UniRef90_L5KYH3 UniRef90-L5KYH3
UniRef90 L5KYH3 UniRef90-F7B2V3 UniRef90-H2LLS UniRef90-H2LLST UniRef90 W5LE67 UniRef90-A1L216 UniRef90-A1L216 UniRef90-Q6ZM93 UniRef90-Q6ZM93 UniRef90-M3Y735 UniRef90 G1KMP4 UniRef90-F6UAQ5 UniRef90-F6UAQ5 UniRef90-U3ICL3 UniRef90-U3ICL3 UniRef90_UPIO003835237 UniRef90-UPI0003EA874F UniRef90_A1E2V0 UniRef90-H2ZTN9 UniRef90-H2ZTN9 UniRef90 UPIo00462B23C UniRef90-G1LU16 UniRef90-G1LU16 6
UniRef90 W5MCF6 UniRef90-W5MEP9 UniRef90_UPIOOO3FOA3E7 UniRef90_UPIOOO42BD183 UniRef90_UPIOO042BD183 UniRef90-UPIO0033316D6 UniRef90-G3NDL9 UniRef90-H2SHS7 UniRef90-T1DB98 UniRef90-H2M1B6 UniRef90-F1QQ37 UniRef90-A0A026W8F5 UniRef90-A0A026W8F5 UniRef90-13Y232 UniRef90-E2A7A5 UniRef90-K1QFI6 UniRef9-K10FI6 UniRef90-T1HSP8 UniRef90 UPIOOO38BC342 UniRef90-UPIOOO38BC342 UniRef90-K1REW7 UniRef90 ${ }^{-}$K1REW7 UniRef90_UPIOOO21A673C UniRef90-UPIOOO32B0880 UniRef90-E9JEIO
UniRef90_E9JEIO UniRef90-UPIO003442868 UniRef90-K1PPI1 UniRef90-T1JFM1
UniRef90-E2BF81 UniRef90-G6CQN3 UniRef90_UPIO0021A673B UniRef90-UPI00021A673B UniRef90-UP100022CA1AE UniRef90 UPIO00046CBD8F UniRef90-UPIO003C264D6 UniRet90_UPIOOO42BAO1E UniRef90 UPIOOO350D250 UniRef90-V9SG28
UniRef90 U3IEM4 UniRef90-K7E8R5 UniRef90-UPIO00258F870 UniRef90-Q6E7G7 UniRet90-W4VUK4 UniRef90-T11M88 UniRef90-K7IZE2 UniRef90_E2C5M2 UniRef90-K1R5W1
UniRef90 K1QCVO UniRef90 UPIO004423533 UniRef90-UPI00020397BA UniRef90-K1R9N9 UniReffo-E9H5Q6 UniRet90_F5A8D5 UniRef90-D7GB53
UniRef9O-F4WQU3 UniRef90-F4WQU3 UniRef90-L7M5L9 UniRef90_EOVC59
UniRef90_EOVC59

VD NSAMSSEEAR】CTFQSWPLT F $S D L Q Y S S E L F R F S T F A R F P T S V$


PGMHSEEE

S S E L F
S S E L F R $\quad$ I




QPE QLA SAGFYYVGR NVSELARAGFYYIGP $N V S E$ L A RAGFYY i $G P$ $N V S E L A R A G F Y Y \| G P$ S P S A L A K A GFYY TGP $V$ T E R S L A R A GWF Y T GV $V$ T E R S L A R A GWFY T GlV | $R$ | $L$ | $R$ | $S$ | $F$ | $E$ | $H$ | $W$ | $A$ | $D$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $L$ | $S$ | $T$ | $F$ | $S$ | $A$ | $F$ | $P$ | $S$ | $N$ | S $R$ S LAR A GFYYTGGV

 LAKAGFYYTGP
 A Q D L A R A GFYYYVGP S

S NPSMSCELY R M S T RMSTHSTHPVVNV NP HMSTEDARRRTF YPEMEAEDSRLTTF

MKSEFDRLCTFQNWPTGASV H Y DLS CELLFRFSTFANFPSPSPV
HYDLS
VA N
SAMSSEEEARLLLT F K T WP LTT F

D P G
P SMRNEAARLRSF

 S
S
S

S | E |
| :--- |
| E |
| P |

$\begin{array}{ll}R \\ R & L \\ \text { R } \\ \text { L }\end{array}$
$P$
S E R
E
R SLAKAGFYY 1 G $\operatorname{C}$ ERSLARAGFYYTGV $\begin{array}{lllllll}E & R & S & L & R & A & G \\ A & Y & T & G V \\ A & N & G & F & Y & L & G\end{array}$ PSELAKA GFY Y L G C $P M Q L A E A G F F H T G P$
$A P A G F Y S L G B$
CAMNTEQDR LTYHMWP $\square$ SF $\square$ SPAE AAPAGFYS L GP
PRMRGEGERLRTF GRWPADAPV TSGELAGAGFFYGGP MRREGDRI RTFQEWPADAAVAPADLARAGFFFLGP NPMMNTEESRLLTFKSWPLTG LSPTSLAKAGFYYVGP MRRERERLQTF QNWPDEAPV TSEDLAKA GFYFLGS MRSE EERRLQTFHNWPSDAAVSPEELARAAGHYGLY NAAMYSEE DRLQTFQNWPSYSTLAPVELARAGFYYTGT $M N V E E N R L R T F G E W P A N A A V D A T R I A K A G F Y Y T G R$
 RMHSEEERRLSTFHNWP L N AS DRSAEELARASFYF L GP K Y E TVSQRLQTFDSWPLTS IIRPEQLALAGFYYLQY

 DFSCELYRLSTYSAFPAGVPVSERSLARAGFYYTGV
 MENNFNRLASFKDWPLSAPVSALLRLVDSGFYFDVQ HPEYASYDARLHTFVTWPKSMPQTKEQLADAGFFYTGK $P G M G S E E L R L A S F H D W P Q T A G V R P E P D A A A G F F H T G X$ Y R S E A L R L L S F S HW E D D SVV S REALV S A GFYHIG
 PGMGSEELRLAS F

 MNVEENRLKTFEEWPVNAAVDAPRIAKAGFYYTGH
DMRREDERI KTFENWPVPF LSPELLARNGFYY LKR
 $M N V E E S R L R T F T D W P V N A T V D A A R I A K A G F Y Y T G H$ VDN T D Y HF F A A RLLQS F E NWPI T Y I E P E K L A A A GFYYY T G E MDYRFEEVRRLQSFENWPSEHVVPADLAAAGFYFTKQ S S M WCE ERRRLRTF QHWP DSNPVVSAPDLAKAGFFF LGP YPEMETEAMRLATF

D Y V T F F E S R R L

## VAK P

 $M R D E A R R L R T T$$M R S E K R R Q R T F$
 MNVVENRLLRTFRDWPANAAVDPTRLAKAGFYYTGH MKFERHRLESFSRWPANAPI EAKKLAKAGFYYKGK MKFERHRL ESFSRWPANAPI EAKKLAAKAGFYYKGK
 $\square D N \square D$ YHFE DARLESSYKDWP CVVSVRPERLAAAGFYYTGE

 HPKYASSSARLASFQSFPGRRTQSPALLASAGFFYAGY
 D MKRESDRRRTY س


QUERY
UniRef90 L5KYH3 UniRef90_L5KYH3 UniRef90 L5KYH3 UniRef90 F7B2V3 UniRef90-H2LLS7 UniRef90-H2LLS UniRef90_G3WEC4 UniRef90 ${ }^{-}$W5LE67 UniRef90_A1L216
UniRef90 A1L216
UniRef90 Q6ZM93 UniRef90-Q6ZM93 UniRef90_M3Y735 UniRef90 G1KMP4 UniRef90-G1KMP4 UniRef90-F6UAQ5 UniRef90-F6UAQ5 UniRef90 U3ICL3 UniRef90-U3ICL3 UniRef90_UPIO003835237 UniRef90_UPI0003EA874F
UniRef90 A1E2V0
UniRef90-H2ZTNo
UniRef90-H2ZTN9
UniRef90 UPI000462B23C
UniRef90-G1LU16
UniRef90-G1LU16
UniRef90_W5MCF6
UniRef90 W5MEP9
UniRef90-UPI0003FOA3E
UniRef90_UPI00042BD183
UniRef90 UPI00042BD183 UniRef90-UPI00033316D
UniRef90_G3NDL9
UniRef90 H2SHS
UniRef90_T1DB98
UniRef90-H2M1B6
UniRef90-F1QQ37
UniRef90_V9KD44
UniRef90 A0A026W8F5
UniRef90_A0A026W8F5
UniRef90 I3Y232
UniRef90 E2A7A5
UniRef90-K1QFI6
UniRef90-K1QFI6
UniRef90_T1HSP8
UniRef90 ${ }^{-}$UPI00038BC34
UniRef90_UPI00038BC342
UniRef90_K1REW7
UniRef90 K1REW7
UniRef90-UPI00021A673C
UniRef90_UPI00032B0880
UniRef90_E9JEI0
UniRef90 E9JEI0
UniRef90-HOZB22
UniRef90-UPI0003442868
UniRef90 K1PPI1
UniRef90-T1JFM1
UniRef90-E2BF8-
UniRef90 E2BF8
UniRef90_G6CQN3
UniRef90_UPI00021A673E
UniRef90-UPI00021A673B
UniRef90 UPI00022CA1AE UniRef90-UPI00046CBD8F UniRef90_UPI0003C264D6
UniRef90-UPI00042BA01E UniRef90 UPI000350D250
UniRef90-V9SG28
UniRef90-U3IEM4
UniRef90_K7E8R5
UniRef90-UPI000258F870
UniRef90_Q6E7G7
UniRef90 W4VUK4
UniRef90 T1IM88
UniRef90-T1IM88
UniRef90-K7IZE2
UniRef90- E2C5M2
UniRef90 ${ }^{-}$K1R5W1
UniRef90-K1QCV0
UniRef90_UPI0004423533
UniRef90 UPI00020397BA
UniRef90-K1R9N9
UniRef90-E9H5Q
UniRef90 F5A8D5
UniRef90 D7GB53
UniRef90-F4WQU3
UniRef90-F4WQU3
UniRef90 L7M5L9
UniRef90-EOVC5s
UniRef90 EOVC59

GQEFVDE\QGRY

QQSFVSNV
GRDYVNNIQESY

S Q

GRDFVQS $\square$ QAS

VA G F S D S VD G Q


ETNNT
ETNNI

REK
REK


GQDFVRSVQE
GRDFVSSVQDS
GREFVNS VQESF
GQEFIDKVRRE
$A Q N$

GHDY VQRVISE

GRDFDNHDQES
GRDFINSIQDSY GQAFI DLVQE GNDY R REI QARY



UniRef90 G1KE95 UniRef90-V3ZXN5 UniRef90-C3Z9S3 UniRef90-D6WAN9 UniRef90 D6WANo UniRef90-H9JPR9 UniRef90_A0A023FKM9 UniRef90 K1R0S8 UniRef90 ${ }^{-}$W4VUJ8 UniRef90-K7JVI7
UniRef90-S4RCZ8
UniRef90 S4RCZ8 UniRef90-Q175J8
UniRef90 Q175J8 UniRef90 UPI00044319B2 UniRef90-U4URP6 UniRef90-Q9QES9 UniRef90_C3XQ28 UniRef90 UPI0003F0BB33 UniRef90-UPI0003F0BB33 UniRef90-B4MQL3 UniRef90 R4WEC7 UniRef90 Q9YNL8
UniRef90-P41437
UniRef90-D3GD96
UniRef90_E9HP27
UniRef90-UPI000333F7FA
UniRef90-EOVJZ7
UniRef90_S5MRD5
UniRef90 Q8JHV9
UniRef90_A9JTP3
UniRef90-W4YF19
UniRef90_V5GHQ7
UniRef90- Q13075
UniRef90_UPI000273FFA5
UniRef90-UPI000273FFA5
UniRef90_Q2M103
UniRef90_A9C47
UniRef90-A9C471
UniRef90 K1QRT8
UniRef90-UPI0003C3996E
UniRef90_UPI0003C3996E
UniRef90-F6YSF8
UniRef90 B7Q7F6
UniRef90_B7Q7F6
UniRef90-V9XTW8
UniRef90 U4UM85
UniRef90- U4UM85
UniRef90-W5LZG1
UniRef90_V5HAR9
UniRef90 UPIO003EAB523 UniRef90-UPI00042AC9AF
UniRef90-B4ITU5
UniRef90_UPI0003502F5D
UniRef90 F1M6V4
UniRef90-F1M6V4
UniRef90-F6R5K2
UniRef90 UPI0003339483
UniRef90-UPIOO03339483
UniRef90-D8V068
UniRef90 D8V068
UniRef90_UPI00035979C9
UniRef90-UPI0003D78422
UniRef90-UPI0003599464
UniRef90 HOWT66
UniRef90 HOWT66
UniRef90-R7VQB7
UniRef90 R7VQB7
UniRef90_B4L082
UniRef90-UPI0003F1077D
UniRef90-UPI0003F1077D
UniRef90 L5M0E5
UniRef90_D7GB54
UniRef90_D7GB54
UniRef90-F4WQT8
UniRef90 E1BEJ9
UniRef90_UPI0004402183
UniRef90-UPIOOO4402183
UniRef90_F6VVP4
UniRef90 ${ }^{-}$F6VVP4
UniRef90-B0XJ37
UniRef90 B0XJ37
UniRef90 W5JR61
UniRef90-UPIO00334484A
UniRef90-K1PP31
UniRef90_UPI000359FD2C
UniRef90 M7C4L2
UniRef90-M7C4L2
UniRef90_K4EQ13
UniRef90 W5P5Z8
UniRef90-W5P5Z8
UniRef90_UPI000387159A

