## QUERY

UniRef90_TONPQ5 UniRef90-UPIO004789E81 UniRef90-U5BSX6 UniRef90_UPI000380EA80 UniRef90-N9RFC2 UniRef90-A4CLS4 UniRef90-Q8RW90 UniRef90_Q1LF36 UniRef90_UPI000465BA44 UniRef90_J1FHL2 UniRef90-G8M4Y8 UniRef90-H6KZK3 UniRef90_C1BU01 UniRef90-S2JAI6 UniRef90_D5ABT0 UniRef90 ${ }^{-}$W6XBL8
UniRef9 UniRef90-X5K7G3 UniRef90_J9IMH0 UniRet90_A9SZX7 UniRef90-V7BRM2 UniRef90_UPIOO036BB445 UniRef90-D3AYC8
UniRef90 Q21AX4 UniRef90-S4PEV8 UniRef90_UPIO003629D6F UniRef90_-Q1IQ42 UniRef90_H3FHT5 UniRef90-E1SSR1 UniRef90_V6J768 UniRef90-A5VD42 UniRef90-U4V4P9 UniRef90-W4HNT1 UniRef90_UPI0002D97E25 UniRef90_UPI00037573C8 UniRef90_UPI00034CE496 UniRef90-Q140J9 UniRef90_K6Z5U6 UniRef90_A8LTH4 UniRef90-A0A010QGK9 UniRef90-G1XUR5 UniRef90_UP100036F7D2B UniRef90 H6BUF8 UniRef90_K9TZ33 UniRef90-F4NZZD3 UniRef90-NOE5A4 UniRef90_W0RGG1
UniRef90_A1VLA6 UniRef90-C7ZE79 UniRef90-R4T5Y1 UniRef90-F7VWC9 UniRef90-S6GMN7 UniRef90_UPI00035F4057 UniRef90-A0A059MI28 UniRef90-HOHU72 UniRef90-S8AQC8 UniRef90 D5RG02 UniRef90_UPIO0037E5DA0 UniRef90-B4V2W0 UniRef90-F8AWJ3 UniRef90_G2QT81 UniRef90_UPI000381C6E6 UniRef90_UPI0003613FE4 UniRef90-L8FQV2 UniRef90_V8QSF9 UniRef90-J5REM2 UniRef90_UPI00030F7AC6 UniRef90-UP10003772B3E UniRef90_E3T759 UniRef90_UPIO00372C4A0 UniRef90-H9KA63 UniRef90-L8ERW4 UniRef90_UPI000308B6D0 UniRef90_UPI000470EFB0 UniRef90_Q39M11 UniRef90_C8X778 UniRef90_UPI00047B1E78 UniRef90-A8CAH7 UniRef90_UPI0003AAE1F7 UniRef90-FOX9S7 UniRef90-W2EGL2 UniRef90-G4NFL9 UniRef90-C7LYE2 UniRef90-TOMK31 UniRef90-Q13R26 UniRef90_UP100034D82AC UniRef90-C5KTJ5 UniRef90-K1E9J1 UniRef90-W2RT28 UniRef90_Q4P904

VEIGNYTDFYASKEHASNVGTMFRGKENALMPNWVHLPVG
 VKI GDYTDFYSS DE HATNVGTMFRDPDNALDPNWRHLPVG VHVGDYTDFYSSEQHARNVGSMFRDPENALMPNWKYLPVG
 VDIPGYTDFYSSREHATNVGRMFRDPENALDPNWLEIPI G VAVAGYTDFYSSKEHATNI GTMFRGKDNALQPNWLHMPI G VKVGNYTDFYSS IEEHATNVGTMFRDPKNALQPNWKHDPIGG VEIPGYTDFYSSKEHATNVGSMFRDPKNALLPNWSELPVGG

 AVI GDYTDFFTSKYHTMNCGIIFRGPESPLPPNWLHLPVA A

H
A V
V V
$\mathrm{A} R$
$\mathrm{~V} R$
A H
Q
A EV V V A RV G D Y T D F F T S L H H T K N C G L I F R G P Q T P V L D N WY R L P I A


A A A
$V A D Y$ V $D$
ANI SDYTDFYAS IIFHATNVGGMLFR ARI G D Y T D F Y T S I Y H A T N I GRRL

HVVTV Y T D F Y T S I. H H A T A V G S L F R

Q 1 G $\operatorname{G} D$
 A DI GDYTDFYAS DFHATNVGKLFR PDNPLLPNYKYVPMA
 A DVGGD T DFYASVVFHATNVGRLFR PD QPLLPNYKWVPI G
 VA D Y VD FYASEHHASNVGRLFRPDAEPLLPNWKHLDVG RI A A A R ARIGDYTD F Y V G G L H HA E N V G R L V A D Y V D F Y A S E D H A S N V G Q I F R P D N A A A L L P P N N W K H
 AVGGDYTDFYAGYHHAHAVGTMFRGPNAALQPNYQHLPVG
 QI GDYTNFFA G I NHAFNVGTMFRGPANALQKNYTHLDV
 TV $V$ S D F V V





 L L P N Y K Y TVGD Y VDFYSSED HATNVGKLFRPGQPPLLPNWKHIPI G A I G D Y T D F Y A G V VHVSDFTDFSCSSLEHVKNAGRIVVNNANPPPGFFHFPTA Y VD FY A S E A H A T N A GRIVFRPD G D P L P A A WR R L P P $\begin{array}{rl}G & D \\ V & \text { T D F Y S S R Q H A T }\end{array}$

IG D Y T D FY S S E E HA T NVGK K M R P N Q D S L LP N WK HLP V $T V A D Y$ VID Y Y A S E Q HATNIGGMFRPDQAPLLPNWKHLLPVG QTGDFTDFSCSHDHVLNAGEAATG TRALPPAFPYYPI G


## QUERY

UniRef90_TONPQ UniRef90-UPI0004789E81 UniRef90_U5BSX6 UniRef90_UPI000380EA80 UniRef90-N9RFC2 UniRef90-A4CLS4 UniRef90_Q8RW90 UniRef90_Q1LF36 UniRef90_UPI000465BA44 UniRef90_J1FHL2 UniRef90-G8M4Y8 UniRef90-H6KZK3 UniRef90_C1BU01 UniRef90-S2JAI6 UniRef90_D5ABT0 UniRef90-W6XBL8
UniRef90 UniRef90-X5K7G3 UniRef90_A9SZX7 UniRef90-B7RJT4 UniRef90-V7BRM2 UniRef90_UPIO0036BB445 UniRef90-D3AYC8 UniRef90_Q21AX4 UniRef90_S4PEV8 UniRef90_UPIO003629D6F UniRef90_Q1IQ42 UniRef90-H3FHT5 UniRet90_E1SSR1 UniRef90_A5VD42 UniRef90-U4V4P9 UniRef90 W4HNT1 UniRef90_UPI0002D97E25 UniRef90_UPI00037573C8 UniRef90_UPIO0034CE496 UniRef90_Q140J9
UniRef90_K6Z5U6
UniRef90-A0A010QGK9 UniRef90-G1 GUR5 UniRef90_UPIO0036F7D2B UniRef90-H6BUF8 UniRef90-K9TZ33 UniRef90-F4NZZD3 UniRef90-NOE5A4 UniRef90_W0RGG1
UniRef90_A1VLA6 UniRef90_C7ZE79 UniRef90-R4T5Y1 UniRef90-F7VWC9 UniRef90-S6GMN7
UniRef90_UPI00035F4057
UniRef90-A0A059MI28
UniRef90-HOHU72
UniRef90-S8AQC8
UniRef90-D5RG02
UniRef90_UPIO0037E5DA0
UniRef90-B4V2W0
UniRef90-F8AWJ3
UniRef90-G2QT81
UniRef90_UPI000381C6E6
UniRef90_UPI0003613FE4
UniRef90-L8FQV2
UniRef90_V8QSF9
UniRef90-J5REM2
UniRef90_UPI00030F7AC6
UniRef90_UP10003772B3E
UniRef90-E3T759
UniRef90_UPIO00372C4A0
UniRef90-H9KA63
UniRef90-L8ERW4
UniRef90_UPI000308B6D0
UniRef90_UPI000470EFB0
UniRef90-Q39M11
UniRef90_C8X778
UniRef90_UPI00047B1E78
UniRef90-A8CAH7
UniRef90_UPI0003AAE1F7
UniRef90-FOX9S7
UniRef90-W2EGL2
UniRef9O-G4NFL9
UniRef90_C7LYE2
UniRef90_TOMK31
UniRef90-Q13R26
UniRef90_UP100034D82AC
UniRef90-C5KTJ5
UniRef90-K1E9J1
UniRef90-W2RT28
UniRef90_Q4P904
UniRef90_R7Z520

YHGRASS 50
60
70
80
YHGRAS SVVGTPIRRPMGQMRPDNSKPP VYGACRLLDM

 YHGRSSSIVLSGTELHRPKGQILPDNSESPVFKASERIDF YNGRASSVIVSGKDVVRPSGQIKDPNEERPVFSATRKLDF
 YNGRASSVVVSGTALHRPNGQ IK $\square P N E A R P D F S P C R K L D Y$
 YNGRASSVVVSGTKVRRPNGQDKLPNDERPVFSACRKLD YHGRASSIVVSGTAI HRPKGQQKPNEGNPDVFGPSKLLDF

YHGRASSVVISGTDLHRPRGQKRPVGKPTPGFGPSAKLDF
YNGRASS
Y H GRA S
V
YHGRASS VVGGD ARPR
YHGRASSVVISGTDIRRPRGQTAPPDGKKPEFKPSARIDF
YNGRASTVVVSGTDDVRPNGQLKAPDADAPTFKGPCKRLDV
YHGRASTVVVS
YHGRASSSVVVSGTPVRRPCGQTLPPGAEAPQFGPSRRLDY
YNGRASTVMVSGTEI RRPHGQLKEPGDAGPRFAPSRRLDF
YNGRASTVVVSGTDIRRPVGQTKASDAKMPSFGPSKRLDD
YHGRASSVVASGAAVKRPSGQRKPPTADMPTFGPCAQLDY
YHGRASTVVFPSGQPVRRPQGQLMADGAEAPTWGISRLIDDF
YHGRASSIGVSGQAFHRPSGQLKAPDAAEPSFGPCKRLDY

YNGRASSVVVSGTDVRRPWGQLKAPDAAQPEFAPCRRFDF
YNGRASTLNISGGDFKRPNGQTLSGNASEPGFAPCARRMDY
YHGRASSILPSGTAIVRPKGQRKSDEALTPSDEPTQMLD
YHGRASS. AVSGQQFPRPVGQTFPPGSEQPSFGPSKRHDY
YNGRASTVVVSGTPHHRPAGQDKDPSAPMPRFGPCERLDY

Y
YHGRASSIV PS GTAI ARPKGQRRSSGESVPSFGFSQHLDY


Y HGRR S G T V V V S
Y HGRSGTVLVSGTD\|VRPS
$Y H G$
Y H GRA S S V R V
$\begin{array}{lll}Y & H & G R S \\ Y & \text { G } & T \\ \text { R A } & S & V \\ V & V & S\end{array}$
Y H G R A S T V V V $S$
Y H GRAS S V RV

YHGRAGTVVVS
H GRS GTMVV S
Y H GRASSLVVS
YHGRAGTVVVSGAPVVRRPVGQULLPGASRPATGP
Y NGRASSVVVS

YHGRA
YHGRSGTVLV
Y GRS GVAVSGDVPRPS
YHGRAS SVRV
YHGRSGTVVVS
YHGRSSSVVVSGEPIVRPDGQSRA EAGDPEFGPSRRLDY
YNGRASSVCVSGVAVARPRGQQRPPADGAPTFAPSARLDH
Y H GRVVSSI GVVGQQVYRPMGQFRPDPSAPPVHDACRRRLD
YHGRAGSVVVSGTPVSRPRGQTRDPGAA PTFGPTQRLDL
YHGRAGTVVTSGTPVVRPSGLVGPPAEGRVEHGPSLRLDID
YHGRSGTVVVSGTEVRRPSGQRSADGG
Y H GRASSVVVSRTGVQRPWGQ L LE E
Y A GRASSVVVSGTPIERPLGQVEAP

Y HGRASSVVVSGTPVRRPMGQMRPDDS
ASGGEVRRPHGQYRDASGQ $\square$ VFGPAPALDF


Y S GRTSSSIVPS GTP\|TRRYGA\|RASSTTTVVFVPSRAVDR


## QUERY

UniRef90_TONPQ5 UniRef90-UPI0004789E81 UniRef90_U5BSX6 UniRef90_UPIO00380EA80 UniRef90-N9RFC2 UniRef90-A4CLS4 UniRef90_Q8RW90 UniRef90_Q1LF36 UniRef90_UPI000465BA44 UniRef90_J1FHL2 UniRef90-G8M4Y8 UniRef90-H6KZK3 UniRef90_C1BU01 UniRef90-S2JAI6 UniRef90-D5ABT0 UniRef90 ${ }^{-}$W6XBL8
UniRef9 UniRef90-X5K7G3 UniRef90_A9SZX7 UniRef90-B7RJT4 UniRef90_V7BRM2 UniRef90_UPIO0036BB445 UniRef90-D3AYC8 UniRef90_Q21AX4 UniRef90_S4PEV8 UniRef90_UPIO003629D6F UniRef90-Q1IQ42 UniRef90_H3FHT5
UniRef90_E1SSR1 UniRef90_V6J768 UniRef90-A5VD42 UniRef90-U4V4P9 UniRef90-W4HNT1 UniRef90_UPI0002D97E25 UniRef90_UPI00037573C8 UniRef90_UPI00034CE496 UniRef90-Q140J9 UniRef90-K6Z5U6 UniRef90-A8LTH4 UniRef90_A0AO10QGK9 UniRef90-G1XUR5 UniRef90_UPIO0036F7D2B UniRef90-H6BUF8 UniRef90_K9TZ33 UniRef90-F4NZD3 UniRef90 NOE5A4 UniRef90-W0RGG1
UniRef90 A1VLA6 UniRef90_C7ZE79 UniRef90_R4T5Y1 UniRef90-F7VWC9
UniRef90 S6GMN7 UniRef90_UPI00035F4057 UniRef90-A0A059MI28 UniRef90-HOHU72 UniRef90-S8AQC8 UniRef90-D5RG02 UniRef90_UPIO0037E5DA0 UniRef90-B4V2W0 UniRef90-F8AWJ3 UniRef90-G2QT8 UniRef90_UPI000381C6E6 UniRef90_UPIO003613FE4 UniRef90_L8FQV2 UniRef90_V8QSF9 UniRef90-J5REM2 UniRef90_UPI00030F7AC6 UniRef90_UPIO003772B3E UniRef90-E3T759 UniRef90_UPIO00372C4A0 UniRef90-H9KA63 UniRef90-L8ERW4 UniRef90_UPIO00308B6D0 UniRef90_UPIO00470EFB0 UniRef90_Q39M11 UniRef90_C8X778 UniRef90_UPI00047B1E78 UniRef90-A8CAH7 UniRef90_UPI0003AAE1F7 UniRef90-FOX9S7 UniRef90-W2EGL2 UniRef90-G4NFL9 UniRef90_C7LYE2
UniRef90_TOMK31 UniRef90-Q13R26 UniRef90_UPI00034D82AC UniRef90_C5KTJ5 UniRef90-K1E9J1 UniRef90-W2RT28 UniRef90_Q4P904

