADPVDPEVLAAQARGKALTRPRPGHADLTG
DWASWSSIMNVEPIEGSDEE KRRVHRPRPGHADLNG
DWTHWQKI MSATPVPEEDEA RRRVSRPRPGHADLNG
EWPKWEKVMNPDPVPAEETEGLARNAALTRPRPGHADMAG
EWPKWETVMSAAPVDADLLSGGRAAPLTRPRPGHADFTG
EWPKWEKVMAADPVPEDELEGMARNAPLRPRPGHADLAG
EWARWEAVMSPEPVPQEA乌QELARNRPLTRPRPGHADLVG
EWPKWEKVMSPELAAEDRPDAQGRNAPLTRPRPGHADLTG
DWKHWTTVMNVEPIEGGDEA KRRVHRPRPGHADLNG
DWQHWRNIMSVEPLDEAHVG RKRVTRPRPGHADLNG
EWPRWRTVMAADPVDSDDLSDQARATPLTRPRPGHADLVG
DWKNWTK】MGПEDVAEGDEA KRRVNRPRPGHADLNG
DWENWKTKMAVEGDPPPEAK MS PVVKPRPGHADLAG
EWPKWQTVMSADPVSPEDEREMSRNKPLTRPRPGHADLVG
EWPKWQTVMSPEPVEDADLGELARNRPLTRPRPGHADLVG DFENWKEMSP
DQRSKDYGNTKD

QFRPGHADYTY
DQRSKDYGDIKD
EWPKWQTVMSADPVDPEVLAGQARNAPDTRPRPGHADLPG
DQRSKDYANDSEQI
RPAHADYTY
EWPKWEAVMATDEVPAQDTRELARNKKLTRPRPGHADLTG
EWPKWEAVMSVDPVPPEDSQELARNKRLTAPRPGHADLTG
DQRSKDYGKIKKD
EWPRWVDVMSPVP DDPE DPK GRGAALTRPRPGHADLTG DWENWQDVMAAFGNSGYDQEEDTDKPKVTKPRPGHADLAG DWKNWSSIM EDEENSQTNEEKYRLNKPRPGHADLVG

DQKSKDYSKIKD
QRFRPGHADYY
DWKHWTK MMG DWKNWTKVMSi EEV EEKQKKLRRVARPRPGHADLVG DQRSKDYSNITKD VFRPAADYTY
EWPKWTTLMSADPDDPTDPEDSGRGAKDTRPRPGHADFAG
DWTHWQKIMSPEPVEEGE
EWPKWETVMSADPVDPRDDRETARNRPLTRPRPGHADLPG
EWPKWQIVMNPDPVSAEDAREVARNKPLTRPRPGHADLAG
DWENWKEVMST GDNIDNDKKVNSPRPGHGDLAG
DQHSNDYAEIAKWY
DWKNWQTVMSVEPVEEKD RT四RRSKPRPGHADLVG
DQRSQDYSEIKDL
DHQKWLDVMAVGDLSQEDETLKLKRRVKHPRPGHADLVG
DWKHWTKLMGIEPLSQEDQEEVKRK VTKPRPGHADLNG DQRSKDYSAIQDL FRPGHADYTY DWKHWTS DMGDEPDEDTEE VKRQПSRPRPGHADLNG
DQRSKDYSETMD
DQRSKDYSKIAES
DWENWKNVM
RFRPGHADYTY
DPEEDLEEKMVTKPRSGHADFAG
DQRSQDYSKTKDL DPEELEEKMVTKRPGHADYTY
DQRSKDYAEI AAKV
DQRSKDYSEIKDL
DQRSKDYGDIKDKY RPGHADFTY
DWVNWSD GMAPGPQAR四NE RVVSRPRPGHADLPG
DQRSRDYGRKDS
DQRSKDYGDIKDTY RPGHADWVY
EWPKWTTMMSPDPLDMEDPA DQARGAKLTRPRPGHADLPG EWPKWQQVMAPDPVGEEALSKLARNAPLTKPRPGHADLAG DYANWDEHMAPFGENDKD RQVTRPRPGHADLSG EWPKWTT円MSADP DDLSDEEVAKRGAKLTRPRPGHADFSG EWPKWTKVMSADPVDLDEEEVAKRGAKLTRPRPGHADGSG DQRSKDYSETKDKY
DYQNWKDEMNPSK DDSEEESQSKFNTQVTKPRPGHADLAG

DYENW
DQRSKDYGHTSE
NQKSKDYSHIKDSY
DFKNWTK TPMSRPRPGHADLPG
DQRSKDYGD AK GFRPGHADYTY
DQRPQDYDTVA VKYRPSHADATY
EWPKWETMMAADPVDPAEDDGQARNAPLTRPRPGHADYSG
DFNHWSQVMAVHEL EEHKKYLRQLTKPRPGHADLVG
DQRSKDYGDIA
DQRSKDYGNIAD
EWPRWSEVMAADTFRPGHADYTY
EWPRWSEVMAADPVDPGRLPARGRSAPLTRPRPGHADLTG
DQRSKDYGDTAR



## QUERY UniRef90_D8HZD8 UniRef90_A4X607 UniRef90-U7JXB4 UniRef90-S3X091

 UniRef90_UPI0003B3C28D UniRef90_UPIO00381A602 UniRef90_UPIO00378EE35 UniRef90-E3H2V4 UniRef90-UPIO003F52B3A UniRef90_UPI0004112F3C UniRef90-R2RYE4
## UniRef90-Q81C42

 UniRef90-H5UV41 UniRef90_UPI0004079B5A UniRef90-W7YN75 UniRef90-U4WYZ1 UniRef90_UPI0003B32F29 UniRef90-IOROH1 UniRef90_UPIO0046D22B6 UniRef90_UPI0003B42D28 UniRef90 ${ }^{-}$W5IJK5 UniRef90_UPI00047D3E15 UniRef90-F5L726UniRef90_U7JGE4 UniRef90-W2E2S3 UniRef90-D5WQ16 UniRef90-X4QMB9 UniRef90_UPI0003772CFA UniRef90-F2LVI7 UniRef90-W6M968 UniRef90-UPIO003B6C1C1 UniRef90-D2S9F9 UniRef90_UPIO00255830E UniRef90-K9EUI1 UniRef90-S2WFB1 UniRef90-W1N544
UniRef90- S7W2W9 UniRef90_UPIO00363CD29 UniRef90_F3YAK0 UniRef90_UPI00047D3087 UniRef90-H8YYK2 UniRef90-H3NUG2 UniRef90_UPI0004737C90 UniRef90_S0J8Y7 UniRef90_UPIO00262CD86 UniRet90_EODF64 UniRef90-E6KPD5 UniRef90_UPI0003FCF91A UniRef90-R1CXJ7
UniRef90 C9RR95 UniRef90-S4CZW3 UniRef90-Q9ZHE9 UniRef90-Q11JCG6 UniRef90_UPIO001E8975A UniRef90_UPI0003 UniRef90-LOEOK5 UniRef90_G4SZA3 UniRef90-B8E258 UniRef90_UPIO002624A14 UniRef90_LOGX07 UniRef90-A1STP2 UniRef90_N0BBBO
UniRef90_K8E059 UniRef90_UPIO003682F61 UniRef90-V6F7X2 UniRef90-UPI00037E7DE7 UniRef90_W2BTE8 UniRef90-UPIO004788A4F UniRef90_W5WPQ6 UniRef90_UPI00028821A2 UniRef90-Q07HS5 UniRef90-B2A258 UniRef90_B0K3V6
UniRef90-D2QD41 UniRef90-W8VRJ0 UniRef90-B1GZT3 UniRef90_UPIO0036077FC UniRef90-M2W447 UniRef90-R7WPK1 UniRef90_UPIO0036090B9 UniRef90-H0A4P5 UniRef90_UPI0003B5AEDB UniRef90_A6WFI6 UniRef90-V4Q5C1
UniRef90 C5WCB0 UniRef90-A6DME9 UniRef90_D1NSB2



## 

MLKYGFDDARPVLERASARETAARVAAGTVARAFLRQALG MQKYGFDEARPVLERASARETASRTALGTVARNFLKQLLD MQKYGHTDARPVLERASARETAARVAVGTVAKALLRQALGG $M Q K Y D W D E A R P V L E R A S A R E T A A R V V L G E F A K Q F L A Q G F G$ MVKYEHSDARNILERSSARETAARVACATVARNFLRQVLG MQKYDFDEARPILERASARETAARVALGTVAKNFLAQGLG MQKYDFDEARPILERASARETAARVALGAI AKAFLQQALG MQKYDFDESRPVLERASARETATRVALGTVAQRLLAE LGG MQKYNFSDARPVLERASARETASRVALGAVARSFLEQSVG MQKYNFSEARPVLERASARETATRVALGVVAAQVLKA L G MRKYGFDDARPVLERSSARETASRVALGAVAARFLEQSVG A MKYEHRDMRNVLERSSARETT $\quad$ RVVAVGAVAQK ILSE FG
 MQKYGFTDARPVLERASARETAARVALGAVAAAYLAQTAG MQKYDWAESRPILERASARETAARVALGRVAQNFLEQAYG GLKYNLKDLRNVLERSSARETAVRVACGSIARQLLESFG A KYHQRDMRNILERSSARETTMRVAVGAVARQLLSQ FG MQKFGFDEARPLLERASARETATRVALGRVAQHFLTQ LG MQKYGFDEARPVLERASARETATRVALGAIAQKFLSE LGG MQKYSHRDSRPVLERASARETAARVAGGALVKAFIKQAYG MTKYGFDEARPVLERASARETAARVALGAVAAAFLEQAAG MRKYGFNDARPVLERSSARETAGRVALGAVAAAFLEQAAG
 $M Q K Y D F D E A R P$ L L R A S A RETAARVGIAA VAKAFLAQSVG
 MNKYGFDSARPILERASARETAARVALGELAKQLLRQVAG $M Q K Y G F D E A R P I L E R A S A R E T A A R V A L G Q V A A N F L L Q A Y G$ Y $\square K Y D R S D M R D V L E R S S A R E T A D R V A A G A L C E A A L K E A F G$ QQKYGFRDYRGG GRSSARETAMRVAAGAI AKKYL RERYG
 WAKFGLRDYRGGGGRSARETAMRVAAGAMAKKWLKQQFG MNKYDHNDARNVLERASARETAARVALGAI AREYANQSAG HHKYGVRDYRGG GRSSARETAMRVAAGAIAKKFLA SHG MQKYDFSEARNVLERASARETAARVALGAI ARAFL DGLG G KYNQED RNILERASARETAMRVAVGAI AKTFLR NFG
 TMKYGQRDYRGG GRSSARETASRVAAGAVAKQVLKHLCG QQKYGVRDYRGGGGRSSARETAMRVAAGAVAKKWLSERYG A I K Y GHRDMRNVLERSSARETTVRVAAGAVAKQVLAQRFG


 MAA YDLDDARPVLERASARETAMRVALGAVAQKVLEQAYG AVKYNQTD $\square R N I L E R A S A R E T A M R V A I G G I A K Q L L K K A F D$ DLKYGFRDYRGGGRRSARET 1 GRVAAGAVAKAFLKTVAG GMKYGHHD LRNVLE


## 

## 

A

##  <br> \section*{}

## 

 ALKYGQRDYRGGGG $\begin{array}{llll}\text { QAKY GTR D } Y R G G G & G R \\ D & R K Y G T & R Y R G G & G R\end{array}$

## 

## -

 MOKYGl RDPRGGGGFAKYGVRDYRGG GR
$Y K K Y G I R D Y R G G G R$
DKKYGLRDYRGGGG
$M R K Y G F D D A R P V V L$

UniRef90_D8HZD8 UniRef90-A4X607 UniRef90_D7GDR4 UniRef90_U7JXB4 UniRef90_S3X091 UniRef90_UPI0003B3C28D UniRef90_UPI000381A602 UniRef90_UPI000378EE35 UniRef90-E3H2V4 UniRef90_UPI0003F52B3A UniRef90-UPI0004112F3C UniRef90-R2RYE4
UniRef90-Q81C42 UniRef90-H5UV41 UniRef90-UPI0004079B5A UniRef90-W7YN75 UniRef90-U4WYZ1 UniRef90_UPI0003B32F29 UniRef90-IOROH1 UniRef90_UPIO0046D22B6 UniRef90_UPI0003B42D28 UniRef90 ${ }^{-}$W5IJK5
UniRef90_UPI00047D3E15 UniRef90-F5L726
UniRef90_U7JGE4 UniRef90-W2E2S3 UniRef90-D5WQ16 UniRef90-X4QMB9 UniRef90_UPI0003772CFA UniRef90-F2LVI7
UniRef90-W6M968
UniRef90_UPI0003B6C1C1 UniRef90-D2S9F9 UniRef90_UPIO00255830E UniRef90-K9EUI1 UniRef90_S2WFB1 UniRef90-W1N544
UniRef90- S7W2W9 UniRef90_UPIO00363CD29 UniRef90-F3YAKO UniRef90-UPIO0047D3087 UniRef90-H8YYK2 UniRef90-H3NUG2 UniRef90_UPI0004737C90 UniRef90_S0J8Y7 UniRef90_UPI000262CD86 UniRef90 EODF64 UniRef90_U1 X065
UniRef90 E6KPD5 UniRef90_UPI0003FCF91A UniRef90-R1CXJ7
UniRef90-C9RR95 UniRef90-S4CZW3 UniRef90_Q9ZHE9
UniRef90_Q1JCG6 UniRef90_UPI0001E8975A UniRef90_UPI0003644F5C UniRef90-14X4W3 UniRef90_LOEOK5 UniRef90-B8E258 UniRef90_UPIO002624A14 UniRef90_LOGX07 UniRef90-A1STP2 UniRef90_NOBBBO UniRef90-K8E059 UniRef90_UPI0003682F61 UniRef90-V6F7X2 UniRef90-UPI00037E7DE7 UniRef90-W2BTE8 UniRef90_UPIO004788A4F UniRef90-W5WPQ6
UniRef90_UPI00028821A2 UniRef90_Q07HS5 UniRef90_B2A258 UniRef90-B0K3V6 UniRef9O-D2QD41
UniRef90-W8VRJ0 UniRef90-B1GZT3 UniRef90_UPIO0036077FC UniRef90_M2W447 UniRef90-R7WPK1 UniRef90-UPIO0036090B9 UniRef90-H0A4P5 UniRef90_UPIO003B5AEDB UniRef90-A6WFI6 UniRef90-V4Q5C1 UniRef90-C5WCB0 UniRef90-A6DME9 UniRef90-D1NSB2
UniRef90-C7RCQ9

VEVLSHVISTGASAPYEGPPPRAEDLPATDASPVRAYDKA VEILSHVVSI GGADAPEGPDPKAEDLAAI DESPVRAFSQE
 VEVLSHVISI GPSQPYDGPAPTPDDI DRI DASPVRAFGKD




 VEIA GHVTTLGGI AQ DPEKLTVAEVKERAEASEIVRVVPN VEI A GHVLEI GGVKAKHDSNLSIEEIQTIENSPVRCLDKE 1 RLVSHTVAVGGAGVSDDAPPGPGDVAALDADPVRASEAA I RILSHVVELGPVRAPAGLLPTMADLPRIDDDPLRCADPE
 I T TVG H TVVMGEVALS D GYFPTVGDVEALDADPLRCIDPD I EVVTHTVAMGAAISK SENDPS PNDLAYYLDADPVVCFDKA
 I QTVVCHVVSULGRAGVPDEQLPGPDDVAAVDADPVRTLDPR

 I Q I A S QV V R



 VEVVSHVVGIGPVVVPDGVVPGPGDNPRIDEDPVRCADPA

 i 1 LS RVVALGSVSDTSGIVPGPADAAALDTSPVRCLDED I QVRGYMSQLGPI EDE $I$ GLVSHTLSIGTVRAPQNSDPKPGDVATLDADDLLRCFDDE I EVAGHVLQVGRVALDKELDDIDDEIRERSEDSPLRCVDKE















 $V$ VVRGYLSALGP FALGLVDWPAVETNPFFCADPD
 1 TV LS SVV GL G GVEANYDRFPRMADLPQUDADPVRSFDP I EVLSHVVSI GTVA $\quad$ NNQEVK, D $\quad$ TLI SKADESPVRCVDQE

 I FVKSKVLEI G GI

 MEI L GYVQRVKD VEVLSHVVSIGGSTPYTGPVPGIGDGAAIDASPVRAFGEE $\begin{array}{llll}1 \\ I V & F H H \| T I F G G M T \square D S D E L T Y Q E D K D K A G Q S D L S D A N E A \\ T V & R G A V Q M G A & D S D D R A H F D F A Q V D Q N P F F C P D P T\end{array}$ IVI RGH ITQQGDTEDPFVSWDEV AEVVSHVVSLGTVDAPAGVVPGRGARDAVDADPVRCVDPT $\begin{array}{llll}1 & Q V R A \\ V & R V Q L G V Y K V & D R A N W D W A Q T A E N P F F S P D A A ~ \\ V & R G Y L S T M G D I I C E & F K G W D N V E K N N F F C P D P N ~\end{array}$ $V$ KI RGYLSTMGDIICE

 UniRef90_UPIO0046D22B6 UniRef90_UPI0003B42D28 UniRef90 ${ }^{-}$W5IJK5 UniRef90_UPIO0047D3E15 UniRef90_F5L726
UniRef90_U7JGE4 UniRef90-W2E2S3 UniRef90-D5WQ16 UniRef90-X4QMB9 UniRef90_UPI0003772CFA UniRef90-F2LVI7 UniRef90-W6M968 UniRef90-UPIO003B6C1C1 UniRef90-D2S9F9 UniRef90_UPIO00255830E UniRef90-K9EUI1 UniRef90-S2WFB1 UniRef90-W1N544
UniRef90- S7W2W9 UniRef90_UPIO00363CD29 UniRef90_F3YAK0 UniRef90_UPI00047D3087 UniRef90-H8YYK2 UniRef90-H3NUG2 UniRef90_UPI0004737C90 UniRef90_S0J8Y7 UniRef90-UPIO00262CD86 UniRef90-EODF64 UniRef90_U1 X065
UniRef90 E6KPD5 UniRef90_UPI0003FCF91A UniRef90-R1CXJ7 UniRef90-C9RR95 UniRef90-S4CZW3 UniRef90-Q9ZHE9
UniRef90-Q1JCG6 UniRef90_Q1JCG6
UniRef90_UPI0001E8975A UniRef90_UPI0003644F5C UniRef90_I4X4W3 UniRef90-L0E0K5 UniRef90_G4SZA3 UniRef90-B8E258 UniRef90_UPIO002624A14 UniRef90_LOGX07 UniRef90-A1STP2 UniRef90_NOBBBO UniRef90-K8E059 UniRef90-UPIOO03682F61 UniRef90-V6F7X2 UniRef90-UPI00037E7DE7 UniRef90_W2BTE8 UniRef90_UPIO004788A4F UniRef90-W5WPQ6 UniRef90_UPI00028821A2 UniRef90-Q07HS5 UniRef90_B2A258 UniRef90-B0K3V6
UniRef90 ${ }^{\text {D2QDD41 }}$ UniRef90-W8VRJ0 UniRef90-B1GZT3 UniRef90_UPI00036077FC UniRef90-M2W447 UniRef90-R7WPK1 UniRef90-UPIO0036090B9 UniRef90-H0A4P5 UniRef90_UPI0003B5AEDB UniRef90_A6WFI6 UniRef90-V4Q5C1
UniRef90 C5WCB0 UniRef90-A6DME9 UniRef90-D1NSB2
UniRef90_C7RCQ9
A
,

A




## V

A

210
220
230
240
$G$
AEADMTA Q TVAAKKDGDTLGGVVEAVALGLPVGLGSFTS G GTDAMVAEVDAVRKAGDTVGGVIVVLAYGLPPGLGSHVHW ASVRMVAEVDAAKKDADTLGGVVEVLAYGVPPGLGSHVQW ASAAMQAEI EQCRKDGDTLGGVVEVLAWGCPPGLGSMREG A EESMVSEI EAAKKAGDTLGGIVEVVVDGDPDGLGSHVSG ASERMQQEVADCHAAGDTLGGVIEVI AWGCPPGLGSHTQW


 AEQKMMNAIDEAKKNGDSIGGVVEVVATGLPSGLGSHVHY VEEAMKELI DATKAKGDTI GGVVEVLAAGVPAGLGSYVQW VEQEMMNA DNAKSSGDSIGGIVEVVAEGMPDGVGSYV HY GSAAMVAEIDAAHKSGDTLGGVVEVLAYGCPPGLGSHVHW

 DSDAMVAEIDDCHSTGDTVGGVCETLVYGCPPGLGSYVHS ASARMVAEVDAAKKDANTLGGVAEVI GFNVPPGLGSHVQW LSAAMVAEVDAARGDGDTLGGVVEVLAYGLPPGLGSHVHW AEEKMVQAI DQAKKSGDTLGGIVEVLAYGVPAGLGTYAEA AEQKMMDLIDKTKADGDSIGGIVECI IEGLPVGLGSHVQW AAQKMMQVIDKAKAEGDSVGGIVEVIVYGVPVGLGSHVHW AEFQMVAAll DAAKAEGDTLGGIVVEVIVEGVPVGLGSHVQW AAEKMVEAI DQARREGNTLGGVFEVVALGVPPGLGSYAHP LAAAFRGEIDSAKADGDTLGGVVEVVAWGVPQGLGTHVRG GSAAMVAAVDAARKAGDTLGGVVEVLAYGLPPGLGSHVHW TSDDMMIAEIEKAKAEGDSVGGSIVEVVARGVVAGLGSYSFY QIVALEQFMDADRKSGDSIGARVTVVASGVPVGWGEPVFD MAEIWAARLDEARKNGSSLGAVVEVVAQGLPAGLGEPVYD TSAVMVA EVDDARKNGDTLGGVVEVVVHGLPPGLGSHVHW
 TARAMMEEVDRAKKAGDTLGGVVEVLAYGVPQGLGSYATP Ti





 DNDRFEAAVDEAKRAGDTIGGVVEVIAYDVPVGLGSHVTA SSKKMVAAI DAAKKSGDTLGGVVEVIVQGVPL GAGTHVQA TENKII KKI DEAKKQGDTLGGIVELI AVNVPIGLGSHVNW
 KVF QLE ELI KK LLKKTGDS

## V

## 

$$
7
$$


 A AEQMAEFLDALRKEGDSIGARVDARVTGMPTGLGEPVFD
 A A ELWADYLDKIRKDGSSIGAVVEVIAEGVPAGWGAPLYG A EAEMVKELDQAKAEGDSLGGVFEIDAYGVPPGLGSHVHW RVPELEAYMDQLRRDGDSAGAAVTVVAEGLPVGLGEPVFD TVPVWEKFLDGVRKAGSSTGGVVEVTASGVPVGLGAPVYD
 TEEAMMEAI DLAKKEGDSLGGVFEI HITGVPVGLGSYVHW