GEAYVEDCLRR

GQRF $\square E A V V G K$ | $P$ | $D$ | $R$ | $T$ | $D$ | $N$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $D$ | $R$ | $T$ | $D$ | $N$ | $V_{R}$ |
| $R$ |  |  |  |  |  |  |

GRDYVQNVNK
$\qquad$ E F

GEQY ${ }^{\text {GK }}$
GRAFVRRVQASY
 GHDYVQKVV
GEAF IRRVQES G P
 S SAEV

## Q

S S A
GR
S S GNVVPAVDQ
SSGNVPAVDQ
G Q D
SSQEDSEY $\square R S Y$ SSEEIPAFQSHY

GQEY $\square \mathrm{NN} \square \mathrm{H}$
$G \square E F \nabla Q N \nabla A G R F$

S SEVIPTLQS QY
S R N
SRN

G QLIY ID S V V

ASAEV

S S A


PDRTDNVRS
SSTEV
GVDFVTLVQS
GQAFINVVR

GRDEV
UniRef90 P41436 UniRef90_V9HX09 UniRef90-UPIOOO252B058 UniRet90-H9GHT2 UniRef90-H9GHT2 UniRef90-E3SVR2 UniRef90_UPI0002C30E14 UniRef90_UPI0002C30E14 UniRef90_UPIO003FOC27B UniRef90-UPIOOO3FOC27B UniRef90_UPIOOO38C3327 UniRef90-UPI00038C3327 UniRef90-D3TM28 UniRef90-UPIOOO34F6911 UniRef90_UPIO0034F6911 UniRef90-V8P6NO UniRef90-UPIOOO359DCBC UniRef90-E2BCE3 UniRef90-G8G3Y5 UniRef90-V8NNB3
UniRef90 - Y 31 U 60 UniRef90-U3IU60
UniRef90_U31U60 UniRef90-UPIOOO3C29863 UniRef90-T1HCP55 UniRef90-F7D4H1 UniRef90_UPIO0035990BC UniRef90-UPIO0035990BC UniRef90-W5JTH2 UniRet90-W5JTH2 UniRef90_UPI0003FOF785 UniRef90-H3B1U1 UniRet90-H3B1U1 UniRef90-Q8WRD9
UniRef90 R7VJB2 UniRef90-UPI0003C17EB5 UniRef90-UP10003C17EB5 UniRef90_UPIOOO442235C
UniRet90-UPIOOO3343A1B UniRef90_UPIooo3343A1B UniRef90-K1PQK7 UniRef90-G5COIO UniRef90-G5C010 UniRef90_UPIOOO46B4367 UniRef90 UPIOOO46B4367 UniRet90-BOW3T6 UniRef90-O89744 UniRef90-F6TZ14
UniRef90-K1S1N1 UniRef90-T1GK49 UniRef90-T1GK49 UniRef90_U3JFM3
UniRef90 U3JFM3 UniRef90-G1KJP5 UniRet90-G1KJP5 UniRef90-R4WJ94
UniRet90-UPIoool80BoAE UniRef90-V4AM91 UniRef90-H3B9T4
UniRef90 H3B9T4 UniRef90-UPIO002247DA0 UniRef90-F7B2G3 UniRef90-16L9G1
UniRef90-16L9G1
UniRef90-Q1A4L2
UniRef90_-J.JJV9
UniRef90_A2RV08 UniRef90-T1E688 UniRef90_T1E688 UniRef90-Q0ILT9
UniRef90 L9KUX UniRef90-L9KUX3 UniRef90-UP10003D0CF7F UniRef90-G1N606 UniRef90-K1RQ86 UniRef90-B4J4Q5 UniRef90 B4J4Q5
UniRef90 Q4RT92 UniRef90-Q9EN27 UniRef90-H3B9T3
UniRef90-W5MJV9 UniRef90_UPI00034F28F9 UniRef90-84J320 UniRet90-O96P09 UniRefofo-F6VVK4 UniRef90-F6VVK4 UniRef90_B6S2F1
UniRef90_R4ZFJ9 UniRef90-B7SVZ2 UniRef90-V9LSP8 UniRef90_C3ZJQ8
UniRef90_F6PS88
UNiso_ropsol

S D L R LEE EVRLLNTFEKWPVSF LSPETYMAKNGFYY LGR
 AYPEYGSYDARLNTFSTWPSFKLQTKEQLADAGFYYTGK $P E L A R E L S R Q Q T F A S F P S D C P V S S A A L A Q A G F F Y T G E$ ELARELSRQQTFASFPSDCPVSSAALAQAGFFYTGE NYAT L D A R LRRSYDTWPDSLKLK PNVLSDAGFFYTGK
 NPAMADYEARI IT F GTWLYS VNKEQLARAGFYALGK STRKFHMESERLKSFNNFPQNSPMKPEELARAGFYYLGY STQUKFHMESERRLKSFNNNFPQNSPMKPEELARAGFYYGGY
 FHREDERLKTFDNWPLD WLNKNE LAMTGMFYMGE


 $N P S M A D F A K R L Q T F$ GA W N N S S V S K ERRLAQAGFYS LGGM D Q D WA Q E H H R L G S F A E F P L D C L V S A S A L A Q A G F VY T G E
NPAMCSE EARLLRSFHNWPNYVPLTP K E L L L A S A GMYYS G $\square$
N P K


MQMNV
ERRLRSFYRWPSDDGLLATRLARDGFYAT Y P A M A DY E A R
S D Y R Y R M T
 SYHTEVARLDSFRNW TVLF DTKAELARYGFYYVGP

MRSEEERKATYHDWTYGHCQSASVLAAKAGFFFTG G NHQMRSELERLKTFKSLEQLSSWSPGEMASAGFYRTGL NHQMRSELERRLKTFKSLEQLLSSWSPLEMASAGFYRTGLL


 N

KKWP ENAAANPTS LAAEAGFYY $G \quad \square$
$N$
$C$
$C$ C K E O NCQ NSRMRSEAQRLLKTFVVAYKP YS SWTPQEMAAA GFYFTGGV


## A

NPAMCS
$\square K H P E Y T A$

| $E$ | $A$ | $K$ | $R$ | $L$ | $E$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $K$ | $Y$ |  |  |  |  |  |
| K | A | $R$ | $L$ | $R$ | $T$ | $F$ |
| $E$ | $E$ | $A$ | $R$ | $L$ | $E$ | $T$ |


EENRRLRSSFGFWWPQNAPINAAERLARAAGFATGN
EHDRRGTFVGFPQGCPVSVSALAQAGFVYTGE
MRSEVQRLKTFLSQPPGNALSPLEMAAA GFYHTGT
MRSEVQRLKTFLS QPPGNALSPLEMAAAGFYHTGT
 $\square K H P$ Q Y R $\square$ K A E R L L V T F F N D WP S Q M R Q K P E D


PAMNDYNARLETFSSWSSFPDDKETLAKAGFYS IGD K N R V N S F QRFP Y S E Di S A QRLAA A GFYFTGE K N RVNSFRQFPYSEDI SAQRLARAGFYFTGE


 MDSLEARLKTFDNSPFD EARAKELALCCQFYSTGN E FAEEMNRLKTFANFPSSSPASASTMLAGAGFLYTGE
 NPAMCSEEARRLK S F H N N WP P Y G L L LT P K E L A S A G L Y Y T GV T D R R L E Y E S ERYAT F LLEWPTNAPVVQVGDLVKNGFFATGN T D R R L E Y E S ER Y A T F L E WP T N A P V QVVGDLV KNGFFAT GN
 NPAMCSSEEARRLGTYQNWPGYAPDVTPSSELSSNAGFYYTGT
 PEYA $\square E T A R L R S F A D W P L N M K Q K P Q Q L A E A G F Y Y T G Q V$

 VA Q S H Y K N Y CNRLGTFTNW TYAI SPEALAENGFYYTGY
 HEAYAQYQDRLATYTNWPRDDNQSPQDLANAGFFYTGR

UniRef90 P41436 UniRef90_V9HX09 UniRef90_UPI000252B058 UniRef90_H9GHT2 UniRef90_H9GHT2 UniRef90_E3SVR2 UniRef90_UPI0002C30E14 UniRef90_UPI0002C30E14 UniRef90_UPI0003F0C27B UniRef90_UPI0003F0C27B UniRef90_UPI00038C3327 UniRef90_UPI00038C3327 UniRef90_D3TM28 UniRef90_UPI00034F6911 UniRef90_UPI00034F6911 UniRef90 ${ }^{-}$V8P6N0 UniRef90_UPIO00359DCBC UniRef90_E2BCE3 UniRef90_G8G3Y5 UniRef90-V8NNB3 UniRef90_U3IU60
UniRef90-U3IU60
UniRef90_UPI0003C29863 UniRef90_T1HCP5

## UniRef90_F7D4H1

UniRef90-R4ZG59 UniRef90_UPI00035990BC UniRef90_UPI00035990BC UniRef90_W5JTH2 UniRef90 ${ }^{-}$W5JTH2 UniRef90_UPI0003F0F785 UniRef90_H3B1U1 UniRef90_H3B1U1 UniRef90_Q8WRD9 UniRef90_R7VJB2 UniRef90_UPI0003C17EB5 UniRef90_UPI0003C17EB5 UniRef90_UPI0004422B5C
UniRef90_UPI0003343A1B UniRef90_UPI0003343A1B UniRef90_K1PQK7
UniRef90_G5C0IO
UniRef90_G5C0IO UniRef90_UPI00046B4367 UniRef90-UPIO0046B4367 UniRef90_B0W3T6 UniRef90_O89744 UniRef90_F6TZI4 UniRef90-K1S1N1 UniRef90-T1GK49 UniRef90_T1GK49 UniRef90_U3JFM3 UniRef90_U3JFM3
UniRef90_G1KJP5 UniRef90_G1KJP5 UniRef90_R4WJ94 UniRef90_UPI000180B0AE UniRef90_V4AM91 UniRef90_H3B9T4
UniRef90-H3B9T4 UniRef90_UPI0002247DA0 UniRef90_F7B2G3 UniRef90_16L9G1
UniRef90_I6L9G1
UniRef90_Q1A4L2 UniRef90_J9JJV9
UniRef90_A2RV08 UniRef90 T1E688 UniRef90-T1E688 UniRef90_Q0IL79 UniRef90_L9KUX3 UniRef90_L9KUX3 UniRef90_UPI0003D0CF7F UniRef90_G1N606 UniRef90_K1RQ86 UniRef90_B4J4Q5 UniRef90-B4J4Q5
UniRef90- Q4RT92 UniRef90_Q9EN27 UniRef90_H3B9T3 UniRef90_W5MJV9 UniRef90_UPI00034F28F9 UniRef90_B4J320 UniRef90_Q96P09
UniRef90_F6VVK4 UniRef90_F6VVK4 UniRef90_B6S2F1 UniRef90_R4ZFJ9 UniRef90-B7SVZ2 UniRef90_V9LSP8 UniRef90_C3ZJQ8
UniRef90_F6PS87

S DEVVIRCAFCKVE\|MRWKEGEDPAADHKKWAPQCPF|V|K A D S V RCF $\square$ CGTGL R NWDP EDEPWVE HARWAPECFYVVDKK
 R D QVKC F S C H TMMVE GWQE G D S A DIERHRTDFPECRFIIN
 GD QT $\quad$ C Y H C G G GLLK D WE E T D E P WVV H H A R WF S K C P Y V

A
A
K
K
E
S
S
K
A
L

K S GI Q C F C C S LI L F G T S L R K FP I E D H

| E |
| :--- |
| S |
| S |
| K |
| A |
| L |
| P |

A D GVV EC F C C G G GL K E WK A GE DP WE EHARWYP GCKY LGE EK

D D Q V E CF C C G GK L K N WEPR D R A L S E H K RHAFPRCF FV L
 G D KVVKC F Y C DL L L L


 G K R L Q C F K C H C T I E S E A F G L L A DQQE Y A R L Y P S C E

 K DVV Q C F Y C S GY L N DWK ET D D P WK E HA TFF F P H C
 NLETECFACRMKI SNWEFGD
NLETECFACRMKI SNWEFGD


 S D R TK C WY C NGGL Q NWEPND DP WYE HAK WFPECEFL LQQK




 G D QVRCFSCLATLE GWKEGDSVVGRHKNVSPNCRTLVN GD QV R C F S CLLATLE GWKEGDSVVGRHKNVSPNCRILLN

 | $G$ | $D$ | $A$ | $R$ | $C$ | $F$ | $S$ | $C$ | $H$ | $A$ | $A$ | $V$ | $K$ | $E$ | $W$ | $R$ | $G$ | $D$ | $S$ | $A$ | $V$ | $E$ | $R$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |$H_{1} R$ K K S GI QCFCC GLVL FA A GA R L S P DS E HK KFR P QCE F V QE K E G D QVA C F C C G GKL K N WE P G D R A WS E H K R H F P K C F F V L