ELEMAFF 90
90
100
110
120
GNRFGEPTP ITS KAHETFGMVLMND WS ARD ELEVGYFI GTGNELGMPIPVVEAEDHIFGLVLVNDWSARD
 ELLEMGFI TG T GNKLGERI P VNEAESHIVGLALLND WSAR D
 EL E MA AVVGPGNELGKP I DVVNAAD HIVGGLLMNDWSARD




 ELEMAMLVGPGNELGTSVSVDDAADHIFGLVLMNDWSARD

 ELEMAVFAGPGNELGTTVSVDDAPNHIVGFVIMNDWSARD





 E L EMAF FVVGKPN A S G E P I TVIM KA E D H I F GMVVVMN D WS A R D E L E V G I V I G R G N A L G E P I E L E L G I WI G Q G N D M G Q A I P I I G D A A E H I A G L C C L L E L ELELGAVVGRPSD GPVSVAQADEMIFGYVLLNDWSARD



 E L L E L G AVVV G T P S QLM GVVP V TVV D E A D E M

 E V EVVGFVV GTPTRRLGQRVSVDQVRDHVFGVVLVNDWSARD E L L
 EAELGFVVGAPSRLGEPVSLAEADDHLFGVVLLNDWSARAD E LELLGFYI GAGTSLGQRLA DDDAESHLLF
 EAEMGFVVGTGTPLNSPITPDDFPRHVFGAVLLNDWSARD E LE LG CFII TK SNDLGGHVSDDEAEKHVFGYVLLNDWSARA




 E LELLGCFVGRGNEMGRAVPVGEAEECIFGYVLLNDWSARD
 E L L L G A V I G G N S Q M G E R L S V


 EAEVGFVCGGEPADQVSPEEFTEHVFGVVLVNDWSARAD
 ELELGLWI GS GNRLGEPVAIGDAPRHMAGLSLLNDWSARAD
 EAEI GFVVGTPSALGEPVGLDGFREHVFGVCLVNDWSARD E L L G F L V G P G N R R G E P I A I G S A E S HL F GV A L F N D W S A R D EVVEGMMVI GAPTRPGDPVSVGAAWDHIFGFCLLNDWSARAD ELELGAVI GVGNPRGNSVPLRDAQRHIFGLCLLNDWSARD EAEVAF $\operatorname{F} V V G V G G S P L G S P V P A G A F A R H V F G V G L L D D W S A R A D$ EAEAGFVVGAPS QLGRPVPVADFTEHVFGMVLVNDWSARD ELELGVWI GPGNAQGDAI AI DRAAEHI A GFCLLNDWSARA EAEVGFVVGVPSVMGETVGVDSFAEHVFGVVLVNDWSARD
 E VEFAAVI GTPDPMGQRASVAAVDRHIFGFVLLNDWSARAD EAEVGFVVGRASERGRPVSAGAFAEMVGGVVLVADWSARD
ELLELAA WDGHGNAFTQP\PDDAAHEHTFGYSLLNDWSAKS EAEVGFVVGAGSQMGERVDVDSFADHVFGVFLLNDWSSRD ELEMGFFVGKGTQLGDPIPDLSEAGDHIVGVVLMNDWSARD EAEMGFVVGGSAPEGEVSVAAQAAAEHLIFGAVLGNDWSARA ELEVAAVI SRPTSLGD RVSLLADAEAHI FGLLLLNDWSARA $E L V V A C V V G G G N Q L G R P V E L D E A E E L I F G M M L M N D W S A R D$


UniRef90＿TONPQ5 UniRef90＿UPI0004789E81 UniRef90＿U5BSX6 UniRef90＿UPI000380EA80 UniRef90＿N9RFC2
UniRef90＿A4CLS4
UniRef90＿Q8RW90
UniRef90 Q1LF36
UniRef90＿UPIO00465BA44 UniRef90＿J1FHL2 UniRef90－G8M4Y8 UniRef90＿H6KZK3 UniRef90＿C1BU01 UniRef90＿S2JAI6 UniRef90＿D5ABT0 UniRef90－W6XBL8
UniRef90－X5K7G3
UniRef90＿X5K7G3
UniRef90＿J9IMH0 UniRef90＿A9SZX7 UniRef90＿B7RJT4 UniRef90＿V7BRM2 UniRef90＿UPI00036BB445 UniRef90＿D3AYC8
UniRef90－Q21AX4 UniRef90－S4PEV8 UniRef90＿UPIO003629D6F UniRef90＿Q1IQ42 UniRef90＿H3FHT5 UniRef90＿V6J768 UniRef90＿A5VD42 UniRef90＿U4V4P9 UniRef90 ${ }^{-}$W4HNT1 UniRef90＿UPI0002D97E25 UniRef90＿UPI00037573C8 UniRef90＿UPI00034CE496 UniRef90＿Q140J9
UniRef90－K6Z5U6 UniRef90＿A0A010QGK9 UniRef90＿G1XUR5 UniRef90＿UPI00036F7D2B UniRef90 H6BUF8 UniRef90＿K9TZ33
UniRef90＿F4NZD3
UniRef90＿N0E5A4 UniRef90＿W0RGG1
UniRef90＿A1VLA6
UniRef90＿C7ZE79
UniRef90＿R4T5Y1 UniRef90－F7VWC9
UniRef90 S6GMN7 UniRef90－UPI00035F4057 UniRef90＿A0A059MI28 UniRef90－HOHU72 UniRef90－S8AQC8 UniRef90＿D5RG02 UniRef90＿UPIO0037E5DA0 UniRef90－B4V2W0 UniRef90＿F8AWJ3 UniRef90＿G2QT81 UniRef90＿UPI000381C6E6 UniRef90＿UPIO003613FE4 UniRef90＿L8FQV2 UniRef90＿V8QSF9 UniRef90＿J5REM2 UniRef90＿UPI00030F7AC6 UniRef90＿UPI0003772B3E UniRef90＿E3T759
UniRef90＿UPIO00372C4A0 UniRef90＿H9KA63 UniRef90－L8ERW4 UniRef90＿UPI000308B6D0 UniRef90＿UPI000470EFB0 UniRef90＿Q39M11 UniRef90＿C8X778 UniRef90＿UPI00047B1E78 UniRef90＿A8CAH7 UniRef90＿UPI0003AAE1F7 UniRef90＿F0X9S7 UniRef90－W2EGL2 UniRef90＿G4NFL9 UniRef90＿T0MK31 UniRef90＿Q13R26 UniRef90＿UPIO0034D82AC UniRef90＿C5KTJ5 UniRef90－K1E9J1 UniRef90＿W2RT28 UniRef90＿Q4P904


QDPKP期 170
180
190
200
CHSSQPYTFDITNSVSLKGEGMSQAATICRSN Q D P E PLP YL R T T N L G S F DI HL EVVFLK SENMEKPQLI TS S N
 Q E P E

Q Q Q


Pu

## 

－

## O

##  <br> 

デ

## マш๐ <br> E

## $\stackrel{G}{G}$




## A <br> \section*{}

GDP A P L P Y L D HRA S G G L D
Q D P E P L P Y L G G T E K W G L D I NSAETLPYLREEGKGVFDMELEVLVKPTGGNDFSKLFTVN RPADDPPYLWDAADGALAGGLSVTLQSAAMREPMVLARSD QDPEVRYYR GDAFGLDVHVEVSLN GTVVSRPE
 NPTELDYLKEGREDSFDIRLEDLTTA EGDTTTIARTS
 NSTELTAYLKDPRADAYDMKLEVDLTTSDGTNGTMSKTT D
Q G GPHPLPYLWDDADGAFAI ELEVGMRSPEMRNPHRLSGSD RNPTPYLQHNESCNFDIKLEVDIKYGKKKR RDVPPLPYLDDSGTEPGGIDLRIQVDDNAMAGETVARPP GDPEPLPYLRNRASGSVDVQLEVLLQTEAMARPARLSRSS促


 HLGPVAPHLADPVRGTFDVTFEVAVQPAGAGDFATAGRSS
 DDPPLMPHLRDQQQGGLHLAKYADLSTSRLRDPVRTTRTH
 REHALADYLDEGESWALDITLEVELNGEDGEVVCHSN RVEQPVAYLRSEVGAHFRIDLQVDLFPGFHVEGVTVCRSR VEHRLFAYLDHKGQGTWDVNLQAHLSGSSEKVWTKITDTS

## QUERY

UniRef90_TONPQ5 UniRef90-UPIO004789E81 UniRef90_U5BSX6 UniRef90_UPI000380EA80 UniRef90-N9RFC2 UniRef90-A4CLS4 UniRef90-Q8RW90 UniRef90_Q1LF36 UniRef90_UPI000465BA44 UniRef90_J1FHL2 UniRef90-G8M4Y8 UniRef90-H6KZK3 UniRef90-C1BU01 UniRef90-S2JAI6 UniRef90-D5ABT0 UniRef90-W6XBL8 UniRef90-X5K7G3 UniRef90-A9SZX7 UniRef90-B7RJT4 UniRef90_V7BRM2 UniRef90_UPIO0036BB445 UniRef90-D3AYC8 UniRef90_Q21AX4 UniRef90_S4PEV8
UniRef90_UPIO003629D6F UniRef90-Q1IQ42 UniRef90-H3FHT5 UniRef90-E1SSR1 UniRef90-V6J768 UniRef90-A5VD42 UniRef90_U4V4P9 UniRef90 W4HNT1 UniRef90_UPI0002D97E25 UniRef90_UPI00037573C8 UniRef90-UPI00034CE496 UniRef90-Q140J9 UniRef90_K6Z5U6 UniRef90-A8LTH4 UniRef90_A0AO10QGK9 UniRef90-G1XUR5 UniRef90_UPI00036F7D2B UniRef90-H6BUF8 UniRef90-K9TZ33 UniRef90-F4NZD3 UniRef90-NOE5A4 UniRef90_W0RGG1
UniRef90_A1VLA6 UniRef90-C7ZE79 UniRef90-R4T5Y1 UniRef90-F7VWC9 UniRef90-S6GMN7 UniRef90_UPI00035F4057 UniRef90-A0A059MI28 UniRef90-HOHU72 UniRef90-S8AQC8 UniRef90-D5RG02 UniRef90_UPIO0037E5DA0 UniRef90-B4V2W0 UniRef90-F8AWJ3 UniRef90-G2QT8 UniRef90_UPI000381C6E6 UniRef90-UPI0003613FE4 UniRef90-L8FQV2 UniRef90_V8QSF9 UniRef90-J5REM2 UniRef90_UPI00030F7AC6 UniRef90_UPIO003772B3E UniRef90_E3T759
UniRef90_UPIO00372C4A0 UniRef90-H9KA63 UniRef90-L8ERW4 UniRef90_UP1000308B6D0 UniRef90_UPI000470EFB0 UniRef90_Q39M11 UniRef90_C8X778 UniRef90_UPI00047B1E78 UniRef90-A8CAH7 UniRef90_UPI0003AAE1F7 UniRef90-FOX9S7 UniRef90-W2EGL2 UniRef90-G4NFL9 UniRef90_TOMK31 UniRef90-Q13R26 UniRef90_UP100034D82AC UniRef90_C5KTJ5 UniRef90-K1E9J1 UniRef90-W2RT28 UniRef90_Q4P904

210
220
230
240
FKHMYWTMLQQ 22

S GS D P E ${ }^{2}$ YKY LIY WSMEQQIAHHTITGCNLQTGDLDATGTISGPTKES


 FKYMYWSMAQQL
FKYMYWTMAQQLA
KNLYT ITQQLAHHTVNGCNLRP

FKYMYWSMAQQLAHHTVGGCNTR
FKFMYWTMKQQLAHHSATGCNVQVGDLCAASGT

FKHMYWSMAQQLAHHTSSGCNTRVGDLMGSGT
Y K Y M Y WN MA QQLAH H TVNGCNIVVGDLYASGTISGKDPKS
F K Y M Y WS TNQQLVH H TVTGCNLNVGDLLGS GTIS GPVKEE




MRF L Y WT A K Q QMA Q Q T $\square$ TGCNLLRPGDLLGSGTIS GDSSDS
LR DMY WT F G Q M L L T H H H A S S G C A M R T G D L L L G S G T I I S G P D P S S