 TV
$T$ AAKE WET AGAEMIIA E D
 KVPE LEAYMDS $\quad$ R K S Q D S I GACL ASAAMVAEIDEAHTQGDTLGGVVEVV者 S V P A WE D Y L D G I R K A G S S I G A V V V V V A D GV P A GW G A P L Y A
 A E Q A MMQR I D QAK Q D A D T L G GVV EVI A Y

## QUERY

UniRef90_D8HZD8 UniRef90_A4X607 UniRef90_U7JXB4 UniRef90-S3X091 UniRef90_UPI0003B3C28D UniRef90-UPIO00381A602 UniRef90_UPIO00378EE35 UniRef90-E3H2V4 UniRef90_UPI0003F52B3A UniRef90_UPI0004112F3C UniRef90-R2RYE4

## UniRef90-Q81C42

UniRef90 UPIO004079B5A UniRef90-W7YN75 UniRef90-U4WYZ1 UniRef90_UPI0003B32F29 UniRef90-IOROH1 UniRef90_UPIO0046D22B6 UniRef90_UPI0003B42D28 UniRef90 ${ }^{-}$W5IJK5 UniRef90_UPI00047D3E15 UniRef90-F5L726
UniRef90_U7JGE4 UniRef90-W2E2S3 UniRef90-D5WQ16 UniRef90-X4QMB9 UniRef90_UPI0003772CFA UniRef90-F2LVI7
UniRef90-W6M968
UniRef90-UPIO003B6C1C1 UniRef90-D2S9F9 UniRef90_UPIO00255830E UniRef90-K9EUI1 UniRef90-S2WFB1 UniRef90_W1N544
UniRef90_S7W2W9 UniRef90_UPIO00363CD29 UniRef90-F3YAK0
UniRef90_UPI00047D3087 UniRef90-H8YYK2 UniRef90-H3NUG2 UniRef90-UPIO004737C90 UniRef90_S0J8Y7 UniRef90_UPIO00262CD86 UniRef90_EODF64 UniRef90-U1X065
UniRef90-E6KPD5 UniRef90_UPI0003FCF91A UniRef90-R1CXJ7
UniRef90-C9RR95
UniRef90-S4CZW3
UniRef90_Q9ZHE9
UniRef90_Q1JCG6
UniRef90_UPI0001E8975A
UniRef90_UPI0003644F5C
UniRef90-14X4W3
UniRef90-LOEOK5
UniRef90-B8E258
UniRef90_UPI0002624A14
UniRef90_LOGX07
UniRef90-A1STP2 UniRef90_NOBBBO UniRef90-K8E059 UniRef90-UPI0003682F61 UniRef90_V6F7X2 UniRef90-UPIO0037E7DE7 UniRef90-W2BTE8 UniRef90_UPI0004788A4F UniRef90-W5WPQ6
UniRef90-UPI00028821A2 UniRef90_Q07HS5 UniRef90_B2A258 UniRef90-B0K3V6 UniRef90-D2QD41
UniRef90 W8VRJ0 UniRef90-B1GZT3 UniRef90_UPIO0036077FC UniRef90-M2W447 UniRef90-R7WPK1 UniRef90_UPI00036090B9 UniRef90-H0A4P5 UniRef90_UPI0003B5AEDB UniRef90-A6WFI6 UniRef90-V4Q5C1
UniRef90 C5WCB0 UniRef90-A6DME9 UniRef90-D1NSB2
UniRef90_C7RCQ9 A

250
260


280
D
DHRLDSQLA
A A
VMG
QA 1 KG V E IG DGFQTARRRGSRAHDE DRRLDARLAGALMGVQAMKGVEVGDGFTTARRWGSQAHDE
 DTRLDARLASALMGI QAI K GVEI GDGFDLASVRGSQAHDE HTRLDAQLAAALMSI DRRLDAKLAAALMSI DRKLDAKLAYALMGI D DKKLLD DSKLDGKLAQGVMS
 D DRRLDSKLAGALMGL DRRLDSQLA GAVMGI DRKLDARLA A ALMSI DRRLDARLAAALMGI DRRLDGAL A GALLMS DRKLDGRIAQAVVSI
 DRKLDGRI A QAAVLSI


 KLDADLAKAMMS
RLD S RLLAGALLMGV
 GGRLDALAGAMMSV YGRLDAELARAMMSI
 DQKLDAKI AQALMSV

## 

 DRKLDAKIAAAVMS D K K Lid D A K I A A A V VD RK R R DKKL D A K L A Q Alv L S i D R K L D A K V A A A I M S


D K


D R

RLDAELARALLMGI
KLDADLAKAMMSI


DERLD D S QLA A A AlVMGI

HRKLDGLLAGALMGL
DRKLDALLAYHVMSV
KLHAELGKAMLSI NAV
KLHADLGKAMLSI
D LKL D GRLA Q S LI S K L D S D L A K K A M M S I
AFRLEAELAKACMS

| $A$ | $E$ | $R$ | $D$ | $A$ | $R$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $D$ | $R$ | $K$ | $A$ | $A$ | $M$ | $M$ |
| $D$ | $G$ | $K$ | $A$ | $A$ | $A$ |  |


D

NAVKGFEYGSGFAGVALRGSQHNDE
QAVKAVEFGAGTKLASLLGALSHDE
 QA $\square K G V E V G D G F E T A R R R G S G A H D E$ NAFKGVEFGLGFESAHLTGSQVMDE
 QAIKGVEVGDGFETARRRGSQAHDE

KLKKADLS KA I M S
D R


QUERY
UniRef90_D8HZD8
UniRef90_A4X607
UniRef90_D7GDR4
UniRef90_U7JXB4
UniRef90_S3X091
UniRef90_UPI0003B3C28D
UniRef90_UPI000381A602
UniRef90_UPI000378EE35
UniRef90_E3H2V4
UniRef90_UPI0003F52B3A
UniRef90_UPI0004112F3C
UniRef90_R2RYE4
UniRef90_Q81C42
UniRef90_H5UV41
UniRef90_UPI0004079B5A
UniRef90_W7YN75
UniRef90_U4WYZ1
UniRef90_UPI0003B32F29
UniRef90_I0R0H1 UniRe990-IOROH1 UniRef90-UPIOOO46D22B6 UniRef90-UP10003B42D28 UniRef90 W5IJK5 UniRef90-UPIO0047D3E15 UniRef90-F5L726
UniRef90-U7JGE4 UniRef90 W2E2S3 UniRef90 ${ }^{-D 5 W Q 16} 6$
UniRef90 UniRef90_UPI0003772CFA UniRef90-F2LVI7 UniRef90_W6M968 UniRef90-UPIOOO3B6C1C1 UniRef90 D2S9F9 UniRef90-UPIOO0255830E UniRef90-K9EU11 UniRef90_S2WFB1 UniRef90-W1N544
UniRef90
S7W2W9 UniRef90-UP1000363CD29 UniRef90-F3YAK0 UniRef90-UPIOO047D3087 UniRef90-H8YYK2 UniRef90-H3NUG2 UniRef90-UPIOOO4737C90 UniRef90-S0J8Y7 UniRef90OPPIOOO262CD86 UniRef90-U1X065 UniRef90-E6KPD5 UniRef90-UPI0003FCF91A UniRef90-R1CXJ7 UniRef90-C9RR95 UniRef90_S4CZW3 UniRef90-Q9ZHE9
UniRef90 O1JCG6 UniRef90-UPI0001E8975A UniRef90_UPIo003644F5C UniRef90-14X4W3 UniRef90-LOEOK5 UniRef90-G4SZA3 UniRef90- B8E258 UniRef90_UPIO002624A14 UniRef90-LogX07 UniRef90-A1STP2 UniRef90 NoBBBO UniRef90-K8E059 UniRef90-UPIOO03682F61 UniRet90_V6F7X2 UniRef90-UPIO0037E7DE7 UniRef90-W2BTE8 UniRef90-UPIOOO4788A4F UniRef90-W5WPQ6
UniRef90-UPI00028821A2 UniRef90-Q07HS5 UniRef90-B2A258 UniRef90-BOK3V6 UniRef90-D2QD41 UniRef90-B1GZT3 UniRef90-UPIOOO36077FC
UniRef90- M2W447 UniRef90-M2W447 UniRef90-UPI00036090B9 UniRef90-HOA4P5 UniRef90-UPI0003B5AEDB UniRef90-A6WFIG UniRef90 $V 4 \mathrm{OSC1}$
UniRef90 UniRef90-C5WCBO
UniRef90_A6DME9 UniRef90_D1NSB2
UniRef90_C7RCQ9
 PKALSTVDVKTGEPAVAI HQRSDVCAVPRAGVVLESVVAL

PRAGRSFDMNTGKSSTADHQRSDVCAVPAAGVVAEAMMAL


 PKALRTVDVLNGEAAQA RNQRSDSTAVPAASVVAEAMVRLD YKPVKSVD NTKET胃KASVERSDSTAVPAASVVAENVTAT YKPLASVDVDTKEAFQASIERSDSCAVPAAGVVAESVVAW
 YKPLMSVDIDTKEPFAATDERSDSCAVPAASVVAEAVI AW PRALQTVDLATGQATKAHHQRSDVTAVPASGVVAEAMVAL


 YKPLQSVDIDTKQPFEASVERSDSCAVPAACVVMENVVAW
 YKPLRSVDIHSKESFQASVERSDTCAVPAAAVVGEAMTAW PRALQTIDVANGEAATALHQRSDVCAVPAAGVVAEAMVAL KKGLKSVDVDTHKEELSAFERSDVCAVPALSUVAKAAVAF HGPGRTVNLHGEPVTVVTKGRHDPCVGVRATPIVEAMLA PRALATVDVATGEPAVADNQRSDACAVPRGAVVMEAMVA
 PRALLRTVDTETGEATTALHQRSDASAVVPGAVI CEAMMALC PRALRTVDVAGGEAAVAHHQRSDVCAVPAAGVVAEAMVAL


 YKPLKSVDVETKEADVVTTGRHDPCVGL YKP

## P


Y


 R Q S G N T I N K N N E K V K V V I K G R H D P C V G I R A V Pi A E A MV A I



 R RPLLK T FDI K E K K I T D GYYERS DVCVVVPA A GVVVGESMLAF


## Y

| T |
| :--- |
| $\mathrm{L} A$ |
| Y A |
| R | |  | $L$ | $L$ | $V$ | $D$ | $L$ | $H$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $T$ | $K$ | $E$ |  |  |  |
| $L$ | $P$ | $R$ | $S$ | $V$ | $D$ | $V$ |
| $T$ | $G$ | $A$ | $P$ |  |  |  | LIP K K S V D R H G N D $\quad$ DIE




 LK P L N S I DI N S K K Q VIK A A Y E R S D V T A V E A A A C V L E A V C A W










VLARAALEKFGGDSDAETQRNDAAYQRSVA90 I LADAALEKFGGDSLAESKRNADAYLKALEER VLAEAAV KKFGGDSVVEQRRNLDAYKDALVVR $V$ VAQACLEKFGGDSLSETRRNYLAYLKRLRDR VLA QAVLEKFGGDSVAETRRNFQAYQESVDKR
 $V L A Q A V L E K F G G D S V A E V Q R N D R T Y L E A L P L D R$ VLAEAVLEKFGGDSVTETRRNFTSYMQNL
 ELAKGFLEKFGGDSMNDVRKAYEAYSKKARE ILAEALMEKFGHDSFDELKAAVAEYRAYLK ELA DA LVEQFGKDRMELLKQNI MQHNNYAKE VLA A VVALVKFGGDSVAETRRNLESYKGESVRSR E A K AFLEKFGGDSMEEVRANYDNYLS QLEN EIA RAMCEKFPSDADDDMVANVEEYRAYTER VI ANAVVLEKFGGDSVVEVVLRNMNSYLESIM VI A EAALEKFGGDNIVETSRNAAGYLNGLA VLADAVLEKFGGDSVAEVARNRAAYLAAVPE VLA QFVLEKFGGDSLAEVRRNDDGYLRSWPQ EVAAKAFIEKFGGDSMEEIEANVRNYLSQLE VLADAVLEKFGGDSVAETTRNYEAHLARLAE

$V L S E A L V E K F G G D S L S E I T R N D R T W W Q T I P E$ VVAEACVEKFGGDSVAETRRNYENYLLANIP ELL $\square N A Y$ A VLMDHALRHRAQN
VLADHLLRHRGQ
VLADAALEKFGGDSVAETRRNARAY LDADS $\square R$
VLVDHVMRQRAQN
TLAEFVAEKFGGDS $\operatorname{T} A E M R R N M R G F D D S \prod P E$ VLAEAI QDKFGGDTLGDTQAAVRAYLDRIPE TLMDHYLRHRAQNAEVEV
TLANSVLEKFGGDSLGETKRNLDSYLAADPD
ELAKVFLEKFGGDSUEEDRTNYENYLAMVRER
EIAKALLDKFSNDSFAQMKKSVQNYREYTK
EIIADGFLEKFGSDTMEDDHKSYEAYMKEARE
VLADHLLRHRGQN
VLMDHALRQRGQN
ELASATVEQFGQDQDETTAENTKQMREYAR
VVANE ILEKFSSDSFEELVQAVKEYREYLKN VL $\quad$ DHALRHRGQN
VVARAVLQKFGGDSLGETKRNDAAYQEHVARR
TLAADALCEKFAGDSLGE MKANYESYLRHVEE
VLADALFEHAGGRSVTEMRRNDAAYLRRVGER TLLQVLLEHTGGFSLKQVQDSVAAYVATLRSR VLAKEFVNKFGGDSIEEMLSNYKRYIQYVDKR $\checkmark \mathrm{V}$ A D $\mathrm{L} Y \mathrm{~L}$ QQ
EI A K AFLDKFPADTDEELQQAVQDYRARD
VLMDHLLRFRAQC
VLAKEILETFSSTTMSEDQKAFSDYRAYVKQ
EI A QA IVVERGQDRMDLI KENVQRMREHAA
VLMDHYLRNMAQNH
EVANALLDQFDADQMPRLSDNLKNYMRYMKE
VLMDHALRHRAQNT DVRTGIPAYTEVLAN
VLMDHLLRHRAQN
VLA KEFLNKFSGDH $\square$ S E $\square$ KES FEKYKKYVYER
TLLMDWMRQRAQN
VLMDHLLRQRAQN
TLLDHLLRHRAQN
VLVDHFLRHRGQ
ELAAALAEKFGGDS $\square$ AE $\square K E R V N R W R Q L V R Q$
TLMDHYLRHRAQN
TLADHLLRHRAQCGLS
VLARAVLQKFGGDSLEETLRNVQATQRAVAQR
VIAELAI EKFGGDSLVETKRNFHSYLRQIADR II I GEEFL RKFGGDSLEE IIDKRWKDYK
VLARAVLKKFGGDSLEETRRNYQAYLDYCTEK VLADAVAEKFGGDSVVE $\square Q R N \square R G Y L E T L$
VLADHLDRHRGQ
ELAKVVKEKFGSDSTDELRRNYQAYFEYLDTR
VIADECLKKGGGDSUE ELKKNYDAYLEYVKN
VLADMYLR
VLADHFLRN
ELAKA LKEKFGGDS $\square$ K D MKKNVN $\square$ YKER $\square K$
TLADHWLRHKAQCR
VMVDQLMQQRAQSFLPFRKESITFH
VVAQAALEKFGGDSLAETAGNFRRYAETVAER VLASEVLETFASDNMTA $\square K Q S F N S Y K E R L K$
VLADHLLRHRAQNPDAPTRPRL
VL DD HALRHRAQC
VLADAVLEKFGGDTVAQVRANVASY $\square$ DG $\square T \square R$
IVLLDA
VIID HLLRHRAQCS
VI ADHLLRWRAQC



## UniRef90 Q5FPG9 UniRef90－UPIO0035DD7C7 UniRef90－E4L4U9 UniRef90－13YYW5

 UniRef90 UPI0003752D94 UniRef90－S6GPZ1 UniRef90－R5M687 UniRef90－H1LFA8 UniRef90＿UPI00041DF108 UniRef90－A9HOU2 UniRef90 R7CCY4 UniRef90＿G8R8L2 UniRef90－P46894UniRef90－D4YIK4 UniRef90－R11RM5 UniRef90－F8E4Q2 UniRef90＿C4R1A7
UniRef90 MORN83 UniRef90－L8JT84 UniRef90－XOT6W3 UniRef90－M7POHO UniRef90 A6L3DO UniRef90－K7A4Z4 UniRef90－R6JBE5 UniRef90 UPI000408A621 UniRef90＿K2KFX2 UniRef90＿O3A2N5 UniRe90 UniRef90－AONR15 UniRef90－C8W223 UniRef90－G5K3U3 UniRef90－V5XMG2 UniRef90－X2H2F3 UniRef90－UPIOOO2558634 UniRef90－Q3AEF4 UniRef90＿UPIIOOO47E97D1 UniRef90－UPI0002892A27 UniRef90－UP10004119685 UniRef90－A7IMW7 UniRef90＿S7UPU7 UniRet90＿N2ABZ0 UniRef90－Q0AZJs UniRef90＿UPIO0029B090B UniRe990 R5P3D5 UniRef90－R6MEV8 UniRef90－A4WWC0 UniRef90－A4CL23 UniRef90－UPIO0047B11D5 UniRef90－UPIO00288CBC3 UniRef90 R7H749 UniRef90－UPI00047EBE6D UniRef90－E8X3K5 UniRef90－R60100 UniRet90 M7NW12 UniRef90＿S3A1V2
UniRef90＿D7DN53 UniRet90＿W1TV28 UniRef90＿O8TT87 UniRef90－UPIOOO469F120 UniRef90－Q7VRU6 UniRef90＿10JNA5 UniRef9－K9GY69 UniRef90－UP100036FCDOD UniRef90＿G2Z701 UniRet90－G1W8S8 UniRef90－UPIO003B52474 UniRef90－D4W8K2 UniRef90－UPIO0034B1713 UniRef90－UPIO0037D5FOF UniRef90＿Q83D67 UniRef90－R5DN40
UniRef90 V8A7D6 UniRef90－D3NWT1 UniRef90－I4AQ49
UniRef90－E8RD98 UniRef90－UPIO0036CC79A UniRef90 A0A033 V4D3 UniRef90＿R5JWA7
UniRef90＿A6E912 UniRef90－S2Z2S4 UniRef90－O2RR25 UniRef90－D8U7P2
UniRef90 FOSFS5 UniRef90－D9QRX2 UniRef90－L1N5Y0 UniRef90＿F6C．JP3


a

## K <br> R R R R

R
，

## \section*{}

Q

## 

## O

：


K



RPGQSRFTT 50 QRREPDQVRILSGVIFEGQTTGTPISLIMI ENT KPGTSKFTTQRREPDQVKI LSGVFEGVTTGAPI GLLIENQ QGGYGRGARMRIDEDRVSITSGLRHGKTTGAPI TMI I TNK QGGQSEIVTQRKEEDEVKFLSGIFEGKTTGTSI

## K A

スロカフロース

QK GY GR GRRMQQIEKDEA I I T G KPGQSRFTTQRREPDEVKI SGVMVDKTTGTP

 QKGYGRGRRMODEKDTAQUVSGVRHGYTLGSPVSMVVFNT QQGYGRGGRMR EKDTAHLSGVRHGKTVGAPVAMTLANV QQGYGRGGRMQLETDRVKILSGVRFGKTTGAPVCLEIQNK RLGYGRGARMKFEADEVTLVGGFRYGHTLGS KPGTSRHVTQRQEADSVEI LSGVEEGKTTGAP RAGYGRGARQKFEQDRAHLVGGVDRGKTTGAP RPGQSEVSTPRSEADRVEILSGIFEGMSTGTP



 SMLVWNS













$\stackrel{80}{T}$

 Bab fotak $R$
R
K
$R$


 UniRef90-E4L4U9 UniRef90_I3YYW5 UniRef90 UPI0003752D94 UniRef90_S6GPZ1 UniRef90_R5M687 UniRef90-H1LFA8 UniRef90_UPI00041DF108 UniRef90-A9HOU2 UniRef90_R7CCY4 UniRef90_G8R8L2 UniRef90-P46894
UniRef90-D4YIK4 UniRef90-R1IRM5 UniRef90_F8E4Q2
UniRef90_C4R1A7 UniRef90-MORN83
UniRef90_L8JT84 UniRef90-X0T6W3 UniRef90-M7POHO UniRef90_A6L3D0 UniRef90-K7A4Z4 UniRef90-R6JBE5 UniRef90_UPI000408A621 UniRef90_K2KFX2 UniRef90-Q3A2N5 UniRef90_UPI00039F41FA UniRef90_AONR15 UniRef90-C8W223 UniRef90-G5K3U3 UniRef90-V5XMG2 UniRef90- $\mathrm{X2H} 2 \mathrm{~F} 3$ UniRef90_Q1N6H5 UniRef90_UPIO002558634 UniRef90_Q3AEF4 UniRef90_UPIO0047E97D1 UniRef90-UPIO002892A27 UniRef90_UPIMOW4 UniRef90-S7UPU7 UniRef90-N2ABZO UniRef90-Q0AZJ3 UniRef90_UPIO0029B090B UniRef90_R5P3D5 UniRet90-E0WT08 UniRef90-A4WWC0 UniRef90_A4CL23 UniRef90_UPIO0047B11D5 UniRef90_UPI000288CBC3 UniRef90-R7H749 UniRef90_UPI00047EBE6D UniRef90_E8X3K5 UniRef90-R6Q100 UniRef90_M7NW12 UniRef90_S3A1V2
UniRef90_D7DN53 UniRef90-W1TV28 UniRef90-Q8TT87 UniRef90-UPI000469F120 UniRef90-Q7VRU6 UniRef90-IOJNA5 UniRef90-K9GY69 UniRef90-K8Z896 UniRef90_UPIO0036FCDOD UniRef90_G2Z701 UniRef90-G1W8S8 UniRef90_UPI0003B52474 UniRef90-D4W8K2 UniRef90_UPI00034B1713 UniRef90_UPI00037D5F0F UniRef90_Q83D67 UniRef90-R5DN40 UniRef90-V8A7D6 UniRef90_14AQ49 UniRef90-E8RD98 UniRef90_UPI00036CC79A UniRef90_A0A033V4D3 UniRef90_R5JWA7
UniRef90_A6E912 UniRef90-S2Z2S4 UniRef90-Q2RR25 UniRef90-D8U7P2 UniRef90-FOSFS5 UniRef90-D9QRX2 UniRef90_LNSYY
UniRef90_F6CJP3
258634
7E97D1
1196855