 WL E A E C N WC H I R R I D H WE Y G D Q V




 LI D T V $\operatorname{R}$ R CAAF C K L T D S V K C V N C K I V V H S WE K G D NV E S E H K K F A P Y C K F V K N



UniRef90 P41436
UniRef90 V9HX09
UniRef90_UPI000252B058
UniRef90 H9GHT2
UniRef90 H9GHT2
UniRef90-E3SVR2
UniRef90_UPIO002C30E14
UniRef90_UPIO002C30E14
UniRef90-UPI0003F0C27B
UniRef90_UPI0003F0C27B
UniRef90 UPIO0038C3327
UniRef90 UPI00038C3327
UniRef90-D3TM28
UniRef90_UPI00034F6911
UniRef90_UPI00034F6911
UniRef90 V 8 P 6 N 0
UniRef90-UPIO00359DCBC
UniRef90_E2BCE3
UniRef90 G8G3Y5
UniRef90_V8NNB3
UniRef90-U31U60
UniRef90 U3IU60
UniRef90-UPI0003C29863
UniRef90-T1HCP5
UniRef90-F7D4H1
UniRef90 R4ZG59
UniRef90-UPI00035990BC
UniRef90_UPIO0035990BC
UniRef90 W5JTH2
UniRef90 W5JTH2
UniRef90-UPI0003F0F785
UniRef90-H3B1U1
UniRef90 H3B1U1
UniRef90_Q8WRD9
UniRef90_R7VJB2
UniRef90_UPI0003C17EB5
UniRef90_UPI0003C17EB5
UniRef90-UPI0004422B5C
UniRef90_UPIO003343A1B
UniRef90_UPI0003343A1B
UniRef90-K1PQK7
UniRef90-G5C010
UniRef90-G5C0IO
UniRef90 UPI00046B4367
UniRef90-UPIO0046B4367
UniRef90_B0W3T6
UniRef90-O89744
UniRef90- F6TZI4
UniRef90-K1S1N1
UniRef90-T1GK49
UniRef90 T1GK49
UniRef90-U3JFM3
UniRef90-U3JFM3
UniRef90_G1KJP5
UniRef90 G1KJP5
UniRef90-R4WJ94
UniRef90-UPIO00180B0AE
UniRef90 V4AM91
UniRef90-H3B9T4
UniRef90-H3B9T4
UniRef90 UPI0002247DAO
UniRef90 F7B2G3
UniRef90-I6L9G1
UniRef90_I6L9G1
UniRef90 Q1A4L2
UniRef90-J9JJV9
UniRef90_A2RV08
UniRef90 T1E688
UniRef90 T1E688
UniRef90-Q0IL79
UniRef90-L9KUX3
UniRef90_L9KUX3
UniRef90_UPI0003D0CF7F
UniRef90_G1N606
UniRef90 K1RQ86
UniRef90 B4J4Q5
UniRef90-B4J4Q5
UniRef90-Q4RT92
UniRef90-Q9EN27
UniRef90- НЗВ9Т3
UniRef90-W5MJV9
UniRef90_UPI00034F28F9
UniRef90 B4J320
UniRef90-Q96P09
UniRef90-F6VVK4
UniRef90 F6VVKL
UniRef90-B6S2F1
UniRef90-R4ZFJ9
UniRef90-B7SVZ
UniRef90 V9LSP8
UniRef90-C3ZJQ8
UniRef90-F6PS87

GQDF $\square N \mathrm{~V}$
GQDYVNKUKN


GQTF $\square \mathrm{DA} \mathrm{V}$ QAR

G Q A F VN GV V $\quad$ KK

GEEYDQKVIS
SSAEV
SSAEVV
RTNNCRNFQA
RTNNCRNFQA
GHEYVNNDH

GRE VNNV

GFYFENNTTQ
GFYFENNITQ
$G E E Y \square A Q C \backslash A K$
$G R D Y V Q N V I S$
$G Q A F \square D G V Q E$
$G \square E Y V Y R / V S Q F$
GEDFLKGVEN
G

GQHFIDNHALK
$G M R N S S S \| Q S$
GMRNSSSIQS
Q
GEEYVSSVQLRY

QHHAFEEMKSE
GRSFVHRVQE
GQRFVD
GHEY $-\mathrm{NN} \square \mathrm{H}$

CMD
GKDYVQESISQ
 UniRef90_UPI000441F703 UniRef90-UPI000441F703 UniRef90_UPI000180D45F UniRef90_UPI000180D45F UniRef90_A5D8Q0 UniRef90-A5D8Q0 UniRef90_UPI00046B79D5 UniRef90_UPI000359D770 UniRef90-AONBE1
UniRef90_I3KLZ9
UniRef90-U5EKT2 UniRef90_UPI00022B001D UniRef90-UPI00022B001D UniRef90-W8AU05 UniRef90-Q6QXJ6 UniRef90-X1YQJ4 UniRef90_UPIO002657D56 UniRef90-V9KHU6 UniRef90-UPIO003EA8F27 UniRef90-F7BMK2 UniRef90-C3Z5V3 UniRef90-UPI0002658935 UniRef90-A0A034W3K6 UniRef90_W5M4Z5 UniRef90-W5M4Z5 UniRef90-A5IZL8 UniRef90_C3Z5N3 UniRef90_COHAV7 UniRef90-COHAV7 UniRef90-D7PD39
UniRef90 H2LVL6 UniRef90-H2LVL6 UniRef90_W0UY11 UniRef90_Q8QL95 UniRef90_UPIO003833D3A UniRef90_V8NE99 UniRef90-UPIO0026596BB UniRef90-F6ZZT6 UniRef90-F6ZZT6 UniRef90_B6D642 UniRef90_F6ZZQ5
UniRef90-F6ZZQ5 UniRef90_UPIO003C10451 UniRef90_UPI0003C10451 UniRef90-K1R5B3 UniRef90-H3DEC4 UniRef90-H3DEC4 UniRef90_UPI0003B75A9D UniRef90_G3Q3M2 UniRef90_G3Q3M2 UniRef90_M3ZX71
UniRef90-M3ZX71 UniRef90-D2J4P6 UniRef90-W4YXS9 UniRef90-W5KDX0 UniRef90_W5KDX0 UniRef90_Q7T9S6 UniRef90 W5NBB2
UniRef90 Q287F3 UniRef90_UPIOO0359EBA2 UniRef90-C3ZDH2 UniRef90_UPI0002A4BC88 UniRef90-UPI0002A4BC88 UniRef90_Q1RPV4 UniRef90-T1DLT5
UniRef90-C3Z5V4 UniRef90-X1 X9M0 UniRef90-UPIO00344608B UniRef90-B3LVZ3 UniRef90-E2BF80 UniRef90_UPI00022CA534 UniRef90-I3XME7 UniRef90_UPIO00359312B UniRef90_Q91EW1 UniRef90_UPIO0042AE922 UniRef90-UPI0003F07679 UniRef90-O70201 UniRef90-C4WX62 UniRef90-J9K8K1 UniRef90_Q7QHS1 UniRef90-Q6JKE3 UniRef90_UPI000359557A UniRef90-U3J5Y8 UniRef90-G1KSY8 UniRef90-E5KJA8 YPEFASEKERLDSFRTWPPLMP|IKPEQ|L|AEAGFFYTGF

 MESEVE | $E$ | $L$ | $A$ | $Q$ | $L$ |
| :--- | :--- | :--- | :--- | :--- |
| $L$ | $A$ | $S$ |  |  |
| $A$ | $Q$ | $L$ | $D$ | $S$ | RQE

 $\begin{array}{llllll}E & R & R & L & A & R \\ E & A \\ P & R & L & A & R & A \\ S & L & L & A & K & N \\ S & S & A & A & A & A\end{array}$ GFYYTGV
GFYYTGG
GFYYY GGR
GFFYTGQ ELA QLDSRQETFANFPSHCPVSSSALAQAGFFYTGQQ $R L T T Y$ T K Y P Q N A P I DVVLLA K H GFYY T GY RLT TY Y K Y P Q N API DVVLLAK K GFYY T GY TDQNYFEEEVRLASFANFSSSYPVSAPALARAGFYYTGD TDQ N Y F E E EVVRLA SFANFSSSYPVSAPALARAGFYYTGD VVIH K F S SF S S R FK T F K L F P S N T S Q N K Y T L S E C GLLK Y S GV E Y A LIK I A RLRSFDGWPSGHHLTKEDLSDA GFYFVGY
 SMQSFEARRASFAGW HPEYA $\square E \square K R \square E S Y A D W P K T M K Q K P Q E L S D A G F Y Y T G K$ PD F S S L K R RI D S F R G S NLA NKVPAETLAQAGFFYTGE PDFSSSLKRRI DSFRGSNLANKVPAETLAQAGFFYTGE RY H REEDERLLKS F E NWP L Q W W L N K K E L A Q T G L V Y T G E VQRFQMYSEAARRRQTFEAWPHYKWVLPDQMAQAGFYHQGN PNFQDDEADRMRSFGSWPSTAPDI SK DKVARA GFYY LGGS
】E L F K E ENRRRETFK TWSAA FNEFVVKELARSGGFY L GN
 MKSCKQRLETFAHWPKP QI DPKRLANAGFYYLQE Y P E Y A $\square E A A R L$ R S F A E WP R N M K QR P K ELA DA GFF Y T G T





 NDTMK LYY ANRLMSFDKWPPNHPLTPHCLAVVGFYHFKY SMRNEARRRLRTERQWPADSPVVSPQDDARAGFYYLGP YPYMETE G DRRLVSFENWPPYS PVMS QLLARA GFFYTGGQ


MQSFEE
 R I T T T Y K L L F P P L N C P P I D DMML L S R H G F Y Y T G Y


 DFSLI KSRLESFRGSSLVQRVPAERLARAGFYLVGP
 DFSEINNRLDSFRGSSLAQQVPAERLARAGFYYTGN DFSEINNRLDSFRGSSLAQQVPAERLARAGFYYTGN PDFSKFDNRFQSFRGSTLAGQVPPERLARAGFYFTGN


 N N $\square D M \square K \square S N R Y K S F E N W T L K S P A S$ SH TY M E S F E D R L R S F A S VVP H

EQARLDTYRDWPRDCPVRPADLARAGFYS DGY
YGRMYRLERRLET FKDWPEDCKCTPERMALAGFVHCPS
NNDDYRFEASRRWSFRSWPKSF D D PVVSLAAAGFYYTGE


$\square D R S L M Y S E A A R R E T F$

HRDFAR TAATFKNWPEDCACTPERMAEAGF DHCPT

 NSFMERRLRTHHTSLSNSYYTPMKFAEAGWQWERE



## UniRef90 Q80LK8 UniRef90-Q9DDN2 UniRef90_Q9DDN2

 UniRef90_UPI000441F703 UniRef90-UPI000441F703 UniRef90_UPI000180D45F UniRef90_UPI000180D45F UniRef90_A5D8Q0 UniRef90-A5D8Q0 UniRef90_UPI00046B79D5 UniRef90-UPI000359D770 UniRef90_AONBE1UniRef90-13KLZ9
UniRef90-U5EKT2 UniRef90_UPI00022B001D UniRef90-UPI00022B001D UniRef90-W8AU05 UniRef90-Q6QXJ6 UniRef90-X1YQJ4 UniRef90_UPIO002657D56 UniRef90-V9KHU6 UniRef90_UPIO003EA8F27 UniRef90-F7BMK2 UniRef90-C3Z5V3 UniRef90_UPIO002658935 UniRef90_A0A034W3K6 UniRef90-W5M4Z5 UniRef90-W5M4Z5 UniRef90-A5IZL8 UniRef90_C3Z5N3 UniRef90_COHAV7 UniRef90-C0HAV7 UniRef90_D7PD39
UniRef90_H2LVL6 UniRef90-H2LVL6 UniRef90-W0UY11 UniRef90_Q8QL95 UniRef90_UPIO003833D3A UniRef90-V8NE99 UniRef90-UPIO0026596BB UniRef90-F6ZZT6 UniRef90-F6ZZT6 UniRef90_B6D642 UniRef90_F6ZZQ5
UniRef90-F6ZZQ5 UniRef90-H2XQL2 UniRef90-UPIO003C10451 UniRef90-UPI0003C10451 UniRef90-K1R5B3 UniRef90-H3DEC4 UniRef90-H3DEC4 UniRef90_UPI0003B75A9D UniRef90-G3Q3M2 UniRef90-G3Q3M2 UniRef90-M3ZX71 UniRef90-M3ZX71 UniRef90_D2J4P6 UniRef90_W4YXS9
UniRef90_W5KDX0 UniRef90-W5KDX0 UniRef90_Q7T9S6 UniRef90_W5NBB2 UniRef90-Q287F3 UniRef90_UPI000359EBA2 UniRef90-C3ZDH2 UniRef90_UPI0002A4BC88 UniRef90_UPIO002A4BC88 UniRef90-Q1RPV4 UniRef90-T1DLT5 UniRef90-C3Z5V4 UniRef90-X1 X9M0 UniRef90_UPIO00344608B UniRef90-B3LVZ3 UniRef90-E2BF80 UniRef90-W5MK32 UniRef90_UPIOOO22CA534 UniRef90_I3XME7 UniRef90_UPIO00359312B UniRef90-Q91EW1 UniRef90_UPIO0042AE922 UniRef90_UPIO003F07679 UniRef90-O70201 UniRef90-C4WX62 UniRef90-J9K8K1 UniRef90_Q7QHS1 UniRef90-Q6JKE3 UniRef90_UPIO00359557A UniRef90-U3J5Y8 UniRef90-G1KSY8 UniRef90_E5KJA8
UniRef90_F1R810
 QDKVKCFSCGLVLDNWQPGDNAMEKHKQVYPSCSFVQNM QDKVKCFSCGLVLDNWQPGDNAMEKHKQVYPSCSFVQNM GDQVRCFSCLATLEGWKQGDSVFGRHKSVSPNCRFINSV GDQVRCFSCLATMLEGWKQGDSVFGRHKSVSPNCRF N K DRVK K F S C GVNDDGWSDGDDPTSE RWHFTNCDLV K DRVKCFSCGVNI DGWSUGDDPTSE RWHFTNCDLV