ASNMYWTVA QIVAHHASNGCNLQPGDLLGTGTISAPTDDG
YKEMYYSSAAQQLAHHTTSGCPMNPGDLLGSGTMSGAEPHQ

F A TMYWTPA QMLAHLTVNGAATRTGDLYAS GTVSGPDEDQ F K E M Y WT IA QMLTHTTSNGCNLRPGDLLAS GTVS GAASGS YRHAYWT IA QMVAHHTVNGCNLQPGDLLGT GTLS GPT LDDQ F DHSYWTPA QLVTHHSVNGCPMTPGDLLGSGTQSGPEADE S K NLLLWS WP QMI A H H T ITTGCNDRPGRDLLGS GTI S G KEPGT
 GRHLLISSFAQMLAHHTIGGCPMAPGDLLGSGTISGKEPGT FK SMY WT LA Q MLLAHHSSNGCNLRS GDLLAS GTVVGAA A GT


 SKNLLDWSWP QMLAHHSISGCNMRTGDLLGS GTVS GLDAGT FREMYWSPAQMLAHLTVNGASSRTGDLYGSGTISGPEKRQ GKNLMWSFPQMIIAHHTLGGCPDRKGDLLGS GTIS GPVPEE F NHSYWSVGGQMVAHHSVVNGNDVAGDFFGS GTQSGPSDDQ S R H M Y WT FA QMVTHHTSNGCNLQPGDLLGS GTLS GPDTGS Y A Q MYWSPA QMLAHTSVNGAATRTGDLFGSGTISGPEKDQ
 A RHMYWTVA QLVAHHSSNGCDDRPGDLDGSGTISTP GPE G HA GMYWSPS QMLAHLTVNGASLRDGDLVGSGTIS GPTRDT

 FSTMYWT A A Q QL A H LTVVNGAS LRTGDDVGS GTVSGP HPHE Y R VMY Y S S A Q QL A H H T S S GCPMRVVGDLL G S GTIIS GP T P D Q A A NLLLWS FP QMLLAHHTVGGCPMNTGDLLGS GTIS GTERDT FKEAYWTAAQLI THHTVNGCNLQPGDLLGS GTLS GPDAA Q


 ARTMYWTAAQMLAHHTVNGCNLNAGDLLGTGTLSAASPT G
$F$ S A MY WT A A QQLLAHMTVNGASLRTGDLYASGTVSGPEPDQ
 A ATLYWTAGQMVAHHTSNGCALQTGDLLGTGTISGPRDDA F RHQYWT LG QMMI AHHTMGGCNLQPGDLLGSGTISGPSSGE FAAMYWTGPQLI AHLTTSNGARLRTGDLLASGTVSGPAADQ $F A G M Y W T P A Q Q L A H L T A N G A S V R T G D L F A S G T V S G P R P G G$ SLN MY WTVA QMVAHHSVNGCKLQPGDLLGTGTLS GPQTGQ F A GMYWTPAQQLAHMTVNGASVRTGDLEAS GTVSGPERGQ S R N L Q W S F P Q M I A H H T L G G C P L R T G D L L G S G T I S G P K G G E YR DMY WT P D Q ML A H L TVVNGASVVRTGDLVAS GTVSGPRD
 VGYMH WT MLQQQLTHHSVVNGCND R P G D L L A S GT I S GP EP E S L D NLY WT F A Q MV A H H T SN GCDL RTGDLLLGSGTIISGAD DAA $F A Q M Y W T A A Q Q L A H M T V N G A S L R T G D V Y A S G T V S G P E P G Q$



QUERY
UniRef90_TONPQ5
UniRef90_UPIO004789E81
UniRef90_U5BSX6
UniRef90_UPIO00380EA80
UniRef90_N9RFC2
UniRef90_A4CLS4
UniRef90_Q8RW90
UniRef90_Q1LF36
UniRef90_UPI000465BA44
UniRef90_J1FHL2
UniRef90-G8M4Y8

FGSMLELS
250
260
270
280

Y
都

C G S LL L Y G S M L

Y G S LL EITTWS GKDKITFEDGVERLFLQDGDQVKITGQAHG
F
F G S $M_{M}^{L}$
Y G S ML
 R G S LL L E Q

## ,

## A

## R

A

0QGK9
36F7D2B



E

Y UniRef90_A1VLA6
UniRef90_C7ZE79 UniRef90_R4T5Y1 UniRef90_S6GMN7 UniRef90_UPI00035F4057 UniRef90_A0A059MI28 UniRef90-HOHU72 UniRef90_S8AQC8 UniRef90_UPI00037E5DA0 UniRef90_B4V2W0 UniRef90_F8AWJ3 UniRef90_G2QT8 UniRef90_UPI000381C6E6 UniRef90_UPI0003613FE4 UniRef90_L8FQV2 UniRef90_V8QSF9 UniRef90-J5REM2 UniRef90_UPI00030F7AC6 UniRef90_UPI0003772B3E UniRef90_E3T759
UniRef90_UPIO00372C4A0 UniRef90_H9KA63 UniRef90_L8ERW4 UniRef90_UPIO00308B6D0 UniRef90_UPI000470EFB0 UniRef90-Q39M11 UniRef90_C8X778
UniRef90_UPI0004 UniRef90_A8CAH7 UniRef90_UPI0003AAE1F7 UniRef90_F0X9S7 UniRef90_W2EGL2 UniRef90_G4NFL9 UniRef90_-T0MK31 UniRef90_Q13R26 UniRef90_UPI00034D82AC UniRef90_C5KTJ5 UniRef90_K1E9J1 UniRef90_W2RT28 UniRef90_Q4P904
UniRef90-R7Z520

| QUERY | D GYRVGF GQCAGKVLPAL |
| :---: | :---: |
| UniRef90 TONPQ5 | $D G Y R V G F G E V R G K V L P S$ |
| UniRef90-UPI0004789E81 | DGYRI GF GEVT GQLLPA |
| UniRef90_U5BSX6 | E G $\square$ RV G F G EV S S QVL P A |
| UniRef90_UPI000380EA80 | D GYRI GF GEVK G K I L P A |
| UniRef90-N9RFC2 | D G I RVGG G EVANTILPA |
| UniRef90-A4CLS4 | E GL R I GF GEVRTKLLPA |
| UniRef90-Q8RW90 | D GYNVGF GTCTGKIVPS |
| UniRef90_Q1LF36 | E GYRVGF GEVT GKI L P A |
| UniRef90_UPI000465BA44 | D GYRVGF GEVEGTI APA |
| UniRef90-J1FHL2 | $N G \square R V G F G E V K A K V L P A L$ |
| UniRef90-G8M4Y8 | E GYRVGF GECVGEILPA |
| UniRef90_H6KZK3 | E G $\square$ RI GF GPCTGK I L P A L |
| UniRef90-C1BU01 | NGYRVGF GDCWGKVLPA |
| UniRef90_S2JAI6 | Q ${ }^{\text {P N I GF GECS GKI }}$ |
| UniRef90-D5ABT0 | D GYKVGF GTCSGKILPA |
| UniRef90-W6XBL8 | N GYRI GF GTCVGGTIL P P A L |
| UniRef90_X5K7G3 | D GKRVGF GEVKTKILPA |
| UniRef90_J9IMH0 | Q GY TI GF G C S GKIL P A L |
| UniRef90_A9SZX7 | DGFCVGFGECSGKIL PAL |
| UniRef90-B7RJT4 | D GYRI GF GACS GTILPA |
| UniRef90-V7BRM2 | RDYTI GF GTCS GKIV P A |
| UniRef90_UPI00036BB445 | EGYSIIGF GECRGLILPA |
| UniRef90-D3AYC8 | DGYNVGFGDNVGTILP V |
| UniRef90-Q21AX4 | D GYRVGF GAVEGTVLPA |
| UniRef90_S4PEV8 | E GVRRLGF GK C E G K L L P A L |
| UniRef90_UPI0003629D6F | D GYRI GF GACT GTILPA |
| UniRef90-Q1IQ42 | EGARI GF GECRGIVV |
| UniRef90_H3FHT5 | D GSRI GF G D CRSKLLPA |
| UniRef90-E1SSR1 | PGARI GF GEVRSTVLPA |
| UniRef90_V6J768 | D GVS I GF GECRGRVI A A |
| UniRef90-A5VD42 | D GHPI GF GECRAVVLPA |
| UniRef90_U4V4P9 | ET LTI GF GTCVGRVLPAL |
| UniRef90_W4HNT1 | NGYRI GF GACTGTVMPA |
| UniRef90_UPI0002D97E25 | P GF S I GF GECRAKVLA A |
| UniRef90_UPI00037573C8 | P G G R I GF GEVS GRILPA |
| UniRef90_UPI00034CE496 | QGFRI GF GECRSAILPA |
| UniRef90-Q140J9 | A GARI GF GECRGAIL |
| UniRef90_K6Z5U6 | D GVTI GF GEVVGTLLPAV |
| UniRef90-A8LTH4 | DGYRI GF GT CTGTILPA |
| UniRef90_A0A010QGK9 | EGALVVGFGEVS GKI EAAL |
| UniRef90-G1XUR5 | LGRYI GF GE CNGII LPA |
| UniRef90_UPI00036F7D2B | DGTRI GLGEVVTGTVCPCL |
| UniRef90-H6BUF8 | E E GLVVGF GECS GKI LPA |
| UniRef90-K9TZ33 | E GYRVGF GECRGRIL |
| UniRef90-F4NZD3 | K PVRLG F G Q T A GVLL |
| UniRef90-N0E5A4 | D GAVI GLGGECT GTI TPA |
| UniRef90_W0RGG1 | $E G V R I G L G E C R G L V V$ |
| UniRef90_A1VLA6 | DGFRI GF GECRGLVL |
| UniRef90_C7ZE79 | E D GLI GF GECS GTIL SAV |
| UniRef90-R4T5Y1 | $N G S R 1 G F G E V R G R V L P A$ |
| UniRef90_F7VWC9 | EGERVGFGECTGRVEGA |
| UniRef90_S6GMN7 | D A TRIIGFGEVRATI LPA |
| UniRef90_UPI00035F4057 | P GATI GF GECVAVVQSAI |
| UniRef90_A0A059MI28 | D GTRI GF GEVRTRILPA |
| UniRef90-H0HU72 | S GASI GF GECRGVIVDA |
| UniRef90-S8AQC8 | GEGRVGF GECAGTILPA |
| UniRef90_D5RG02 | E GVPI GFGACRGEVLPA |
| UniRef90_UPI00037E5DA0 | D G SRI GLGEVT G TVRPA |
| UniRef90-B4V2W0 | NGTRVGLGEVTGRIV |
| UniRef90-F8AWJ3 | P DATI G L G EVRARILP |
| UniRef90_G2QT81 | DGARVGFGECRGRIVSAV |
| UniRef90_UPI000381C6E6 | D G TRVGLGEVRGQV |
| UniRef90_UPI0003613FE4 | KDYRI GF GP CSGTVTPA |
| UniRef90-L8FQV2 | E G QLVGF GECVGTI LP A |
| UniRef90_V8QSF9 | E G Y P I S F G SVS G SVLKA |
| UniRef90-J5REM2 | GDAAVNFGECEGTVLIPPL |
| UniRef90_UPI00030F7AC6 | DGARI GF GEVRGRVLPA |
| UniRef90_UPI0003772B3E | DGSVVGFGDVA GTVLPAV |
| UniRef90-E3T759 | $P G T S I Q L G T C T A R V L P A L$ |
| UniRef90-UPI000372C4A0 | D GVPI GF GPCRAEVSAA |
| UniRef90-H9KA63 | D GYRI GFG S C S GKL LP A L |
| UniRef90-L8ERW4 | E G S R I GLG EVT GRI R P A |
| UniRef90_UPI000308B6D0 | S GARI GF G A CAST |
| UniRef90_UPI000470EFB0 | P GYRI GF GECRATVIPS |
| UniRef90-Q39M11 | DGARI GFGTNHGTVL |
| UniRef90_C8X778 | G G GRLTLLGEVTGAVRPA |
| UniRef90_UPI00047B1E78 | $P G G R I P L G A V T G Q I S P$ |
| UniRef90_A8CAH7 | $E G \backslash S I \quad G F G E C R G V V L$ |
| UniRef90_UPI0003AAE1F7 | N G Q A L A L G EVTGRVVA |
| UniRef90-F0X9S7 | GNGRVGFGECIGRI FSA |
| UniRef90_W2EGL2 | D G I C L G V V S TVVPA |
| UniRef90-G4NFL9 | E G S GV GF GEVVGQVLPA |
| UniRef90-C7LYE2 | D G GFi R L G EVTGRVVSAI |
| UniRef90-TOMK31 | $D G Y R \vee G F G Q C A G K V L P A L$ |
| UniRef90-Q13R26 | S GVV I GF GECRGRI APAL |
| UniRef90-UPI00034D82AC | DGTTV $\mathrm{HFGEVTGR} \mathrm{\\| LPA}$ |
| UniRef90-C5KTJ5 |  |
| UniRef90-K1E9J1 |  |
| UniRef90-W2RT28 | LG T CVGG G E A WGVLLP A |
| UniRef90-Q4P904 | PDSKI GF GECT GQLWPA |
| UniRef90-R7Z520 | N G A R I G F G Q LT G K I LP S |