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




## 

 DLKYGI RDYRGGGGRSSARETAMRVAAGAVARRVLGEAFG
 HLKYGI QAPSGGGRASARET DGRVAAGAI AKQLLQKVQN GIKYGFKDDRNVLERSSARETTMRVAVGSIAQQIL DGLD HQKYGHRDYRGG GRSSARETAMRVAAGAIAKKYLKQEFG FMKYGlRDYRGG GRSSSRETDGRVAAGAVAKKLLSLKD LQKYGIK ASSGGGRSSARETVGRVAAGAVAEKFLKQLNN
 A I K Y GFKDVRKVLERASARQTAMRVADGSVVSSLLEE FN


 | V |
| :--- |
| G I |
| D |

,
D
D
Q
G
$H$

## A G D A


 $M V K Y G A T D A R D D L E R S S A R E T A A R V A V G E V A K Q F L V Q A A G$
 $M A R Y G I R D H R G G G R S S A R E T D G R V A G G A L A K$ LLLLSRYG




 $D A K Y G F R D Y R G G G$
$A D K Y G H R D L R N V L$
,

D L Q


## \section*{D}

$K Y H R D L R N V L G$
$\begin{array}{lll}D A K Y G \square R D H R G G & G R \\ D S K Y G F R D Y R G G & G R\end{array}$

 AIKKGHRDLRNVLE



DAKYGFRDYRGGGR


UniRef90 Q5FPG9

## UniRef90_UPIO0035DD7C7 UniRef90-E4L4U9

 UniRef90-I3YYW5 UniRef90_UPI0003752D94 UniRef90-S6GPZ1 UniRef90_R5M687 UniRef90 H1LFA8 UniRef90_UPI00041DF108 UniRef90-A9HOU2 UniRef90-R7CCY4 UniRef90-G8R8L2 UniRef90-P46894 UniRef90-D4YIK4 UniRef90-F8E4Q2 UniRef90-C4R1A7 UniRef90-M0RN83UniRef90-L8JT84 UniRef90-XOT6W3 UniRef90-M7POHO UniRef90_R6KDL0 UniRef90-A6L3D0
UniRef90 K7A4Z4 UniRef90_R6JBE5 UniRef90-UPI000408A621 UniRef90_K2KFX2 UniRef90-Q3A2N5 UniRef90_UPI00039F41FA UniRef90-UPI000377AB6F UniRef90-AONR15 UniRef90-C8W223 UniRef90-G5K3U3 UniRef90-V5XMG2 UniRef90-X2H2F3 UniRef90-Q1N6H5 UniRef90_UPIO002558634 UniRef90-Q3AEF4 UniRef90_UPIO0047E97D1 UniRef90_UPI0002892A27 UniRef90-UPIO004119685 UniRef90-A7IMW7 UniRef90-S7UPU7 UniRef90_N2ABZ0 UniRef90_Q0AZJ3 UniRef90_UPIO0029B090B UniRef90_R5P3D5 UniRet90-E0WT08 UniRef90_A4WWC0 UniRef90-A4CL23 UniRef90_UPI00047B11D5 UniRef90_UPIO00288CBC3 UniRef90-R7H749 UniRef90_UPI00047EBE6D UniRef90-E8X3K5 UniRef90-R6Q100 UniRef90-M7NW12 UniRef90-S3A1V2 UniRef90-D7DN53 UniRef90-W1TV28 UniRef90_Q8TT87 UniRef90_UPIO00469F120 UniRef90-Q7VRU6 UniRef90-IOJNA5 UniRef90-K9GY69
UniRef90 K8Z896 UniRef90-UPIO0036FCDOD UniRef90-G2Z701 UniRef90-G1W8S8 UniRef90_UPI0003B52474 UniRef90_UPI0002E853F1 UniRef90-D4W8K2 UniRef90_UPI00034B1713 UniRef90_UPI00037D5F0F
UniRef90_Q83D67
UniRef90-R5DN40
UniRef90-V8A7D6
UniRef90-D3NWT1
UniRef90-I4AQ49
UniRef90-E8RD98
UniRef90-ERRD98
UniRef90-UPI00036CC79A
UniRef90-A0A033V4D3
UniRef90-R5JWA7
UniRef90-A6E912
UniRef90-S2Z2S4
UniRef90_Q2RR25
UniRef90-D8U7P2
UniRef90-FOSFS5
UniRef90-D9QRX2
UniRef90_L1N5Y0
UniRef90 F6CJP3

VK|l|RAAl| G Gl| ${ }^{170}$ G G Q T
180
180 D S R WD WD E V ${ }^{190}$ R R
200 $\stackrel{2}{2}$ 1 E I G WLSQQGDIT TEE IDPSRWDWDEVIERNPLWCPDA TTMNH LDNGGGQEDLIPEEMSQQE LDAEKARSELSUANPD IK TIA YV S VVGEMELKKN YSEVDGSE DEKNPVRCPDAK H L N N L V F GGK TIGQLP E EE S F E MLLQEKAMAS DL S IVNE E



| V |
| :--- |
| V |
| V |
| V |
| T |
| 1 |
| 1 |
| 1 |
| V |


 QA YVCAVGEDSDED DYSKLNLSETDSNIVRCPHSA

I EV R C Y L S Q M G DV T I D K
I K I T G Y V K Q I G TVVK GE K

1


| $V$ | $E$ | $H$ | $G$ | $Y$ | $L$ | $S$ | $Q$ | $L$ | $G$ | $P$ | $I$ | $K$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $I$ | $Q$ | $E$ |  |  |  |  |  |  |  |  |  |  |  |

$\stackrel{A}{\mathrm{~A}}$
${ }_{\mathrm{A}}^{\mathrm{N}} \mathrm{G}$

|  | $S$ | $Q$ | $A$ | $Y$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $T$ | $Q V$ | $G$ | $D$ | $L$ |
| $M$ | $V$ | $G$ | $L$ | $L$ | $V$ |

 QTET $\qquad$ D E D




S $\begin{gathered}Y \\ Y\end{gathered}$
YQ

| $P S$ |
| :--- |
| $N R$ |
| $V$ |
| $D$ |
| $Y$ |
| $Y$ |

I QVRGYLS QLGPIKAE
$V Q 1$ R GYMTQVVGPKAE G $\quad$ Q R QFDWNQ
$V Q 1 R G Y M T Q V G P H D N R A A F D D A E I E N N P F W S P D A A$



 VVLTTTYAKAVGPVEVPEEEYRFEEIFQNKLYMPST I RVYS QVK SI GPVTWQVNEQNWQDLREKVDESPLHSVDT



$V$




 I TI LSHVVA I GGSSEPRDTALPQPGDEERIDASPVRALSEE


 I EVVAGYVREIA GLVSDVDES LT LIKERREIVNSSVRTFDEN








 $\square$ I Q G Y V S QV GN I T LQK E Y S E

## - -

I

## UniRef90 Q5FPG9 UniRef90_UPI00035DD7C7 UniRef90_E4L4U9

 UniRef90-UPIO003752D94 UniRef90_S6GPZ1 UniRef90_R5M687 UniRef90_H1LFA8 UniRef90_UPI00041DF108 UniRef90_A9H0U2 UniRef90_R7CCY4 UniRef90_G8R8L2 UniRef90_P46894UniRef90_D4YIK4 UniRef90_R1IRM5 UniRef90_F8E4Q2 UniRef90_C4R1A7
UniRef90-M0RN83
UniRef90 L8JT84 UniRef90-X0T6W3 UniRef90_M7POH0 UniRef90-A6L3D0 UniRef90-K7A4Z4 UniRef90_R6JBE5 UniRef90 UPI000408A621 UniRef90_K2KFX2 UniRef90_Q3A2N5 UniRef90-UPI00039F41FA UniRef90_A0NR15 UniRef90 C8W223 UniRef90_G5K3U3 UniRef90_V5XMG2 UniRef90- X2H2F3 UniRef90_Q1N6H5 UniRef90_UPI0002558634 UniRef90_Q3AEF4 UniRef90_UPI00047E97D1 UniRef90_UPI0002892A27 UniRef90_UPI0004119685 UniRef90_A7IMW7 UniRef90_S7UPU7 UniRef90_N2ABZ0 UniRef90_Q0AZJ3 UniRef90_UPI00029B090B UniRef90_R5P3D5 UniRef90_R6MEV8 UniRef90_A4WWC0 UniRef90_A4CL23 UniRef90_UPI00047B11D5 UniRef90_UPIO00288CBC3 UniRef90_R7H749 UniRef90_UPI00047EBE6D UniRef90-E8X3K5 UniRef90_R6QI00 UniRef90_M7NW12 UniRef90_S3A1V2
UniRef90_D7DN53 UniRef90_W1TV28 UniRef90_Q8TT87 UniRef90_UPIO00469F120 UniRef90_Q7VRU6 UniRef90_10JNA5 UniRef90-K9GY69
UniRef90 K8Z896 UniRef90_UPI00036FCD0D UniRef90_G2Z701 UniRef90_G1W8S8 UniRef90_UPI0003B52474 UniRef90-D4W8K2 UniRef90-UPI00034B1713 UniRef90_UPI00037D5F0F UniRef90_Q83D67 UniRef90_R5DN40 UniRef90_V8A7D6 UniRef90_I4AQ49 UniRef90_E8RD98 UniRef90_UPI00036CC79A UniRef90_A0A033V4D3 UniRef90_R5JWA7 UniRef90_A6E912 UniRet90-S2Z2S4 UniRef90_D8U7P2 UniRef90_F0SFS5 UniRef90_D9QRX2 UniRef90_L1N5Y0
UniRef90_F6CJP3



 UniRef90_UPI00035DD7C7 UniRef90_E4L4U9 UniRef90_I3YYW5 UniRef90_UPI0003752D94 UniRef90_S6GPZ1 UniRef90_R5M687 UniRef90 H1LFA8 UniRef90_UPI00041DF108 UniRef90_A9H0U2 UniRef90_R7CCY4 UniRef90_G8R8L2 UniRef90_P46894 UniRef90-D4YIK4
UniRef90-R1IRM5 UniRef90_F8E4Q2 UniRef90-C4R1A7 UniRef90_M0RN83 UniRef90_L8JT84 UniRef90-X0T6W3 UniRef90_M7POH0 UniRef90_R6KDL0 UniRef90_A6L3D0 UniRef90_K7A4Z4
UniRef90-R6JBE5 UniRef90-UPI000408A621 UniRef90_K2KFX2 UniRef90_Q3A2N5 UniRef90_UPI00039F41FA UniRef90_UPI000377AB6F UniRef90_AONR15 UniRef90-C8W223 UniRef90_G5K3U3 UniRef90_V5XMG2 UniRef90-X2H2F3 UniRef90_Q1N6H5 UniRef90_UPI0002558634 UniRef90_Q3AEF4 UniRef90_UPI00047E97D1 UniRef90_UPI0002892A27 UniRef90_UPI0004119685 UniRef90_A7IMW7 UniRef90_S7UPU7 UniRef90 N2ABZ0 UniRef90_Q0AZJ3 UniRef90_UPI00029B090B UniRef90_R5P3D5 UniRef90_EOWT08 UniRef90_R6MEV8
UniRef90 A4WWC0 UniRef90_A4CL23 UniRef90_UPI00047B11D5 UniRef90_UPI000288CBC3 UniRef90_R7H749 UniRef90_UPI00047EBE6D UniRef90_E8X3K5 UniRef90_R6QI00 UniRef90_M7NW12 UniRef90_S3A1V2
UniRef90 D7DN53 UniRef90-W1TV28 UniRef90-Q8TT87 UniRef90_UPI000469F120 UniRef90_Q7VRU6 UniRef90-IOJNA5 UniRef90_K9GY69 UniRef90_K8Z896 UniRef90_UPIO0036FCD0D UniRef90_G2Z701 UniRef90_G1W8S8 UniRef90_UPI0003B52474 UniRef90_UPI0002E853F1 UniRef90_D4W8K2 UniRef90_UPI00034B1713 UniRef90_UPI00037D5F0F UniRef90_Q83D67 UniRef90_R5DN40 UniRef90_V8A7D6 UniRef90_D3NWT1 UniRef90_I4AQ49
UniRef90_E8RD98 UniRef90_UPI00036CC79A UniRef90_A0A033V4D3 UniRef90-R5JWA7 UniRef90_A6E912 UniRef90_S2Z2S4 UniRef90_Q2RR25 UniRef90_D8U7P2 UniRef90_F0SFS5 UniRef90_D9QRX2 UniRef90_L1N5Y0
UniRef90 F6CJP3


 YKPGRSVNIENHTPYKATVERSDPTALPAAGVI MENVIAT RLP GK S V DVVE GN E V E V ITTK GR H D P C V G DR A T P I A E A ML A I
 $\frac{R}{L}$ $\frac{R}{\mathrm{~L}}$ MRDQQSVNEKGEEVIVKGKGRHDPCVVPRAVPIVEAMAAL RK DQQ TI D SE GK QUTL A SKGRRHDPCVVLPRAVPMVEAMVS I Y H P L Q S V D I Y T K E P Y K A S

 GKK QKTVTRDRQETDD DARGRHDPCVVPRAVPMVEAMVAL MQDQESIDDSQGNPATV SGKGRHDPCVVPRAVPVVEAMAAL $\square$ N P L R SID FA T K K ETVKA IVQRS D DCVVVPAASVV GEAVAA W
 LME QHTVVNINGTDDTTMKAKGRHDACVLIPRAVVIVVAAMAAM
 L M E Q E TVVNME GE DTVLL KA R GR H D P C V L P P R A V MQDQESVNESGENVTVVSGKGRHDPCVVVRAVPIVEAMAAB $K$ VP G R S I DVVD G N A V E V V T K G R H D P C V V GIIR A V P I A E A M L A L
 YK PLMSVDIE T K EPFKAS DERS DSCAVPSAAVVCE HVVAW
 Y K P L M S V N I E N H E P Y K A TVVER S D P T A L P A A GVV I M E S L V A T YK PL M S V DI D T K E A YK A SVVERS DSTAVPAASVVAE HVI A T





 A QPQQTVTENGEDTELVIDGRHDPIIVPRAVVVVESMAALL

## 

\section*{| $R$ |
| :--- |
| $Y$ |
| $L$ |
| $L$ |
| $R$ |
| $Y$ |
| $S$ |}





 $P R A L R T V D M A N G E P A T A D H Q R S D V C A V P A A A V V A E A A V A L$

 K $I$ P GK T V T N H N Q E T Q I I I T T G R H D P C Cll





 RIPGKTVD DNGKAVEVVTTGRHDPCVGLRAVPI AEAMLAL S SVQD TVVKD GEDI KV SIGKGRHDPMIVPRAVVVVESMAAL
 MK D QESVVNE GNKTTV S GKGRHDPCVVVRAVIPIVEAMAA L
 YK P L N S V D $\square D S K D S F K A T D E R S D S C A V P A A S V V C E N V I A F$ A STQ H TI NKS GEN DEVS DKGRM DP II GPRAVVVVESAAA I





| UniRef90 Q5FPG9 | V L A D HLL R D ${ }_{\text {3 A Q C }}$ |
| :---: | :---: |
| UniRef90－UPI00035DD7C7 | TLMDHFMRHRAQN |
| UniRef90－E4L4U9 | V L A Q E L EK F P A H H D E LK T T F D D Y LD Y CK N |
| UniRef90＿I3YYW5 | V I A D F WL ${ }^{\text {N }}$ |
| UniRef90－UPI0003752D94 | ｜VI LQElL EKFPSDTMVDLKKAMT D Y R S Y V |
| UniRef90－S6GPZ1 | VIMDHFLRDRAQN |
| UniRef90－R5M687 | TIL LD QYM |
| UniRef90－H1LFA8 |  |
| UniRef90＿UPI00041DF108 | VLMDQALRHRAQC |
| UniRef90－A9H0U2 | VLADHFLRHRAQ |
| UniRef90＿R7CCY4 | VLANAYLEK F G S D N M D $\square$ K A N $\square$ A S F K E R $\square$ K |
| UniRef90－G8R8L2 | VLADHYL |
| UniRef90－P46894 | VLADHLLRQRGQCS |
| UniRef90－D4YIK4 | ELA Q AILEKFPHDDYNELVKAVNNYREYAKN |
| UniRef90＿R1IRM5 | VLMDHLLRHRAQN |
| UniRef90－F8E4Q2 | VIVDSLMIN |
| UniRef90－C4R1A7 | V L ADAVLIQ |
| UniRef90－M0RN83 | VLLDQLMSQTAQCGL |
| UniRef90－L8JT84 | VLADFYLIN |
| UniRef90－X0T6W3 | EI A T AFLEKFNGDSLLETKENYKKYGEKLQE |
| UniRef90－M7P0H0 |  |
| UniRef90－R6KDL0 | TLVDM\L GNMTSRIDRIVDFYKR |
| UniRef90－A6L3D0 | TILD Y YL |
| UniRef90－K7A4Z4 | VVMDHLLRHRGQN |
| UniRef90－R6JBE5 | T L L D Y L L 1 Q |
| UniRef90＿UPI000408A621 | VIA D Y L |
| UniRef90－K2KFX2 | TLMMDHLRHRGQ |
| UniRef90－Q3A2N5 | EMAQAMLEKFGGDAMEEVKQNLQAYGEYVQR |
| UniRef90＿UPI00039F41FA | VLA D A L L EKF G G D NLNQLKKHIK A S G K Y |
| UniRef90＿UPI000377AB6F | ELAKALLEQFPCDQFPVLQKAVEAYREYAR |
| UniRef90－A0NR15 | VLADHFLRHRGQ |
| UniRef90－C8W223 | ELAAAFLEKFGGDS\AEDDFRFNNY口EQ |
| UniRef90－G5K3U3 | IVAQEILDQFLS DQMT TLMTDFDRYRDQVK |
| UniRef90－V5XMG2 | ALAVEILEHFPADNMSELKKSVASHRQMIQD |
| UniRef90－X2H2F3 | VLMDHYLRYRAQCN |
| UniRef90－Q1N6H5 | VLADHYLRHRGQNADVE |
| UniRef90－UPI0002558634 | ｜VILDHLL $\quad$ HRGQ |
| UniRef90－Q3AEF4 | VLMESFLEKFGGDR】EETKRNYQNYLQS $\square$ A |
| UniRef90－UPI00047E97D1 | VLADHYLRHRAQ |
| UniRef90＿UPI0002892A27 | TLLDFYI EQYG |
| UniRef90－UPI0004119685 | VLADFYVLEY |
| UniRef90－A7IMW7 | IVLADHFLRHRGQ |
| UniRef90－S7UPU7 | VLADTALIQAG |
| UniRef90－N2ABZ0 | TLVDLLLQNMGS RMEHLRKLY |
| UniRef90＿Q0AZJ3 |  |
| UniRef90＿UPI00029B090B | VI VDAWLMN |
| UniRef90－R5P3D5 | TVV L M L L S M T S D $\square$ EK $\square$ K K F F E |
| UniRef90－EOWT08 | VLMDHVLRQRAQC |
| UniRef90－R6MEV8 |  |
| UniRef90－A4WWC0 | V L L D HLL $\square$ D R G Q |
| UniRef90－A4CL23 | VLADMS |
| UniRef90－UPI00047B11D5 | TI A DLVQRKFGGDSADEMKRNFAGYDEQDR |
| UniRef90＿UPI000288CBC3 |  |
| UniRef90＿R7H749 | TLVDLI FENM |
| UniRef90＿UPI00047EBE6D | ELANAL VEQFYSDRFETFAEEDKRQREYARE |
| UniRef90－E8X3K5 | TIARLVI DKFGGDSLGELKRNYAGYCEQDR |
| UniRef90－R6Q100 | VLADAFLEKFGGDSLEELKRNFXXNKE |
| UniRef90＿M7NW12 | VLA DACLLQR |
| UniRef90－S3A1V2 | V VARAVLDKFGGDTVDEVAARVAEYREYVDSR |
| UniRef90－D7DN53 | VLMDHALRNRAQN |
| UniRef90－W1TV28 | VLADALLEHVGGYSLD QVRENLQAYQKRVEAR |
| UniRef90－Q8TT87 | VLS D M M R |
| UniRef90－UPI000469F120 | VLMDHALRHRAQN |
| UniRef90－Q7VRU6 | 1 LMDHILRFRAQC |
| UniRef90－IOJNA5 | ELAKAI TEEFP S D Y F P R L R AVDD Y R K V VRE |
| UniRef90－K9GY69 | VLADHL $\mathrm{V}^{\text {R H R A Q C }}$ |
| UniRef90－K8Z896 |  |
| UniRef90＿UPI00036FCD0D | VLCDHLLRQRGQC |
| UniRef90＿G2Z701 | VVADMQLMHQA |
| UniRef90－G1W8S8 | V I F D HYLLHLT G |
| UniRef90＿UPI0003B52474 | EL A N L Y A K F G G D T L K E LK E R VEA Y K K Y L |
| UniRef90＿UPI0002E853F1 | VLA D HWDR N |
| UniRef90－D4W8K2 | EVATA I DEFQSNQMSQLIDS M A Y REYVR |
| UniRef90＿UPI00034B1713 | TVAD F Y L L S R |
| UniRef90－UPI00037D5F0F | VLMDHALRNRAQC |
| UniRef90－Q83D67 | VLMDHYLRYKAQ |
| UniRef90－R5DN40 |  |
| UniRef90－V8A7D6 | LLADHILRDHAQNSWHRAR |
| UniRef90－D3NWT1 | V L A H |
| UniRef90＿14AQ49 | VI T D F Y L R Q S HER $\square$ |
| UniRef90－E8RD98 | VLIDLALLRQRA |
| UniRef90＿UPI00036CC79A | VLADMALRARSQ |
| UniRef90＿A0A033V4D3 | EVAKALT T E Y Q S H $\quad$ D QLQEAl K NHR |
| UniRef90－R5JWA7 | TVLDLLFDNMSS RLDK【ID F Y |
| UniRef90＿A6E912 | VLADHL $\mathrm{L}^{\text {d }}$ N |
| UniRef90＿S2Z2S4 | TLIDDLLFANMS S R L D V V S F Y K R |
| UniRef90－Q2RR25 | VLADHLLRFRGQCGLP |
| UniRef90－D8U7P2 | VLADQLLQHFAQCEL |
| UniRef90＿FOSFS5 | TLADHLLRWRAQC |
| UniRef90－D9QRX2 | EL AKA WLEK F G G S M A $\square$ K R N Y K N Y $\square$ H S $\square$ K E R |
| UniRef90＿L1N5Y0 | VI L D T WL |
| UniRef90＿F6CJP3 |  |