 GDCAECFYCGGGGLRNWELNDNDWVE HARWFSKCAFMRQTK RDCVRCYFCRDELGGWDEHDVVIEEHLKKWSPHCRDMTKR


 NF LVACPFCKMETNRVPEDDNAFEQHKRWAPQCNFVR KDRAMCFTCTVCLVCWEKTDEPWSEHERHSPDCPFV G LDVACPFCEVEIGDWHFNDVALRKHRERSPNCSYVLQR NDQVQCFSCGGLMQNWEPGDRAMLE HKRHYPMCSFVL QDRVQCFCCGGVLGGWEPQDEPWKEHERHFPNCFFIL QDRTQCFSCSGVLRNWRASDDVNVEHFRHFPHCKM RDKVECAFCGGVLHQWEEGDDPKTEHQRHYPHCPFDRN

GD TV C F H C N GGLL N H WQ D D DV





A

## A

## A

## F



Q D R VI C F K C G GGGLK DWQS DEEP WE E HA K Y Y P
GDA V L C FYNDCRRLSEWNA GDDP WREHARWFAECPYVRKFK
R D CVVRCFCC GLGL K YWRSTDVPA Y Q HARFRPHCDF NR V V N


S D MVV E C F C C S NV L G N WN V D D N P K N R H L E R F P N C R F I R R

,

$$
{ }^{2}
$$

 EDVACCFFCLKEL E GWEPDDDPWYEHAKRSPHCGF L NMKK DD RVGRC F E C EL V V N H WT D G D N P M Q D H E M R S P E C R F I R N


D DRAMCFTCSVCLVCWEPTDEPWSEHERHSPNCPFVRG



 P DVVVKC F F CLI E L K G WK P N D D P WE E H T K S H S C G F L S L S K


UniRef90 Q80LK8 UniRef90-Q9DDN2
UniRef90-Q9DDN2
UniRef90 Q7T5S1
UniRef90 UPI000441F703 UniRef90-UPI000441F703 UniRef90_UPI000180D45F UniRef90_UPI000180D45F UniRef90 A5D8Q0
UniRef90-A5D8Q0
UniRef90 UPI00046B79D5 UniRef90 UPI000359D770
UniRef90-A0NBE1
UniRef90-13KLZ9
UniRef90 U5EKT2
UniRef90 ${ }^{-}$UPIO0022B001D
UniRef90_UPI00022B001D
UniRef90 W8AU05
UniRef90 Q6QXJ6
UniRef90-X1YQJ4
UniRef90_UPIO002657D56
UniRef90_V9KHU6
UniRef90-UPI0003EA8F27
UniRef90-F7BMK2
UniRef90-C3Z5V3 UniRef90-UPI0002658935 UniRef90-A0A034W3K6
UniRef90-W5M4Z5
UniRef90 W5M4Z5
UniRef90-A5IZL8
UniRef90_C3Z5N3
UniRef90-C0HAV7
UniRef90_C0HAV7
UniRef90-D7PD39
UniRef90-H2LVL6
UniRef90-H2LVL6
UniRef90_W0UY11
UniRef90_Q8QL95
UniRef90_UPI0003833D3A
UniRef90 V8NE99
UniRef90 UPI00026596BB
UniRef90_F6ZZT6
UniRef90-F6ZZT6
UniRef90 B6D642
UniRef90-F6ZZQ5
UniRef90-F6ZZQ5
UniRef90 H2XQL2
UniRef90-UPI0003C10451
UniRef90-UPI0003C10451
UniRef90-K1R5B3
UniRef90 H3DEC4
UniRef90-H3DEC4
UniRef90_UPIO003B75A9D
UniRef90_G3Q3M2
UniRef90 G3Q3M2
UniRef90-M3ZX71
UniRef90-M3ZX71
UniRef90 D2J4P6
UniRef90-W4YXS9
UniRef90-W5KDX0
UniRef90 W5KDX0
UniRef90 Q7T9S6
UniRef90-W5NBB2
UniRef90-Q287F3
UniRef90 UPIO00359EBA2
UniRef90 ${ }^{-}$C3ZDH2
UniRef90_UPI0002A4BC88
UniRef90 UPI0002A4BC88
UniRef90 Q1RPV4
UniRef90-T1DLT5
UniRef90-C3Z5V4
UniRef90 X1X9M0
UniRef90-UPI000344608B
UniRef90_B3LVZ3
UniRef90 E2BF80
UniRef90 W5MK32
UniRef90-UPI00022CA534
UniRef90-I3XME7
UniRef90_UPI000359312B
UniRef90- Q91EW1
UniRef90_UPIO0042AE922
UniRef90_UPIO003F07679
UniRef90 O70201
UniRef90-C4WX62
UniRef90-J9K8K1
UniRef90_Q7QHS1
UniRef90-Q6JKE3
UniRef90-UPI000359557A
UniRef90_U3J5Y8
UniRef90 G1KSY8
UniRef90-E5KJA8
UniRef90_F1R810

GQNFIQKIV

GNHSENNVNDEF GQAF $\square \mathrm{DA} V \mathrm{~K}$

GPEFVNS $\square \mathrm{H}$ LQ
GQGYID K
RTSFNQN
RTSFNQN

G EFTQNV

GQS Y $\square E S \square A A K Y$
GK E
GKE
GESYVDRVMNK
HRSRVNSLQG
HRSRVNSLQG
HDKNI

S S NDIY K T DE Q

QEERMCKV
GREFVEAALAR
$C \square K Y \square N P D N S S$

GEEFVQQ $\square \mathrm{Q}$
G
GAAFDNS $\square$ H $\square K$
RTNF
RTNF

G $\square K Y$ Y $\square E Q$ VHDE
K K N


GLD Y TQK I
GQSYVDKVQRDF

|  |
| :---: |
| D F D |
| GEKY $\square$ RNAMNK GQEYINEAQQQ SDEFIKSVVNE |
| EYTQNV |
| GQNFVDKVRG |
| GKRFVEEVGGE |
| GADTVDEV |
| GFLFINHC |
| N F D D L T VE |

ESE

|  |  |
| :---: | :---: |
|  |  |
| F2U16 | Crvasfakh |
| UniRef90-85X0A1 | 促 |
| UniRef90-UPIO0038C4445 | YQEEEARLESFENW |
| UniRef90-13K | KMYFFENRL |
| UniRet90-W5L9K2 | KLYFYENRL |
| UniRet90 R4ZFZ | MESEQLRLDSFIN |
| UniRef90 UPI00038BEC83 | QHEEFANEELRLDTFKDWPQESPVAVEDLVRAGLFYTGIL |
| UniRef90-Q7T5K8 | NLNTKAARYKTFETWPLGGKQTKDDMVDAGFYYSGY |
| UniRef90-X1XPU8 | DLTTYENRLRTFYGVWKLNFDTPDQMAKAGLYY |
| iRef90-028ER3 |  |
| Uni? | AMYSYEKRLDSFREWPFTERCTPENN |
| UniRef90-v9DE | NYATLESRLATFEGWPHKTP TPEEVA |
| UniRet90-K1QZ | GWPTQUTLRPDDL |
| UniRet90-H6BQ13 | KWPHKTP TPEEL |
| UniRef90-X1X1B5 | SL S EA |
| RRef90_UPI0003E |  |
| UniRef90-W5 | N |
| UniRef90-W5MJZ2 | RRAT |
| UniRef90-Q8JKH5 | WS Pr kr beal |
| UniRef90-F7EEB6 | NMYDYEARLATFADWPENCKCTPENMAKAGFVHCPT |
|  |  |
| niRet90_V5IE |  |
|  |  |
| UniRef90 UPIOO046B96C1 |  |
| UniRet90 B7, | LLQERLKSFANWP |
| UniRef90-K1RFF6 | NMKODEARTETFEKHDGHSOLTASKYAEAGFESYGE |
| UniRef90 ${ }^{-}$K7G4S1 | DWPENCKCTPENMARA |
| UniRef90-V4CAX9 | WP P L VNV |
| UP100026 |  |
|  | ARLRTFSN |
| UniRef90-E91XU6 | RRLRSFAMW |
|  |  |
| UniRef90-E9F2A3 |  |
| UP10002A | NWYDProusal |
| UniRef90 R7UB78 | HEANRLETFENWYDDFPVKASALAKAGFYFIGP |
| Uni | AYPEFSTFSSRLRSFQTYPSNAGQNKYKLAQCGFQY |
|  | HP MTSEASRRETFASWPHYKWALPSQMAEAGFYHQPN |
| UniRef90-F6YGU3 | N W |
|  |  |
| iRe990_08MVN1 |  |
| f90-U1M |  |
|  | SVP EMILYEDRVNSFGGWSKQLRPNKDTLAPAGFFYTGM |
| UniRe990-L7LZH2 | MEHRISTKK |
| UniRet90 UPIO0022F60 |  |
| UniRe | SQELREQSFVDW |
| UniRef90-E2A7A7 | V S W |
| 90-UPIO003508C | NEELRQDSFKSW |
|  |  |
|  | EMSTEEKRLSTFKKWPYDTSINKEKMAAAGFYYIGN |
|  | RLKSFDGW NGQVDPRQLAHAGFYYLGN |
| UniRet9 | RKLTFEHWPHYRWALPCQMAEAGFFHQPN |
| UniRet90-F4WC |  |
|  |  |
|  |  |
|  | DLISSFDFRLKTFSCWPFDCNCTADRMARSGFFHNGS |
| UniRef90-K1ROS5 UniRef90-R7U8K4 |  |
|  |  |
| UniRef90-T1K6N3 |  |
| UniRef90 R7TNG3 | LWPQWSNAQPADLAKNGL |
| UniRef90-R7TNG3 | EDNRLKTFFLWP |
|  | NSFMERLRTFHNFTSSNSYTPMKFAEAGWERFPW |
|  |  |
| UniRef90-R7T |  |
|  | $\underset{T}{N}$ |
| UniRef90 UPI00035A1A71 | RTRLETYSTFPEHVKQNPKD |
| UniRef90-T1L5D8 |  |
| UniRef90-UPIO004410768 | KARHETFK\WPPDSGATSKRMAEAGFVYTPQ |
|  |  |
| UniRef90-B8 | RRATFAGWPHEGKCQSEKMVEAGWYFCPN |
| UniRe990-Q9VEI |  |
| UniRef90_L1J848 |  |
| niRef90 |  |
| niRef90_L1 | MSTYDSRL |
| UniRef90-UPI00021A62F2 | ASYVSRL |
| UniRet90-K | RLESFEFWPKAMKQRPKELAAAGLF |
| niRee90 A0A023UHL8 |  |
| UniRef90 B6A8L1 |  |
| UniRef90 V5GB08 | G |
|  | (RRKTEDYWTNSSVDDDILARTGFYFWRT |
| 8807B |  |
| ef90_D6WDU5 | NLIE Y C F E A N R K T F K K WlVF S D K C N A A K LIA E A G Fli F V G N |

## UniRef90 X1WL86 UniRef90_T1KAL6 UniRef90-F2U162 UniRef90 UPI00038C4445 UniRef90_I3KV49 UniRef90_W5L9K2 UniRef90_R4ZFZ0 UniRef90-K1QZD4 UniRef90_UPI00038BEC83 UniRef90_Q7T5K8 UniRef90-X1XPU8 UniRef90_Q28ER3 UniRef90_V9LFH4 UniRef90-K1QZ33 UniRef90-H6BQ13 UniRef90-X1X1B5 UniRef90_UPI0003EAD00C UniRef90_W5MJZ2 D <br> , <br> K

 UniRef90-W5MJZ2 UniRef90_V5HQW6 UniRef90_Q8JKH5 UniRef90_F7EEB6UniRef90-A7T0Y6
UniRef90-V5IEU8
UniRef90-A7SUG7 UniRef90_UPI00046B96C1 UniRef90_B7SVF5 UniRef90_K1RFF6 UniRef90_T1K3K0 UniRef90_K7G4S1 UniRef90_V4CAX9 UniRef90-UPI0002652D6A UniRef90_W5KDW8 UniRef90_E9IXU6 UniRef90_W4YE76 UniRef90_E9F2A3 UniRef90_UPIO002A47922 UniRef90-J9K829 UniRef90_X1WM90 UniRef90_E9GG69 UniRef90_F6YGU3 UniRef90_F1NN48
UniRef90_Q8MVN1 UniRef90_U1M7M7 UniRef90_Q6R7D0
UniRef90 L7LZH2 UniRef90_UPI00022F6CEB UniRef90 W9VPQ7 UniRef90_H2U9J2 UniRef90_E2A7A7 UniRef90_UPI0003508C24 UniRef90_E2ADZ3 UniRef90_L7SU02
UniRef90_V4AVE8
UniRef90_F1KQK8
UniRef90-X1WWM5 UniRef90_UPI00021A8988 UniRef90_H2KVIO UniRef90_K1R0S5 UniRef90_R7U8K4 UniRef90_A0A023GJ39 UniRef90_T1K6N3 UniRef90_R7TNG3 UniRef90_R7TNG3 UniRef90_UPIO0035990A3 UniRef90_S8AU40
UniRef90 R7T6P5 UniRef90_G4VLP1 UniRef90_M1WGI0 UniRef90-UPI00035A1A71 UniRef90_T1L5D8
 H DAVTCFFCA GTI A NWLPKDDPWELHALHFPDCMYVYLKR K D QL K C F K C K K S L D G WE E G D DPFE EHFNHNKRCTF RDTVVQCFSCAGCL GNWEEGDDPWKEHAKWFPN