UniRef90 G2IKY1 UniRef90-B601X0 UniRef90_UPIoo03337B8B UniRef90_-_9MX47 UniRef90 UPIO003EBE293 UniRef90-U4V3Y6 UniRef90-D5WPT5 UniRef90 B9L3W1 UniRef90_UPIO003B396B1 UniRef90-C2W355 UniRef90- ${ }^{-} 4 \mathrm{HNN} 4$
UniRef90 UPI000363E6CE UniRef90-A4EPQ4 UniRef90-G7WFPO UniRef90 F6ENG5 UniRef90-UPIO003680005 UniRef90_UPIO003778A98 UniRef90_UPI000360044B
UniRef90-C7QYU6 UniRef90-A5FQA8 UniRet90-F8E4PO UniRef90_UPI00037038AC UniRef90_Q125D9 UniRef90-V9XEHO UniRef90-C6Y429 UniRef90 GOHKMO UniRef90-D6Z991 UniRef90-G2TCL1 UniRef90_A9AV63 UniRef90_B1FYF9 UniRef90_C6D1J3 UniRef90_C6DOH4 UniRef90 UPIOOO47ABODD UniRef90-UP100047BODBF UniRef90-10HH36 UniRef90_U2H732 UniRef90 A31063 UniRef90-D5VR02 UniRef90-A0LSS6 UniRef90 UPI0003FC51E6 UniRef90_B8G018 UniRef90-FOS6J1 UniRef90-UPIO0037CA6F8 UniRef90 UPI0002F6D24A UniRef90-D6Y689 UniRef90-14N5DO UniRef90_ROEQ37
UniRef90 J1Z8F1
UniRef90-UPIO0045EB4F0 UniRef90_UPIo0036FCA3E UniRef90 W6WA68 UniRef90-W0Z698 UniRef90-F7QJ70 UniRef90 ${ }^{\text {F2LR }}$ LR5 UniRef90-UPIO004672FEB UniRef90_G0J6X0 UniRef90 UPIO0036B0221 UniRef90-UPI00037F8B6F UniRef90-UPIO0036A2837 UniRef90 XoWVF5 UniRef90 A0A037ZKV5 UniRef90_UPI0003FF8FB2 UniRef90-Q47SA8 UniRef90-F0M6Z8 UniRef90- F5SD94 UniRef90-UP100036ACCE4 UniRef90_B5GT29 UniRef90_UPIO00376CD7B UniRef90-UPI0002D82552 UniRef90-A0A034U343
niRet90 G7H4D5 UniRef90-F8FCT1 UniRef90-GOES11
UniRefo - 8 C
UK UniRet90_-88C3Y6 UniRef90 UPI00035F40F8 UniRef90-UPI0003B34EED UniRef90-UP100040BDDF2 UniRef90-R8ZDS8 UniRef90-A5CPZ6 UniRef90-Q6AEQ0 UniRef90_UPIO00410C826 niRef90 E8WQ24 UniRef90-UPIOO028905DD UniRef90-VFFK20 UniRef90 A0B2A0 UniRef90 V4J730 UniRef90-F3WWD8 UniRef90_W5WRH0 UniRef90 C5B2Z9 UniRef90_UPIO0047A3520 UniRef90_UPIOOO36ACF5A

F T DFCTSLDH\|KRMAQ D Y T D F Y T S V V H A Q TA G R A M N AT TGGDYTDFYSSRQHATNLGGMFRGKENALMPAFWEYPMA
 AA $\square$ GS $\square$ RDFYAFEQHVKTA
$\qquad$ $G L N Y$
$R A R$
$G L N Y$
$\qquad$ DHAR

AKNRRGLD KNYEHAKEMGDEVPDEPVI

VGLNY A DHARETGKAPPDEPIL
$C \vee G N T G K F \| C$ $A C \vee G Q \vee G K F \| C$

A C $V G G \square G K F \square C$ I GGLN N Y A D H A A E A G M A
N K V L C
$\vee \vee C$
NKVVA VGRNYAEHARELGNE VPDVPVVV

 G
$V I G V G B C A$
LI A I GLNYA DHVKEMGNEMPTQPLL
 IGL Y AHAE
$V 1$ A $V G R N Y$ A A HAAA E S G N E V $V$ P D E P Ml RDGYAFRQHVAAARRNRK AKNYAEHAK
V V C
1
$F C V G L N Y$ A A H IGGLNY SADHAA E T G A S AVP Q E P L I

H A I GL L N Y S D H A A E T G A T V P P P

SFRDFVAFETHVKNATKRNGDKVA
$V \square G \square G R N$ Y A D H A A E M G
$\begin{array}{lll}V & \square G Q G R N \\ V & A T & S R R N\end{array}$
$\begin{array}{rl}R & D A \\ \text { R }\end{array}$
$C \bigvee G G V S K F V C$
ARPGNFV

A P VT G $\square$ T K F V A
A C V G Q $\square \mathrm{GKF} \mathrm{V} \mathrm{C}$
VI A V

V V C V $\begin{array}{llllll}\text { G K N }\end{array}$

V V A I G L Y A K H DE E L

| $V$ | $V$ | $A$ |
| :--- | :--- | :--- | :--- |
| $F$ | $\square$ | $C$ |

GLNFABDHA

## 1

FCVGRNYSEHA $A V G E G F D A T$ $V G R N Y$

## V V C

 VGKNYSHDHAAETGATAVC 1 G $\square$ Y A A HAEEMGGVVPEDPVI I GL N Y A D D H A A E S GLLPVP S E P V V V $V \mathrm{G} L \mathrm{~N} Y \mathrm{~S}$ L H A K E S S M A V P P I GL N Y S D D H A A E

C LT D VP N F Y C
 A TMRDFCDGKNYADHIAEMGGSAEDERDPK $C \boxtimes G Q \square G N F \square C$
$C \boxtimes G N \square R N F \square A$
> $E W Y$
$P V P$

$\begin{array}{lllllllll}\text { G K } & P & V & P & E & E & P & L & M \\ G & M & E & P & S & E & P & V & I \\ G & M & A & P & A & V & P & R & L \\ M & D & P & E & E & P & M & F\end{array}$ NSP1

| $V \mathrm{~V}$ |
| :--- |
| $\mathrm{~V} \mid \mathrm{C}$ |
| v |

$\qquad$ A APA DPVI I GL NY A D HAA E A GMP L P A E P I V
$\square$ LGM
TGA

I GLL NYS DHAA E S NLDPVVPSEP
V VAVGRNYAAHAAEHGSEAPTTPLI
$V \vee A V G K N Y R E H A A E M G A E A P V E P L L$ $V G K N Y R D H A D E M G S E D P E H \square M V$ I GRNYADHLKELGNETPERPVI
NK I ICVGGLNYRK HAE ETNSPDPEYPI L VGKNYAEHAKENSS GYDSSDKDDQPTHPVI ACVGRVGKF ICC $\quad$ VGLNYSDHAAESGMEVPKEPVV
 I GLDN YR D H A A E S NDLD I PA A E P V I
V V C $C V G K N Y A D H A R E M G G E A P A D$
$C \boxed{V} G T R N F D A$

UniRef90 G2IKY1 UniRef90-B601X0 UniRef90-UPIOOO3337B8B UniRef90_-_9MX47 UniRef90 UPIO003EBE293 UniRef90-U4V3Y6 UniRef90-D5WPT5 UniRef90_B9L3W1 UniRef90-UPI0003B396B1 UniRef90-C2W3555 UniRef90 UPI000363E6CE UniRef90-A4EPQ4 UniRef90-G7WFPO UniRef90 F6ENG5 UniRef90-UPI0003680005 UniRef90_UPIO003778A98 UniRef90_UPI000360044B
UniRef90_C7QYU6 UniRef90-A5FQA8 UniRef90-F8E4P0 UniRef90-UPI00037038AC UniRef90-Q125D9 UniRef90-V9XEHO UniRef90- GOHKM0 UniRef90-D6Z991 UniRef90-G2TCL1 UniRef90 B1FYF9 UniRef90-C6D1J3 UniRef90-C6DOH4 UniRet90_UPIO0047ABODD UniRef90-UP100047BODBF UniRef90-10HH36 UniRef90_U2H732 UniRef90 A31063 UniRef90-D5VRO2
UniRef90 AOLSS UniRef90-UPI0003FC51E6 UniRef90-B8G018 UniRef90-FOS6J1 UniRef90-UPI00037CA6F8 UniRef90 UPI0002F6D24A UniRef90-D6Y689 UniRefo-I4N5DO
UniRef90- J1Z8F1
UniRef90_UPIO0045EB4F0
UniRef90_UPI00036FCA3E
UniRef90 W6WA68 UniRef90-W0Z698
UniRef90-F7QJ70
UniRef90_X5LJ40
UniRef90 F2LR56
UniRef90-UPIO004672FEB
UniRef90-G0J6X0
UniRef90-UPI00036B0221
UniRef90-UPI00037F8B6F
UniRef90-UPIOOO36A2837 UniRef90-X0WVF5
UniRef90 A0A037ZKV5
UniRef90_UPI0003FF8FB2
UniRef90-Q47SA8
UniRef90_FOM6Z8
UniRef90 ${ }^{-}$F5SD94
UniRef90-UP100036ACCE4
UniRef90_B5GT29
UniRef90_UPI000376CD7B UniRef90-UPIOOO2D82552 UniRef90-A0Ао34U343
UniRef90_G7H4D5
UniRef90-F8FCT1
UniRef90-GOES11
UniRefo - 8 C
UK UniRef90-F8C3Y6
UniRet90_UPIO0035F40F8
UniRef90-UP10003B34EED
UniRef90-UPIO0040BDDF2 UniRef90-R8ZDS8
UniRef90 A5CPZ6
UniRef90-Q6AEQ0
UniRef90-UPI000410C826
UniRef90 E8WQ24
UniRef90-UPIOO028905DD
UniRef90-V5FK20
UniRet90_Aов2A0
UniRet90_V4J730
UniRet90-F3WWD8
UniRef90_W5WRH0
UniRef90 C5B2Z9
UniRef90-UPIO0047A3520
UniRef90_UPIooo36ACF5A
 YNGRVSSVVVSGTDVIRPKGFYSEAGDDRAKLQPSQKLDF
YHGRASSVVVSGTPIVRPMGQMRPDDLKPPVFGACKLLDD

YHGRASS VVVSGTP TRQP LVPDVVA FMKANSAVTGPNDDVVMPRGSVKTD YFSNPNAFLGPGEPVRRP
FNKFANALIGPGEPIVLPR
FLKPPSAVI GQDETIIIP
YFTNHRAVI GPEVAVSCPK
FLKPPSSLIGPGSPIILPR
FMKATSAIVGPNDEVEIPRGSTKAD FFKATSAIVGPNDDVEIPRTSVKSD FMKPQTSVIGPDAE! 1 YPK
FMKPSTSITGPGAPIQLPSS
FFKPSTSVSGPGDSIV
FMKPTSCIVGAYDPVEIPRGAQKTD
FLKASTALVGPNDDIEIPRGSTKTD
FLKPNTSVVGPDDPIVLP
FFKNASGIIGPEDNIIKP
FLKPSTSLACHESVIIYP
FSKFSDSVIAHGKEI
FMKATSCI QGPNDPVMLPKGSVKTD
FLKPNTSIVGPGAPIVIPPT
YFTNHNAI QGPGE
FLKPPSAL!GPGEPIILPR
FLKPSTSIVGPGAPIVLPSDA
FLKATSAIVGPNDDLELPRGSTKTD FTKPPTAINSPTEEVI
FMKATSAVVGNDTIELPRDAGKTD
FNKFNNTLTGHGHDV
FSKFSNALAAHGEDVPLPRS
FLKPNTSVIGPDDPIVLP
YFSNPNSMKGPGEEVKRP
F $\square K P S T S V \square G P N D A \square R \square P$
YFTNHNAIIYGPGD
FMKATSSLCGPNDNILIPKNSEKTD

FLKPSTAVIGPGSP VYPS
FLKPASCLVGDGDTELP
FFKSTTALLGPNDDVVIPKNSVKTD
FFKPSTSVIGPGDPITYP
FLKTNNAVIGCNDPVVLPQGSVKTD FLKPSTAVIGPGDGIVYPQ
FNKWTSAI CGPNDNVQIPRDSKKTD F LK K TSA CGPNDAIGRPR
FTKPAATVIASGDPV
FNKAPNCIVGPNDDVMTPKGS $\square K \square D$
FLKPSTTI IGPNEAIMLIP
FMKATSAIVGPNDDVVIPRGSVKTD

FMKANTSLCGPNDNVEKPRGSTK LD
F■KPNTAI lGPGVPI QLP
FAKWTSAVCGPNDGIEIPRDSLKTD FLKANSAINGPFDPVVLPRTSKKAD FMKATSALSGPFDPIVIPKN
F LKPNDCVVGANDP VLPQGS DKSD FAKFTSAVSGPNDPIPMPRGA
FLKPSTSV1GPNAAGKMP

FMKPSTSVIGPGAAVRLP
FLKPSTAVVGPNDPVFHPKL
YFTNPHTVTGTGEVIGDPAG
$\stackrel{\mathrm{F}}{\mathrm{F}}$
FSKDTSSICGPNDDVIIPRNAVKTD
FFKPPSAVIGPDEPIHYP

FMKPNTSII GPNVPIILP
F LK K NTAIVGPEVPIVRP
FNKFSNALTGHGHDV
FLKANSSLNGPDDAVMLPFGSEKTD FLKPPTAVIGPEENIILP
FFKATSAIVGPNDDLIPKNSKKTD FTKAVSSLNGPYDDVEKPRN
FMKSTTAUVGPNDA』MDPKGSEKTD
F LKKPNTSVIGPDDA TRLP
FLKPNTAVI GDGEABVLP
FTKAPTSVI GHREAI
FTKPASSVIGEGEEIVIP
FNKFNNTLTGHGSEVTLPK
FTKRATSIDAHGEPI
FGKWTSAI SGPNDDVEDPRGSEKTD
FPKTVNTLIGPGEPIVIPAFL
FGKWSSAVVGPNDDVEIPRGSEKTD
FMKPSTSVI GPDATIVLPR
FNKAPSCIVGPNDTVILPKASAKTD

AKPPVYGPSKLLD ${ }_{W}^{W}$
PYTTMLDY VSQQVDY
PESKRVDY QSQKLDY
KSRRVDH
$\square S Q R V D Y$ HPSFSSEVHY w w
PFSQEVSY GQSERVDY