UniRef90_LIJF54 UniRef90-M1P7G3 UniRef90-UPIOO04002EDE UniRef90-D8DZB1 UniRef90-F4C401 UniRef90-X5MML9
UniRef90_K0B7M9 UniRef90-UPIO00473EC19 UniRef90_UP10003B68291 UniRef90-JobH22 UniRef90-R5EA33 UniRef90_R5QK84 UniRef90-J9ZCE1
UniRef90 COW 1 3 UniRef90-F6DBA6 UniRef90-B1XUP3 UniRef90-이CB5 UniRef90-D3FCW4 UniRef90-B3V5N7 UniRef90-F7RVB9 UniRef90-UPIO003F6C3D1 UniRef90-A5GF03 UniRef90-FOPOC1 UniRef90-D7BNS4 UniRef90-UPI00016C47BE UniRef90_UPI00036D7F22 UniRef90-S7ZBL9 UniRef90-C2FY37 UniRet90_A8PWP1 UniRef90_O88VL0
UniRef90 W2V637 UniRef90-W4TDE9 UniRef90-U2YJT9 UniRef90-D1W3S4 UniRef90-C9KPR8 UniRef90-13BX46 UniRef90-UPIooou71A8AO UniRef90-G5JQA3 UniRef90-A7NQM2 UniRef90-UPIIO002E1ATE9 UniRef90-UP10003F7ACC5 UniRef90-R5VDK4 UniRef90_F4RMJ5 UniRef90-J7QF96 UniRef90-UPIO002D4CC66 UniRef90 M8BQG8 UniRef90-R7HPA8 UniRet90-A4BZB6 UniRef90 N1ZEW3 UniRef90-F8EM95 UniRef90_E7C734 UniRef90-Q11KE5 UniRef90_U5DJT2 UniRef90-UPIOOO2557B9D UniRef90 UPI0003B6AF5F UniRef90-Q1GVE2 UniRef90-B3EPI9 UniRef90 C5DPE2 UniRef90-R91Q87 UniRef90-UPIO0021940CC UniRef90 J771WD4 UniRef90-E1GYN0
UniRef90-UPIO003742E31 UniRef90-C5C5T3 UniRef90-UPIIOOO360FC56 UniRef90-M2YHE8
UniRef90 L8LUE9 UniRef90-Q0BVNO UniRef90_UP10003B41ADA UniRef90-I15AW24 UniRef90-14EGT6 UniRef90-O21TN3
UniRef9O-D6ZHD3 UniRef90-A2CCA2 UniRef90-G8LRK8 UniRef90-R5DIT2
UniRef90-R7MFN3 UniRef90-K9STJ5 UniRef90-H8XOS8 UniRef90-C7NHDO
UniRef90
Q6C8Q1 UniRef90-E3GZA0 UniRef90-UPIOO0287F6D6 UniRet90-D7GT20 UniRef90-A8Z5Z2 UniRef90-F6BB62 UniRef90-F9DIJ3
UniRef90 G8UQS3
Une_Gouls


FSTDAQGMVT ${ }^{290}$ TN 300 Fid MVRGD


## 

##  <br> 



MS SEQG
LH S D
$F S S D P R G \square$ GFASNNSSGGGTL
$\begin{array}{ll}\text { FVA R K N K } \\ \mathrm{Y} & \mathrm{V}\end{array}$ H T L
F R E

## MTPE

IA WDNEGY
I FYDQSGFYRKS
F L P N M
$R T K T N N A G G \square E G G 1$
$\square T R T P Q G \square$
RTKTNFSGGI Q G GIS S NGMP
WEP K H GP R V R T T S N R H G G M L G G I S S S G M P
$Y R A D D V G N V F$ T $\quad$ T N R S G G V Q G G
FVVSEDGRKTKTNNSGGUQGGISNGAS

## 

FNTD


$\square \mathrm{T}$
$\mathrm{M} Y$
K N GF S S


## $F$ $F$ $I$ <br> F $F$ <br> 















TWEEKGFYRKTNRLGGFEGGMTNGMPI

## F

MYLKDGK VRKTNNAGG|EGGMTNGEPL
FYRDGDRURTVTNRSGGUQGG1DNGEN
MEWDEGADRRVTDRSGGVEGGMSTGELL
FYKDVGRFRTRTNYSGGVQGGMSNGEN DYWDKHGWYRSSDHDGGFEGGMTNGMP



## UniRef90 L1JF54 UniRef90_M1P7G3 UniRef90_UPI0004002EDE

 UniRef90_D8DZB1 UniRef90_F4C401 UniRef90_X5MML9UniRef90_K0B7M9 UniRef90_UPI000473EC19 UniRef90_UPI0003B68291 UniRef90_J0BH22 UniRef90_R5EA33 UniRef90_R5QK84 UniRef90_J9ZCE1 UniRef90_C0W1M3 UniRef90_F6DBA6 UniRef90_B1XUP
UniRef90-I0ICB5 UniRef90_D3FCW4 UniRef90_B3V5N7 UniRef90_F7RVB9 UniRef90_UPI0003F6C3D1 UniRef90-A5GF03 UniRef90_F0P0C1 UniRef90-D7BNS4 UniRef90_UPIO0016C47BE UniRef90_UPI00036D7F22 UniRef90_S7ZBL9 UniRef90_C2FY37 UniRef90_A8PWP1 UniRef90_Q88VL0
UniRef90_W2V637 UniRef90_W4TDE9
UniRef90_U2YJT9 UniRef90-D1W3S4 UniRef90_C9KPR8 UniRef90_I3BX46 UniRef90_F7WZ04 UniRef90-UPI000471A8A0 UniRef90_G5JQA3 UniRef90_A7NQM2 UniRef90_UPI0002E1A7E9 UniRef90_UPI0003F7ACC5 UniRef90_R5VDK4 UniRef90_F4RMJ5 UniRef90_J7QF96 UniRef90_UPI0002D4CC66 UniRef90_M8BQG8 UniRef90_R7HPA8 UniRef90_A4BZB6 UniRef90-N1ZEW3 UniRef90_KOKM12
UniRef90_F8EV95 UniRef90_E7C734 UniRef90_Q11KE5 UniRef90_U5DJT2 UniRef90_UPI0002557B9D UniRef90_UPI0003B6AF5F UniRef90_Q1GVE2 UniRef90-B3EPI9 UniRef90_C5DPE2 UniRef90_R9IQ87
UniRef90_UPI00021940CC UniRef90_J7IWD4 UniRef90_E1GYN0 UniRef90_UPIO003742E31 UniRef90_C5C5T3 UniRef90_UPI000360FC56 UniRef90_M2YHE8
UniRef90_L8LUE9 UniRef90_L8LUE9
UniRef90_Q0BVN0 UniRef90_UPIO003B41ADA UniRef90-15AW24 UniRef90_I4EGT6 UniRef90_Q21TN3 UniRef90_D6ZHD3
UniRef90_A2CCA2 UniRef90_G8LRK8 UniRef90_R5DIT2
UniRef90_R7MFN3 UniRef90-K9STJ5 UniRef90-H8XQS8 UniRef90_C7NHD0 UniRef90_Q6C8Q1 UniRef90_E3GZA0 UniRef90_UPI000287F6D6 UniRef90_D7GT20 UniRef90_A8Z5Z2 UniRef90_F6BB62 UniRef90_F9D1J3
UniRef90 G8UQS3

330
340
350
360
GKAQNTADFTGSSTVLEAKGRHDPCVV|PRADPIVETMAA L PRALLKTVDMAD GSAATGDHQRSDVCAVPAAGVVAEAMVAL
 MRS Q S TI NQQGEETEI S GKGRHDPCVVPRAVAIVEAMAALL

## गめ!

A

|  | 370380390 |
| :---: | :---: |
| UniRef90_L1JF54 | VI A D M C L \| M Q |
| UniRef90-M1P7G3 | $\underline{V}$ L A A V L T K F G G D S L E TKRNIA A Y Q ERVAER |
| UniRef90_UPI0004002EDE | EVAKA I EQF E S D QLERLKK NIEDFREYARN |
| UniRef90_D8DZB1 | V I L D N Y L N |
| UniRef90 F4C401 | V I V D Y L R N |
| UniRef90-X5MML9 | V L A D Q L R H R A Q |
| UniRef90-K0B7M9 | TI A D H A L |
| UniRef90_UPI000473EC19 | VLMDHALRHRAQC |
| UniRef90_UPI0003B68291 | TVVLD L L L E N M H A D S $\square \mathrm{E}$ E |
| UniRef90-J0BH22 | VLMDHCLRHRSQC |
| UniRef90-R5EA33 | VLID Q VMA Q R G Q C |
| UniRef90-R5QK84 | V L A D HLLRFRA |
| UniRef90-J9ZCE1 | TLA R A ASEKF G G D S VEEVLA H Y Q A |
| UniRef90_COW1M3 | VLADEVTGMF GT GSLEMVKRNLVAFQAEDQQR |
| UniRef90_F6DBA6 | VLLD HFMRNRAQN |
| UniRef90-B1XUP3 | V L M HVLRHRAQC |
| UniRef90_IOICB5 | V L A D A WL R Q R A VGGVVDA |
| UniRef90_D3FCW4 |  |
| UniRef90_B3V5N7 | VIA D H G L R |
| UniRef90_F7RVB9 | TLID HWLR Q R A Q N |
| UniRef90_UPI0003F6C3D1 | EVADALLDMF GS DRVEAVERNDKEHTDWARE |
| UniRef90_A5GF03 | ELA D A F MVK F G G D I T E I K R N Y Q S L P Y L |
| UniRef90_F0P0C1 | VLA D M T L Y R S Q R il |
| UniRef90-D7BNS4 | TLA E AVLERSAGDQVADVRAHYD |
| UniRef90_UPI00016C47BE | VLVD HLLRARS S |
| UniRef90_UPI00036D7F22 | VLMDHALR HKAQCT |
| UniRef90- S7ZBL9 | V V M D A L M Q Y ARES |
| UniRef90 ${ }^{\text {C }}$-2FY37 | V I T D HLLRQ |
| UniRef90_A8PWP1 | VI M D MFLAQSARKS |
| UniRef90_Q88VL0 | ELT R A LTA T F D G S NLA R LQQ T VT A Y R E E LR Q |
| UniRef90-W2V637 | VLMDHFLRHKAQNM |
| UniRef90_W4TDE9 | \|VLADLFL $\mathrm{V}^{\text {L }}$ |
| UniRef90_U2YJT9 | VLAESVLEKF G G D NVA E T R R N L E G Y LA A $\square$ P E |
| UniRef90_D1W3S4 | V I LD N Y L |
| UniRef90_C9KPR8 | VIA Q A I C K F G S D A MVD |
| UniRef90-I3BX46 | TL M D H ALR HRAQN |
| UniRef90-F7WZ04 | ILMD H L R H R A Q C N |
| UniRef90 UPI000471A8A0 | TI L D T L L |
| UniRef90_G5JQA3 |  |
| UniRef90_A7NQM2 | V L A D HL L R R |
| UniRef90-UPI0002E1A7E9 | V I A D HILLNHAQC |
| UniRef90_UPI0003F7ACC5 | EVAEAILDKFPS D D F G D LKA S LELLYNKRLS E |
| UniRef90_R5VDK4 | V V L D M L L E S R |
| UniRef90-F4RMJ5 | V MMDAVLQQ A R K S L A L |
| UniRef90_J7QF96 | VLA D HFLR HRGQ |
| UniRef90_UPI0002D4CC66 |  |
| UniRef90_M8BQG8 | VLMDQLMAHVAQCEM |
| UniRef90-R5IHT4 | VILD H Y L L |
| UniRef90_R7HPA8 | T V L D M Y L N |
| UniRef90_A4BZB6 | VL AD Y W L L |
| UniRef90-N1ZEW3 |  |
| UniRef90-K0KMT2 | V I A D TLLLMQ |
| UniRef90-F8EV95 | V L A D Q K L H R G Q |
| UniRef90 E7C734 | V L T D H Y R R R |
| UniRef90 Q11KE5 | AI A D HYLRHRGQ |
| UniRef90_U5DJT2 | VLCDRLMHQTAQCQL |
| UniRef90_UPI0002557B9D | \|V I LD N I LD K A G |
| UniRef90_UPI0003B6AF5F | VLMDHALRQRGQN |
| UniRef90-Q1GVE2 | TLA D HKLLHRAQC |
| UniRef90_B3EPI9 |  |
| UniRef90_S8FG94 | TMLD Y CL L N |
| UniRef90-C5DPE2 | VLAD S L I Q K S R D |
| UniRef90_R9IQ87 | TLLDLMMEHMGS |
| UniRef90_UPI00021940CC |  |
| UniRef90_J7IWD4 | VI AEAVMDKFAADSF】ELENA WQEYQAYLRQK |
| UniRef90-E1GYN0 | VI LDD A L Y Q Q A |
| UniRef90_UPI0003742E31 | A A D H FLR R R G Q |
| UniRef90-C5C5T3 | VLA Q A L L E K VGG D S VA ESARNLT S Y LEADPE Q |
| UniRef90_UPI000360FC56 | ELA QA L E EFNGDRMDA LIR Q I E D HKQ M AKE |
| UniRef90-M2YHE8 |  |
| UniRef90_L8LUE9 | $V \mathrm{C}$ CHLLR C Q A Q CKL |
| UniRef90-Q0BVN0 | V L A D HL L R R A Q N |
| UniRef90_UPI0003B41ADA | V I LD HL L L D R Q |
| UniRef90-I5AW24 | V L A D AL L |
| UniRef90-14EGT6 | V L A D L Y L L N R S |
| UniRef90-Q21TN3 | V V M H A L R R A Q C |
| UniRef90_D6ZHD3 | V L A D ALLEK T G G D SVAECSRNLWA Y LDEVT Q R |
| UniRef90-A2CCA2 | $V L A D H L L R Q Q G Q C S L$ |
| UniRef90-G8LRK8 | V I V D Y Y M L K |
| UniRef90-R5DIT2 | V L I D E L M K F G G N L N E V L R |
| UniRef90_R7MFN3 |  |
| UniRef90_K9STJ5 | V L CDHWLRNRA |
| UniRef90-H8XQS8 | VLVD NFLKN |
| UniRef90_C7NHD0 | $V L L R A V L E K F G G D H L E D T R A A V E H Y R R R \square A$ |
| UniRef90-Q6C8Q1 | V I A D A HL $\mathrm{Q}^{\text {a }}$ |
| UniRef90-E3GZA0 | VI A D HLIRR |
| UniRef90_UPI000287F6D6 | ELCKAI L D T F D S S M R L K K Q Y Q Y CEELK N |
| UniRef90-D7GT20 | T A M D M L L |
| UniRef90-A8Z5Z2 | V L Y D N M L N R |
| UniRef90_F6BB62 | T L A D L M I |
| UniRef90-F9D1J3 | VI LD HYLLN |
| UniRef90_G8UQS3 | TVVLD T R L |





UniRef90_S4VV63 UniRef90-UPIOOO36A6D11 UniRef90-UPIOOOO3815790 UniRef90- J4HW07 UniRef90-BoSW42 UniRef90-C7MCM4 UniRef90-M5FQ34 UniRef90_UPIooos UniRef90-UPIO00367E9F7 UniRef90-D4M5M5 UniRef90-Q0W6Q8 UniRef90-J3JBY0 UniRef90_O29587 UniRef90-D5SXG5
UniRef90 F5YAG5 UniRef90-R6F6Y5 UniRet90_CoW3N1 UniRef90-H1VG29
UniRef90 N6VFT4
UniRef90-A7AZ80 UniRef90-D3E4F0 UniRef90-UPI000225BB8A UniRef90-EOP294
UniRef90-R5EPD8 UniRef90-Q8TXN1 UniRef9O-UPIIOOO3B78646 UniRef90-K2AXR5 UniRet90-A5CX05 UniRef90-F9VLF5
UniRef90 F5T8Y3 UniRef90-F5T8Y3
UniRef90-LOB7MO UniRef90-A0A059G3N4 UniRef90_UPIO0026276E9 UniRef90-D6TF82 UniRef90-H8KZG8 UniRef90-E9C4K4
UniRef90 R8BAJ6 UniRef90-K8E1LO UniRef90-F2NX08 UniRef90-R7ROH8
UniRef90-D4HOT2 UniRef90-D4HOT2 UniRef90-F21324 UniRef90-S9PSGO UniRef90-I4YDT6 Unirea90-UPTIOOO374EA6E UniRet90-R5B955 UniRef90-A3LYZ8 UniRef90-Q72DN5 Wivesue UniR Refo-R4XAR9 UniRef90-A6Q1H1 UniRet90-BgKE093 UniRef90-UPI000405D329 UniRef90-R6WJK3 UniRef90-A9AWF4
UniRef90-V4YP47 UniRef90-W6NJO2 UniRef90 R7PPD2 UniRef90-B3E9NO
UniRef90 EORQP8 UniRef90-UPIOOO3725829 UniRef90-F3B2N9 UniRef90-H1Q212
UniRef90 C4K3so UniRef90-UPI0003B5BAD9 UniRef90-V2TR19 UniRef90-F9RXE1 UniRef90-V9H2M5 UniRef90-F7PVN6
UniRef90_M9ROW8 UniRef90-UPIOOO378B444 UniRef90-UP100046A3B2C UniRef90_H7CTE8 UniRef90-UPIOOO41EA4C3 UniRef90-B6BQT7 UniRet90-N6VSV1 UniRef90-F4B3Q9 UniRef90-10X824 UniRef90-Q30NY4 UniRef90_OOARD9
UniRef90_M2NF69 UniRef90-U6EEA2 UniRef90-H2CB28 UniRef90- W4HNU2
UniRef90 UniRef90-K8F1Z6
UniRef90-Q7M841 UniRef90-F81911
UniRef90_C5ZXD0

$\qquad$

130
150
160 MAKYG\|IK ASSGGGRSSARET|L|MRVAAGAVVAEKWLGLKYG QAKYGHRDYRGG GRSSARETAMRVAAGAIAKKYL ETGG

 FAKYGVRDYRGG
 HEKYGFRDYRGGGGRTS GRETVGRVAAGAVAS LLLDEELG

 DQKYGFRDYRGG GRSSGRETIGRVAAGAIASKLLGE LGG $M E K Y G M R D Y R G G G R S S G R E T L S R V A G G A V A K K L L D S L Y G$


 LEKY GVVK A S S G G GR S S A R E T I A R V A A GAALA E K Y L R E A Y G

 $A L K Y G H R D M R N V V E R S S S A R E T A A R R V A V G A V A R V M L D Q Q L G$

 $D Q K Y G R R D Y R G G G R S S A R E T A A R V A A G A I A D K F L A Q H$ G $A$ QKKYG I R D H L G G GRASARETVVMRVAA GAI AKKY L REKYA


D

##  <br> W

## $\mathrm{G} \frac{1}{\mathrm{Y}} \mathrm{K}$

GR D $\cap R G G G R S$
 FKKYGI RDYRGG GRSSARETASRVAAGAIAKKVLSQLLG

 ETKYGVRDHRGG GRTSARETANWVVGGAVAKHIIPS


 Y HK Y G $I R D Y R G G G R A S A R E S \square A R V A A G A L A Q M L L X E B D$
 $D \square K Y G F R D Y R G G \quad G R S S G R E T \square G R V A A G A V A A K M L K B G G$

 F I K Y K GFNDYRGGGHFSGR\|TAPLVFAGA\|ARQLLKK KG AMKYGHRDVRNDLLERSSARETAAVR VAVGAVARGLLDHALD HK K Y R $\square R D$ YR GS


## A


$T Q K Y G F R D Y R G G G G R S$
$H Q K Y G \square R D Y R G G G G R S$
$Y M R Y S G F N$
YMRYS GFNDYRGGGHF
$A L K Y N Q R D M R T \| I G R S$
$H Q K Y G L R D Y R G G G$

FQKYGIVK Q Q G GGRSSARETAARVAAGGVARKVL GPD Q
Y $\square R Y N G F N D Y R G G G H F S G R \square T A P L V F A G A L A K E I L K E B K G$


 F HKY G L R D Y R G G G R S S A R E T A A R V V A G G A V A K L M M K E L L






UniRef90 S4VV63 UniRef90_UPI00036A6D11 UniRef90_UPIO003815790 UniRef90_UPI000369F739 UniRef90-J4HW07 UniRef90-B0SW42 UniRef90-C7MCM4 UniRef90-R9NEW8 UniRef90_M5FQ34 UniRef90_UPI000372BB33 UniRef90_UPIO00367E9F7 UniRef90-D4M5M5 UniRef90-Q0W6Q8 UniRef90-J3JBY0 UniRef90-O29587 UniRef90-D5SXG5 UniRef90-F5YAG5
UniRef90 $\mathrm{R6F6Y5}$ UniRef90-COW3N1 UniRef90-H1VG29 UniRef90-N6VFT4 UniRef90_A7AZ80 UniRef90_D3E4F0
UniRef90_UPIO00225BB8A UniRef90-EOP294 UniRef90-R5EPD8 UniRef90_Q8TXN1 UniRef90_UPI0003B78646 UniRef90-K2AXR5 UniRef90_A5CX05 UniRef90-F9VLF5
UniRef90 F5T8Y3 UniRef90_LOB7M0 UniRef90_A0A059G3N4 UniRef90_UPIO0026276E9 UniRef90-D6TF82 UniRef90_H8KZG8 UniRef90-E9C4K4
UniRef90-R8BAJ6 UniRef90_K8E1L0 UniRef90-F2NX08 UniRef90-R7RQH8 UniRef90-D4HOT2 UniRef90_F21324
UniRef90_S9PSG0 UniRef90_I4YDT6 UniRef90-UPI000374EA6E UniRef90_R5B955
UniRef90_A3LYZ8 UniRef90-D5V152 UniRef90-Q72DN5 UniRef90_UPI0003B51D9E UniRef90-R4XAR9 UniRef90-A6Q1H1 UniRef90-B9KE09 UniRef90-T1C3W3 UniRef90_UPI000405D329 UniRef90-R6WJK3 UniRef90_A9AWF4
UniRef90_V4YP47 UniRef90-W6NJ02 UniRef90-R7PPD2 UniRef90-B3E9N0
UniRef90 EORQP8 UniRef90-UPI0003725829 UniRef90-F3B2N9 UniRef90-H1Q212 UniRef90-C4K3S0 UniRef90_UPI0003B5BAD9 UniRef90-V2TR19
UniRef90 F9RXE1 UniRef90-V9H2M5 UniRef90-F7PVN6 UniRef90-M9R0W8 UniRef90_UPI000378B444 UniRef90-UPI00046A3B2C UniRef90-H7CTE8 UniRef90-UPI00041EA4C3 UniRef90-B6BQT7 UniRef90-N6VSV1 UniRef90-F4B3Q9 UniRef90-10X824 UniRef90_Q30NY4
UniRef90_Q0ARD9 UniRef90-M2NF69 UniRef90-U6EEA2 UniRef90-H2CB28 UniRef90-W4HNU2 UniRef90-K8F1Z6 UniRef90_F81911
UniRef90_C5ZXD0 I E E \| VA WV S SAGDQA\| I ANEPD $V K T T S Y V S Q \prod G A!K A$
 1 EVMAYVKQVGDVVAPD