 G D R V E CFYCGVILCD WWPEDEAWRRH DKANSECAYVLMRK
 P DVVVIC F F C L K E L D N WE P E D D P WK E H Q S H S P P N C G F L A L K S GDKCRCFYCGNTGLLKWDPEDDPDLLEHAKWFPDCA WLLKL K


## 





 P DVVAK C F F C L I E L E G W E P N D D P QV

UniRef90_D6WDU5

| UniRef90 X1WL86 | $\text { GMEFTDNVK }{ }^{90} \mathrm{~N} \text { K }$ |
| :---: | :---: |
| UniRef90-T1KAL6 | GKNFVN |
| UniRef90-F2U162 |  |
| UniRef90-B5X0A1 | G K D F VQTV |
| UniRef90_UPI00038C4445 |  |
| UniRef90-I3KV49 | K V E |
| UniRef90-W5L9K2 | S V E |
| UniRef90-R4ZFZ0 |  |
| UniRef90-K1QZD4 | G D F V K L V |
| UniRef90-UPI00038BEC83 | S S T EV |
| UniRef90_Q7T5K8 | K D F I D D $\downarrow$ |
| UniRef90-X1XPU8 |  |
| UniRef90-Q28ER3 | K A E |
| UniRef90_V9LFH4 | D V D D $\square$ |
| UniRef90-V9DEV9 |  |
| UniRef90-K1QZ33 | $\square \mathrm{NT}$ V Q |
| UniRef90_H6BQ13 | GQ D |
| UniRef90-X1X1B5 | VNEF $\square$ E NVK N E Y |
| UniRef90-UPI0003EAD00C |  |
| UniRef90-W5MJZ2 |  |
| UniRef90-W5MJZ2 |  |
| UniRef90-V5HQW6 | EPALY ${ }^{\text {P }}$ TVRS |
| UniRef90-Q8JKH5 | GPLYYVESIKKR |
| UniRef90-F7EEB6 |  |
| UniRef90-A7T0Y6 |  |
| UniRef90_V5IEU8 | GPQENAE $\square$ S K R |
| UniRef90_A7SUG7 | S S E I |
| UniRef90_UPIO0046B96C1 |  |
| UniRef90_B7SVF5 | D A AFIAKCKRR |
| UniRef90_K1RFF6 | SMEFIERVQE |
| UniRef90_T1K3K0 | GRNFL |
| UniRef90-K7G4S1 | NFD |
| UniRef90_V4CAX9 |  |
| UniRef90-UPI0002652D6A | GK D F VDEVQ D |
| UniRef90-W5KDW8 |  |
| UniRef90_E9IXU6 |  |
| UniRef90-W4YE76 | K R N |
| UniRef90-E9F2A3 | IE A E ID E Y |
| UniRef90-UPI0002A47922 |  |
| UniRef90_R7UB78 |  |
| UniRef90-J9K829 | GKNFTDEVECG |
| UniRef90 X1WM90 | G N Q Y I Q KVLS ${ }^{\text {V }}$ |
| UniRef90-E9GG69 | G DYTSNV |
| UniRef90-F6YGU3 |  |
| UniRef90-F1NN48 |  |
| UniRef90_Q8MVN1 |  |
| UniRef90-U1M7M7 | R E E |
| UniRef90-Q6R7D0 |  |
| UniRef90_L7LZH2 | K S E |
| UniRef90_UPI00022F6CEB | Q F E |
| UniRef90-W9VPQ7 |  |
| UniRef90-H2U9J2 | D F T ELTVGEF |
| UniRef90-E2A7A7 |  |
| UniRef90-UPI0003508C24 | S S A EV |
| UniRef90-E2ADZ3 |  |
| UniRef90_L7SU02 |  |
| UniRef90-V4AVE8 | GKE $\triangle$ VKE $\square \mathrm{R}$ |
| UniRef90_F1KQK8 |  |
| UniRef90-F4WQV7 |  |
| UniRef90-X1WWM5 | G N Q F V |
| UniRef90-UPI00021A8988 |  |
| UniRef90-H2KVIO | Y E E |
| UniRef90-K1R0S5 |  |
| UniRef90-R7U8K4 |  |
| UniRef90-A0A023GJ39 |  |
| UniRef90-T1K6N3 |  |
| UniRef90-R7TNG3 | NRNLVE |
| UniRef90-R7TNG3 | NRNLVE |
| UniRef90-UPI00035990A3 |  |
| UniRef90-S8AU40 |  |
| UniRef90-R7T6P5 | G |
| UniRef90_G4VLP1 |  |
| UniRef90-M1WGI0 | Q F G G V N K |
| UniRef90-UPIO0035A1A71 |  |
| UniRef90-T1L5D8 | G A $\square \mathrm{F}$ V D S V K S |
| UniRef90_UPI0004410768 UniRef90 B3GN6 |  |
| UniRef90-B3GN56 UniRef90 B8M3C7 | G R D Y VQQVIS E |
| UniRef90 B8M3C7 UniRef90 Q9VEM2 |  |
| UniRef90-Q9VEM2 |  |
| UniRef90-L1J848 |  |
| UniRef90-H0ZKA5 | H F D |
| UniRef90-L1JDG1 | D PEFVEEM |
| UniRef90-UPI00021A62F2 | GREYVNNVTGQ |
| UniRef90-E91XU8 |  |
| UniRef90-K1QPB5 |  |
| UniRef90_A0A023UHL8 | G Q E F V H Q $\square$ Q A R F |
| UniRef90-B6A8L1 | K E D |
| UniRef90-A0A026W4X5 |  |
| UniRef90-V5GB08 |  |
| UniRef90-U5EZU9 | T Q N |
| UniRef90-UPI000440807B |  |
| UniRef90-D6WDU5 | P E E F DD |

UniRef90 S4RL57 UniRef90-UPI00034FF2F3 UniRef90-G3P2K7 UniRef90-K7JJX5 UniRef90-W4XBIG UniRef90_C1GU17 UniRef90 COSSA3 UniRef90-K7JN41 UniRef90-T1K794 UniRef90- H 1 VD93 UniRef90-D5GF35 UniRet90-G2XCQ9 UniRef90_T1L618 UniRef90-A0A022T5X2 UniRef90-W2RQM7 UniRef90-F5HJSO UniRef90_V4A6N2 UniRef90 F2T9US UniRef90-UPIOOO2741B42 UniRef90-M3D761 UniRef90_R7VD72 UniRef90-UPIOOO3C18084 UniRef90-A1YJA1
UniRef90 S3C438 UniRef90-UPIO002B48748 UniRef90_G3J6U0 UniRef90_UPI0001DE91F6 UniRet90_UP10001DE91F6 UniRet90-UP10001DE91F UniRef90-O88642
UniRef90_=5AEX2 UniRef90-Q16GV8 UniRef90-A0A026WRP9 UniRef90-P47732 UniRef90_L7STYO UniRef90-H3BLT4
UniRef90 N4VLR7 UniRef90-T1J1U5 UniRef90-R7Z318 UniRef90-Q4KT41 UniRef90-GOSF UniRef90-Q96RW6 UniRef90-K1QAX5 UniRet90 C6HBC9 UniRef90-C1BPV4 UniRef90-C4JYD7 UniRef90 UPIo0034FC91F UniRet90-E4XUQ1 UniRef90-T1K8X2 UniRef90 G6CR95 UniRef90_M2ZWQ6 UniRef90_U1GR11 UniRet90 W6VOD6 UniRef90-A0A024S8F8 UniRef90 LLJDM5 UniRef90 W5JBK7 UniRef90-UPIO000D86BB0 UniRef90-E5R1S6 UniRe99_UPI0003C39A94 UniRef90-C5PAB4 UniReffo-S3DYH6 UniRef90 N1J4Z5 UniRef90-FFFBP2
UniRef90
V8NY05 UniRef90-K1R0X6 niRef90 M7TEV2 UniRef90-A0A016PX24 UniRef90-K1RLJ2
UniRef90 A1CP55 UniRet90-A1CP55 UniRef90 L2FJ34 UniRef90_R7TS99
UniRef90 K2RLZ5 UniRef90-W9C9D6 UniRef90_S5MK11 UniRef90-L5KKZO UniRef90_G4N339 UniRef90-K1x378
UniRef90 E4X9Y7 UniRef90-Q9YKL5 UniRef90_LOP812 UniRef90-H2Z957 UniRef90-H2Z957 UniRef90-UP100021A6203 UniRef90-E6ZNS7 UniRef90_E4XD90

EFYDLERRRKTYDDWPENCACTPEQMATAGFLLHQPS DMSDEYSRLETYRGHCHHFPHNQRRLAQAGFYYVGP MYMEEAREQSFADWPEECNCTPEKMAKAGFVVCCS HPDYMTYEDPLHTYKLWLKKESSHRPE LIAEMDFCSNCK

DKAREATFKGWPHEKEGKSKKMAKAGFHFAPS MSGTGMETVAAREASFVSWPHERPVPEDAAQAGFYFKPT SSLNLKSKEDRLTTFSGWPVSFMMENSLATAGFYYLDH YPEYITLQSRIDTFSNW NSENQSVENLAEAGLVVYSGK RLETFKHWPENHQCNPDNMARAGFYA DGG AARKATFDGWPHEWKNKIKQLAEAGWKYTPS EARDMTFKWWPHEEKPKIGTMAEAGWHYAPS PRM DEAGKATFAGWPHDWKCKTK MLAEAGWKWTPY QHPEYDTLTSRLSTFTNWTSESDSAPELAKAGFLIFAGQ SMF WMRNRLSTYKYWPFESPCNAESMAAAGFFATGG MEFATLQARLKTFEGWPHKSP SAEAVANAGFYYQPQ SARVRSFRNWPYSGDGPDLRLAYAGFCWRGV METVAARLATFISWPHDRPSPEELAHAGFYFKPT SDMNSFVARLATFDQWPHANP SKEALARAGFFYRPS NFEEERRETYEDWTYGQCQSANALAKAGFFFTGI
 HYFVFDNRLASFQSWPHRSPA PEDLARAGFFFNPN MFNEDDRLKTFTSWPHYKWADPGPMAEAGFYHPAT
PRM
VEAREATFGTWPHEWQCKTKQLVESGWVYTPT DLSDERRRLETFRGHSNYFPYYRQMMAQAGFCYVGP DLSDERRRLETFRGHSNYFPYYRQMMAQAGFCYVGP SARMRTFLYWPSSVLVQPEQLASAGFYYVDH Y DFEKDRVNSFKKWPYSSPCNDQKMAEAGFYWQGD
K N DPFASYD ERLNSFQNWP
NRLKSFNWP EYYTYEGRLGSFHTWPHAEYLVPEDLIAKAGFVWLPH SEADRLKSFNKWPYESKCTPVEMARAGFYCPDE
 METFAAR【ATFDSWPHSKP SPAELAHAGFFYNPN
HPKYANFTERYASFRDWPKFLKPNKKDLARAGFYALGE MSTDGMETVAARLATFSVWPHKRP SPEELAHAGFYYKPT KYFTYDGRLASFRNWPHK QDTPASLANAGFYFNPN VDPTSVEIVEARRATFGTWKKGWKCKMEKMVEAGWYFCPN DMSDEYSRTQSYQAVKEHFPQTP而KLAWAGFYYVGP NTPDKRFLYDRRISFNNWTRAHPL PSELADAGFFYTGE YPDYDTLASRLSTYGDW DNTNUSSTALAEAGFYYTKK SEMDTFAARLASFDTWPHQRP SPAELAHAGFYYKPN MSSPDMNSFAARLATFEQWPHERP SRDALARAGFFYRPS

PGMETLAARLSSFQSWPHQSP SPEELAEAGLYYNPS
QYFTYEARLASFQNWPHK Q STTS SLARAGFVFRPS MNEEVQRLKTFEHWPHTESVTPIILAADGFHFCPT NPQSKSLKCRELTFKMWPYNH CQPRVMAEAGFVYTPS MAQTGMETVSARLASFKTWPH VKPSPEELADAGFYYQPT DAR AATFFSWPHDGKCKTEKMVEAGWYFCPN EKQRDDSFKNWPYDADCSDSKMAQAGFYWSGN EARRATFGTWPHDWKCKTEKMVEAGWYLCAT DDARKATFGNWPHEWKCKTKQMADAGWRYTPT DQPYMK DARKATFAGWPHDSKCKTKQLVDAGWKYTPT EMYDYRNRLQTLTAWPFNCKCTPENMAKAGFIHHPH QYPEYLNFSERFATFHDWPKYGRPAKKDLARAGFDYTRD SHARKATFAGWPHDWKCKTKQLVDAGWKYTPT DEALKYATFEERLKSFELWPGTEFQDPVQMANSGFYYGGV EFFTFEGRLASFKTWPHAKYLLPEDLAKAGFVWRPN HLNTFVGRLATFEDWSHEACQSASALAAAAGFFFTGV AHANYVHLSTRLATFNSWPTWLVQQPGELAEAGFVYTGU

पEARKATFAGWPYESKCKTKQLAEAGWЏYTPT FTYEARLASFVKWPHRF LSGAELAKAGFFFHPN NPDWAEYGTRLRSFENWNASHSPSAEELASAGFHFVGR ARKSTFEDWPAADQHLVANISEAGMFHTKL ME VY V ESRLETYDWPSNDRATPQQ1 ANAGFFFLGS MSKADYRYEQKRLDSFDSWPVKY LNPDYLAKTGFYYTG\| MYSEGMRRLAYSSWPHYDWAEPNKMAEAGDYPHSK HQEFSHVAARESSFQDYPNMSPTPEEFATCGFFSNPG