TSLVH $\square E C M P D H F Q K L D F$ MSKRVDH QTVH ${ }_{\mathrm{W}}^{\mathrm{W}}$ DPAVSER $\square \mathrm{DW}$ W SSKVDY
EQSADVHH
AKCSRLDY
CSKRVDY QLLSARVDY
ESSSQVDY
AMSQQVDY
AFSTEVH H
K पSERVD Y
DPHTD DSTRARD
PQSQQVE H
PQSTRTDF
ADAFPVH

## $H$ $W$ $W$ $W$

SKATAD W
QTMDW
QRVDF
AASQRVDF
ADSSRVDY SSRVDY EDRUDH
PQSRQVEH
PQSSRVDY
PSSSQVDY


PESKEVHY SQSTD $\underset{W}{W}$

ADSERVEH ADSERVEH
PQSERVVY
DAHKGVEALDY
SYSSDCHH
VSSKV Y Y
DPHPETQTLDY
DDGGFRDCRTDY

ESSRVDF
PFFPDSEQLDY
 UniRef90-J9MX47 UniRef90_UPIO003EBE293 UniRef90-U4V3Y6 UniRef90_D5WPT5 UniRef90-B9L3W1 UniRef90_UPI0003B396B1 UniRef90-C2W355 UniRef90-F4HNN4 UniRef90_UPI000363E6CE UniRef90-A4EPQ4
UniRef90_G7WFP0
UniRef90-F6ENG5 UniRef90-UPI0003680005 UniRef90_UPIO003778A98 UniRef90_C7QYU6 UniRef90-A5FQA8 UniRef90-F8E4P0
UniRef90_UPI00037038AC
UniRef90-Q125D9
UniRef90_V9XEHO
UniRef90 C6Y429
UniRef90-C6Y429
UniRef90_DGZ991
UniRef90_G2TCL1
UniRef90-A9AV63
UniRef90-B1FYF9
UniRef90_C6D1J3
UniRef90 C6DOH4
UniRef90_UPI00047AB0DD
UniRef90_UPI00047B0DBF
UniRef90-IOHH36
UniRef90_U2H732
UniRef90_A31063
UniRef90-D5VR02
UniRef90 A0LSS6
UniRef90_UPI0003FC51E6
UniRef90-B8G018
UniRef90-FOS6J1
UniRef90_UPI00037CA6F8
UniRef90-UPI0002F6D24A
UniRef90_D6Y689
UniRef90_14N5DO
UniRef90-R0EQ37
UniRef90_J1Z8F1
UniRef90_UP100045EB4F0
UniRef90_UPIO0036FCA3E
UniRef90-W6WA68
UniRef90-W0Z698
UniRef90-F7QJ70
UniRef90_F2LR566
UniRef90_UPI0004672FEB
UniRef90_G0J6X0
UniRef90_UPIO0036B0221
UniRef90_UPI00037F8B6F
UniRef90_UPI00036A2837
UniRef90-XOWVF5
UniRef90_A0A037ZKV5
UniRef90_UPI0003FF8FB2
UniRef90-Q47SA8
UniRef90_F0M6Z8
UniRef90-UPIOO036ACCE4
UniRef90-B5GT29
UniRef90_UPI000376CD7B
UniRef90-UPIO002D8255
UniRef90_A0A034U343
UniRef90-G7HH4D5
UniRef9O-F8FCT1
UniRef90-G0ES11
UniRef90-F8C3Y6
UniRef90_UPIO0035F40F8
UniRef90-UPIO003B34EED
UniRef90-UPI00040BDDF2
UniRef90_R8ZDS8
UniRef90-A5CPZ6
UniRef90-Q6AEQ0
UniRef90_UPIO00410C826
UniRef90_E8WQ24
UniRef90-UPIO0028905DD
UniRef90-V5FK20
UniRef90-A0B2AO
UniRef90_V4J730
UniRef90-F3WWD8
UniRef90- W5WRH0
UniRef90-C5B2Z9
UniRef90_UPIO0047A3520
UniRef90_UPI00036ACF5A

37038AC

.

w6FC51E6



##  <br> A

## 



ELEFGVVWDREGNALGHPIGMADAERALLIFGCCLVVNDSARG





##  <br> E


RAK NV SAAEKAAFEYVLGYTVII LDDVI TARAD

| $E$ | $V$ | $G$ | $G$ | $V$ | $V$ | 1 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $E$ | $A$ | $E$ | $A$ |  |  |  |
| $A$ | $V$ | $V$ | 1 |  |  |  |  ..... $K$

 ..... G
G
G
G
G
N
D
DDVPA A R A R DVI LGGYT I A N DVVTARD VTPENAHRHI LGYTI ANDVTARA

E

EAEFAAVVMㅗㄴ
$G K$
$G K R A R Y$
$G L D P G$
$G K T A K Y$
$R$ L$\stackrel{R}{\mathrm{R}} \mathrm{L}$
$R M$A R



| E | E | L | G | V |
| :--- | :--- | :--- | :--- | :--- |
| E | V | E |  |  || E | V | E | G | l | V | I |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| E | E | E |  |  |  |  |
| E | A | I | V | I |  |  |G $\quad$ R $\quad \underset{\text { RAK }}{1}$

GKNVSEDEAFSVVLGYTVGNDVSARDR $Y$
S N EEEEALDVVF

| E | V | E | L | $A$ | I | V |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| V | L |  |  |  |  |  |
| L | G | V | V | V |  |  | 


GRPCKRAK Y VEVELGIVI
EEAELAVVIGK GS DGR
RGK

 PHAV
R M

RARREVELGVV
GKAAKY
GK Q A
RPCKGRPCKCREVSERHEALAEYVAGYCDVCNDVSERE
EAELALVI
E VE L A GVVI
GKE ..... $G K E$
$G S T A R$
$G K T \square Y R$
RCKV SPA E A L H H V A GYCVVVNDLSEREAHNVPSEADAANVIIGYTCMNDVSDRVDVPA AKA G SVI LGGYTIVANDVSERE
 ..... R
K
GK K
GK K E V V E L A A TV
AKDVPREEA LTNYVL $\mathrm{N} V \mathrm{~V}$PKNFASYV KDIESAI LGGYCFNDVTARDDVSVEDAARSTFGYT\|GNDVTARD NVAEEDAAGHI FGYTVANDVTARD EGELAVVI GKS GKNI PKAEALDDYVGYTIMNDVTARDRKGSNI AAADAlISYVAGYATADDLTLRD
EAELALLI G


EGEELGGVIL ..... GK K
GKG
EGVELGVVi GTRARY
E GELAVVVIGGBPGKHI SEAEAYDHILGYTCFNDVSQRN
EVELAVVI GA



UniRef90 G2IKY1 UniRef90- B60IXO UniRef90_UPIo003337B8B UniRef90_J9MX47
UniRef90 UPIO003EBE293 UniRef90-U4V3Y6 UniRef90-D5WPT5 UniRef90 B9L3W1 UniRef90-UPI0003B396B1 UniRef90_C2W355 UniRef90 F4HNN4
UniRet90 UPI000363E6CE UniRef90-A4EPQ4
UniRef90-G7WFPO
UniRef90 F6ENG5 UniRef90-UPIO003680005 UniRef90_UPIOOO3778A98 UniRef90 UPI000360044B
UniRet90 C7QYU6
UniRef90-A5FQA8 UniRef90-F8E4P0 UniRef90_UPI00037038AC UniRef90 Q125D9 UniRef90-V9XEHO UniRef90-C6Y429 UniRet90 Gotkmo UniRef90-D6Z991 UniRef90-G2TCL1 UniRef90 B1FYF9 UniRef90_C6D1J3 UniRef90-C6DOH4 UniRet90 UPIO0047ABODD UniRef90-UPIOO047BODBF UniRef90-10HH36
UniRef90_U2H732
UniRef90 A31063 UniRef90_D5VR02 UniRef90-AOLSS6 UniRef90 UPI0003FC51E6 UniRef90 B8G018 UniRef90-Fos6J1 UniRef90 UPI00037CA6F8 UniRef90 UPI0002F6D24A UniRef90-D6Y689 UniRef90-14N5DO UniRef90 ROEQ37 UniRef90- J1Z8F1 UniRef90_UPIOO045EB4F0 UniRef90 UPIO0036FCA3E UniRet90 W6WA68 UniRef90 WoZ698 UniRef90-F7QJ70 UniRef90 X5LJ40
UniRef90 ${ }^{-2 L R 56}$
UniRef90-UPI0004672FEB
UniRet90_GOJ6X0
UniRef90 UPIO0036B0221 UniRef90-UPI00037F8B6F UniRef90-UPIO0036A2837 UniRef90 XoWVF5 UniRef90 A0A037ZKV5 UniRef90_UP10003FF8FB2 UniRef90-Q47SA8
UniRef90-FoM6Z8
UniRef90- F5SD94
UniRef90-UPIO0036ACCE4
UniRet90_B5GT29
UniRef90 UPI000376CD7B UniRef90-UPIO002D82552 UniRef90_A0A034U343
UniRef90 G7H4D5 UniRef90-F8FCT1 UniRef90-GOES11 UniRef90_-88C3Y6 UniRef90 UPIO0035F40F8 UniRef90-UPIO003B34EED UniRef90-UPIO0040BDDF2 UniRef90-R8ZDS8
UniRef90 A5CPZ6 UniRef90-Q6AEQ0 UniRef90_UPIO00410C826 UniRet90 E8WQ24 UniRef90-UPIo0028905DD UniRef90-V5FK20 UniRef90 A0B2A0 UniRef90 V4J730 UniRef90-F3WWD8 UniRef90_W5WRH0 UniRef90 C5B2Z9 UniRef90_UPIO0047A3520 UniRef90_UPIOOO36ACF5A
 SNKMPIDAHLQSDPNNYDIEFSVFLSRN SSTPVKISRSF QHPLLDP
NEVPPKKY पDEKREDS पDTNLEVSTTTA KGNKTK■TQVS CDTPSLFRPQEPESFGSMLELSWRG

NGKRMQTGN



GEVLQRSN
I GERYNLEMTTHVNGELLSKSS DPSDLEIGLKV NGKVRQLGR SDPRNLSLWLDV NGVRRQTGS ADPQNLEMYLEV NGHRYQDGS $\begin{array}{ll}\text { DPSHLDVQGLL } & \text { NGEVKQTSN } \\ \text { DPGDLRITMEL }\end{array}$ $D G T R Y Q N G S$
$N G Q T R Q D G N$

LD P QVQㄴ

G H T G
पD PE
ADPNALS $\square \mathrm{GTRV}$
PNPQKLGMWDEV
D $\square \mathrm{DPSDRLE}$
TTTTVN
vaEQRQHGS
VRCLVNGDVKQNGN
NGEIVQHSN
NGKRMQKGS
DGQ
GVGVRASR
VAGS
NGQLRQLLGR
$\square$ DDLE GLKV VRGACE

ADPQDLDLWLEV NGERRQTGS
PDPQALERLWEV
GDPNDLRISCTV

NKVGDVFDLEMTASVNGE VRMSTGN

## ■PYKTPHYKGHTGDSYNLEMTCKVNGKQFS

PDPHNLRLWLKL
EPMNLKIUDREMMTVERVNGEVKQRSN
RDLDYRNVK:R SVLNGEVKQSSQ
ENPHNLRLWLKMV
PDPQNLDMWUDV
ADPHQLDLWLEV DGGRYQNGN
ADPCALSMWLEV VNGGERQDGRFQNGS

PDPQNLGMWLTV NGEKMQDGS
TLQTRVNGE $\square K Q S A$
ADVHKLGMWLDV NGEKACRCTGS
 ELDPEAS LVRTRVNGELARQEAR
 ADEVGNPNDLSVKCFVNGEERQNGT


UniRef90 G2IKY1
UniRef90-B6QIXO UniRef90_UPIOO03337B8B UniRef90-J9MX47 UniRef90_UPIO003EBE293 UniRef90-U4V3Y6 UniRef90_D5WPT5 UniRef90-B9L3W1 UniRef90_UPIO003B396B1 UniRef90-C2W355 UniRef90-F4HNN4 UniRef90_UPI000363E6CE UniRef90-A4EPQ4 UniRef90_G7WFP0 UniRef90-F6ENG5 UniRef90-UPI0003680005 UniRef90_UPIO003778A98 UniRef90_C7QYU6 UniRef90-A5FQA8 UniRef90-F8E4P0 UniRef90_UPI00037038AC UniRef90_Q125D9 UniRef90-V9XEH0
UniRef90 C6Y429 UniRef90-GOHKMO UniRef90_D6Z991 UniRef90_G2TCL1 UniRef90-A9AV63 UniRef90_B1FYF9 UniRef90_C6D1J3
UniRef90 C6D0H4 UniRef90 UPI00047AB0DD UniRef90_UPI00047B0DBF UniRef90-IOHH36 UniRef90_U2H732 UniRef90-A31063 UniRef90_D5VR02
UniRef90 A0LSS6 UniRef90_AOLSS6 UniRego_UP10003FC51E6 UniRef90_B8G018 UniRef90_UPIO0037CA6F8 UniRef90_UPI0002F6D24A UniRef90_D6Y689
UniRef90_14N5DO
UniRef90-R0EQ37
UniRef90-J1Z8F1
UniRef90_UPI00045EB4F0
UniRef90_UPI00036FCA3E
UniRef90- W6WA68
UniRef90-W0Z698
UniRef90-F7QJ70
UniRef90-X5LJ40
UniRef90_F2LR56
UniRef90-UPIOO04672FEB
UniRef90_G0J6X0
UniRef90_UPIO0036B0221
UniRef90_UPI00037F8B6F
UniRef90_UPI00036A2837
UniRef90-XOWVF5
UniRef90-A0A037ZKV5
UniRef90_UPI0003FF8FB2
UniRef90-Q47SA8
UniRef90_FOM6Z8
UniRet90_-YSDD94
UniRef90_UPI00036ACCE4
UniRef90-B5GT29
UniRef90_UPI000376CD7B
UniRef90-UPIO002D8255
UniRef90_A0A034U343
UniRef90-G7H4D5
UniRef90_F8FCT1
UniRef90-G0ES11
UniRef90-F8C3Y6
UniRef90_UPIO0035F40F8
UniRef90_UPIO003B34EED
UniRef90_UPI00040BDDF2
UniRef90 R8ZDS8
UniRef90-A5CPZ6
UniRef90_Q6AEQ0
UniRef90_UPIO00410C826
UniRef90-E8WQ24
UniRef90-UPIOOO28905DD
UniRef90_V5FK20
UniRef90-A0B2A0
UniRef90_V4J730
UniRef90-F3WWD8
UniRef90- W5WRH0
UniRef90-C5B2Z9
UniRef90_UPIO0047A3520
UniRef90_UPIO0036ACF5A
FC51E6
A