 $V T V R A A L V Q I G P H R I D R G N L W D W D Q T N E N P Y W S P D A A$ | I |
| :--- |
| RLV |
| $H$ |
| $H$ |
| $L T S H T$ | I EVVAVSSVGKITIPSTPSPTTVTRAQVDAHPTRCPHPA




 AQVIGYVHQVGSIVAEVPHPESVTLQQVEYPNII RCPDEA A 1 I A WTSSAAGIDGPGPGDPS FNWDEDENNPLRMGGKA V S NAYTSQVGDVALDR D YTKYDFAETERNPVRCPDPA
 ELLTAFSKSI GPVTVPE SEYRLDEVVENPLYMPNNA


1V
$I$
1
,PGDBS
VEIVANVSSVGDVEMKEDVVDTVTREERVDSHPTRCPDAA
1QIIFAYTKEAAGIKIFIGAHTKSAKNUQDFDFCNVGEGDFSEMEQNAMRAADKDVTI QAYVIQVGPHKAEK RDLGIVEENDIRTCDLD
KKVIGAVTQIGPV MSNPDNWDEKQI RKNPFFSADKD
ПEIVAFVSAVGPITPEYMKFLDEDTREEVDKTMDRCPHAE





I EVVAFVSSVGKIKVPSTGPQSTDEDDDDVESPVRCPHPE
I EIMSGVFGVGSU DSKDSNDEFDFNCAKNSEVYALDKN
I V VGWLDGIGSMRYAGAPPRVRPD
I Yi GA HVKKI KSMESFDYTD DSRELLDEDRKKEGPLDKPE



I SI S S HI QQI GAI CDKKYNPEKQDVLDCLSKSSFPVLDAV

I S I I A YTLRAGGUQC
IKI IGYTKQVGP
S SUATQSIGNTKDDE YA
S Si KAYTSQVGEVKDE
S S KAYTSQVGEDKVDE DYRKFNLASAELNAVRCPDELD
KFISFVVEI GGVRAKFPEDFDFDEMQKI ENSQLYTPDPE

$V$ EV R A Y L S QM G DVA $\quad$ DE

I EVLSHVINLGGI DVSNYSLDDIRTMDSKVRMVHKVK
I EIKGYMVQMG EKHIDRARFDWDADDGNDFWCPDAG
QURAALTQMGPRKIENDDTRRWDWSIVHDNPFFCPDPD
VDI LAYASSIGSVSVPNDIDPRDDRNVVESIVRCPDEK
V 1 LAAYASSGGSVSVPNDITPK DRNSVEDSLVRCPDEK


I EVVQS GI C E V D Gll K S L E E F F D Y E S A K K S II I Y A LDD S T


TEV I A WVD S I GKTTGGRGYEHPPTSSDDEVDASDVRSHDPD




## UniRef90 S4VV63

 UniRef90-UPIO0036A6D11 UniRef90-UPIOOO3815790 UniRef90- J4HW07 UniRef90-BoSW42 UniRef90-C7MCM4 UniRef90_R9NEW8 UniRef90-M5FQ34 UniRef90-UPIo00372BB33 UniRef90-UPI000367E9F7 UniRef90-D4M5M5 UniRef90-Q0W6Q8 UniRef90-J3JBYO UniRef90-O29587 UniRef90-D5SXG5 UniRef90-R6F6Y5 UniRet90_CoW3N1 UniRef90-H1VG29UniRef90 N6VFT4
UniRef90-A7AZ80 UniRef90-D3E4F0 UniRef90_UPI000225BB8A UniRef90-EOP294 UniRef90-R5EPD8 UniRef90_O8TXN1 UniRef90-UPIOOO3B78646 UniRef90-K2AXR5 UniRef90-A5CX05 UniRef90-F9VLF5
UniRef90 F5T8Y3 UniRef90-LOB7MO UniRef90-A0A059G3N4 UniRef90-UPIOOO26276E9 UniRet90_D6TF82 UniRef90 H8KZG8 UniRef90-E9C4K4
UniRef90 R8BAJ6 UniRef90-K8E1LO UniRef90-F2NX08 UniRef90-R7RQH8 UniRef90-D4Нот2 UniRef90 F21324 UniRef90-S9PSGO UniRef90-14YDT6 UniRef90 UPI000374EA6E UniRef90-A3LYZ UniRef90-D5V152 UniRef90-Q72DN
UniRef90-UPI0003B51D9E UniRef90-R4XAR9 UniRef90-A6Q1H1 UniRef90-B9KE09 UniRef90-T1C3W3 UniRef90-UPI000405D329 UniRet90_R6WJK3 UniRef90-A9AWF4 UniRef90-W6NJ02 UniRet90-R7PPD2 UniRef90_B3E9NO
UniRef90 EOROP8 UniRef90-UPIOOO3725829 UniRef90-F3B2N9 UniRef90-H10212 UniRef90_C4K3S0 UniRef90-UP10003B5BAD9 UniRef90-V2TR19
UniRef90 F9RXE1 UniRef90-V9H2M5 UniRef90-F7PVN6 UniRef90-M9ROW8 UniRef90-UPIOOO378B444 UniRef90 UP100046A3B2C UniRef90 H7CTE8 UniRef90-UP100041EA4C3 UniRef90-B6BQT7 UniRef90-N6VSV1 UniRef90-F4B3Q9 UniRef90-10X824 UniRef90 Q30NY4 UniRef90_OOARD9
UniRef90_M2NF69 UniRef90-U6EEA2 UniRef90 H2CB28 UniRef90-W4HNU2
UniRef90 UniRef90-Q7M841 UniRef90-F81911
UniRef90_C5ZXD0

STARMVKAlVEDAKRQEDSUGGTVTCVCRNVVAGLGEPCFD KLTDLDNLFSDLIAEGNSVGAKLGVTIENCPVGLGAPVFD

 TSAAMVTEVDEAKADGDTLGGVVEVLAYGVPVGLGSHIQW YAEDAAHYLEDCTKNQDSSGGIVECIIDGMPTGUGEPVF AAEKMTARUMRSKEALDSDGGTVTCVIRNVPSGLGEPVFD AEEKMMKA DDDAKAEGDSIGGVVQVVVDGVPTGLGSHVQY AAKKAAEYVSTLMEQMDSCGGLIECRVDHLPAGLGEPVFD AADAMLREVSAAREASDSVGGIVEVVTGVPAGVGTPAFD AAAKDRDLIDDTKKAGDTLGGVVEVVATNLPAGLGSYVSA AEKEAEQRLKEAMSEGDSVGGVVEVVAKNVPAGLGEPVFG TGSRMIDALIEEVRKQQDSIGGAATIVATGIPAGLGEPVFD
 AAQRMEQLISEVKAEGDTMGGVVTCVVKNCPKGLGEPEFG

A A VAKKAADYLNEMMEQKDSC AEKKMMDT DQAKNNGDSLGGITTEVVEGMPAGUGSYVHY AGARMRERIDAAKQAGDTLGGIFEIVVRGLPTGLGTHTQW MAKRMEEY GKVKSEGDTVGGVVTCVVRHVPAGLGEPVFD AAEEMLGEI ERARENGDSVGGTIEVI AENVPPGLGDPVFG TAERMTDLIRQVRDRHDTVGGLVTGVVTGVPAGLGEPVFD KVKILEKYMDTLRKSGDSVGARINI IVNNMPVGLGEPUFD RRNEIVSLIDCLKSEGDTVGGSYELRIKNVPVGLGSYTHY GKEEADRRILSLRAEGDSAGGVVTCKVNGLCPGIGEPVFD IVAELEAYMDDLRKSGNSVGSRIELLAENLPCGLGEPIYD TTQQMDACIDQARMSGDSVGGLDRAQDRKAPAGWGEPVFD

VA Q E M M D K I A A ALM QK KV E E F K QKK N S CGGGIV E CVVVGGLAAGFGEPVFD





 VETLLOKEAILKAKEAHDSVGGVLVRATNLPVGLGEDM

 VAEQMDAYVDQARRDLDSLGGVVEVRARGVPAGLGEPVFD SCQKMKDTIDSAKSESDSVGGIVETAVINIPSGI GDPFFD VEESMKKEVEKKMQNKDSVGGIVECMLQGVPVGLGNPFFD AAEKMVERI RTDKEETDSVGGIVECRIRGVPPGLGEPVFD MAQKMVDHVLDARKKGDSVGGVVELIVKGVPAGLGEPVFD AALKALELINEARADKDSLGGVIGCVATGVMPGLGEPVFD KVEEIAELICALKERGDSIGAKITMAKNLPVGLGEPVFD AEKLMMDKVELARRKKDTLGGVFEVRVRGVPPGLGSHTQW KVDAFDQLIRDLKKQGDSVGAKVQVVATNVPVGLGEPVFD TSEAMKRY㛾ESKDEGDTLGGICEAFVLNVPAGLGSYVSH MIALLWEADMDAARKAGSSLGAMVEVVASGLPPGWGAPVYG ATETMKQLIKKVKNEGDSI GGVVSCIVKGVPAGWGEPVY KTEETKEEITSYRMEGDSUGGIVECAIVGLEAGMGNPFFD
 NEKEMEEYILKADEEKDSVGGVVEVVINLPVGVGNPIF LEEKYEKLLMEATKEGDSYGGVAEIVVNNPPVGLGEPVFD KEEAQKEAI LRAKNEHDSVGGVSRVLIVGVPVGLGQPLY
 VSERM1K AAESWGAYLDELRKSGNSVGAEVEVTATGVPAGLGAPVYA




## UniRef90 S4VV63

 UniRef90_UPIO0036A6D11 UniRef90-UPIOOOO3815790 UniRef90-J4HW07 UniRef90-BoSW42 UniRef90 C7MCM4 UniRef90-R9NEW8 UniRef90_M5FQ34 UniRef90-UPIo00372bB33 UniRef90-UPIo00367E9F7 UniRef90-D4M5M5 UniRef90_-Q0W6Q8UniRef90-J3JBYO
UniRef90-O29587 UniRef90-D5SXG5
UniRef90-F5YAG5 UniRef90-R6F6Y5 UniRef90-CoW3N1 UniRef90-H1VG29
UniRef90 $\mathrm{N6VFT} 4$
UniRef90-A7AZ80 UniRef90-D3E4F0 UniRef90 UPIO00225BB8A UniRef90-EOP294 UniRef90-R5EPD8 UniRef90-Q8TXN1 UniRef90-UPIOOO3B78646 UniRef90-K2AXR5 UniRef90-A5CX05 UniRef90-F9VLF5
UniRef90 F5T8Y3 UniRef90-LOB7MO UniRef90-A0A059G3N4 UniRef90-UPIO0026276E9 UniRef90-D6TF82 UniRef90 H8KZG8 UniRef90-E9C4K4
UniRef90 R8BAJ6 UniRef90-K8E1LO UniRef90-F2NX08 UniRef90-R7ROH8 UniRef90-F21324 UniRef90_S9PSGO UniRef90-14YDT6 UniRee90 UPI000374EA6E UniRef90_-ABLYZ8 UniRef90-D5V152 UniRef90-UPI0003B51D9E UniRef90-R4XAR9 UniRef90-A6Q1H1 UniRef90-B9KE09
UniRef90
T1C3W3 UniRef90-UPI000405D329 UniRet90-R6WJK3 UniRef90-A9AWF4
UniRef90-V4YP47 UniRef90-WGNJO2 UniRef90 R7PPD2 UniRef90_B3E9NO
UniRef90 EOROP8 UniRef90_UPIOOO3725829 UniRef90-F3B2N9 UniRef90-H1Q212
UniRef90 C4K3SO UniRef90-UPI0003B5BAD9 UniRef90-V2TR19 UniRef90-F9RXE1 UniRef90-V9H2M5 UniRef90-F7PVNG
UniRef9O-M9ROW8 UniRef90-UP1000378B444 UniRef90-UP100046A3B2C UniRef90 H7CTE8 UniRef90-UP100041EA4C3 UniRef90-B6BQT7 UniRef90-N6VSV1 UniRef90-F4B3Q9 UniRef90-10X824 UniRef90-Q30NY4 UniRef90_OOARD9
UniRef90_M2NF69 UniRef90-U6EEA2 UniRef90-H2CB28 UniRef90- W4HNU2
UniRef90 UniRef90-Q7M841 UniRef90-F81911


UniRef90 S4VV63 UniRef90_UPIO0036A6D11 UniRef90-UPIOOOO3815790 UniRef90 J4HW07 UniRef90-BosW42 UniRef90-C7MCM4 UniRef90_R9NEW8 UniRef90_M5FQ34 UniRee90_UPIo00372BB33 UniRef90-UPIo00367E9F7 UniRef90-D4M5M5 UniRef90-Q0W6Q8 UniRef90-J3JBYO UniRef90-O29587 UniRef90-D5SXG5 UniRef90-F5YAG5 UniRef90-R6F6Y5
UniRet90-COW3N1 UniRef90-H1VG29 UniRef90-N6VFT4 UniRef90-A7AZ80 UniRef90_D3E4FO UniRef90-UPIO00225BB8A UniRefefo-EOP294 UniRef90-R5EPD8 UniRef90_O8TXN1 UniRef90-UPIO003B78646 UniRef90-K2AXR5 UniRef90-A5CX05 UniRef90-F9VLF5
UniRefo
U5T8Y3 UniRef90-F5T8Y3
UniRef90-LOB7MO UniRef90-A0A059G3N4 UniRef90_UPIO0026276E9 UniRef90-D6TF82 UniRef90-H8KZG8 UniRef90-E9C4K4 UniRef90-R8BAJ6 UniRef90-K8E1L0 UniRef90-F2NX08
UniRef90-R7ROH8 UniRef90-D4H0T2 UniRef90 F21324 UniRef90-S9PSGO UniRef90-14YDT6 UniRet90_UPI000374EA6E UniRef90_R5B955 UniRef90-A3LYZ8 UniRef90-D5V152
UniRef90 O72DN5 UniRef90-UPI0003B51D9E UniRet90-R4XAR9 UniRef90-A6Q1H1 UniRef90-B9KE09 UniRef90-T1C3W3 UniRef90-UPIO00405D329 UniRef90-R6WJK3 UniRef90-A9AWF4 UniRef90-V4YP47 UniRef90-WGNJO2 UniRef90 R7PPD2 UniRef90-B3E9NO
UniRef90 EORQP8 UniRef90-UPIOOO3725829 UniRef90-F3B2N9 UniRef90-H1 Q212 UniRef90_C4K3S0 UniRef90_UPI0003B5BAD9 UniRef90-V2TR19 UniRet90-F9RXE1 UniRef90-V9H2M5 UniRef90-F7PVNG
UniRef90-M9ROW8 UniRef90-UPI000378B444 UniRef90-UPIO0046A3B2C UniRef90-H7CTE8 UniRef90-UP100041EA4C3 UniRef90-B6BQT7 UniRet90-N6VSV1 UniRef90-F4B3Q9 UniRef90-10X824 UniRef90-Q30NY4 UniRef90_OOARD9
UniRef90_M2NF69 UniRef90-U6EEA2 UniRet90-H2CB28 UniRef90-W4HNU2 UniRef90-K8F1Z6 UniRef90_Q7M841 UniRef90_F81911
UniRefgo-C5ZXD
UniRef90_C5ZXD0

GSAQQTCEYGGEQATLEARGRHDPCVVIARAVIP\|VEAMAAM KNTGKSMNADGNEVNIEVTGRHDPCVGIRAVPIAEAMANL LIPGHSVNLQGEPDEMRTKGRHDPCVGLRATPVGEAMVA

 SRPQRTVNLTGAETIIEITGRHDPSIVPRAVPVAEAMVAL SKKQRTVDYEKMEEETSVKGRHDPCIVPRAVPVVEAMVAL PLEQPTVTRAGEATTVRTKGRHDPCLLPRFIPMAEAMVACL LQEQKTVDSTGNSADLQAHGRHDPCVVPRAVPIVEAMTAM GQDQTTATYDGSEEVLAAKGRHDPCVVPRAIPIVEAMAALI GTPCRSDDVNGNNVDVVTKGRHDPCVGDRAVPVGEAMVAC SQDQETIDLNKKETTIEIKGRHDPCICPRVTAVAESATAD MKPLQSVDATETKERFQASVERSDACAVPAAAVVMEHVVAF
< ros
Z

|  |  |
| :---: | :---: |
|  |  | GKEQATVTYDGTSAVLAAKGRHDPCVVPRABPDVE GQAQTTATYDGEEGVLAAKGRHDPCVVPRAVPIVEAMAAL YKPLMSVDVDTKEEYKASDERSDSCAVPAASVVAEAVVAW

 LNTRETDDKSGKNTKI SVGGRHDPCVGDRAVPIGEAMLAC
 SQAQQTAKYNGDAGVLEARGRHDPCVVPRAVPIVEAMASIM SRPLRTVDVNGNEALLKARGRHDPCVLPRAVPVVEAMAAV
SQEQPTATYDGKDGVLAARGRHDPSVTPRAVPIVVESTAAL SQEQPTATYDGKDGVLAARGRHDPSVTPRAVPVVESMTAL
FIKQASTDIHNN EVSCEEKGRHDPCVAVRGSTVAESMMS AQEQDTVDRDGKPSAMFIAGRHDDSAIPRIVPVLKAMTAL
 FQKQRSDDVNGNEVEVERKGRHDPFVAARGSVVAEAMMAC有






UniRef90 C1DV19 UniRef90 ${ }^{-}$F8L8E1 UniRef90_UPIO003697E89 UniRef90-D8QKM UniRef90-F3X2L9 UniRef90-C8NC64 UniRef90-UPI0002E93AAE UniRef90-C6LCU3 UniRef90-UPIOOO40893BB UniRet90_U5QG54 UniRef90 E2S9F9 UniRef90_UPIO00363BEE2 UniRef90-WORL63 UniRef90-U6B3L1 UniRef9_R5T3P3 UniRef90-A7810
UniRef90-BEIID UniRef90-C5VNK0 UniRef90_U2YXK8 UniRef90-UPIO0041C92D5 UniRef90_096Y94 UniRef90-K2QVS5 UniRef90-X2H8S9
UniRef90 E6MSZ4 UniRef90-UPI0003B5515C UniRef90-R7AJR1 UniRef9-C8X4V8 UniRef90-B8D2E0
UniRef90-D1CDM5 UniRef90-Q892J3 UniRef90-LOA8Z8 UniRef90_UPIOO047928D9 UniRef90_Q72IW3 UniRef90-D9SPR5 UniRef90-D0GLL8 UniRef90-C5A782
UniRef90 ${ }^{\text {C5RCM }} 1$ UniRef90-C5RCM1
UniRef90_R5F9×5 UniRef90-UPIIO00441DAB3 UniRef90-R5I2S4
UniRef90 R6WC09 UniRef90-R6WC09 UniRef90-C3XNS 1 UniRef90-B2B197 UniRef90 UPIO00368A8AB UniRef90-A00387 UniRef90-C0QEK8 UniRef90-12F9F2 UniRef90-R7LDX8
UniRef90 R5BFVO UniRef90 UPI00036FE7FA UniRef90_UPIO004152C65 UniRef90-UP1000288F1AD UniRef90-V6M1A1
UniRef90_UPI000255F61F
UniRefofo-s3XG45
UniRef90-V8G6T1
UniRef90-A8UVY6
UniRef90_G9WP52
UniRef90_S6F3F5
UniRef90-Q9V 1 Ho
UniRef90-F6D491
UniRef90-C7MMU6
UniReffo-E8LLH9
UniRef90_10AKF6
UniRef90 LTVJLO
UniRef90-E4TZF1
UniRef90
U7JOF4
UniRef90-E7G8L9
UniRef90-D1B4G9
UniRef90-UPI0003B6BF85
UniRef90-U2Q0F9
UniRef90_UPIO00225AF63
UniRef90-UPIOOO3B3CC17
UniRef90-R5WGF7
UniRef90-R5WGF7
UniRef90-R6OKM2
UniRef90-Q18F10
UniRef90_UPIO0047E288D
UniRet90-R9RBG0
UniRef90_D3L5K9
UniRef90-14C399
Unii effo-B6GO229
UniRef90_C7LUN7
UniRef90-R6NZM1
UniRef90-XOZ934
UniRef90 - $10 . \mathrm{JVM5}$
UniReffo-10JVM5
UniRef90 W6K3N4
UniRef90-G4D218
UniRef90 D2R8V8
MLRFLINAGESHGPALTAIVIEGYPSNVNVSSDRINHELARR LFRTTWGESHGKGGGVIDGCPANLPLNDEDINRELEKR

DR TTAGESHG TA GGGVLDGFPAGVK DFDFLQNELDKR LFTVTNFGESHGIAIGCVVDGCPAGLSLSEEDIQKELDRR VLRFLTAGESHGKGLTAILEGIPANLEISEGYINRELRRR IFRUSSFGESHGKALGVVVDGCPAGLSLSEADI QPYLERR





| UniRef90_C1DVI9 |  |
| :---: | :---: |
| UniRef9 | F8L8E1 |
| UniRef90_UPI0003697E89 |  |
| UniRef9 | D8QKM1 |
| UniRef90-F3X2L9 |  |
| UniRef90_S3DAV2 |  |
| UniRef9 | C8NC64 |
| UniRef90_UPI0002E93AAE |  |
| UniRef9 | C6LCU3 |
| UniRef90_UPI00040893BB |  |
| UniRef90_U5QG54 |  |
| UniRef9 | E2S9F9 |
| UniRef90_UPI000363BEE2 |  |
| UniRef9 | W0RL63 |
| UniRef90_U6B3L1 |  |
| UniRef90_R5T3P3 |  |
| UniRef90-A718M0 |  |
| UniRef90_B3EID0 |  |
| UniRef90_C5VNK0 |  |
| UniRef9 | U2YXK8 |
| UniRef90-UPI00041C92D5 |  |
| UniRef90- Q96Y94 |  |
| UniRef90_K2QVS5 |  |
| UniRef90_X2H8S9 |  |
| UniRef9 | E6MSZ4 |
| UniRef90_UPI0003B5515C |  |
| UniRef90_R7AJR1 |  |
| UniRef90-C8X4V8 |  |
| UniRef90_B8D2E0 |  |
| UniRef90_D1CDM5 |  |
| UniRef90-Q892J3 |  |
| UniRef90_L0A8Z8 |  |
| UniRef90-UPI00047928D9 |  |
| UniRef90_Q72IW3 |  |
| UniRef90- D9SPR5 |  |
| UniRef90-T0GFF6 |  |
| UniRef90-D0GLL8 |  |
| UniRef90-C5A782 |  |
| UniRef90_C5RCM1 |  |
| UniRef90_R5F9X5 |  |
| UniRef90_UPI000441DAB3 |  |
| UniRef90_R5I2S4 |  |
| UniRef90_R6WC09 |  |
| UniRef90-Q3ZZI6 |  |
| UniRef90_C3XNS1 |  |
| UniRef90-B2B197 |  |
| UniRef90 UPI000368A8AB |  |
| UniRef90-A0Q387 |  |
| UniRef90 ${ }^{\text {C }}$ C3MZF2 |  |
| UniRef90-C0QEK8 |  |
| UniRef90-I2F9F2 |  |
| UniRef90-R7LDX8 |  |
| UniRef90_R5BFV0 |  |
| UniRef90_UPI00036FE7FA |  |
| UniRef90_UPI0004152C65 |  |
| UniRef90_UPI000288F1AD |  |
| UniRef90- V6M1A1 |  |
| UniRef90-UPI000255F61F |  |
| UniRef90-S3XG45 |  |
| UniRef90_V8G6T1 |  |
| UniRef90_A8UVY6 |  |
| UniRef90_G9WP52 |  |
| UniRef90-S6F3F5 |  |
| UniRef90_Q9V1H0 |  |
| UniRef90_F6D491 |  |
| UniRef90_C7MMU6 |  |
| UniRef90_E8LLH9 |  |
| UniRef90-I0AKF6 |  |
| UniRef90_L7VJL0 |  |
| UniRef90-E4TZF1 |  |
| UniRef90_R7J0F4 |  |
| UniRef90_E7G8L9 |  |
| UniRef90-D1B4G9 |  |
| UniRef90-UPI0003B6BF85 |  |
| UniRef90_U2Q0F9 |  |
| UniRef90_UPI000225AF63 |  |
| UniRef90_UPI0003B3CC17 |  |
| UniRef90_R5WGF7 |  |
| UniRef90_R6QKM2 |  |
| UniRef90_Q18F10 |  |
| UniRef90_UPI00047E288D |  |
| UniRef90_R9RBG0 |  |
| niRef90_D3L5K9 |  |
| niRef90_14C399 |  |
| UniRef90_B6G029 |  |
| niRef90-C7LUN7 |  |
| UniRef90-R6NZM1 |  |
| niRef90-X0Z934 |  |
| UniRef90-10JVM5 |  |
| UniRef90-W6K3N4 |  |
| $\begin{aligned} & \text { UniRef90_G4D218 } \\ & \text { UniRef90_D2R8V8 } \end{aligned}$ |  |
|  |  |