## UniRef90 S4RL57

 UniRef90_UPI00034FF2F3 UniRef90-G3P2K7 UniRef90-K7JJX5 UniRet90_W4VUGO UniRef90-R4XBI6UniRef90-C1GUI7 UniRef90 ${ }^{-}$COSSA3 UniRef90 K7JN41 UniRef90-T1K794 UniRef90-K7IMS3 UniRef90_H1VD93 UniRef90-D5GF35
UniRef90 G2XCQ9
UniRef90-T1L618 UniRef90-A0A022T5X2 UniRef90-W2RQM7 UniRef90-F5HJSO UniRef90_V4A6N2 UniRef90- F2T9U9 UniRef90-UPIO002741B42 UniRef90 M3D761 UniRef90-R7VD72 UniRef90_UPIo003C18084 UniRef90-A1YJA UniRef90 S3C438 UniRef90_UPI0002B48748 UniRef90_G3J6U0 UniRef90_UP10001DE91F UniRef90_UPI0001DE91F6 UniRef90_UPI0001DE91F6 UniRef90-O88642 UniRef90 E5AEX2 UniRef90 Q16GV8 UniRef90-A0A026WRP9 UniRef90-P47732 UniRef90 LT7STYO UniRef90-H3BLT4 UniRef90-N4VLR7 UniRef90-T1J1U UniRef90 O4KT41 UniRef90-G0S7K7 UniRef90 Q5BFG5 UniRef90-Q96RW6 UniRef90-K1QAX5 UniRef90 C6HBC9 UniRef90-C1BPV4 UniRef90-C4JYD7 UniRef90 UPIo0034FC91F UniRef90-E4XUQ UniRef90-T1K8X2 UniRe90_BGAF2 UniRef90-M2ZWQ6 UniRef90 U1GR11 UniRet90 W6V0D6 UniRef90-A0A024S8F8 UniRef90-L1JDM5 UniRef90_B6K6S4 UniRet90_UPIOOOOD86BB0 UniRef90-E5R1S6


UniRef90 S4RL57 UniRef90-UPI00034FF2F3
UniRef90_G3P2K7
UniRef90 K7JJX5 UniRef90 W4VUGO UniRef90-R4XBI6
UniRef90_C1GUI7
UniRef90 COSSA3
UniRef90 ${ }^{-}$K7JN41
UniRef90-T1K794
UniRef90 K7IMS
UniRef90 H1VD93
UniRef90_D5GF35
UniRef90-G2XCQ9
UniRef90-T1L618
UniRef90 A 0 A 022 T 5 X 2
UniRef90-W2RQM7
UniRef90-F5HJSO
UniRef90 V4A6N2
UniRef90-F2T9U9
UniRef90-UPI0002741B42
UniRef90_M3D761
UniRef90 R7VD72
UniRef90-UPI0003C18084
UniRef90-A1YJA1
UniRef90 S3C438
UniRef90_UPI0002B48748
UniRef90_G3J6U0
UniRef90 UPI0001DE91F6
UniRef90 UPI0001DE91F6
UniRef90_UPI0001DE91F6
UniRef90-O88642
UniRef90 E5AEX2
UniRef90 Q16GV8
UniRef90-A0A026WRP9
UniRef90 P47732
UniRef90 L7STY0
UniRef90-H3BLT4
UniRef90-N4VLR7
UniRef90 T1J1U5
UniRef90-R7Z318
UniRef90-Q4KT41
UniRef90 G0S7K7
UniRef90 Q5BFG5
UniRef90_Q96RW6
UniRef90-K1QAX5
UniRef90 C6HBC9
UniRef90-J4WD94
UniRef90_C1BPV4
UniRef90_C4JYD7
UniRef90 UPI00034FC91F
UniRef90-E4XUQ1
UniRef90-T1K8X2
UniRef90 B6HAF2
UniRef90 G6CR95
UniRef90-M2ZWQ6
UniRef90_U1GR11
UniRef90 W6V0D6
UniRef90-A0A024S8F8
UniRef90-L1JDM5
UniRef90_B6K6S4
UniRef90 W5JBK7
UniRef90-UPI0000D86BBC
UniRef90_E5R1S6
UniRef90 UPI0003C39A94
UniRef90 ${ }^{-}$C5PAB4
UniRef90_S3DYH6
UniRef90 N1J4Z5
UniRef90 F9FBP2
UniRef90-V8NY05
UniRef90-K1R0X6
UniRef90 M7TEV
UniRef90-A0A016PX24
UniRef90-K1RLJ2
UniRef90-A1CP5
UniRef90 L2FJ34
UniRef90-R7TS99
UniRef90-K2RLZ5
UniRef90-W9C9D6
UniRef90 S5MK11
UniRef90-L5KKZ0
UniRef90_G4N33s
UniRef90 K1X378
UniRef90-E4X9Y7
UniRef90-Q9YKL!
UniRef90_L0P812
UniRef90- H2Z957
UniRef90-H2Z957
UniRef90-Q0ZP5
UniRef90 UPI00021A6203
UniRef90 E6ZNS7
UniRef90-E4XD9

E F E

GEKF $\square$ NKARTK
QDEKEWTVDELY

GEEF TEKVCTR
GFGFIDACTG
PEE
QHAATRKTKGK
EHA
$\mathrm{G} \square \mathrm{SFDRSC}$
PDELTWTVEDLY
$\underset{E}{G} \underset{E}{D} Y T E N V$
EPE

QDEKDWT $\square E E M Y$ F D N F VK N

Q F E
$\square$ Q Q
TRKY $\square \mathrm{NN} \square \mathrm{H} \square \mathrm{SH}$ GKD Y

■E A E I E E Y CK Q
GHAEV

GKSFIDSC LQQ

```
Q P K
```

N F D D L T V E E Y

AK K

】EAQDRDLNNEY
GCDYVKSIMA
 EFINS

G LD F V H Q GDEFCNAVRQR


G E Y TVNVT A R Y E E E
GAEY

## UniRef90 UPIO0045610E5

 UniRef90－L8FTG3 UniRef90－O14064 UniRef90－N1PSR2 UniRef90－T2MIT8 UniRef90－UPIO0027428FE UniRef90 J41252 UniRef90－J3PFQ0 UniRef90－T1KBOO UniRef90－K5V2Z1UniRef90
H2ZML3 UniRef90－R7T7M1 UniRef90－B8N6W7 UniRef90 UPI000273F7FD UniRef90－E3KHK4 UniRef90－Q80SF6 UniRef90－M2NAC4 UniRef90－C5FC66 UniRef90－T2MEB3 UniRef90－T2MEB3 UniRef90 X8J038 UniRef90－T5AIV6 UniRef90－R7VJ21
UniRef90
U1DP17 UniRef90－E2A7A6 UniRef90－UPIOOO4413855 UniRef90＿UPIO00206082C UniRef90－Q06KM7 UniRet90－W3X9X0 UniRef90－F7HH34 UniRef90－K1PUT6 6 UniRef90－F9WXS5 UniRef90－LOCLP5
UniRef90
U1 1 USX7 UniRef90－${ }^{-12 Z 946}$ UniRet90－M5FQS5 UniRef90－L5MI28
UniRef90 J3PZE9 UniRef90－B2B3E3 UniRef90－M2Q549 UniRef90－QOUPJO UniRef90－K4JV09 UniRef90＿B8NZX9 UniRet90－SgVPR2 UniRef90＿17AMP1 UniRef90－Q7S9P5
UniRef90＿S9RCR6 UniRef90－H2ZML4 UniRef90 U615J6 UniRef90 Q6JPGO UniRef90－UPIOO04417273 UniRet90＿UPI000333D48D UniRef90 W4VUKO UniRef90－F4RQZ7
UniRef90 F4WQU4 UniRef90－H2Z952 UniRef90－E4X895 UniRef90－F6XGK1 UniRef90－E1FT01 UniRef90－T1GWH2 UniRef90－FILDV1 UniRef90 T1JTC6 UniRef90－A0AO24JG95 UniRef90－M2T6R9 UniRef90－Q6CGG1 UniRet90－V9LSU2 UniRef90－E1G523 UniRef90＿11F7X1 UniRef90－F7G9Y0 UniRef90－UPIOOO462128D UniRef90 UPIOOO38311FFA UniRef90＿UPI00035030BA UniRef90－B2VYK2 UniRef90－TTJZQ9 UniRet90＿11FWD3 UniRef90－A8Q7S1 UniRef90－F7W2B6 UniRef90－S8FDC8 UniRef90＿V4AD96 UniRef90－F6Y811 UniRef90 T1 JKE4 UniRet90 C4R8V8 UniRef90－Q2H209
UniRef90 G1 GKF3 UniRef90－GONH34 UniRef90＿G7DWR8 UniRef90＿Q8SVK6

MFDEAERVASFKTWPHSTAPSPAALARYGFYFDGS QYYTEVARLESFHKWPHS WLGPEQLAAAGFFFDPN DAQFFVLENRLASFQTWPHRSP TADDLARAGFFFNPN EMHSYLARLETFQQWPHEHP DPNYLAKAGFFYRPS SMHMEKNRKATFVDWPESCDCNSKNMAEAGFFRENE
 MECLKARLLETFNKWPHSHRATPQTLAEA GFYYNPS
RYVVYNRLSSFLSWPHKF LPPFELAKAGFFHPGN TDHALITEKNRVKTFKNWPHKTKISKENMAKAGWFKCDP KSFLDW HENALDK KALARSGFFY LGN SYPAMVNDANRVATFSSWKGAADLTPGDLSDAGFFYTSS EMETFAARLASFDLWPHRKP SPAELAHAGFYYNPN

EARLATFCGWKHEGKPTRLELARAGFHFTPN RHNSFENYPDDNDAF I NSLLVNGFRYAHV A A RKGTFEGWVHEDKCKVGKMVEAGWCFDP S
TAAGRRATFDTWPYTAPSPDELAHAGFYYTPT NPNMKSEDKRYQSFGMCPEKHWPSPEKLAKSGMYYDYS NPNMKSEDKRYQSFGMCPEKHWPSPEKLAKSGMYYDYS K Y $\square$ TY Y A R L A SF QK WTHK S Q PDMKEEVNRQLTFNNWLHHFPVKASALAKAGFFFIGGP YPTLSRF R $\square D Y R F E$

EKA
YPQYTSF
R N N VDRSLMYSEANRRETFTSWP

D पNEF KKRLNTFKNYPKNAVKSKEDLAQNGFHYDGK
 VRSLDLKKESDRMKTFDVWPANRTVSSVHLARYGFFYLGN NYQELEVRVASFKTWPHALTETPESLAKAGFYFNPS PRVRACLPGQMAAAGFDHCPT
 MEALQARLASFFKWPHTYKATPNTLAEAGFYFDPT DASMATFQARLATFQGWPGAAPSAEDLAFAGFVWRPT

YAKEEDRLESFSYW NFEPSSEELAKAGFYYTGK SMQTLQARLDSFKKWPHSYRATPQTLADAGFYYDPS MFSFKERMETF VDWPYDF DYF
EMCVEN
SMKFYK
K RLVSFDKWPHK GV PSKFYEDRISSFEKWTHSGPPTDSDIAKAGFFLFDV YPQYKNLQDRQSSFEEWP SSLKSLKTQLAYTGFFYTQK EKARLETFTKWPHDHGANSKKMAQAGFVFSPQ SDYRFEDIRLKSFSSFVYSMSVNPKKLAAADFFYTKK VDY四DHCFEGARLASFCGWRHEGLPTRUDLARAGFHFAPN VOMLDCF SYRLSTFDKFPQDTPVNPRHLAAAGFLYTGY ADYLERLKTFDQ FYNNRLKSFTKWPHHQSVNPEKMAQAGFFFDPN EQHRLESFTNWPFNNSCNDQNMAEAGFYFCGN FYEYRLQSFTSWPHTCNLSPEKMAKAGFFYNPG YFSELERLKTFRGWPHSF LSPEDMAKCGFYYTGD
YHGYETRLETFSTWPHTAQPSANEVAKAGFYFTPG DASL HPGYHLDAERLKSFKNWRYENDVRKMDLVAAGLFYTGD MVAYTERLASFEQWPHEHP DPEQLAKAGFYFNPS MSNVQARVNTFADWPAVLRGLVSSIADAGLFYSGR MASEAARRLTFQNWPHYRWALPCQMAEAGFYHQPN
YOSFDVRVESFYSWAKDERLUAGASHGFCFTGH DYQSFDVRVESFYSWAKDERLDABLASAGAFCFTGH EKARLDTFSQWPHDHGANSKALLKAGFVWNPG SFMSWWKWKSLSPNDLAQAGFYYVGP AARRSTFADWPGDPSATVDQMVAAGWFYDPT DLSCYDMRVKTFNMEPSNDPALDTSLA SYGFYFTGH SARKATFDDWPYTWRPTSNKLSEAGFHFTPT DARKATFGKWPYESKCKSKQLAEAGWKFAPT EKARLETFQDWPHDSGASSKKMAKAGFVFTPQ EKARLETFSGWPHDHGANSLQMAQAGFVYTPS YASVENRMLSFDKVSLPSFLT IESLAHAGFYYVGP MFSF DDR पGTFKNWP DDF VSPRS DARAGF DPAM DEARKATFAGWPYESKCKTKKLVEGGWKFTPS QYFTEEQRLRSFTSWPAGHPA PELMARAGFYFQGE Y向FYKDRLGTYKNY湭DATCTSKALARAGFDSTG