## N

T B2


8


 LK D S HWDSLQMIAYQSSSGCGLHTGDLLGSGTNSSPTPEE
SQN LLWS WP QM $\square$ AHHSVS GCN $\square R T$ GDLLGSGT $\square S G \square E P G T$
$T K T M D F T V A Q V I S H L S Q L F T L H P G D V I S T G T P P G V G$
FRDUYFTFPQMI AR ASQGVCLAPGELI GSGTVG




T
$\begin{array}{ll}T & R \\ T & Q \\ T & S \\ T & S \\ T & R \\ T & R \\ T & A \\ T & A \\ T & S \\ T & S \\ T & K \\ T & S\end{array}$ <br> \section*{T <br> \section*{T <br> T
F
T
F
T
T
T
T
T
T
T
T
T
T
T}

## -

## $\rightarrow-1 \Gamma$

T

## 

T



$$
1
$$-1ー

TT
T
T
T
T
T
T

UniRef90 G2IKY1 UniRef90-B6QIX0 UniRef90_UPIO003337B8B UniRef90 J9MX47 UniRef90 UPI0003EBE293 UniRef90_U4V3Y6 UniRef90-D5WPT5 UniRef90 B9L3W1 UniRef90 UPI0003B396B1 UniRef90_C2W355 UniRef90 F4HNN4 UniRef90 UPI000363E6CE UniRef90-A4EPQ4 UniRef90-G7WFP0 UniRef90 F6ENG5 UniRef90-UPI0003680005 UniRef90_UPI0003778A98 UniRef90-UPI000360044B UniRef90 C7QYU6 UniRef90-A5FQA8 UniRef90-F8E4P0 UniRef90-UPI00037038AC UniRef90 Q125D9 UniRef90_V9XEHO UniRef90_C6Y429 UniRef90 G0HKM0 UniRef90-D6Z991 UniRef90_G2TCL UniRef90-A9AV63 UniRef90 B1FYF9 UniRef90_C6D1J3 UniRef90_C6D0H4 UniRef90 UPI00047AB0DD UniRef90-UPI00047B0DBF UniRef90-IOHH36 UniRef90-U2H732 UniRef90 A31063 UniRef90_D5VR02 UniRef90-A0LSS6 UniRef90 UPI0003FC51E6 UniRef90 B8G018 UniRef90-F0S6J1 UniRef90-UPI00037CA6F8 UniRef90 UPI0002F6D24A UniRef90-D6Y689 UniRef90-14N5DD UniRef90-R0EQ37 UniRef90- J1Z8F1 UniRef90_UPI00045EB4FO UniRef90_UPI00036FCA3E UniRef90 W6WA68 UniRef90-W0Z698 UniRef90-F7QJ70 UniRef90_X5LJ40 UniRef90 F2LR56 UniRef90-UPI0004672FEB UniRef90_G0J6X0 UniRef90 UPI00036B0221 UniRef90-UPI00037F8B6F UniRef90-UPI00036A2837 UniRef90_XOWVF5 UniRef90 A0A037ZKV5 UniRef90_UPI0003FF8FB2 UniRef90-Q47SA8
UniRef90_F0M6Z8 UniRef90 ${ }^{-}$F5SD94 UniRef90-UPI00036ACCE4 UniRef90_B5GT29 UniRef90 UPI000376CD7E UniRef90-UPI0002D82552 UniRef90-A0A034U343 UniRef90 G7H4D5 UniRef90-F8FCT1 UniRef90_G0ES11 UniRef90-F8C3Y6 UniRef90 UPI00035F40F8 UniRef90-UPI0003B34EED UniRef90_UPI00040BDDF2 UniRef90-R8ZDS8 UniRef90-A5CPZ6 UniRef90_Q6AEQ0 UniRef90-UPI000410C826 UniRef90 E8WQ24 UniRef90-UPI00028905DD UniRef90-V5FK20 UniRef90_A0B2A0 UniRef90 V4J730 UniRef90-F3WWD8 UniRef90-W5WRH0 UniRef90 C5B2Z9 UniRef90_UPIO0047A3520
UniRef90_UPIO0036ACF5A
 RGCLLFEAVSANDNLPMVAD QKVTWLEDGDRVTMEGWT TP

QGS LLeqt magkof

PGDVVRVTDERTGTLENPVDAE
$P$ GDV I E V E E I S GUGRLKNTVSQEK
GCIL ELGG
HGDVVEAWDEGDGSVKFEVLREDSIL
R P D
KPETYLKPGDKMELGUE
$P G D E V V V R \prod P M \square G E L R N T V G V Q$
A GQTVSVTVEGI GTLSNP
VGDEVAVTIEGUGTLTNKVIKR

N
HGDRVECSTDGLGTLSN

EEERVWLKRGDEVTTATE
MK P PVYLKKGDQMTVWIE
$P G N T V S \square T V E G \square G T L T N P V$
GCFLEL NGTGLLNDPN FKPQWLQDGDEVEME $\square T G L G$ H G D RVEAWIE G I G R V E

$P G D L L E T E V E G \square G \| L R N P V$
$P$
$P$
$P$
K P P VYY LK P G DVVT LG
PEKQVYLQDGDVVTIEIEK
A GDHVAVTVEG\|GALTNPV

E L H P W L E P G D E VE L K $\square$ T
HTDQWLQNGDTVTLEVT TPPTYLKEGDVVELGILEGLG
RGDVVECEDEKDG\|LRN
PGDDVTVTVERI GSLTNPV
SGDTCRLDI E GII GTLENNV
TGDADAI DI K GII GRLHN
$P G D \| M E L G: D G L G T$
A GDEVAVVI E GUGTLTNQV.

P A P $V Y$ Y $\square$ P G D T M R $\square G \square A$
$\square G V K P N P V F L R P G Q E M R L G \square A$ KPPVWLQPGDVVELGIE DPPKYLREGDEVIVSA KPPRFLKA GDVMRVGDE

 A GDVVEVE $\square$ SGLGVLRNPV


EPVY L K P GQTVR\GTD
KPQKFLKEGDIMEAKI ERLG
$K P P R Y L K A G D V V E L G \mid D G L G$
AKPPRFLREGDELRLGIS
K
$\mathrm{DGQTV} \prod_{\mathrm{R}}^{\mathrm{T}} \boldsymbol{\square} \mathrm{EG} \square \mathrm{GT} \mathrm{L} T \mathrm{NPV}$ RGDVVEVAIDGIGILRNPV NGQTVSVT $\operatorname{NEGLGTLTNTVAAPPRYLAPGDVVELQVE}$ $A G Q T V S V V_{V}^{T} E G L G T L T N T V A A R$ VGQRMTVAIDRLGELSNPV SGCLAELWGR NGSQTPPPLKTGDVVRMTVE PGDEVQVE $\square E G \square G S \square T N R \square$
$P G D T V E V S T S G V G T L S N P V A S$
EGDEIQVElDGIGTLINSV
MK P PRF $\square$ K G GEVVA $\square \mathrm{G} \square \mathrm{D}$
A GQQVSVTVEGDGTLDNPVAAKR
A GDRVSVTVEGLGTLTNPV
EGDVVEDF $\square$ EK $\ G V L R N G V$

## E A P F D A E S P N





KPPVF $\square R$ A GQTVR $\square G \square D K$ EGQS VSVSVEGDGT DTNKVA

MK P P RYLRSDDEMVLR DD
$P Q V F L K D G D\|V R I E\| D Q \square G$


UniRef90 G2IKY1
UniRef90 B6QIX0
UniRef90_UPI0003337B8B
UniRef90- J9MX47
UniRef90 UPI0003EBE293
UniRef90-U4V3Y6
UniRef90-D5WPT5
UniRef90_B9L3W1
UniRef90-UPI0003B396B1
UniRef90-C2W355
UniRef90-F4HNN4
UniRef90 UPI000363E6CE
UniRef90-A4EPQ4
UniRef90_G7WFP0
UniRef90_F6ENG5
UniRef90-UPI0003680005
UniRef90_UPI0003778A98
UniRef90-UPI000360044B
UniRef90 C7QYU6
UniRef90_A5FQA8
UniRef90-F8E4P0
UniRef90_UPI00037038AC
UniRef90 Q125D9
UniRef90_V9XEHO
UniRef90-C6Y429
UniRef90 G0HKM0
UniRef90-D6Z991
UniRef90-G2TCL1
UniRef90_A9AV6
UniRef90 B1FYF9
UniRef90_C6D1J3
UniRef90_C6D0H4
UniRef90 UPI00047AB0DD
UniRef90-UPI00047B0DBF
UniRef90-10HH36
UniRef90_U2H732
UniRef90-A31063
UniRef90-D5VR02
UniRef90-A0LSS6
UniRef90 UPI0003FC51E6
UniRef90-B8G018
UniRef90-FOS6J1
UniRef90-UPI00037CA6F8
UniRef90 UPI0002F6D24A
UniRef90-D6Y689
UniRef90-14N5DD
UniRef90_R0EQ37
UniRef90-J1Z8F1
UniRef90_UPI00045EB4FO
UniRef90_UPI00036FCA3E
UniRef90 W6WA68
UniRef90-W0Z698
UniRef90-F7QJ70
UniRef90-X5LJ40
UniRef90- F2LR56
UniRef90_UPI0004672FEB
UniRef90-G0J6X0
UniRef90 UPI00036B0221
UniRef90-UPI00037F8B6F
UniRef90-UPI00036A2837
UniRef90 XOWVF5
UniRef90 A0A037ZKV5
UniRef90_UPI0003FF8FB2
UniRef90-Q47SA8
UniRef90 F0M6Z8
UniRef90 ${ }^{-}$F5SD94
UniRef90_UPI00036ACCE4
UniRef90 B5GT29
UniRef90 UPI000376CD7B
UniRef90_UPI0002D82552
UniRef90-A0A034U343
UniRef90_G7H4D5
UniRef90-F8FCT1
UniRef90-G0ES11
UniRef90-F8C3Y6
UniRef90 UPI00035F40F8
UniRef90_UPI0003B34EED
UniRef90-UPI00040BDDF2
UniRef90_R8ZDS8
UniRef90-A5CPZ6
UniRef90-Q6AEQ0
UniRef90_UPI000410C826
UniRef90 E8WQ24
UniRef90_UPIOO028905DD
UniRef90-V5FK20
UniRef90_A0B2AC
UniRef90-V4J730
UniRef90-F3WWD8
UniRef90-W5WRHC
UniRef90 C5B2Z9
UniRef90-UPI00047A3520
UniRef90_UPI00036ACF5A

QGYP\|GFGDCSGT\|APA
DGQRAGFGP LTHLVVPA
EDGLVGFGECEGT पIAAV
GLGDQRQNV
GLLGSLTNTVV
G L G T L R NTV
GLGEQRQRT\AA
$G L G V Q T Q S V V A$

GLGEQQQTTVAA
GLGRARQTVRA

GLGELTNRT
GLGEQKQTVVP

GLGVQCQTVI
GLGNQRQDVV
LGSITNRMV
LGALTNRMV
G L G S LK N K I I
$G \square G L L E N K \square V$

GLGE Q N Q T V H P A L
GLGEQRQRTVQA
GLGRQKQTVV
$P G L G G E L R N T I I \quad P A$
G LG T QRQTFVA
$G \square G A Q R Q E \square V A A$
G $\square G E Q R Q L T R A A$
GLGTQHQRV GLGEQRQ

G $\square$ G S Q R Q E A $\square \mathrm{A} \mathrm{A}$
$\mathrm{G} \square \mathrm{GT} \square \mathrm{ENTV}$
$G \square G T Q K Q Q V R A$