$G \square K Y$ GF Y D L ${ }^{130}$ R N VLE R A S ARET ${ }^{140}$
150
160
LFKY G DF $\quad$ YR G G GRSS AR
 LEKYDVK ASSGGGRSSARET DGRVAA GAVAEKYL KEVYG DAKYGFRDYRGGGGSSARETAARVAAGAVARAVIPQ

 D $\rightarrow$ T3







 I

## 

 GMKYFHQANDYRGGGHF  HHKYGTRRDYRGGGGGRYSGRRE $D M K Y G F R D Y R G G G G G Y L A T Q$ FMKYGGFNDYRGGGRFSGR』TAGHVMAGAIARK LI DSTDG $F Q K Y G F R D F R G G G R S S A R E S V A R V A A G A I A K M F L R B F N$
 $F V K Y D G F N D Y R G G G H F S G R L T A P D V F A G A V A K Q V L A K N N$




|  |  |
| :---: | :---: |
| UniRef90-F8L8E1 |  |
| UniRef90-UPIooo3697E89 | EIVAHIQSIGEIKDKSDCD |
| UniRef90-D80KM1 | EIVAFVSGVGKVHVPRTMGGDDD |
| UniRef90-F3X2L9 | RIRAWVEAI GGDR |
| UniRef90-S3DAV2 | E1 VA WT |
| UniRef90_C8NC64 | R1 RSYVSQ GEHR P A LDEADWKHVSENPFNCPNDH |
| UniRef90_UP10002E93AAE | RLVSHVVR GEVSLPDGAPPTPEDTERLDADPVRCLDAA |
| UniRef90-C6LCU3 | S SVMAYTKSGGPVEIDPARFCEAEXYKSVSAMPLNMPDAA |
| UniRef90-U5QG54 | IHVHSQVVE! GGVGGDAPLRPELPDFAEWKAL |
|  | ATIVSHVVALGTAVAPAGVVPTRAD |
| UniRef90-UPIO00363BEE2 | RCTAYTSQI GSVRLPQEK AKKYSLEEVESSPIRCPDPD |
| UniRet90-WOF | VRIGSHLVHLGGIDAARPDTLPEDLNAAADASPLRTLDAS |
| UniRei90 U6B3L |  |
| UniRet90 R5T3P3 | I TVCAYTKAVGPYE ADPGQFNMEEMHRNRLYMPDAG |
| UniRe90-A78M0 | GRVAVGK |
| UniRef90 B3EIDO | \| EVVGYVSAA GSAAEPTVNPAVEELLVNGDRSSVRMLN |
| UniRef90-U2) | RAGIVQI GPHRDEDDR DDFGAVEH |
| UniRef90-UPIO0041C92D5 | VSHIKSICNIEDISFDYTNUSDTNNLPK |
| UniRef90_Q96Y94 | AGHLKSLGYVELNE PVTFEEVLCSKYSPVRASKKW |
| UniRet90-K2QVS5 |  |
| UniRef90-X2H8S9 |  |
| UniRef90-UP10003B5515C | I SVVAYTIGALGGVVAEK |
| UniRef90-R7AJR1 | QG\PDTP पNMDQLSRLSSH |
| C8X4 |  |
| Ref9 ${ }^{-1882 E 0}$ | QTGEVKSSSPEVDFDTLK |
| UniRef90-D1CDM5 | SLTRSIGPIRSDATPPY DWQQI |
| UniRet90_0892J3 |  |
| UniRet90_LOA8Z8 |  |
| UniRef90_UP100047928 | IEITAYTKSIGGVV ITDESNFDKAQITRSITAMPDAD |
|  | VEGVGYVPGMAGV WAKVPFSWDLVPRIEESPLRMTDPE |
| UniF | EDI EDV |
| UniRet90-TOGFF6 | G |
| UniRer90-DOGLL8 |  |
| UniRef90-C5A782 |  |
| UniRet90_C5RCM1 |  |
| UniRef90_R5F9X5 | I TVRAYTREVGGICIAQ ERFDLDEMWNNRLYMPDAR |
| UniRef90 UPI000441DAB3 | I TVRGYMSQLGPIEIPP FKTWDSVEQNAFFSPDPS |
|  | I RLITYSKSIGPIA CDPRHFDAEELLKNPVYMPDAD |
| UniRef90_R6WC09 | Q D |
| ee90_Q3ZZ16 | 1 EVIGYTAELGGI TA KLPKHKDIRQNISQSDVNCPDLI |
| UniRet90_C3XNS1 |  |
| UniRet90_B2B197 | KHPVRCPDQA |
| UP1000368A8 | FAWVDQ1 GTVR A ADPALIF DREQNN |
| UniRef90 A00 387 |  |
| UniRe90-COOEK8 | S |
| COQE2 |  |
|  | Q A m |
|  |  |
| UniRef90 - UPI00036FE7FA |  |
| UniRef90-UP10004152C | CAYTKSIGSVT ADMDK |
|  | I EI RSKVNSI GPYKDSNMDLFDNRVYERUNN |
| UniR |  |
| UniRef90-UPI000255F61F | 1 RTVSHTTAVGTVSVPEDSLPGPDDVVALDADPLRCFDQL |
| S3XG45 |  |
| Ref90-V8G6T1 | I EVMGYMSQL GPUK IP FVSWSEVANNPFFAPNAE |
| iRef90_A8UVY6 | IRIGSYVINIGECSFPIEEEDLLKRHELLAEKSELRFPDPT |
| UniRef90_G9W | VEVDAKVMELAGISLS <br> TS E |
|  | $V R G Y L S Q I G S V R \square N P K T V E N Q \square D W Q Q V N S N P F F C P D Q S$ |
| UniRef90-Q9V1H0 | GRVEAKQLTLLEE OLSSENPFCPDEE |
| 6D |  |
| ef90_C7MMU6 |  |
| iRef90_E8LLH9 | ESGCVTA GSIA AD |
| niRet90_10AKF6 | GSYVESI GGI Y SKEDFYEKLIF |
| UniRef90_L7VJL0 | GTHLLRIGK। |
| UniRef90-E4TZF1 | 1 TFQSGIJSAl HG1 |
| UniRef90_R7JOF4 |  |
| ef90-E7G8L9 | GA |
| et90-D1B4G9 | QS G |
| Ref90_UPI0003B6BF85 | LKI RAALVGMGIHKD DRSRWDWAEVDNNPFFTPDAG |
| iRef90-U2Q0F9 |  |
| UP |  |
| UniRef90 UPI0003B3CC17 | ENNLRAPDNE |
| UniRet90_R5WGF7 | EYL QYENIEKSPLRMPDLIQ |
| UniRef90_R6QKM2 |  |
| et90_Q18F10 | AHVNQ GDIKAPPVTFEEM LEETEENEVRCAHPE |
|  | YIGSHIKSI GHIKEHNFDWVNTDDKHLENTKKFPVLDIE |
| UniRet90-R9RBG0 |  |
| UniRef90-D3L5 | $V A V R S S V T S V G P$ RSIGLPRSEEEWTRACSSDMGLPREE |
| Uni |  |
| 90-B6G029 |  |
| iRef90- 7 LUN7 |  |
| UniRef90-R6NZM1 |  |
| ef90 ${ }^{-}$xoz934 |  |
| UniRefo-10JyM |  |
| $0{ }^{-}$W6K3N | TRLVSHTISIGTASVADAEDPHPDQVDALDADPVRTDDAA |
|  | ETDYPDMKALKECEKKEIPVISEE |
|  |  |




 EKK QK TVVTE GREFEDPKGSRHDPCVTIRAVPIVEAMAAL





| UniRef90_C1DVI9 |  |
| :---: | :---: |
| UniRef90-F8L8E1 |  |
| UniRef90-UPI0003697E89 | GI LD L I |
| UniRef90_D8QKM1 | V V M M M L I Q |
| UniRef90_F3X2L9 | $V L A D Q A L L H R G Q C$ |
| UniRef90-S3DAV2 | V V V D A L M A Q |
| UniRef90-C8NC64 | T L A H Y L R Q R G Q N |
| UniRef90_UPI0002E93AAE | VLA Q A L L E K T G G D S VA ECARNLR A Y TERVAER |
| UniRef90_C6LCU3 | TIVDALFANM YARMDA】T D F Y K |
| UniRef90_UPI00040893BB | TILDLLL $\mathrm{L}^{\text {L }}$ NMHS |
| UniRef90_U5QG54 | VLAQELQRKF G G S L G M M R H |
| UniRef90_E2S9F9 | VLAEAVLEK F G G D SVGE T R R NVES Y LS HLS F R |
| UniRef90_UPI000363BEE2 | TLLA D A YL |
| UniRef90-W0RL63 | VLA Q A F L E K G G D S L E M R R N Y D G Y LTRVGER |
| UniRef90_U6B3L1 | $1 \mathrm{~L} A \mathrm{DHYL}$ R D R G Q |
| UniRef90-R5T3P3 | T TADLLL CSMTSRLDR\QAF |
| UniRef90-A718M0 | VLID A L L E Q |
| UniRef90_B3EID0 | VI AN A L L E K G G D H F $\square$ E $\square$ K S R L E T Y R D H L |
| UniRef90-C5VNK0 | GI L E L |
| UniRef90_U2YXK8 | VLADA M L R Q R G Q |
| UniRef90_UPI00041C92D5 | GI L E L L |
| UniRef90_Q96Y94 | VI V D HAMR R $\square$ S D D Q $\square$ K $\square$ I E E R WNK Y |
| UniRef90_K2QVS5 | TILDDHILR D R G Q N |
| UniRef90_X2H8S9 | VLMD H AL R Q A Q N |
| UniRef90-E6MSZ4 | V I LD N Y L L |
| UniRef90_UPI0003B5515C | V L A D HL L R L A |
| UniRef90-R7AJR1 | ALLDLL L E S Q G |
| UniRef90 ${ }^{-} \mathrm{C} 8 \mathrm{X} 4 \mathrm{~V} 8$ | T I A D ML L L R S AR S |
| UniRef90_B8D2E0 | IILA QAILEK F G G D H I D E IF D NYKRFLD |
| UniRef90-D1CDM5 | $V$ W W A FLE K F G G D S L R i R R N Y G Y i E S L |
| UniRef90_Q892J3 | EILKE IL N K FP S D E Y Y EL K R N $\square$ S HYRGTI Y LR |
| UniRef90_L0A8Z8 | TLI D H Y M R K L S K Q A D I E K R WS E Y K Q |
| UniRef90_UPI00047928D9 | TVVLDLLMSNMHS |
| UniRef90_Q72IW3 | VLA QA Y L E K F G G T M E E $\square$ Q |
| UniRef90_D9SPR5 | AL A E L I L |
| UniRef90_T0GFF6 | VL VD A Y V Y Q R A |
| UniRef90_D0GLL8 | V I LD QL L E A R |
| UniRef90_C5A782 | V L A D HL L R R A WE GVVR |
| UniRef90_C5RCM1 | ELA K A I L D K F D T D S L S R L Q E Q V S A Y R E E $\square \mathrm{K}$ |
| UniRef90_R5F9X5 | TAADMLLLSMTS RLLDRVQAFFARDR |
| UniRef90-UPI000441DAB3 | A L M D HLL R HRAQN |
| UniRef90-R5I2S4 | TI VD A M F A N M S A D SLER |
| UniRef90-R6WC09 | V I A D M L T T R F G T D Y L |
| UniRef90-Q3ZZI6 | V L A D L A L R |
| UniRef90_C3XNS1 | ILA D MLL L N A T S K Lie NLQ K L Y |
| UniRef90_B2B197 | TVVMDALVRHF G P K T L S Q |
| UniRef90 UPI000368A8AB |  |
| UniRef90-A0Q387 | G $\$ L E L I  \hline UniRef90-C3MZF2 & T L V D H A M  \hline UniRef90-C0QEK8 & VLADLLLRQ  \hline UniRef90-I2F9F2 & V I A D ML L L H  \hline UniRef90_R7LDX8 & \|V I L D N Y M L H  \hline UniRef90-R5BFV0 & VLLD F L L  \hline UniRef90_UPI00036FE7FA & V L A D HL R HRGQ  \hline UniRef90_UPI0004152C65 & TV LD L M S NTS S D NL  \hline UniRef90-UPI000288F1AD & EILKKEILKVYQ Q D D F N K L K E N I Q  \hline UniRef90-V6M1A1 & VLEDHFKRHLLA  \hline UniRef90_UPI000255F61F & $V L A Q A V L E K F G G D S V A E T R R N L D N F V A A L E ~$ |
| UniRef90-S3XG45 |  |
| UniRef90_V8G6T1 | VLID NLLMHRA |
| UniRef90-A8UVY6 | V L A D A L E K L G G F M E E LKARFK LYMEHVK |
| UniRef90_G9WP52 | V V LDCLLENMSA R L E NVKK $\square \mathrm{Y}$ ( R |
| UniRef90_S6F3F5 | V L L D H L R F K Q C |
| UniRef90_Q9V1H0 | V L A D HL L F R R |
| UniRef90_F6D491 | TI A D HLI R |
| UniRef90_C7MMU6 | VLADA YLQK F G H D N M A DVKA H LD Q Y C Q R $\square \mathrm{K}$ |
| UniRef90-E8LLH9 | CLDD A A L L Q R Q C |
| UniRef90-I0AKF6 | SVAK F F L EKF G G D S |
| UniRef90 L7VJL0 | V V M D L F E H |
| UniRef90-E4TZF1 | V CA D MVLL ${ }^{\text {CMGS }}$ |
| UniRef90-R7J0F4 | TVFGGALL R N R |
| UniRef90-E7G8L9 | G I LD M M |
| UniRef90-D1B4G9 | VI A D L L L L N L G T S MEHLLKQ |
| UniRef90_UPI0003B6BF85 | AI A D HYL |
| UniRef90-U2Q0F9 | G ${ }^{\text {L }} \mathrm{D}$ L $\square \mathrm{M}$ M |
| UniRef90-UPI000225AF63 | VI AD HFLR WR G Q C |
| UniRef90-UPI0003B3CC17 | $V L$ VD S L L R |
| UniRef90_R5WGF7 | TIV V R L |
| UniRef90_R6QKM2 | TVADMLLCNMSS |
| UniRef90_Q18F10 | T I LDF ML LD G Q $\square$ NP D R LD D N P G Q Y |
| UniRef90_UPI00047E288D | CILDLI CERNGAEWM |
| UniRef90_R9RBG0 | A I L D El L |
| UniRef90-D3L5K9 | VLA Q A CEQFGGDRMEDLRSRFEEHTKRTRR |
| UniRef90-14C399 | V L A E A L LE K L G G D S $\square E E$ M K P R F K D L R |
| UniRef90_B6G029 | AV F D M L |
| UniRef90-C7LUN7 | VLA D M V L L Q R |
| UniRef90-R6NZM1 | AI L N L L |
| UniRef90-X0Z934 | VILD F L L |
| UniRef90-I0JVM5 | $\checkmark \mathrm{A}$ A H ALLRQ |
| UniRef90-W6K3N4 | VLA Q A CLE K F G G D S L V T R R N F E S Y LA S $\square$ P E |
| UniRef90_G4D218 | TI LD F M |
| UniRef90 D2R8V8 | EVARALVEKFGNDSLVEMKARYDLFQKMARER |





## UniRef90_F8N883 UniRef90_S6CC47 UniRef90_UPI000377D3F4 UniRef90_UPI00036E4BAD UniRef90_A0A010YUC9 UniRef90_K6PNZ0 UniRef90 E1QT32 UniRef90-D6YWA2 UniRef90_K2KJJ4 UniRef90 D7DTY2 UniRef90_J9Z085

 A LDTNTDDCRNDLERASARETAARVAAAGVAREFLAA LIG




 HMKYKNFDYRGG GRSSARETAMRVAAGALADLYLKKVAN DAKYGFRDYRGG GRSSGRETAARVAAGAVCAKLLSGMG QMKYGTR ASSGGGRASARETDGRVASGAVAEKWLKQQFG NVRYGGHQDASGGGHFSGRLTAP LCIAGGICDQFLQQAHG


 KVKYNGFNDYRGGGHFSGRLTAPLVFMGAVAKQLLAQR G
 NMKYHGFQDFRGGGHFSGR\|TAGIVAAGAVA 1 SALKAKKG

 F RYNGFNDYRGGGSFSGRDTAPLVFAGAVCQQVL ESKG TAKYG IRDWRGGGRASARETFGRVAAGAVAAELLRLDSG YVRYNGSNDLRGGGHFSGRITAPLVFAGAIASQLLGESKG
 Y L K Y GliNYDHRGGGRASGRTTAAIVAAGAVAKAVLVHVGG QKKYGURDYRGGGRASARETAVRVTGGAIAKAVLQQLCA
 KVRYGGFNDYRGGGHFSGRLTAPLVFAGAVASQILARHGG


 HAKYGFRDYRGG GRS | DAKYGFRDYRGGGGRS |
| :--- |
| LKKYGIRDYR GSGRA | FHKYENRDYRGG GRS MLRYEGFNDDRGGGHFSGRLTAPLVFAGALSKLALKEKFD FIKYGFDDDRNVLERSSARETAGRVAAGALCKNLLR HDG LAK YGRRDYRGGGRASARETAARVAGGAVAASLLAGRGG K 1 KYFGFNDYRGGGRFSGRLTDGFVDAGYFAKKVL EPVG

 QLKWHGNQDVPGGGHFSGRLTAPLCAAGGIADQALATR G GIKYRHKDLRDVLERASARETAARVAVGSVALKLLAE LG WMRYGGFQDYRGGGHFSGRDTAPDVFAGAVAREALSQDPG EAKYGFRDHRGGGGSSARETLGRVAAGAVAKAFLATQ G SAKFGTRNW GGGGRSSARETVNWVAAGAVAEQVLASEYD RVRYGPEADDSGGGDFSGRMTVGLVIAGALARQLLA PDG EAKYGHRDPRGGGGRASARETVVRVIAGAIATQWLTAQGG QMKYGlR ASSGGGRASARETIGVVAAGAIAAKVLKEKCN FKKYGIRDHRGGGGASARETAVRVAGGAFAQ LLLNEDK YAKYHGFQDARGGGHFSGRDTAALVAGGSDVLGAL NRAG HVKYKGHEDSRGGGAFSGRMTAPLCIAGGICKQLLESEGG EQKFG $\square R D V R G G G R S S G R E T S A R V A A G A V A R Q V L$ ESKG DMRYGYENDYRGGGRSSARETVGRVAAGAIAKK LIMFHD KARYDVYDYRGGGRGSGR VTIGHVIGGAVAKK LLNTDN F $\square \mathrm{KYGKDMDMNGGGPFSGRLTAPFCLAGGIAKQDLEEKN}$
 MLKYGFDDARPVLERASARETAARVAAGTVARLFLRQALG $T L R Y K G F N D V R G G G H F S G R L T A P L C F A G A V C G Q U L E R R E G$
$W Q K Y G D R D R G G G R S S A R E T T M R V A A G V I A K K W L K Q R Y G$ $A L K Y G H R D L R N V L E R A S A R Q T A A W T L A G T L A R L L L A E G G$ LMRYKGFND DRGSGHFSGRDTAS IVFAGAIAKLILKE KG
 GERYNNSQDYTGGGHFSGRLTAPLCIVGGLCLQLLRAE G DEKYGFRDYRGGGGRSGRETIGRVAAGAVVAKLLES $\square G$ THKYGGFEDYRGGGHFSGRLTLNLVAAGVIAKKIL G G A G KDKYKQANDYRGGGHFSGRLTAPLVFAGAVAKQILEKQ D WNKYKNDFRGGGHSSGRLANVSASSITKKYLIKNYG $G I K Y G H K D L R D V L E R A S A R E T A S R V A A G A I V A L R D L L E T V G G$
$G V K Y N G F N D S R G G G H L D G R T T A A L N F C G A V C R Q I L E R R E G$ FLRYNGANDPRGGGHFSGRLTAPLVFAGAVCAQILEHR G


 QOKYSGYNDPRGGAHFSGRITAGVVAGGVVAKKILLEKG G DK Y H Q A D L R NVLERSSARETVMRVAVGAVAKAVLQEDGG EGKFRGYQDYRGGGHFSGRDTAALCVAGGIADQMLQERNG HAKYGGFEDFRGGGHFSGRLTVCMVAAGVIAKKLLGH SAKFGTRNW GGGGRSSARETVNWVAAGAVAGAVLDQTHD