UniRef90_UPIO0045610E5 UniRef90-L8FTG3
UniRef90
Ul4064 UniRef90 ${ }^{-} \mathbf{F O X 8 5 8}$ UniRef90_N1PSR2 UniRef90-T2MIT8 UniRef90_UPIO0027428FE UniRef90 J44252 UniRef90-J3PFQ0 UniRef90-T1KB00 UniRef90-H2ZML3 UniRef90-R7T7M1 UniRef90-B8N6W7 UniRef90 UPI000273F7FD UniRef90-E3KHK4 UniRef90-O80SF6 UniRef90_C5FC66 UniRef90-T2MEB3 UniRef90-T2MEB3 UniRet90_X8J038 UniRef90_T5AIV6 UniRef90-R7VJ21
UniRef90
U1DP17 UniRef90-E2A7A6 UniRef90-UPIOOO4413855 UniRef90-UPIO00206082C UniRef90-Q06KM7 UniRef90-W3X9X0 UniRef90-F7HH34 UniRef90-K1PUT6 6 UniRef90-F9WXS5 UniRef90-LOCLP5
UniRef90
U1 1 USX7 UniRef90 H2Z946 UniRef90 M5FQS5 UniRef90-L5M128 UniRef90-J3PZE9 UniRef90_- 22 B 3 E 3 UniRef90-M2Q549 UniRef90-OOUPJO UniRef90-K4JV09 UniRef90-B8NZX9 UniRet90-SgVPR2 UniRef90-17AMP1 UniRef90-O7S9P5
UniRef90-S9RCR6 UniRef90-H2ZML4 UniRef90 U615J6 UniRef90-Q6JPG0 UniRef90-UPIOOO4417273 UniRef90-UPI000333D48D UniRef90 W4VUKO UniRef90 F4RQZ7
UniRet90 F4WQU4 UniRef90-H2Z952 UniRef90-E4X895 UniRef90-F6XGK1 UniRef90 E1FT01 UniRef90-T1GWH2 UniRef90-F1LDV1 UniRef90-AOAO24JG95 UniRef90-M2T6R9 UniRet90_-66R7E2 UniRef90_Q6CGG1 UniRet90-V9LSU2 UniRef90-E1G523 UniRef90-I1F7X1 UniRef90-F7G9Y0 UniRef90-UPI000462128D UniRef90-UPIO0038311FFA UniRef90_UPIO0035030BA UniRef90-B2VYK2 UniRef90-T1JZQ9 UniRef90_l1FWD3 UniRef90-A8Q7S1 UniRef90-F7W2B6 UniRef90-B8PF76 UniRef90-S8FDC8 UniRef90-V4AD96
UniRef90 F6Y811 UniRef90-F6Y811
UniRef90
T1JKE4 UniRef90-C4R8V8 UniRet90-Q2H209 UniRef90-G1XKF3 UniRef90-GONH34 UniRef90-G7DWR8
UniRef90- Q8SVK

PDRTVHYपYDTAVISGWSAGDDPLE
PDNVKCFLCRESICGWEKGDNPLEEHLKLSPGCGWAVTSC SDNVTCYMCTKSFYDWEDDDDPLKEHITHSPSCPWAYILS PDNVKCFMCHKDLDGWEEDDDPLQEHLKHSGNCGWAD
PDVVKCFVCLKQLDGWEPEDDPWKEHKYHSSKCAFAKDNK
RDTMXCFNRHAAVDRRQXGDSAVWKHRKVSPNCKFIN
KDNVTCFMCGKELSDWDPDDNPFDTHKKCRNTCAWAVARC PDNVVCFLCNKNMDGWEADDSPDEEHLKHSPNCGWA
EDAVECFCCLKQMEGWSSNDDPWKEHLDHSPDCEFAK RDRTQCFNCMGVLKNWRPGDDINT THSESFPTCS ADKDMCF CGUHVNNWKPRDEPWT EHAK RNDHCSFVRQRR


DDAVMCEYCGVVIKNWHEDDSVEFVHATLSPYCVYANKI
EDGATCFYCNLSLDGWEPKDDPLEEHKRRSPECHFFAL M

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

PDNVTCFLCGHGLDGWGAGDDPLLEHLKHASHCGWA
GDRVECAFCGGRVSKWVPGDSALGKHGHLFPTCLIVLSMK GDFVKCFQCGLGLSQWESGDDPQQEHESHNNGCNYFNK DDTALCDYCNLSLNGWDEDDDPYEEHVKRDKKCAF DK
GDLALCLYCNGSLNGWDEDDDPYEEHVKRDKKCAF
DDAVACEYCNVVIKNWCEDDCVEFVHATLSPYCVYANKDA
PDNTVCFLCHKMVGGWEDGDDPIVEHLRLSPNCGWAD
DDRAMCFTCSVCLVCWEPTDEPCSWDYRRPP
DDKVQCVFCGVIVNNWTKEDDDMSEHRRFSRDCMHDYQDD DDQVVCEYCEAES KNWSPEECDEYAHVILSPHCAYANKDA
$T$ LDRVQCFSCGGVLRNWNYGDNVNKVHQNHFPHC
DDNCTCFLCGKGLGGWEKGDDPYKEHVTHDENCAWANAVC

PDNVVCFLCDKSLDGWEEHDNPGEEHLKHSPTCGWATM
RDNVVCFMCRKELSDWDEDDDPFSSHSKCRNNCPWAIVRC
$P D N V Q C W A C N C Q D G W E E A D V P A Y E H L T H S P S C G F A$
 SDRVKCFSCALEISEWEEGESPMETHQRETKKCAFL RDNVICFMCEKELSDWDADDDPFEIHDKCRSTCPWAAARC KDAAHCDYCNDDLHDWEPDDDPFKEHQRRRPDCLFF PDNVTCFLCENSFDGWTPGDHPIQEHLKHSPFCGWA俍 SDATQCFVCHKIVSEWDPKDNP FEKHREMSPECAYVTLVK GDVTICFHCGMSLKDWESDDDPMVEHRKREKKCPFF PDLAQCFFCSKELEGWEPPMTPLRNDKKHSSGCAFLSVRK

TVK

## E

UniRef90 UPI00045610E5 UniRef90-L8FTG3
UniRef90_O14064
UniRef90-F0X858
UniRef90 N1PSR2
UniRef90-T2MIT8
UniRef90-UPI00027428FE UniRef90 J4l252
UniRef90-J3PFQ0
UniRef90-T1KB00
UniRef90-K5V2Z1
UniRef90 H2ZML3
UniRef90-R7T7M1
UniRef90 B8N6W7
UniRef90-UPI000273F7FD
UniRef90-Е3KHK4
UniRef90_Q80SF6
UniRef90-M2NAC4
UniRef90 C5FC66
UniRef90-T2MEB3
UniRef90-T2MEB3
UniRef90- X8J0388
UniRef90-T5AIV6
UniRef90-R7VJ21
UniRef90-T1DP17
UniRef90 E2A7A6
UniRef90-UPIOOO4413855
UniRef90_UPI000206082C
UniRef90_Q06KM7
UniRef90 W3X9X0
UniRef90-F7HH34
UniRef90-K1PUT6
UniRef90 F9WXS5
UniRef90-LOCLP5
UniRef90-T1JSX7
UniRef90 H2Z946
UniRef90 M5FQS5
UniRef90-L5MI28
UniRef90-J3PZE9
UniRef90 B2B3E3
UniRef90 ${ }^{-}$M2Q549
UniRef90_Q0UPJO
UniRef90 A7SKK
UniRef90 K4JV09
UniRef90-B8NZX9
UniRef90-S9VPR2
UniRef90-17AMP1
UniRef90- Q7S9P5
UniRef90-S9RCR6
UniRef90 H2ZML4
UniRef90 U6I5J6
UniRef90- Q6JPG0
UniRef90-UPI0004417273
UniRef90_UPI000333D48D
UniRef90 W4VUK0
UniRef90-F4RQZ7
UniRef90-F4WQU4
UniRef90 H2Z95
UniRef90-E4X895
UniRef90-F6XGK1
UniRef90_D8QLZ3
UniRef90 E1FT0
UniRef90-T1GWH2
UniRef90-F1LDV1
UniRef90 T1JTC
UniRef90-A0A024JG95
UniRef90_M2T6R9
UniRef90 Q6R7E2
UniRef90 Q6CGG1
UniRef90-V9LSU2
UniRef90-E1G523
UniRef90-I1F7X1
UniRef90 F7G9Y0
UniRef90-UPI000462128L
UniRef90-UPI0003831FFA
UniRef90 UPI00035030BA
UniRef90-B2VYK2
UniRef90-T1JZQ9
UniRef90-I1FWD3
UniRef90-A8Q7S1
UniRef90-F7W2B6
UniRef90_B8PF76
UniRef90 S8FDC8 UniRef90-V4AD96 UniRef90_F6Y811
UniRef90_T1JKE4 UniRef90 C4R8V8 UniRef90-Q2H209
UniRef90_G1XKF3 UniRef90 G0NH34 UniRef90_G7DWR8
UniRef90 Q8SVK6
$\square E A R L G D M H L E$ SKN

K E
G

GD GFAQDVDSS
$\square Q Q$
$G Q G Q V E \square E G Q Y$
PTENAKKANGK QNEQFDE

NKDFVEE NKDFVEE

G Q

Q S E

RKNFGSMMNG
ER E S F $\square$ R S C

Q F E

G

G
】E S R VNMFNG

GHNFVE
NCD
Q F E

SD
D EK
T E K

G D D F
$\mathrm{K} \square \mathrm{E}$

GMD
GKNF $\square$ N
$E N Y Y D Q \square Q G$

GHAF VAN $\square$ QTSY

| $R D$ |  |
| ---: | :--- |
| $L_{D}$ |  |

VEGRVHMFDG

D Y T LLEHR DDSFQNYP QCLKS LVVQLICEAGFYYTNVV METLQQARTDSFAKWPHNFKANADTLAEAGFFYAPS S S ME ALLQARRLESFSNKWPH HFFATPNAALAEA GFYFSSPS EKAR LTFKGWVHDHNANSKKMAKAGFVATAK KNR A TFRKWSLK S LDDNDLADSGFYYTPT
 ME I Y T K RLK S Y NK T Y HRA HL D VEAL SKA GF YMESK MDVYENRLNSFKYWPGHE NKE KL A LVVGFYFS GV E S DEVVRAQTFKKWPHK QKPTVKALARAGFVYNPS $D S R L A S F A D W P L D F N V S P R K L A D N G F V Y L G N$ $\square S N Q S M Q T H D A R V K T F D N W P T R D P V R P E Q L A N A G F Y Y T G R$ DHRVSTFKNWPE GCACTPERMAAAAGF DHCPT MN S R R T F GK WP HSEY DS ID SMVA E GFE F IGP EKARLLDTFKSWPHDS GATSKKMAKA GFVYTA Q MHFE S L N R $\qquad$
MSY I L Q N $\begin{array}{llll}R & D & S \\ R & A & T\end{array}$ K D WP K S WP ED C S CV R 늘
RTVEGRENSFYSWPHSHKLSKSAMA AGFVFAPD $M H S V Q E R L K T F Y N W K H S G N C S A \square R L S \square C G L Y V S C Q$

EKARAETERGWDHDSTANSRKMAKAGWTENPG Y A NYHSRVSTFDNWPLSRP TKEMMASCGFFFTPK T S L K S R V V K T F E G D E WG T P Q S A E ILLA Y A GF A R D L S FYTFRKATFKNWKKNSPCSSNALSRAGFFFSGS MN $\square L Q N R \square D S F Q N W P Y A E K Q K T E T F A K A G F Y F M R R$
D Y S L L E H R $\square$ N S F Q N F P A S L K S L V S D L S A N GFYY T N EFRREFFKNFPDSYKANSDTLSQAGFVYDPF NSANARFDSFRTWQHP NVSFRRIAES GFYY LGGL D Y S $\square$ KYNR L E S L E T FP S S HVNP $\square Q L A K Y G F Y Y T G F$
$M \square S L E E R \square K T L K T W K D K N K L T R M N F S V C G F Y L I C S$ ME DQTNRLKSYNRAYHTLHLDDEELSKAGFYA MGM $M K Q L A D R L E S F K L W T Y D$ I $\operatorname{D}$ YKQLAEMGFYYTGY EMNRLNSLQNWTMNKP SAKEMAEAGFYCPNT $S L S S E K L R L Q T F C K Y P S G A H K S A D L L A K D G F V Y V G T$
E Y N G L R S R L M T F D A VA Q WS GP K V S LLA EA GFF Y T GV VSSARYS DYTEREASFQMANGNLKQRAPNLAKSGFFCKGS HDSMFWK DGR LKTFEDWPFDNSCNPEKMAAAGFFAVGE NF ALLMEHRLDS YKNFPK SLKP LVYE LSNS GFYYTNVV

ESAKVRQKTYEKWPHKWIPTPKNLSKAGFVFYPS NAQMRSETRRLKTFETYTSCRCWAPQEDAAVGFYY K A EKARLSTFR $\quad$ SWPHDSAAAS LLKMARAGFVYAP Q
 ARLMTFGRWPYSANLNDIQMVNAGFHYAPM QARRMTFDNWPKDAVCYSGAVRAGFYCTGK A LRRRRTFKYWRFDNSATSSQAMAMAAGFFY CP




MQPPNYHSVEARDKS FDGWPHNEP TAMELANAGFYFYTPK KFTFYKDRLMTFKNFEYDAKCTS QAVAQAGFYCTGP

NESMQYRENRLETFQDWTHSTP D V VQLVDCGFYFTPT ESVK LIRANSFKDFP LD YR PNSK SL A EA GFGLYQPR A HHSYNLLEHRSLSFKNYPKCLKHLVYRMCLAGLYYTNV M H Y P Q Y H QF S D R