LGA LT NRMV $G L G E Q T Q Q V V P$

E G H S $\square$ GF GECRGKVLAA L

L G RLT N K MV
DLGTLRNK IAP
GLGEQRQRTVQA
$\square G E Q Q Q R F$ VA A
G $\square$ G E QR QRVVA


| UniRef90_UPI00026CC592 | FTKA | $70 \quad \begin{aligned} & 80 \\ & W \end{aligned}$ |
| :---: | :---: | :---: |
| UniRef90-D1CFU7 |  | K\S EQVD W |
| UniRef90_B9LB72 | FSKMPTAVNHPNAPVPL | MADVSA QRDW |
| UniRef90-E1QI46 | F 1 K P A T AV $\square \mathrm{GPNQAI} \mathrm{K} \mathrm{L}$ P | AMSQRVD Y |
| UniRef90-A8L561 | $F L K P S T S V A G P G D P I V L P$ | PDSERVD P |
| UniRef90-Q39RG9 | FTKPATSVIGGDGDAIVI P | P Y SRDCHH |
| UniRef90_UPI00037EEE68 | FFKATSAI CGANDDI EIP R H S T A T D |  |
| UniRef90_E3BB72 | F L D P N T AVVGP N D PVVMP | S $\square$ S ERVVD |
| UniRef90_UPI0003691BDD | YFTNPHAVYGPDDAV | PMPPGSAVLD Y |
| UniRef90-W2ELQ1 | FMKA P D TVIG P F D EV L I P R R S VK T D | Y |
| UniRef90-E8UQW8 | F L K P P S AVI GPEENIVYP | $P \mathrm{DV}$ V E L G Y |
| UniRef90-UPI000288E65B | F TK T P T TVVVGPNEIV | $\square \mathrm{NHKNVTEQLD}$ Y |
| UniRef90-UPI000413B72C | F M K A T S SLS GP N D PVVYLP R G S E K S D | W |
| UniRef90-1016G3 | F SKFNNSLAAHREPI | P L P P T A R Q Y D Y |
| UniRef90-S0EVD9 | F S K Y A T AI NDPEGII | $L P G \square S N Q \square D Y$ |
| UniRef90_K4R9N5 | FFKAPDTVVGPNDTVLVPRGSVKT D | W |
| UniRef90-Q0A6D6 | F T K A T T SVTGPYADVR | VD P R VT E Q LD W |
| UniRef90-K1Z0C1 | FPK T P NVLI GPGETI ILP A | VED Y GFPNCRTD H |
| UniRef90-14F2J0 | F LK P S T S V I G P G D A I RIP A G S T | $\mathrm{N} V \mathrm{HH}$ |
| UniRef90_UPI000371DA92 | F NKFNNTLTSHQAEIVVPN | VT K EL D Y |
| UniRef90-UPI000363718B | FMKPSTAVVGPSAPI K M P | PDSERVD Y |
| UniRef90-B1ZQS9 | F 1 K A T S SVQ CPG G P I E LP | LA S HKVDY |
| UniRef90-W9KP06 | F YKPP T ALS S P ViP P T T P | MA Q ${ }^{\text {T A GVVD }}$ |
| UniRef90-Q5WFZ7 | FFKPTSSVVGPDDPIVIP | GANEQVKF |
| UniRef90-W0HYH2 | F LKVT S AI T G P Q D P I EI P P G A | V D W |
| UniRef90_UPI0002892A3B | F TK S P N T L I G P N D DVRI PRGS TK T D | W |
| UniRef90_L1KTH7 | FMK D P G TVVVGP Y DEVLVPPRGSVK T D | W |
| UniRef90_UPI00034D5156 | F L K P S T AVTGPSEPI FYP | A M S K R VD Y |
| UniRef90_UPI00037E8598 | FSKATSAIVGPNDNVEIPRN | SSETDW |
| UniRef90_UPI0003B44332 | FAKMTTSANGPYSNI DLP S V S T K LD |  |
| UniRef90-D2QEC2 | F F K A T T A L CGPNDNVVIP K R S E T D |  |
| UniRef90_UPI0003761959 | FTKSPTTVIGHEEFV | DA HTDVT NELD Y |
| UniRef90_UPI000309FD38 | FTK S P S Al I G P N A T I | DAHEMDTSQLDY |
| UniRef90-Q0BUD0 | F L K S L G A F C G P Y D DV R |  |
| UniRef90_UPI0002F3C2F4 | FSKAPTAVVGPGAPILR | E DVT DELLD Y |
| UniRef90_17IJM7 | F AKFDNTIVGPEDDIV | HYPIS DKL ${ }^{\text {S }}$ S |
| UniRef90_S3BUP3 | F Y K P S T SL S G P T D P I PVP A | $P \square Q D D A G L D Y$ |
| UniRef90_G2Q6B4 | F Y K P A T SLT G P S D P I | PVHPMAQQHTGLD Y |
| UniRef90-A9D6I9 | F S K A P S CL S G P D DVVLP Q GVEK A D |  |
| UniRef90_M7X605 | F TKRATSII G T NQPI H | P H P NVT T K L D Y |
| UniRef90_F4CVZ8 | F GKPATAVVGPGEPI | LL T EQLDW |
| UniRef90-UPI0003759089 | F $\square \mathrm{K}$ A LT AL N GP N D DVE $\square$ P R S S VK T D |  |
| UniRef90-W5J0X4 |  | A VCERMD Y |
| UniRef90-L0DA07 | YFSNPASVIGHEAEVFAPKG | SRALD Y |
| UniRef90_UPI0003102534 | FFKPPTSVI A S L A El QYP Y | QS QRVD Y |
| UniRef90-Q13HB6 | FMMPTTAAI GP GEAIVRPR | EAQVV H H |
| UniRef90-W9UZS2 |  | D N $\square$ E F Q H Y |
| UniRef90-K1ZG69 |  |  |
| UniRef90_UPI00046FFE58 | FMKSTTAI CGPEDDVI MPKDSVK T D | W |
| UniRef90_UPI00016C544F | F GKFPNTLVAHGEPIVLPKVAQK | Y |
| UniRef90-F9UDH9 | F M K P T T AI T D P GEPII L P N A CEHGP | EVD Y |
| UniRef90-H8MT26 | F TKP S T AL N GP G S P 1 RI P K | A S Q VV H Y |
| UniRef90_G8N4L7 | F F K P S S SV VGP EAEVVIP S GV | GEVK F |
| UniRef90_T1DBV4 | F S K F S S IVGGPYDAll | HPGET DEVDW |
| UniRef90-UPI0002630876 | F MKALSS LTG P N E V M L P R G T H S D |  |
| UniRef90-D8K131 | F LK P S T AVIG P E A DIV V P | EASHRVD Y |
| UniRef90-W5W6M0 | FLK T P D TVVGP H D EVLVPRRSVK T D |  |
| UniRef90_K4TSW8 | FTKAPTAVIGGHGGHVKR | H A G LT D S LD Y |
| UniRef90_UPI000470FB67 | F TKA T H TVTGP F A DVP L | HS DVT A QVD Y |
| UniRef90-A0A024PBW1 | F MVVS P S AVI S E GEEI EL | DHRID Y |
| UniRef90-A0A010Z182 | FMKAPDTVNAPNDDVLIPRRTSVKT D |  |
| UniRef90_D8FZ47 | F L K P P T A I DP T GA II R Y P | A Q SQRVD Y |
| UniRef90_E3CVE0 | $F$ L K A R S A L $\quad$ LP | G S $\square \mathrm{E} \square \mathrm{P}$ S WVGRVVD Y |
| UniRef90_K9U117 | FLKKPPS AVIATATEDKYP | Q Q SRRVD P |
| UniRef90-C5CAC0 | FLK K N T AVVGPNEPVTLP | S WS DEVVS Y |
| UniRef90_UPI00047B372D | F L K LP T A L V G H GEAI R L P S $\square$ S S Q P D |  |
| UniRef90-H2SRW8 | FLK KP S A Y L K E G S PI LVPPR | Y S S NL H H |
| UniRef90_UPI0003B45878 | FLK P S S AVVGP GAAI KIP | DFAKKVEF |
| UniRef90-V4HAC1 | FSKASTSVTN P E D PIV |  |
| UniRef90-W4QCU2 | FNKFNNTLTGNQCDIVIP | AVTNKLD Y |
| UniRef90_M2WR59 | $F$ LK P S S S Y Le Q GNPILLP K G A | QV H H |
| UniRef90_L0EGN2 | FSKYANALNA HLQPVR | G T H L T D Q L P |
| UniRef90_Q0B7L5 | FFRGATSLIA HGDPVIRPF | $V$ S K L D Y |
| UniRef90-UPI00029A5E21 | F NKFSQTVI GPEDAVILDPK | $\checkmark$ S HEV D Y |
| UniRef90-C1BUX2 | F NKFPSCI CGPFDDIIKMPN N | TKELDW |
| UniRef90_UPI000469A4ED | FTKPPSTVIGPGAPI PR |  |
| UniRef90_C1BMB0 | F S K F S S Ci T G P Y D NI T L P | DESQEVDW |
| UniRef90-K9PYP3 | F LK P S T TII A NEENIVYP | S Q S N WV D F |
| UniRef90_UPI00036F9F08 | YFTNPYAII G P | D DVVPMPPGSSVLDF |
| UniRef90-C6XPJ7 | F T K A VT SV NGPNDPVLIAKNA | P Y V D Y |
| UniRef90_UPI00035ED510 | FSKAPSClVGPNDNIVMPTN | S R ML D W |
| UniRef90_A0A059KGY6 | F L R G K S SL I G H G A P GV R P K | VSERFDY |
| UniRef90_UPI000346B433 | FFRGATSLI A H D D PVI R P Y | $V$ S EKFD Y |
| UniRef90_UPI0003F6C298 | FAKYNNALI GPEDVI EKP | AFTSELD Y |
| UniRef90_G9YBA1 | F $\square$ K A P N SLTGHQQISVRP | D NVEYMHY |
| UniRef90_A0A023DIP2 |  | V K F |
| UniRef90_UPI000349C986 | F LK P S T AVT G P Q P P I | F HPAASEEVHF |
| UniRef90_UPI0003763024 | FLKAPSSLCGARDAVR\P P G A T R G D |  |
| UniRef90-A0A022FPD9 |  | D S M N T D W |
| UniRef90-T0MEV0 | F M K S T T S L VG P Y D Q V M I P R D S VK T D |  |
| UniRef90-V5PT83 | F MKAETSVTA T D TEVVLP | P HAERVD W |
| UniRef90_UPI000258DA89 |  |  |

UniRef90_UPIO0026CC592 UniRef90_D1CFU7 UniRef90-B9LB72 UniRef90-E1Q146 UniRet90_A8L561 UniRef90_UPI00037EEE68 UniRef90-E3BB72 UniRef90_UPI0003691BDD UniRef90-W2ELQ1 UniRef90-E8UQW8 UniRef90_UPIO00288E65B UniRef90-UPIO00413B72C
UniRef90_1016G3
UniRef90-S0EVD9
UniRef90_K4R9N5
UniRef90-Q0A6D6
UniRef90_K1Z0C1
UniRef90_14F2J0
UniRef90-UPIO00371DA92
UniRef90_UPIO00363718B
UniRef90-B1ZQS9
UniRef90-W9KP06
UniRef90-Q5WFZ7
UniRef90- WOHYH2
UniRef90_UPI0002892A3B
UniRef90-L1KTH7
UniRef90_UPI00034D5156
UniRef90_UPIO0037E8598
UniRef90_UPI0003B44332
UniRef90-D2QEC2
UniRef90_UPIO003761959
UniRef90_UPI000309FD38
UniRef90-Q0BUD0
UniRef90_UPI0002F3C2F4
UniRef90-I7IJM7
UniRef90_S3BUP3
UniRef90-G2Q6B4
UniRef90-A9D619
UniRef90-M7X605
UniRef90-F4CVZ8
UniRef90-UPIO003759089
UniRef90-W5J0X4
UniRef90-LODA07
UniRef90_UPIOOO3102534
UniRef90-Q13HB6
UniRef90-W9UZS2
UniRef90-K1ZG69
UniRef90_UPIO0046FFE58
UniRef90-UPIO0016C544F
UniRef90-F9UDH9
UniRef90_H8MT26
UniRef90_G8N4L7
UniRef90-T1DBV4
UniRef90-UPIO002630876
UniRef90-D8K131
UniRef90-W5W6M0
UniRef90_K4TSW8
UniRef90_UPIO00470FB67
UniRef90_A0A024PBW1
UniRef90-A0A010Z182
UniRef90_D8FZ47
UniRef90-E3CVE0
UniRef90 K9U117
UniRef90_K9117
UniRef90_UPIO0047B372D
UniRef90_H2SRW8
UniRef90-UPIO003B45878
UniRef90 V4HAC1
UniRef90-W4QCU2
UniRef90- M2WR59
UniRef90_LOEGN2
UniRef90_Q0B7L5
UniRef90-UPIO0029A5E21
UniRef90-C1BUX2
UniRef90_UPI000469A4ED
UniRef90_C1BMB0
UniRef90-K9PYP3
UniRef90-K9PYP3
UniRef90_C6XPJ7
UniRef90_UPI00035ED510
UniRef90-A0A059KGY6
UniRef90_UPIO00346B433
UniRef90_UPI0003F6C298
UniRef90_UPIO003F6C298
UniRef90-G9YBA1
UniRef90-A0A023DIP2
UniRef90-UPIO00349C986
UniRef90-UPIO003763024
UniRef90-UPI0003763024
UniRef90- A0A022FPD9
UniRef90-A0A022FPD9
UniRef90-TOMEV0
UniRef90-V5PT83
UniRef90_UPI000258DA89

100
110
120

## E <br> E

V $\underset{\mathrm{E}}{\mathrm{E}} \mathrm{L}$ G|I VI
G K T CRH V|EQDAALDD HV|AGYVLVND|VISERA VLAVI I


LQRRHGGQWFR GK S LDTHCPMGPWIV TADEI
Q RHQQFFY SKSLD GSAP LGPWIVTAD
$F Q L K R S G Q W V K G K S C D T F G P I G P Y$
$L Q K S D G Q W S R A K G F D T F C P L G P W I E T E D D P S$
LQSA EMKVGGPCK GKDTAT T L GP Y L V T A DE L D P F R
KMTGGPWTKAKSYDTFLPLGPWIVT
$\square$ Q S R HKQF F L GK S LD T T CPMGPMLVHKSLI


LQK GDKS G WYR GK S LDD T F G P I G P V V V P P E K I
LQ MRTHQWLLGKTCDDFS

WQQR GE GQWSLGKGFDTWAPYGPGVVTSNVI
Y FHEA GHWMIGGKSFDTFTP LG P
$F Q L E R G G G Q W A K G G K S A E T F N P A G P W W A T A D C D$ FQLLE Y S P Q WD LGGKSCET F NP LGP WL VTADE

E E A A
WQLRT SQFVVGKSFDTHCPFGPWDTS ADE
WQL E R G GQWV K GK SAD TFAP LGGPYLVTADEV


$I Q Q Q R T L Q W L Q$ GK TVVDGTAPMGPWI MTSDELQQ
 WQIE GTGQ W IKGKSAP TFGPVVGPWLV TADEV
 $F Q I E R G G T W D K G K G H E T F G P V G P W L V T K D E V$ LQRLEMAVGGPSKGKDFATSLGPDLVTLDELSDQYRDG
LQRKDGQWT RAKGFDTFCPLGPWIV
I QNREMGYGCVGKAFDTFCPLGPVI ATGL
YLENYYRPNLRVKSRDSLLPMGPWIVDTADV