## UniRef90_F8N883 UniRef90-S6CC47 UniRef90_UPI000377D3F4 UniRef90 A0A010YUC9

 UniRef90-K6PNZ0 UniRef90-E1QT32 UniRef90_D6YWA2 UniRef90-K2KJJ4 UniRef90_D7DTY2 UniRef90-J9Z085 UniRef90 UPI00040CCE8D UniRef90-H3G8E2 UniRef90-R6LJ41 UniRef90_14BZ62 UniRef90-B9CK62 UniRef90-FOLJD7 UniRef90-IOEN86 UniRef90_R7AZM3 UniRef90_R6HC47 UniRef90-B1C7Z0 UniRef90_UPI0001C3763C UniRef90-MOMR49 UniRef90-F4BQH8 UniRef90_LODN33 UniRef90_A6M253UniRef90_A8ZT68 UniRef90-D4JU17 UniRef90-R5IST7 UniRef90-C7N567 UniRef90-A3MUI8 8 UniRef90_A5EXT0 UniRef90_T0N4C6
UniRef90_B8J8W9 UniRef90_G0VLC3 UniRef90_N9WHV3 UniRef90-A0A017PKP8 UniRef90-R9M376 UniRef90_A5UNA1 UniRef90_FOJHH9 UniRef90-UPIO003B6407F UniRef90-H9UMY8 UniRef90_JOLF16 UniRef90-D8IF37 UniRef90_UPI0003B5B180 UniRef90_C4XQX4 UniRef90-16V1M5 UniRef90-D3LTF5
UniRef90 F7XM82 UniRef90-G5F4J2 UniRef90-UPI00036B8ECE UniRef90-E3GJJ99 UniRef90-B9LMX0 UniRef90-T1C8U3 UniRef90-U2IQX8 UniRef90_K1YNA8 UniRef90_A8Z6F5
UniRef90_D4JXH4 UniRef90-X8IRC4 UniRef90_G8QXX4 UniRef90_A4YHW1
UniRef90 F0T5U0 UniRef90-FOT5UC
UniRef90-FOHOL4 UniRef90_R9TBF7 UniRef90-F4KLY1 UniRef90_X7Z186 UniRet90-R7MMW2 UniRef90-UPI0003B4EFE4 UniRef90-D1ALD0 UniRef90_F9MR69 UniRef90-BOS2R8 UniRef90-R5J6W7 UniRef90_C7PC56 UniRef90_UPIO0036E222F UniRef90-EOTIQ1 UniRef90-D7CWQ2 UniRef90-R6GFF1
UniRef90 R5GUE9 UniRef90-R7D054 UniRef90-E1QZZ6 UniRef90-R5ZGX7 UniRef90-D2MM28 UniRef90-M1P8S1 UniRef90-H1X6B3
UniRef90
X8K573 UniRef90-UPI00041B6B6B UniRef90-V4XX93
 ATDAMKKVI DRAKSDGESLGGTFRDVVCGLAPGLGTYATG
 STARMVAEVDAAKEEGDTLGGVVEVVVHGLPVGLGSYVQA T A A LDA CEYLEEMMGKLDSVGGVVECVIDGVPAGIGDPVF ASERMVEAI RTAGQAGDTLGGVFEVLVTGVPVGLGSHASG AMKRAI DVLDNAVKDGDSVGGIGEVLTTEVPPGLGEPVFD TEASMUSMI ERTLEEKDSVGGVVEVIARNLPAGLGDPVY
 II K A WEELI L LHRKKGSSLGAI I EVRVKNCPAGLGEPIY ADKKAVEYI ESCRQDTDSSGGII ECRITGAPAGI GDPVF
 MEARLRRAIDEAGQSGDSLGGTFAVVVKNVPAGIGSYGEW AGEKILSAIREARDAGDSVGGLVECVATGIPAGMGSPLF
 AA QEVAVFAEKKMEEHDSVGGVIECVISGVMPGIGETVFD A GNEMQQLILAAKQSCDSVGGVI ECMAINLPAGIGAPFFD

V


 $V$ E Q Q M R DVI A GAAA K L D S V G GI I E YA A V G L PA GI G S P M F D A A A A MQAEIAQAKAD GDSVVGGVVECVIDGLPAGI GEPMFG

 ND ELL L Y QK I L RI I K E G D S L G S I I S T EVVY NV P S G V G E P F F
 VA



 FEEE QKQTILLSVREH H D S L G GTAVVVKIN NSP


 A A DRMQAAVDSARKEGDSIGGVVVVIARGVPPGDGEPVFD AEGAMLAAI DAARRGLDSVGGVVECVATGLPAGMGSPMFD A A A QMRER DQAKK DGDTLGGLL EVRFRGLPVGLGSYVHW
 A A A E M Q ELI E R Y Q E A G D S DGG S I Y F E C R GVVPR G L G A P R F D





A A ERMEAEEIDETKKS GDSDGGGVVETVVLNPPAGGLGDP I F G


A E A A MIDA E II E A A A K K K D G D T L L G G V V
Q V P


 A A A EAES Y L ED MIQRKD S CGGVI E CVVNGLPAGVGEPVFD


 A E EK M R DVI L A A R A D L N S V G G I V E C A A V G M P A GVVGS P MV A A AL M H T L S A K K RLLD SVVGGAVECAVYGVPA GI GDPMFD

 QESAlD ELI A EADSE GDSLGGGTIA CTIE GLPCGVGEPMF D




## UniRef90_F8N883 UniRef90_S6CC47 UniRef90_UPI000377D3F4 UniRef90-A0A010YUC9

 UniRef90_K6PNZ0 UniRef90-E1QT32 UniRef90_D6YWA2 UniRef90_K2KJJ4UniRef90 D7DTY2 UniRef90_J9Z085 UniRef90_UPI00040CCE8D UniRef90_H3G8E2 UniRef90-R6LJ41 UniRef90_I4BZ62 UniRef90_B9CK62 UniRef90_FOLJD7
UniRef90 IOEN86 UniRef90_R7AZM3 UniRef90_R6HC47 UniRef90_B1C7Z0
 $1 \vee L A D G E F R R T S N N A G G L E G G M T T G M P L V I T A A M K P I P T L$

\section*{| 1 |
| :--- |
| $F$ |
| $W$ |
| $I$ |
| $Y$ |
| $L$ |
| $Y$ |
| $M$ |
| $F$ | <br> }

UniRef90_UPI0003B57E08 A R A SGFLSNNAGGGLGGDSTGNEVVFRVVVKP WRGPA A G F
$1 V R R G G R P$

MT

LTP S
$Y$ CY N T E L F RYDEEGKYKTSNHA G GIIMGG
FCAGSDSSHPTKNDAGGVLGGI TSGSE
$\begin{array}{ll}F R V E N G R V V T E T N H C G G 1 L & G G U \\ F V L L S D Q W D R G S N A G G U G G V\end{array}$
$Y \vee V Q D G E V Q P A T N N A G G U L G G I T N G Q D$
(P8
B6407F

## $\stackrel{-}{\square}$

 F $\square$ M S G D K V G F L MSAD$\square$ YT $\square K E S N N D T K T N N N G G G L G G G U T$ $F Y$ SEERGFYRETNRAGGLEGGM





 M F R M K G D S V V T A T N H N A G I N G G $F Y Y D A K G N V R T$ TNNCGGGLGGII

 |  | $V$ | $R$ | $K$ | $G$ | $E$ | $R$ | $L$ | $G$ | $W$ | $R$ | $E$ | $N$ | $K$ | $S$ | $G$ | $G$ | $L$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $F$ | $L$ | $I$ | $E$ | $T$ | $N$ | $T$ | $I$ | $K$ | $T$ | $R$ | $T$ | $N$ | $H$ | $S$ | $G$ | $G$ | $L$ | $G$ |

$\mathrm{M} Y P$ GP TG
 ITPE GF LS N H A G GI L G GIS T G Q A T T A S MV L K P T S S L



 $\begin{array}{lll}\| H P & \text { G A G } ~ A ~ Y ~ R ~ Q ~ S ~ N ~ R ~ A ~ G ~ G ~ L ~ E ~ A ~ A ~ G ~ M ~\end{array}$
 YRMSNGRVVCQTNHAGGALGG F EMR D GA A C P R TN N A G G V L G G
 TI D E E G K $\quad$ T A T N N A S G I $\operatorname{l}$ G G G I




## UniRef90_F8N883 UniRef90- $\mathrm{s6CC47}$ UniRef90-UPI000377D3F4 UniRef90 AOAO1OYUC9

 UniRef90-K6PNZO UniRef90-E1QT32 UniRef90 D6YWA2 UniRef90 K2KJJ4 UniRef90-D7DTY2 UniRef90-J9Z085 UniRef90 UPI00040CCE8D UniRef90-H3G8E2 UniRef90-RGLJ41 UniRef90 14BZ62 UniRef90_B9CK62 UniRef90-FOLJD7 UniRef90-IOEN86 UniRet90-R7AZM3 UniRet90 R6HC47 UniRef90-B1C7ZO UniRef90-UPI0001C3763C UniRef90-MOMR49 UniRef90-F4BQH8 UniRe990_LODN33 UniRet90-A UniRef90-D4JU17 UniRef9_R5IS7 UniRef90-A3MUI8 UniRef90-A5EXTO UniRef90_TON4C6 UniRefofo-b8J8W9 UniRef90- N9WHV3 UniRef90-A0A017PKP8 UniRef90-R9M376 UniRef90-A5UNA1 UniRef90-FOJHH9 UniRef90-UPIooo3B6407F UniRef90-H9UMY8 UniRef90-JOLF16 UniRef90-D8IF37 UniRef90-UPI0003B5B180 UniRef90_C4XQX4 UniRef90-6VMM5UniRef90_D 3 DTF5 UniRef90-F7XM82 UniRef90-G5F4J2 UniRef90-UPIO0036B8ECE UniRef90-E3G,999 UniRef90-B9LMX0 UniRef90-T1C8U3 UniRef90-U2IQX8 UniRef90-K1YNA8 UniRef90-A8Z6F5

UniRef90 D4JXH4 UniRef90-X8IRC4 UniRef90-G8QXX4 UniRef90-A4YHW1 UniRef90-FOT5U0 UniRef90-FOHOL4 UniRef9-R9BE7 UniRef90-X7Z186 UniRef90_R7MMW2 UniRef90-W4SS47 UniRef90-UPIO003B4EFE4 UniRef90 D1ALDO | UniRef90-F9MR69 |
| :--- |
| UniRef90-B0S2R8 | UniRef90-R5D1K7 UniRef90-R5J6W7 UniRef90-C7PC56 UniRef90-UPIO0036E222F UniRef90-EOTIQ1 UniRef90_D7CWQ2 UniRef90-R6GFF1 UniRef90-R5GUE9 UniRef90 E1 QZZZ UniRef90-R5ZGX7 UniRef90-D2MM28 UniRef90_M1P8S1 UniRef90 $\mathrm{H1X6B3}$

UniRef90
$\times 8 \mathrm{~K} 573$ UniRef90- UPI00041B6B6B UniRef90-V4XX93 Uniref90_UPI0003B57E08


AQPQNTVDYRNSNEVLEDKGRHDPC\|VPRADPCVEAAVNT RLPGATVDADGAVVDVITTGRHDPCVGIRATPIAEAMMAL RRSLRSVDIATGLETAAHFERSDACAVPAACVVGEAMAAW SKKQKTVNVVTKETVLEVTGRHDPVIVPRAVVVLECATAL GKVQETVDVHEKNDTLAVRGRHDPCIVPRVVPVLEAALAW ALEQDTVDLRTMETKLTVGGRHDPCIVPRAVPCIEAAAA SQUQKTVDRYGKERELEKGRHDPVIVPRAVVVVEAMAAL PKEQHTLNDKSGEVEFSVKGRHDLCI ALRVPVVLEAVAAM AKEQQSINFEQTNVALKITGRHDPCIVPRAVVVVEAAAAW KDPQKSINKFNKKVKFIIKGRHDTCIGIRILSVAESMLSL MKPLPTVDVLTHEAADAARERSDTTAVPAASIVVLAMSAL PKRQKTVNUKLMQTTVSVLGRHDPCVVPRAVPVVESVAAV SRPQKSVDFKDMEQELVIKGRHDPCVVPRAVPCVEAALNU AQEQQSVSLDGTDTPLSVKGRHDPCVAPRAVPAVEAVC ARAQDSVDLVGKDERLCVRGRHDPCVAPRAV
GLVQETIDMQTQNTTVEIGQRHDPAIIHRVRPVVDAVTAF
 SDPSKSVSYRGENVELK ISGRHDPCIALRAVPCVEAAAA PKEQQTWNWESNTDEFSVKGRHDGC|AALRVPVVLEAVTAF

|  | 370380 |
| :---: | :---: |
| UniRef90-S6CC47 |  |
| UniRef90-UPI000377D3F4 | VLEDHYKRQ |
| UniRef90-UPI00036E4BAD | VLADAALEKFGGDS $\square$ A |
| UniRef90_A0A010YUC9 | TADLLLANMAS R |
| UniRef90-K6PNZ0 | ELAAA WIE K F G G D SVDDMLRNY\\|A Y CERLA |
| UniRer9o- ElQ ${ }^{\text {a }}$ | $\checkmark$ VD AM |
| UniRet90-D6YWA2 | $\checkmark$ AD |
| UniRet90_K2KJJ4 | $\checkmark$ V ${ }^{\text {d }}$ |
| UniRef90-D7DTY2 | VLVD |
| UniRef90-J9Z085 | VIIA DLMLIM |
| UniRef90-UP100040CCE8D |  |
| UniRef90-R6LJ41 |  |
| UniRef90-14BZ62 | VLAQA CEQFGGDRMEDLKGRLKEHDERTRR |
| UniRef90_B9CK62 | ALLIDAEL |
| UniRef90_FOLJD7 | A D |
| UniRef90 IOEN86 | VLADMAL |
| UniRet90-R7AZM3 | TLVDLIFTNMSA RMDRIQKFYEEER |
| UniRef90 R6HC47 | V1 LDMLL |
| UniRef90-B1C7Z0 | CLYDFLL |
| UniRef90 UPI0001C3763C | VLCDQLALRYGTDWL |
| UniRef90-MOMR49 | TMVDFML |
| UniRet90-F4BQH8 | GLMDLML |
| UniRef90 LODN33 | E AAALVEKYVGTS |
| UniRef90_A6M253 | G V L L L |
|  | ALLSYVIR ${ }^{\text {a }}$ |
| UniRef90-R5IST7 | AVLDA WM |
| UniRef90_C7N567 | ALYDMMLESR |
| UniRef90 A3MU18 | VLADHVL |
| UniRef90 A5EXT0 | TLCDHLLRQRGQN |
| UniRef90-B8J8W9 | ELANALLEKFGGDAVEDVRraveayan |
| UniRef90 GOVLC3 | A LDVCLSEKGRCW |
| UniRet90_N9WHV3 | G L |
| UniRet90_A0A017PKP8 | VLADLFL |
| UniRef90-R9M376 | IV L L D M |
| UniRef90-A5UNA1 | VLADHMDR |
| UniRef90_FOJHH9 | TI A |
| UniRef90 UPIOOO3B6407F | VLLDLMISNMSS |
| UniRef90-JoLF16 | $\checkmark$ EDH |
| UniRef90_JoLF16 | VLVDMLLLNMG |
|  |  |
| - | VVAD |
| UniRe ${ }^{\text {c }}$ | $\checkmark$ A ${ }^{\text {a }}$ |
| Uiretolelm5 | $\checkmark$ a |
| UniRef90-D3LTF5 | V1 V HMMQNGSTSSVSLIKK |
| UniRei90 G5F4J2 | ALLDSWL |
| UniRef90-UP100036B8ECE | VIADALLEKFGGDt位ELQERVAA |
| UniRef90-E3G.J99 | CMLDFL |
| UniRee900-F5YK4 |  |
| UniRef90-B9LMX0 | TVLDFML |
| UniRef90-T1C8U3 | VLADLA YR |
| UniRet90_U2IQX8 | TLMDFYLLH |
| UniRet90_K1YNA8 | $\checkmark$ VDML |
| UniRef90_A8Z6F5 | VLADMLLLN ASTKLENLKK\Y |
| UniRef90_D4JXH4 | AVGDLMTARYGTAWMER |
| UniRef90-X8IRC4 | VLVDVMLSQQPGES AD■KSEY |
| UniRef90- A4YHW1 |  |
| UniRef90-FOT5U0 | ILADQLI R |
| UniRef90-FOHOL4 | TV LD Y LYE |
| UniRef90_R9TBF7 | VLTDLCL |
| UniRef90-F4KLY1 | TLLADLLI |
| UniRee90-X7LI86 | A Ta ${ }^{\text {a }}$ |
| UniRef90-W4SS47 | VLMDQAL RHRAQC |
| UniRef90-UPIO003B4EFE4 |  |
| UniRef90-D1ALD0 | VMDDCLDE |
| UniRet90_F9MR69 | SLLD |
| UniRef90 BoS2R8 | VI Y D LLKEYGWKNLE |
| UniRef90-R5D1K7 | AVYDALLEK |
| UniRe990 C7PC56 | ALADMLLE |
| UniRef90-UPIO0036E222F | VLDDNILCors |
| UniRef90-E0TIQ1 | VIMDFIL |
| UniRef90-D7CWQ2 | 1 LADALMEKFGADTVREDTERVAAHRD |
| UniRet90-R6GFF1 | AMLD |
| UniRet90-R5GUE9 | ALVSAL |
| UniRef90 R7D054 |  |
| UniRe990-E1QZZ6 |  |
| UniRef90 D2MM28 |  |
| UniRef90-M1P8S1 | VLADLMLRERRG |
| UniRef90-H1X6B3 | ELAQAVLDKFDADNDDRDKEQVADYREEVR |
| UniRef90-X8K573 | A VLDLML |
| UniRef90_UP10004136B6B | T L D MLLE |
|  | A LCEFM |

UniRef90 Q08SJ6 UniRef90_R5VOM1
UniRef90_UPIO00047CE3D1 UniRef90_U5FB18 UniRef90_R6PYX6 UniRef90-R9YL04 UniRef90-A3DDD8 UniRef90- ${ }^{-1585 M 1}$ UniRef90-B0B7T7 UniRet90 UPI0003A11BF2 UniRef90-TOPYH7 UniRef90-E1L1X6 UniRef90 W1JT64 UniRef90'UPI0003B717D8 UniRef90-M2Q478 UniRet90_C7NPS2 UniRef90 E5BF71 UniRet90_G9YEN5 UniRef90-R6T894 UniRef90 B8GF68 UniRef90 R6WCA5 UniRef90-Q9Z6M2 UniRef90-X1AIB9 UniRef90-Q73NM0 UniRef90-X1KZV2 UniRef90-K4RL51 UniRet90_R6GXM9 UniRef90 M4YK27 UniRef90-W2BYV4 UniRef90-R5J640
UniRef90- UPIOOO237852E
UniRef90-AOAO14U6Y1
UniRef90 U2U812
UniRef90 A0A015LLI7
UniRef90-R6ETJ3
UniRef90-UPI0002FB01EA
UniRef90 U4KR27
UniRef90 U2LBV4
UniRef90-UPI0003A6C5D1
UniRef90-D9XUU3
UniRef90- Ј9СНJ9
UniRef90-F4NOA6
UniRef90-R5AUC4
UniRef90-J3VQS3
UniRet90-R7KAT8
UniRef90-R6ULE8
UniRef90 A9BHP5
UniRef90-R7JHF2
UniRef90-H2J484
UniRef90-S3JWK4
UniRef90_J3TW45
UniRef90_S5DKW2
UniRef90-K2M3L4
UniRef90-R6NU51
UniRef90 R6WWS8
UniRef90-K6UL18
UniRef90-U1NX17
UniRef90-R5FVE1
UniRef90 T1AAL2
UniRef90-R5IGA6
UniRef90-TOCS23
UniRet90 W3ARU9
UniRef90 ${ }^{-}$WoFF32
UniRef90-X0TVS6
UniRef90-UPI0003754492
UniRet90-U7VEZO
UniRef90- M5ULC6
UniRef90-UPIO004652035
UniRef90_X1DGU8
UniRef90-X1AQK0
UniRef90-B9D5R0
UniRef90-Q8GDR4
UniRef90 U6S887
UniRef90-B9THA5
UniRef90-A0A059EDL5
UniRef90-B0L8T2
UniRef90-X1JOR0
UniRef90-D4DNIO
UniRef90-UPI0003659556
UniRef90 Q7RHB8
UniRef90-E6SM13
UniRef90-COBBC3
UniRef90-K2S8W9
UniRef90-W9RAG6
UniRef90-R7JC07
UniRef90-W7DQQ4
UniRef90-TOBAC2
UniRef90_J9FZ99
UniRef90 S6RAJ5

TVTLF GESHGKAVGAVIDGLSPG\PDDEEY DREKMNLR FFRI S I F GESHGKNI GITI D GCPA GVPI SEKDFILDDLKRR




LFSFT TWGESHGPS $\square \mathrm{GVVIDGCPAGLELHESDFVPAMKRR}$

## FF T LTT T F GESRSAGVGA V DD GCPAG $\square$ P L C A D D $\square$ QK E L $\quad$ N R R

ПRLSTFGESHGVLIGGVLEGVPAGLKDDLSADQAEVNRR MRFLTA GESHGEELTGI I EGLPSGLSVVSAAFINDDLRRR





##  

 $L L K V T S F G E S H G K A \| G C V I D G F L P N I E I N F D L I Q K Q L N R R$LQLE DS GASHDDK IVGRDFGVPKNLTVDFDYDEK QLRRR



##  LRFLTAGESHGPALTVVLVGMPAGLPLKPEDVNRDLRRR 

LFK I S F GESHGEVIGVIID GCPAGLKDDADLIQKELNRR
 $\square F R V T T W G E S H G P A \square G C V V D G C P P G \square R F K \square Q D \square Q T W \square D K R$

## LLKVTTFGESHGKG $\square \mathrm{GCVIDGF} \square \mathrm{PN} \square \mathrm{T} \square \mathrm{NFEE} \square \mathrm{QK}$ Q $\square \mathrm{NRR}$