 $\begin{array}{llll}M V E & A & G & W \\ M & C & P & N \\ M & G & G & F \\ T & P & G\end{array}$
MKDFAARLATFHDWPVAA
MESYVNRLDSFKDWTGNE DKEKLALVGFYYTGY WPHSGALSPEEMARAGFFYSPT
K WPHSFKANAYTLAEAGFYFAPS
$D \square K M Y F Y E N R L K T F E G W P E D C S C T P E$
$N$ PK Y S E Y AN QLLRTFELWWQKELDTYKVEDLDEMGFCYD DR RRKTFGSWKFDAKATSLALAKSGFYYCPL TYPQYATETSRLLKTYNLGPPTDPQNKYVLSECRFDYTBG EGYKPNSTTLAAAAGFFYAPQ
YP TRRATYHNWPHTSSTHADHLSRAGFYSTPT



UniRef90 Q8JRV1
UniRef90 B0CTP1
UniRef90-W4JSM3
UniRef90 W6JIV0
UniRef90 A8N8U2 UniRef90-C4Y781 UniRef90-Q55KX6 UniRef90-14YH75 UniRef90-Q7T5I7
UniRef90_-J9W0E6
UniRef90 R7T8W5 UniRef90 UPI0002657618
UniRef90_C3V145
UniRef90_UPI0003840B4B
UniRef90 Q6R712
UniRef90 ${ }^{-}$V9TL50
UniRef90-S7Q1W2
UniRef90-W4XZK7
UniRef90 17FNV7
UniRef90-E3LPN8
UniRef90-V2WTB2
UniRef90_T1DQL9
UniRef90-L1IRU5
UniRef90-S7W8Y5
UniRef90_G4TZF2
UniRef90 W6MMX3
UniRef90-T1K115
UniRef90-H8ZAE
UniRef90_W2TI68
UniRef90 S2J5S4
UniRef90-W4YE75
UniRef90_Q91ET9
UniRef90 A5E1IO
UniRef90-Q0IL39
UniRef90-H2ZHY1
UniRef90 UPI00035A1D96
UniRef90 S7W7U3
UniRef90-R7UU51
UniRef90-R9AHQ7
UniRef90_A5IZV8
UniRef90-J9KF16
UniRef90_UPI000359A5C0
UniRef90-K7JBM2
UniRef90 BOWII9
UniRef90-K1S4Y1
UniRef90-UPI00021A7EEF
UniRef90 K4EQ33
UniRef90-UPI0003F4A0AA
UniRef90-T1K116
UniRef90-T1I601
UniRef90 UPI0003314C65 UniRef90-UPI0004449502
UniRef90-K1PJZ1
UniRef90_A0A016UD22
UniRef90 U4KVC6
UniRef90-K7H572
UniRef90_S8AHI2
UniRef90 A5DCT0
UniRef90-G5ECJ5
UniRef90-K9HGW0
UniRef90_Q9DVT5
UniRef90 W1Q9H2
UniRef90-TOLBSO
UniRef90-J5SF47
UniRef90 T1IJ41
UniRef90-A0A024J636
UniRef90_G5EFA2
UniRef90_V5GMN7
UniRef90 X1XQK1
UniRef90-B5RUV5
UniRef90-G8BFR0
UniRef90_Q6QXG6
UniRef90-B2YG55
UniRef90-V4BA58
UniRef90 B6S712
UniRef90 Q7T9R6
UniRef90_U6DUP6
UniRef90-A0A022Y5S7
UniRef90_N4W1Z4
UniRef90 UPI00042AF886
UniRef90-Q1A4K1
UniRef90_A0A058Z8Q9
UniRef90 UPI000455CF83
UniRef90-E6ZGP9
UniRef90-UPI00046D27C0
UniRef90_V4CHQ5
UniRef90 G8YJW6
UniRef90-X1WR28
UniRef90_A3M035
UniRef90 U5HFG5
UniRef90_U6I2P0
UniRef90=E4XA56

G
$\square$ K H F $\square$

GDAFVQEVQSQH
S
 A HRKASFKNWCYDAVCTGEKLADAGFHYTGN

 M E C R L L S GRWPHP NLSPEDMAGAGFRQAKS

 VDRSLMYSEANRRETFTSWPHYRWAQPDPMAQAGFYHQ

SEEARKGFFQTYP LDDRPNSRSLSEAGF DYSPN
$P$ LYASHRARRLESFQASPTESTQQANEELASAGFFHTGS NDEARRLETTFSS W NGEVCSRKKLAAAGFVHLDK

$\stackrel{P}{P}$ G G S E E L R L A S F Y D WP L T A GVP P E L L A A A GF F H T MDLLYENRLNSFKYWTGDE DKEKLSLVVGFYYTGF PRFATHRQCLDASESANSPQRPSPVELAEAGGFFHBTGR
 SHPK FA DYA AK LATFD RWPK TMMLQ DK E D L A TA GFYY T E S MDEFCVRLLSYFDWPHS LPP SPEDMAGAGYRFEGN
 Y S C L S E A R R I N S F $\square$ NFPN V L R S L LVP KL C D A GFYY T NV
HP

A HPE
 RESTFMNWPPSDSLLLPACMS QA GLLLRY D S
Y LS Y A ARFASFKGFKH DAACSSDALSHAGFYSTAT


SLQSRLDTYEKSKKNHKTNSLDDFALCGGLYMYSS

KYDSY L E R L Q S F GGW C C S K IA D S FA EA GFYSCPN
MES LQSRRLDSFLKWPHTFKATASTLSEAGFYFDPS


A A A GFYHTGV
S SRHMDVENYRRLTFCNWPHYRWTTPEAMAQAGFYHRRC
 $R S L Q A R I K T F S N W P F V D K L S V E Q L A V A G F V Y N P T$
$F N S Q T T R K K S F E S F K T S R K Q C A Q E L A M N G F Y Y N G G$
RLA R S GFS Y T GR
T DERRRAAS FQAFKSKYGHGAKTMAACGFFYNAR

[^0]

```
UniRef90 A8Y491
UniRef90-H3EPS2
UniRef90-B9WLV1
UniRef90-H1VD77
UniRef90-M3JZS8
UniRef90-K0K6Q1
UniRef90-UPI00034FF9D6
UniRef90-G3AHN3
UniRef90_G7Y5W7
UniRef90 E3W5S4
UniRef90-F2NYT6
UniRef90_UPIO0035A1B19
UniRef90_G7PFI5
UniRef90 D2J4R5
UniRef90_A0A023GEE5
UniRef90-W6UT28
UniRef90-V3ZSL3
UniRe990_K7JE57
UniRef90-A0A010QZB7
UniRef90- C5M3B4
UniRef90-F4S860
UniRef90-F4ZKX7
UniRe90 LIJ5N2
UniRef90- X1WPM5
UniRef90_G8BP81
UniRef90_G8ZRS1
UniRef90 A8XCR6
UniRef90-B6D615
UniRef90-B7XH82
UniRef90-J6E9U9
UniRef90-L7JV57
UniRef90_Q287H7
UniRef90-Q0N465
UniRef90-F8NJ48
UniRef90_Q4KT18
UniRef90_Q9YVK0
UniRef90-E3M088
UniRef90 S5TRE4
UniRef90-A3E102
UniRef90_O09119
UniRef90 G7Y4KO
UniRef90_UPIO0046B9763
UniRef90-L1IX92
UniRef90_C3TWX0
UniRef90 R4J1W5
UniRef9O-T1IQD4
UniRef9O-D4N2B2
UniRef90_A0A059EHJ1
```


 GDSVICNFCSDQAWAWERKDDPYHQHQDGSPKCEYVVSRK SDRVTCMYCK CSLDFWDVDDVPIEEEHKCHVSGYCYVIDLY KDRUKCFWCKKTTGNWKTTKDLVRFHDDKSHDC DDDTTCFACGVVVGMWEEGEDALFRHEAAAERCPFATVRR DDRVVCIYCGCADDYWESGDDPVGEHERHSPNCPFVK GDETVCPACGLGGLRDWQPTDQPEACHKAFSSYCYFL ADVIECFSCGLKLKDLAAPEDDVLNTHMRCRYKCAFLDN GDGVVCSHCNLKLNDWKCSDDPE CCHRELRPKC DF SDEVTCSYCGAEYMGWCGGESPQAVHRVLNPKCPYMN SCQFLLRSK
K DLITCYYCKFDSYNFTTGENTLLDHKRYSPECPFYLNN EDLARCYVCFKELDGWDPSDDPSKEHSR SKNCAFVRLGK ADETVCGACF LGGLRDWQPCDDAEAVHARFAASCLFLTTRR EDTVECFVCRYKLKEWQSDDCA WDEHRRHSPHCLYLK GDQTTCYQCGGGLKNWEPNKD GDDTLCYHCGGGLRD
GDIVVCDFCTMQAWA WEKKDDPFTQHME SKSCDYV DDRVTCMYCQCALDFWEVDDDPDQEHDKNQGYCYFL PDRTICWMCG EATDEPWLVHFKWAVNCRFARI GDAVCCYACSVIAKDFDVNSNVWQMHKRLNDQCSLL PDNVRCAFCRMELANGSSVVDVVKLHAKGSPSCVMVRK DDAVQCHWC
GDFCYCDYCNNDIGSWQEDDDPLEEHFKSSPSCYFFKCDE QDACYCVYCKRIVGSWQPNDDPLLEHYRSSNGCYFFDKMR KKNAKCPFCTQEELTFAENDDPWELHKAARPNCDYVMDGR KVEDRCSSCHIIIVKLNRHDNAQHI HRRWSPECEF PLETNCDYCDFHYSNWTMNDDPQMMLHELDNKCDLFQLNK ENTTTCYLCGKTLSYWLDDD DPF F EEHLKRHKNCPDYQL KVEDRCSDCHVVIVKLHREDNVEQIHRLWSPECYF EHVI KCFNCTLVYECCMDTDNPWYYHALYSPSCSHVIMCK RDSVACFDCGKELSDWDADDDPFDDHYKCRNTCPWAVVRC NDEI RCAGCRLTIVKLNRTDRAEDIHRKYSPECEF PSIVECMECRKVLTDWKKGDNPFFEHDYYSKDCP PTNAKCPFCMLELT FAENDDPWEKHRTQKPDCEFVILGQ TENDQCCKCKVVI LK L N K NDD DK I DHK $\square$ Y S P HCGFNRKQQ
 GDQVLCF

## ES QAQGCCCSQEDEGWAPDEGP

K DGTTCVECSYV
 GQDCVCFSCGIHNSDWSGRNVTEIHRRLPPGCRHLN SDHVRCFCCDGGLRNWEVNDDPWVTSCKMQPEDS LLVYME CREAQCSRCSMAVVKLQRGDDDRFDHGVYSPKCAFVN $N D N V S C V F C Q K S L E G W E K Q D N P$


| UniRef90 A8Y491 | LD D |
| :---: | :---: |
| UniRef90-H3EPS2 | Q D |
| UniRef90-B9WLV1 |  |
| UniRef90-H1VD77 | HQE |
| UniRef90-M3JZS8 | G K D |
| UniRef90-K0K6Q1 |  |
| UniRef90_M7XKR3 | G E E GVD |
| UniRef90-UPI00034FF9D6 |  |
| UniRef90-G3AHN3 |  |
| UniRef90-G7Y5W7 |  |
| UniRef90-E3W5S4 |  |
| UniRef90-F2NYT6 |  |
| UniRef90-UPI00035A1B19 |  |
| UniRef90-G7PFI5 | G R D F V H S V Q E H |
| UniRef90-D2J4R5 |  |
| UniRef90-A0A023GEE5 |  |
| UniRef90_W6UT28 |  |
| UniRef90-V3ZSL3 |  |
| UniRef90-K7JE57 |  |
| UniRef90-E91XD8 |  |
| UniRef90-A0A010QZB7 |  |
| UniRef90-C5M3B4 |  |
| UniRef90-F4S860 |  |
| UniRef90-F4ZKX7 |  |
| UniRef90-L1J5N2 |  |
| UniRef90-X1WPM5 |  |
| UniRef90-G8BP81 | S S N QVEELRKKH |
| UniRef90-G8ZRS1 | S DSTYNEV ${ }^{\text {S }}$ S |
| UniRef90-A8XCR6 | P D D |
| UniRef90-B6D615 |  |
| UniRef90_B7XH82 | K P |
| UniRef90_J6E9U9 | RFENMRNTKGS |
| UniRef90_L7JV57 |  |
| UniRef90_Q287H7 |  |
| UniRef90-Q0N465 | GEKFSKND |
| UniRef90-F8NJ48 | GRDDVDE |
| UniRef90-Q4KT18 |  |
| UniRef90-Q9YVK0 |  |
| UniRef90-E3M088 | P D E |
| UniRef90-S5TRE4 | Q Q Q |
| UniRef90-A3E102 | Q F E |
| UniRef90_O09119 |  |
| UniRef90_G7Y4K0 |  |
| UniRef90-UPI00046B9763 |  |
| UniRef90-L1IX92 |  |
| UniRef90-C3TWX0 |  |
| UniRef90-R4J1W5 |  |
| UniRef90-T1IQD4 | S P |
| UniRef90-D4N2B2 |  |
| UniRef90_A0A059EHJ1 |  |
| lupas_21 |  |
| lupas_14 |  |
| lupas_28 |  |
| jnet | ¢ |
| conf | 557899875199 |
| sol25 | B B B |
| sol5 | B B |
| sol0 |  |
| jhmm |  |
| jpssm | $\dagger-$ |


[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    jhmm
    jpssm