 $\square F Q \square S T W G E S H G K G \square G \nabla V I D G C P A G \square S \square S E E D \square Q \nabla Y \square D R$FRFLTAGESHGKCLTATlEGTPSGFDTNPDFTNSELKRR MRYLTAGESHGPGLTTIIEGLPAGMPLDAEDINKDLTRR MRYLTAGESHGPSLTA\|IUGUPAGLTLHPADLDHELQRR



|  |  |
| :---: | :---: |
| UniRef90_Q08SJ6 | GGHFSGRLTAPLCFAGA |
| UniRef90-UPI00047CE3D1 | NARYGGFQDYRGGGHFSGRLTAPLVFAGAIAKEILRPEDG |
| UniRef90 U5FI | DVKYSGYQDYRGGGHFSGRITAPLVAAGAIAMQVL QQKG |
| UniRef90-R6PYX6 | AVKYGGFQDYRGGGHFSGRLTAPLCFAGAVCMQILERR G |
| UniRef90 R9YL04 | FVKYSNRDYRGG GRASARLTAPLVAGGAVAKRWLGYHYG |
| UniRef90-A3DDD8 | FKKYGQFADNGGAGRASGRETAARVAAGAVAKAVL DTMG |
| UniRet90-Q30XS4 | DAK YGRRDYRGGGRSSGRETLSRVAGGAVAQALLAEC G |
| UniRef90-8815M1 | YKKYGEHSDYLGAGRASARETVARVAGGA |
| UniRef90-B0B7T7 | EGKYGFADNRGG GRASARETASRVAAGVIAKKILLSQG |
| UniRef90_UP10003A11BF2 |  |
| 111 $\times 6$ | W |
| UniRef90 W1JT64 |  |
| UniRef90-R6EM69 | HCKYGGYEDYRGGGHFSGRITAALVAAGALTAKAL |
| UniRef90-UPIO003E | HQKYNGFNDYRGSGHFSGRLTAPLVAAGVVAKKL |
| UniRef90-M20 | YVKYQGFNDDRGGGHFSARVTAPLVFAGAL |
| UniRef90-C7N | SAKFGTRNWGGGGRSSARETVNWVAAGALAKQVLDQEYD |
| UniRet90-E5BF71 | Q KYKGFQDLRGGGHFSGRLTAPVFAGTFA |
| UniRef90 G9YEN5 | K1RYGGYNDYRGGGHFSGRLAPIVFAGAVA |
| UniRef90-B8GF68 | EEKYGITRDRGGGGRSSGRETLARVAAGAVAVKVLLAGYG |
| UniRef90_R6WCA5 | YNKYGIRDYRGG GRSSARDTISRC |
| UniRef90-092 | EKKFGIVD PNGGGRSSARETACRVA |
| UniRef90-X1A1B9 | A KYDFADIRNVLERASARETAARVAVGA |
| 退90-Q73NM0 |  |
| UniRef90-1KZV2 | WAKYGVRDYRGGGRTSARESVARVAGGAVAKM |
| UniRet90 R6GXM9 | DFKYGYGDPALASERGSARETAMRTADGSVCKQL |
| UniRef90-M4YK27 | \LKMPKFDDTGG GQFSGRLTAPVVAGSIAKGML |
| Uni | HVKYGGYEDYRGGGHFSGRLTAP |
| UniRet90-R5J66 | FVKYKGYNDYRGGGHFSGRITAGLVFAGS |
| UniRet90-C3PZL6 |  |
| UniRef90-A0A014U6Y1 | TQKYGFRDYRGG GRSSARETAMRVAAGAIAKKYL |
| UniRef90-U2U812 | QQK WLGFQDVAGGGHFSGRLTAPLCIAGGIALQML |
| UniRef90-A0A0151 | SIK ASSGGG |
| UniRef90 R6ETJ3 | FYKYGGYGDFRGGGHFSGRTIAAVVASCAVIMKAL EDKG |
| UniRef90 | IKKYKGFSDPRGGGPFSGRMTTGLVAAGSFAKMFT G |
| UniRef90-U2LBV4 | YVKYGK DFAGGGFFSGRMTAPLVDAGAVAKQF |
| UniRef90 UPIO0038 | YSKYKGYNDWRGGGM |
| UniRet90_D9XUU3 | YGFDEARPILERASARE |
| Uni | MGIRDHGG GRSSARE |
|  | EQKYGVRDYRGG GRSSARE |
| UniRet90-R5AUC4 | TVRFGGHADLRGGGPFSGRILTACLVFAGAVCRQLLERR G |
|  | FLKYKFRDYRGGGGRSSARETACRVASGCLFKNMLLYNKG |
| UniRef90-R6ULE8 | NEKYHGFQDYRGGGHFSGRITAGLVAAGAVCQAVLGRR G |
| UniRef90-A9BHP5 | WYKYRLDDLNDYTERNSARWTSVLTADGSVAKQFL ENFG |
|  | RAFNLRGGGHF |
|  | PDLITYPER |
|  | EAKYRRRDWRGGG RASGREAAARIAAGVIAKKVLAHYPV |
| UniRef90-J3TW45 | (RDFRGGGSSARETTCRVASGAI FNNYLL SKG |
| UniRet90-S5DKW2 | D\\|RFIVLEASAA |
|  |  |
| UniRef90 R6 |  |
| Ref90_R6 | ND |
| UniRef90_K6UL18 | FKKYNVKNKSGSSRFSGRETATRVAAGA |
| UniRef90-U1NX17 | SAKFGTRNWGGGGRSSARETVNWVAGA AKR |
| UniRef90-T1AAL2 | WHKYGITRDPRGGGRSSARETTMRVAAGVIARKWL |
| UniRef90-RIGGA | RTKYGVDGLTSGGGMFSGRMTDPVVAAGVVA |
| UniRef90-ToC | SLKYNFDDARNVLERSSARETASRVAVGAI CKQ |
| UniRef90-W3, | FQKYGLRDYRGG GRSSGRETLARVAGGA |
|  | DFKYGLRAVQGGGGRSSARETAGRVAAGALAKKİL |
| UniRef90-UPIOOO3754492 | AVKFLTKDLRPVLERASARETAARVAAGAVAKKLL |
| UniRef90-U7V | TKKYSGFNDIRGGGHFSGRILTAALVAAGVI |
| UniRef90 M5UIC6 | YHQSKGFVD $\backslash R G G G R S S Y R S T I S D V I G G S V$ |
| UniRef90_UPIO004652035 | DYRGG GRASARETCMRVAAAGAAKKYLKAEHGA |
| UniRef90-×1A | SADYRGGGRFSGRDTAGFVMAGA1AKQLSLN N |
|  |  |
| UniRe90- U6S |  |
| UniRef90-B9THA5 | DVKYGDRDYRGG GRSSARETAARVAAGGUARLVVP G |
| Ref9-AO |  |
| UniRef90- BOL8T2 | DVRNULERSSARETA】RVAVGAVAKAYLS RFG |
|  |  |
| UniRef90-D41 |  |
| UniRef90 UPIO003659556 | FMKYNVKNKSALLQKKILERKG |
| UniRef90-O7RHB88 UniRef90 E6SM13 | FMKYNVKNKSG |
| UniRet90 CobBC3 | YGFRDYRGG GRSSGRETTARVAAGAVAAK |
| Ref9 |  |
|  | DMKYGDR AVQGGGRSSARETIGRVAAGAVAKTILKLFSR |
|  | -LERSSA |
| UniReef90 W7DQQ4 | DMRNVLERSSARETTVRVAAGALARKLLRELG |
| Ref90-TuBAC2 |  |
|  |  |


|  |  |
| :---: | :---: |
| UniRef90－R5VOM1 | GVEDDSETDVSRADILAVREKPFAV |
| UniRef90－UPIO0047CE3D1 | GSRIVSUGDVKDEPURDWRVYLIKGFENPAFPL |
| UniRef90－U5FB18 | SHI AQCHTIKDQPFEELLEQQLRQMNTSDFAV |
| UniRef90－R6PYX6 | AHIHSTHGI ADTPMNPITAEELAEVTAKTFPV |
| UniRef90－R9YL04 UniRef90 A3DOD8 | TIFQSFVSGVGSIRFP |
| Rer90－A3DDD8 | TVNAFTVELGGVPARPEDPAGAQDR |
| UniRef90－B815M1 | DVIAFTIESHGKAGPFSYETA KQNYRAND |
| UniRef90 Bob7t7 | AFLSGFGTLESKNYPKLSDSLIQQVHTSPF |
| UniRef90－UPIO003A11BF2 | GDQAACVEDGGIAVPAG DVDMERALIRPYFAA |
|  |  |
| UniRef90－E1L1X6 | VRVMAHVASTGTDHDDKAQLQTLEERTCAHPHEL |
| UniRef90 W1JT64 | VKVRGALVQIGPHKI |
| UniRef90－R6EM69 | Y GT |
| UniRef90－M2Q478 | TEVYSHILSIKDIKDDHFP劓FTSQMI |
| UniRet90－C7NPS2 | VQIKAHVNQLGELEAPDVTFEEM LEHSEENDI |
| UniRef90＿E5BF71 |  |
| UniRet90－G9YEN5 | 1 RVGAHILQIEKVADRPFNPEEPAVFERLTRETLP／VLD |
| UniRef90＿R6T894 | MK1ASH1LRCQDITDSHFTDNUESEDDK】NTSDFPVI D |
| UniRee90－B8GF68 | VEVVAYTSQVGSIAD DNDYTRYDLTQVESN |
| UniRef90－Q9z6M2 | SLGSLTLPHYDK |
| UniRet90－X1AIB9 |  |
| UniRet90＿Q73NM0 | K |
| UniRef90－X1KZV2 | KVVSMTEEIGGI QAGLSKLSPEQIEKASESSP |
| UniRef90－K4RL51 | 俍 QKIDFSHAKTSPUFSLDKD |
| UniRef90－R6GXM9 | I EAAFCRAGGDR DANERT或KAKKSREFPTRAASKE |
| UniRef90 W2BYV4 | ICVAAGILEIGG－R DANERTUKDAKKSREFPTRAASK |
| UniRef90－R5J640 | I Y IGSHVRSIKDLKDRRFCLDDMTRFKQLESKRLGF |
| UniRef90＿C3PZL6 | VTAYTSQVGS |
| Ploor | RACMAQLGELVIPFEG WEHVR |
| UniRef90 A0A014U6Y1 | IRGHVTQ GNEVAEKL |
| UniRef90－U2U812 | VA |
| UniRef90 ${ }^{-}$R6ETJ3 | GTHISSCRGACDRGFENYEEDITSLSEKRFPVLGDGA |
| UniRee90－UPIO002FB01EA | G |
| UniRef90＿U4KR27 | FNVDAKLIQAGELTDMS |
| UniRef90 U2LBV4 | VEIVGQISKIGSEEARSFSFPNKKERTMLRRSDFPIVMEPE |
| UniRef90 UPIOOO3A6C5D1 |  |
| UniRei90－J9CHJ9 | evahvosla a |
| UniRef90 F4NOAG | QVRGYGAQIGDISCM |
| UniRet90－R5AUC4 |  |
| UniRet90－J3VQ | I I R S Y IKKI GYLKINFKYWNY！LNRF |
| R7KAT |  |
| UniRet90＿R6ULE8 | GTHMASAAGV YDRGFEDYAPDTAAVS |
| UniRet90＿A9BHP5 | FVKSIGKVRFEEIQKDFTYYIQ |
| UniRef90－R7JHF2 |  |
| UniRef90－S3JWK4 | QYSVCKADGKPPDGTSAAGENRPQHGTS $\square$ P $\square$ T $\square$ QTS |
| UniRet90－J3TW45 | LIRSYIKKIGNLKDNFFYWKNILNRFFTNDFYL |
| UniRef90－S5D | GEVSYQQNVKDKVK KEKVTKSNVGCPDTV |
| UniRef90－K2M | VSHVISIGGAGVEDADDPTPDDVEALDASPVRTLDKA |
| UniRet90－R6NU51 | －TVGTHLLSCGGV NDRDFDD\GADI |
| R6WWs8 |  |
| Ret90＿K6UL18 | CTVCYVHSVGNTR |
| UniRef90 U1NX17 |  |
|  | VRVRGYLAOLGAIT |
| UniRef90－R5IG | ALTEVGGRRLLLDNAGYAEPDSAAAVEQPDDAD |
| UniRe990－ToCs | KVKLDRLYSFD YUKEKVDLSLVRCIDEE |
| UniRef90 W3ARU9 | ITVDAEVTEAG |
| UniRef90－XOTVS 6 | NI YSYVLRIGRVKARRITSFNSKIKTEINKSPVYCTDGII |
| UniRef90－UPI0003754492 |  |
|  | S |
|  | S SI SQV |
| UniRef90 UPIO004652035 | EVKACLSQLGP：KAE TFDWDEVENNLFFFPDAS |
| UniRet90－${ }^{\text {P1DGU8 }}$ |  |
| UniRet90－x1AQK0 | AYTKE GG |
| UniRef90 B9D5R0 | VQSGVASVGESCGERLDFDLA |
| UniRet90＿Q8GDR4 | VAHVIGIGGEYVSKSALPTPD DAEAALDASPVRCADSE |
| UniRef90－B9 | GALVQI GKHKINRA NWDWAQVDQNPFFAPDPE |
| UniRef90－A0AO59EDL5 |  |
| UniRet90＿B0L872 | G |
| niref90－XIJoro | A |
| UniRef90－D4DNIO | YVTQVG |
| UniRef90 UPI0003659556 | A H SVEIVA |
| UniRef90－E6SM13 | VRIQSYVLRIGQVAIPRPPVDPARLEAATEASPVRCPDPE |
| UniRef90－СовВС3 | $V H A Y T K A I G P V S V P E N E Y H P E E I F F$ QNPIYMPSNA |
| UniRet90－K2S8W9 | A |
| UniRef90 W9RAG6 | QV HNVVLPLGVDHDTLTLE Q |
| UniRee90－RTCO7 | EVAGHVLG GGVRSEDTRDYSVKETQEDEASSVRCDD |
| UniRef90－TOBAC2 |  |
|  | IKIQAYTSEVGSIKLDKG YESYDLNGIEKNIVRCPDME |
|  |  |




UniRef90 Q08SJ6 UniRef90_R5VOM1
UniRef90-UPIO0047CE3D1 UniRef90_U5FB18 UniRet90_R6PYX6 UniRef90-R9YL04
UniRef90 A3DD8 UniRef90- Q30XS4 UniRef90-B815M1
UniRef90
OOB7T7 UniRef90-UPI0003A11BF2 UniRef90-TOPYH7 UniRef90-E1L1X6 UniRef90-W1 UT64 UniRef90_UPI0003B717D8 UniRef90-M2Q478 UniRef90-C7NPS2 UniRef90-E5BF71 UniRef90-G9YEN5 UniReffo- 6 6T894 UniRef90_B8GF68 UniRef90-R6WCA5
UniRef90-Q9Z6M2 UniRef90- X1AlB9 UniRef90-Q73NM0 UniRef90-X1KZV2 UniRef90-K4RL51 UniRef90-RGGXM9
UniRef90
M4YK27 UniRef90-W2BYV4 UniRef90-R5J640 UniRef90-C3PZL6 UniRef90-UPIO00237852E UniRef90-A0A014U6Y1 UniRef90-U2U812 UniRef90 AOAO15LLI7 UniRef90-R6ETJ3 UniRef90-UPIO002FB01EA UniRef90_U4KR27 UniRef90-U2LBV4 UniRef90-UPIO003A6C5D1 UniRef90-D9XUU3 UniRef90-J9CHJ9 UniRef90-F4NOA6 UniRef90-R5AUC4 UniRef90-J3VQS3 UniRef90-R7KAT8 UniRef90 R6ULE8
UniRef90 A9BHP5 UniRef90-R7JHF2 UniRef90-H2J484 UniRef90-S3JWK4 UniRef90_J3TW45 UniRef90_S5DKW2 UniRef90-K2M3L4 UniRef90-R6NU51
UniRef90-R6WWS8 UniRef90-K6UL18 UniRef90-U1NX17 UniRef90-R5FVE1 UniRef90-T1AAL2 UniRef90-R5IGA6 UniRet90-TOCS23 UniRef90-W3ARU9 UniRef90-WOFF32 UniRet90-XOTVS6 UniRef90-UPIOOO3754492 UniRet90 U7VEZZ UniRef90-M5UIC6
UniRef90-UPIO004652035 UniRef90- X1DGU8 UniRef90-X1AQK0 UniRef90-B9D5RO
UniRef90 O8GDR4 UniRef90-U6S887 UniRef90-B9THA5 UniRef90-A0A059EDL5 UniRef90-B0L8T2 UniRef90-X1JoR0 UniRef90-DLDNDIO UniRef90-UPIOOO3659556 UniRef90-Q7RHB8 UniRef90-E6SM13 UniRef90-COBBC3 UniRef90-K2S8W9 UniRef90 W9RAGG UniRef90 R7JC07
UniRet90
W7DOQ UniRef90-TOBAC2 UniRef90-J9FZ99 UniRef90 S6RAJ5
290
300 300 310
320
FYMDNGHVTKKDTYGGQGGLANEPMQLRAFFKPPATL FYMDENGHVTKTNHHGGI LGGGISGMPIILRVAIKPTAS

LTSH
YHMEQNTTAP $\square T N N A G G N \square G G \square T T G A P \square L F R M A V K P T S S \square$ WVLKNDRLGTKTNNSGGTQ



FYMDE $\square$ GNVRTTNRSGG $\square$ QGG $\square$ SNGET $\square$ YMR $\square$ AFKPTST $\square$


M

$M R T G N D G A R F D S N H N G G M A G G$

F
WRGPAAGFFRYRNGAGG $\square E G G \square T N G E P \square V L R A A M K P \square A T \square$
FVKARPRTTTKTNNSGGTQGGTSNGANTYFHVGFKPAATT FYVGEHGR $\square R T T N R S G G\|Q G G V S N G E\| I N G R V A F K P T A T I$


YKEQDTVDFRKRETKTDHGRHDPADHRARAVIDAVTAL AREQQTFDFAGRVAPLRI RGRHDACI
YVKQETYHFDENKDPQQiEGRHDAFI ARRAVIVVENACHI
GRRQRTVTPYGETAELTLEGRHDPVIAPRAVVVMEAVCAM


ACEQPSVDLATMEETLR $\square$ NGRHDPC $\square$ APRA $\square P$ VMEAALAC SKNIKSINEKFKNIVNKTYGRHDPCVGLRAIPVIESML SKPQKSVDLKSMDVELKIGGRHDVCFVPR
 AKKQYTFNFTGRMEEFVVKGRHDACI ALRCPVVVE AKPLNS DNDATGENTKSPY DRSDVTVIPASVVILENAVAL AQEQDMETASGDRDTHADTGRHDVCLYRRVMPVIEAMTA』 SKNIRTINDNFKEVLSKTYGRHDPCVGLRAIPII ESML

 AREQMTYN LETDSVVELARIRGRHDACVVARRGAVVVEAACA 1


A R P Q T T $\square$ N $\square$ T G R $\square E E \square S \square K G R H D V C F A \square R \nabla P V V I E S A A S \square$
GKKQNTVTRDRHETELDARGRNDPCVVPR

FKPQETFNFKDKNDQLK $\square$ NGRHDVAFLLRVP IVLENAVA



PRA LRTVD T LTGQPA QA $\square$ NQRSDFTAVPAASVVAEAMVRL
$\square T P V Q S V T R D E E V D V R T V G R H D P C V G D R A V P V A E A M D A C$ $\bar{Y} Q P L Q S V D I D T K E P F E A T V E R S D C C A V P A A S V V A E A V V A C I$



RRRLPSADLLTGEPFEAHHERSDVCAVPAAAVVAEA $\square V A$
GQAQTTTTYDEEEG】LEAKGRHDPCVVPRA】P\｜VEAMAAL G L K M A VC


LIFRVT TYGESHGCSVGCIVDGVPPGLMLTADDTQQQLWRR VF GASHGQVVGSTLEGLPAGVHINHAAIEEWLGRR $\square F R \square T$ T WGESHGPS $\square G C V V D G C P P G \square R F T R A E \square Q A E L D K R$ $\square R V S T F G E S H G T A V G C \square I D G L P G G L P F C L S C V Q R Q L Q R R$

RPGSGRFYDVLREQDLVEDESGVEGGVTDGTPDALRDRNE KPS $\square$ SE I T TQREEDDSVS ILSGVKDDFTDGSPITFIIANK RPGQSRFVT QRREPDEVKVLS GFEDG口TTGTPVSMLIENV $R P G Y S S A G S S R S E P D V A Q \square L S G V E N G L T L G S P \square A \square L I P N Q$

lupas_21
lupas_14
lupas_14
lupas_28
lupas
jnet
conf
conf
sol25
 LCKY GCHASSGGGRSSARETAARVAAGATAEKYLREVCG FMKYGEFRNYSGGGFLSGRMTAPLVAAGSVCMS ILSGAGG $D \nabla K Y G \square R D H R G G G R S S A R E T A A R V A A G A L A R K V V P \quad G$ $L L K Y G \square S S S S G G G R S S A R E T A A R V A A A A V I E S S F D \underset{R}{R} \underset{R}{V} G$
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
solo
solo
jhmm

 DGIVAFVSS GRIHMDLEAMDRLSWLK IGVAFVSS GR HMDLEAMQRQTLQEKQKSGQQEHLETQ
 $M V V R G A L V S M G E K S \square D R A N W$ NWNF $\square G D A E N P F F T P D P A$ WFTRAQVDAHPVRCPCPY
$Y K R N P P T R E L I E K R G I I Q Q$


 SASAMSTEVRYLKHEEDSTGGVVTCVDRNVPVGLGEPCFD LGAQQAMHLRRSAKEENACKGVLE VDTTA $\quad$ NMIKK MMSDGDS IGGAL HVRVVGLPGGVGEPFFD AVPRFEALVTSLREQGTSCGAKLEI IVENVPVGWGEPVFD SVPVFFSYLDGli RKSGSSVGAVI EI I ADGVPAGLGAP WARRMEAAI AESQARGDSVGARLAVRVRGLPAGWGEPVVED


S VESVISHALFSDPAVKADEFGSGFKVSSMRG $R L D A D \| A H A M M S I N A V K G V E \square G D G F A V A G Q F G H E T R D E$ R LP ARLAHAALSLPAARGFAMGDGWHAVQSHGSRWNDP KLPAVMAHAMFSIPAVKGFEDGEGFKAAEMRGSEHNDP GLLES RLDAAADYA I PAVKGVEFGEGFGVAADFGSENNDN

```
lupas 21
lupas_14
lupas_28
jnet
conf
lol25
sol5
sol0
jhmm
```

$\square$ T P Q $\quad \stackrel{290}{ } \quad$ G N HA G G|I L ${ }^{300}$
310
FCDGKGE LGVTKNDAGGVLGG $\operatorname{CRSSAD\square YFRVAVKPVST\| }$
$\square T$ TE GF $\square$ ANHAGG $\square L G G \square S S G Q H \square R V A \square A L K P T A S \square$
FAAAGPFEVPATNQSAGSQGGLTTGLPLSFRVAMRPPST■ F F V Y Q A G GTVRTTNHHGGS $\square$ GG $\square$ SSGMPLVLRAAFKPTPS $\square$

ARAQRTADWAGALREVAGAGRHDPCVGPRAVP ILEAMTSL GQTQDT $\square$ S $\square$ RGENDT $\square$ A $\square V G R H D P C \square V P R A V P C V E A A A A D$

370
A $\square$ A D N A M $\square$ Q $\square$ S RESFEE

VLMDHY $\square$ RHRAQN
VLADLALIQLS
ALLDLICR

```
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm
```