 $\square$ QRKE $\square$ Q H T RAK GY D T F A CAGPWAVT

R NQKQRGSQWSKGKGHDSFCPLGPWLVTADEIII $L Q K L D G Q$ WTRAKGFNTFAAVGPWISTGVD LQARHGQWFK GKSSLDTSNPLGGPVVVMRSAI
L Q Q N H S Q WF K GK SLD GF CPMGPWIVTRREI DHP
 LQKRDGQWT RAKGFDSFCPLGPWIV

V Q LA T S Q WV L G K S F P T F A P L G P A I V T K D E $\square$
LQHSDGQ WTRGKGIDDTFCPLGPWIET
AQF DDGQYFRGKSYDTFAPMGPTLVPDEYL
WQASK GKTCDDFSPVGPYLVT
LQNRT S QWLLGKTGDGFCPLG
Y QKRTA QWTI GGKNFDGTGAFGPWLVTSDELP
WQRRNGGQWLVGKAMDGFCPLGPCIVTTDEL

LQKQDGQWT RAK GFDTFCPDGPWIV
L QAREMRVGGPCKGKDTATTLGPWLVTADEFEAYR
WQHRTPQWSL GKSFDTHCPIGPWITTAEEV
$Y Q K R T P Q W S I G G K N F D A T G A F G P V L V S A D A L D$ F QKRTS T WWTIGKNFDGTGAFGPWIVTPEDLPAGA YLLENYYR P NLLRVK S R D T L T P I G P WI I D K S E I F FHPD GHWTIGKS F DTFTPLGPVIET LQKRDKQ WTRAKGFDSFCPLGPWI T T G FQFE R G P T WD K GK S C D T F C P WQ ERS GQF D I G S AP GFAPVGPWLVTRDEI LN R R T D H D WF R GK S F D T F A P L G P WF V P R DVI R

UniRef90_UPI00026CC592 UniRef90-D1CFU7 UniRef90-B9LB72 UniRef90_E1Q146
UniRef90 A8L561 UniRef90-Q39RG9 UniRef90_UPIOOO37EEE68 UniRef90 E3BB72 UniRef90-UPI0003691BDD UniRef90-W2ELQ1 UniRef90 E8UQW8 UniRef90 UPIO00288E65B UniRef90_UPI000413B72C UniRef90-1016G3
UniRef90- SoEVD9
UniRef90-K4R9N5
UniRef90-Q0A6D6
UniRef90-k1Z0C1
UniRef90 - 14 F2Jo
UniRef90-UPIO00371DA92 UniRef90-UPIO00363718B
UniRef90 B1ZQS9
UniRef90_W9KP06
UniRef90-Q5WFZ7
UniRef90-WOHYH2
UniRef90'UPI0002892A3B
UniRef90-L1KTH7
UniRef90-UPIOOO34D5156 UniRef90_UPIO0037E8598 UniRef90-UPI0003B44332 UniRef90-D2QEC2
UniRef90-UPIO003761959
UniRef90_UPI000309FD38
UniRef90 QOBUDO
UniRef90_UPI0002F3C2F4
UniRef90 17IJM7
UniRet90_S3BUP3
UniRef90-G2Q6B4
UniRef90-A9D619
UniRef90_M7X605
UniRef90 F4CVZ8
UniRef90-UPIOOO3759089
UniRet90_W5JOX4
UniRef90 LODA07
UniRef90-UPIOO03102534
UniRef90-Q13HB6
UniRef90 W9UZS2
UniRef90-K1ZG69
UniRef90_UPI00046FFE58
UniRef90-UPIO0016C544F
UniRef90 FgUDH9
UniRef90-H8MT26
UniRef90-G8N4L7
UniRef90-UPI0002630876
UniRef90-D8K131
UniRef90-W5W6M0
UniRef90-K4TSW8 UniRef90_UPIO00470FB67 UniRef90-A0A024PBW1
UniRef90-A0A010Z182
UniRef90 D8FZ47
UniRef90-E3CVEO
UniRef90_K9U117
UniRef90-C5CAC0
UniRee90-UPI00047B372D
UniRef90-H2SRW8
UniRef90_UPI0003B45878
UniRef90 V4HAC1
UniRef90_W4QCU2
UniRef90-M2WR59
UniRef90_LOEGN2
UniRef90-Q0B7L5
UniRef90-UPIOOO29A5E21
UniRef90_C1BUX2
UniRef90-UPIO00469A4ED
UniRef90-C1BMBO
UniRef90-K9PYP3
UniRef90_UPIO0036F9F08
UniRef90 C6XPJ7
UniRef90_UPIO0035ED510
UniRef90-A0A059KGY6
UniRef90_UPIOO0346B433 UniRef90-UPIOOO3F6C298
UniRef90_G9YBA1
UniRef90 A0A023DIP2
UniRef90 UPIOOO349C986 UniRef90-UPIO003763024 UniRef90_A0A022FPD9
UniRef90 TOMEVO
UniRef90-V5PT83
UniRef90_UPIo00258DA89


P LGPYLVSADEVGDPNQL FDRADVGEVRQNSN
 LIETELNPDTVRVEARLNGEEKQN NGETLQDSS

- DAQNLALWLEMLINGEEKQ DGVRRQESN NGARRQTGN NGVERQHGH
DGETKDGR NGKRMQEGS NGEVRQDSN NGKRLQDSN NGERROSN DGERMQTGN
RVNGE $\square R Q D$ NGEEMQRSN NGKTVODSN NGQTMQEST
$N G K R C Q T G N$ NmTDetrvNGQLRQRAN PDPQTLALGLKVNMNGEKKGN $\begin{array}{ll}P D P Q N L D M G L D V & D G Q V M Q H G N \\ A D P Q A L I M R Q V & N G E T R Q E S S\end{array}$ RELSPGA ESATPVQSA

DAGNLRVRASVN NGSPRQDGN
PDPQKLPLWLEVAVNGETQDGKRYQDGN
NPSDLDLWLEV NNHPYQKGN
KNPHNLQIQLRL NGTTLQNSN
PDPQALSVTCTLVERVN NGERVQTGH
GQVRQDGR
GEEKQNSS
SDPHNGGTRCRVAVSVKARV
ADPQDLDMFLDV NGARMQTGN

NGELKQDS
PDANNLTVSLSV NGELRQKDN
VELNDSSWVNGELRQRSN
E LDPNHTGVKLTL NGEVKQQSN
RELSPGA QLQTF DNDTNEP VQSAK ETNPSAQLQTFLNDNPQPVQSAS
PDPHADVEPGGLR
SEF DPKER TPDPGNVTLWLKV
IT S R L
DLDTVNLD DQKIN
Y $\square$ THDGE
$\checkmark A C R V / N$
ADEVGNPNQLSLKTYVNGEपRQE
NQDPKERDPDPQKLDIWLKV
GDPQRLAIR SIVNGEVRQQSN
PGAAGLKLERDNGEAMQRA
KDPNTRVSLRL
NGETVQNST DGRNLGVTCWVNGELRQQA
RELSPEAKLQTY Y D DAF
DADGFLDTADRASVN
PDPHNLSLR
SDPQNLHLWLKV AGAAGLRIQSRLNGQVMQDA
KDPSNDSRRGSTYNGNGERQSAN PDPHRLADSTYVNGEDRQRGT

WVKARLNGVEKQNSP


DPQALSLSLSV
K D DNDVNIWLKV
SDDNNLAMVKTWVNGNDK

DGEVRQDGH DGETMQASN NDEDRQQSH NGKMYQNGS NGETMQNDT
QDGN


UniRef90 UPIO0026CC592 UniRef90-D1CFU7 UniRef90-B9LB72 UniRef90-E1Q146 UniRef90 A8L561 UniRef90-Q39RG9 UniRef90_UPI00037EEE68 UniRef90 E3BB72 UniRef90_UPI0003691BDD UniRef90_W2ELQ1 UniRef90 E8UQW8 UniRef90 UPI000288E65B UniRef90-UPI000413B72C UniRef90_I016G3 UniRef90- S0EVD9 UniRef90-K4R9N5 UniRef90-Q0A6D6 UniRef90_K1Z0C1 UniRef90 14F2J0 UniRef90-UPI000371DA92 UniRef90_UPI000363718B UniRef90-B1ZQS9 UniRef90-W9KP06 UniRef90-Q5WFZ7 UniRef90-WOHYH2 UniRef90 UPI0002892A3B UniRef90-L1KTH7 UniRef90_UPIO0034D5156 UniRef90 UPI00037E8598 UniRef90 UPIO003B44332 UniRef90-D2QEC2
UniRef90_UPI0003761959 UniRef90 UPI000309FD38 UniRef90 Q0BUD0 UniRef90_UPI0002F3C2F4 UniRef90 17IJM7 UniRef90 S3BUP3 UniRef90-G2Q6B4 UniRef90-A9D619 UniRef90 M7X605 UniRef90 F4CVZ8 UniRef90-UPI0003759089 UniRef90-W5J0X4 UniRef90 LODA07 UniRef90-UPI0003102534 UniRef90-Q13HB6 UniRef90 ${ }^{-}$W9UZS2
UniRef90 ${ }^{-}$K1ZG69 UniRef90_UPI00046FFE58 UniRef90_UPI00016C544F UniRef90-F9UDH9 UniRef90-H8MT26 UniRef90-G8N4L7 UniRef90-T1DBV4 UniRef90-UPI0002630876 UniRef90-D8K131 UniRef90-W5W6M0 UniRef90 K4TSW8 UniRef90 UPIO00470FB67 UniRef90-A0A024PBW1 UniRef90 A0A010Z182 UniRef90 D8FZ47 UniRef90-E3CVE0 UniRef90_K9U117 UniRef90 C5CAC0 UniRef90-UPI00047B372D UniRef90-H2SRW8 UniRef90 UPI0003B45878 UniRef90 V4HAC1 UniRef90-W4QCU2 UniRef90-M2WR59 UniRef90-LOEGN2 UniRef90 Q0B7L5 UniRef90_UPIO0029A5E21 UniRef90_C1BUX2 UniRef90 UPI000469A4ED UniRef90-C1BMB0 UniRef90-K9PYP3 UniRef90-UPI00036F9F08 UniRef90 C6XPJ7 UniRef90_UPI00035ED510 UniRef90_A0A059KGY6 UniRef90 UPI000346B433 UniRef90_UPI0003F6C298 UniRef90_G9YBA1 UniRef90-A0A023DIP2 UniRef90 UPI000349C986 UniRef90-UPI0003763024 UniRef90-A0A022FPD9 UniRef90 TOMEV0 UniRef90-V5PT83
UniRef90_UPI000258DA89

260 PTPVF LTKAGTMHLSVAT
PGDVMD LIETEK\GRLSNPVVE
VG DVMEAEI D G I GVLK K VVVSE
A GDVATlEVQGVGSLVNPV
A GQTVAVTVDGI GTLTNPV
SGDRLVAEI PGVARLQVSV
A GDRMELGI EGLG
A GQRVEVE』PE $\square G L A N$
GCLAELWG LRGEQTPPPLKPGDTVTLTVE $P G$ QPYLRAGDVVELEID
$P G D H \prod K A K \prod E G \prod G N L Q N Y V V E G R$
A GDLIE I T I D N L G TLRNKLQE
${ }_{P}$ EGDVMELELEGLG
P

HGDVVEVETAGTGTLKNPVKAEP
$P G Q R V E C T I E G L G T L T N S V A$
$P$ P $P G Q K \nabla S V S \square D G \square G T \square T N P V Q Q$
$R$ R P V VWLKPGDEVVIETEK TG
A GNVIDEC $\square \mathrm{Q}$ G $\square \mathrm{GK} \mathrm{K} \square \mathrm{KNR}$
$P Q T W L K D G D V V E V G L E Q \| G$
$T P P V Y \square R P G Q T \square R \square G \square D$
TPPVYLKPGDTVELGI T
$T P Y L R P G D T V E L E L G G L G$

$M K P P V F L N A G D T M K \square G D E$

N G D Q $\square \mathrm{E} \square \mathrm{K} \square \mathrm{E}$ G $\square \mathrm{GK}$ K $\square \mathrm{H} N \mathrm{~T}$ V
M G K K P
DPPKF LKPDDR $\square R \square E \square E D V G$ EP $\square \mathrm{Y} L \mathrm{RP}$ GQTMTLGVS
$S G D \square I E \square T V E G \square G T \square R N K V$

```
TPNL
N
```

DPQVFMKDGDVVK TE TDK $P$ QVWL K $W$ G DVVV E V
$M K P Q T F L K E G D T M R L G A A$
$P G D V V E \operatorname{V} \| T G L G K L S N V V A R P N T$
$P G D V V E A T V E G I G T L R N P V V D A R$
VGDVMRVE MGKKP
 GCILELT PEAVG


> G WLKK P G DVVELTVER

PGD IVVCSVENGCS
$K P P V Y L K A G D V M R L_{G}^{L} G V E$
A GDVAEVETEGTGTLKNPVVAE
A GDRVVVEI EGI GALENPVVQ
A GDTVEVVELGUGTLVNPV
$P$ GTVIECDVDGUGTLRN
KPP $\square \mathrm{F} \square \mathrm{KRGDEDQCEDD}$
GKKPES $\square$
PGDTVEVR VENDGTGRN
A L G QPEPKPF LRAGDVVELE $\square$ D
VGDVVSASVEHTGTLT $\operatorname{T}^{T}$
S G DVVRIEVEKI GYI ENR
$P G D K V E I E I E G U G K L T N Y V K E$
SDGQ F $\square$ RDGDVVEVE $\square$ T
$\square G D R \ R V E \prod E G \prod G A L E N T V G$
PGDRVEVQIDGI GTLSN
A GDRI RVE E E G I GRLENTV
EGQRVEAEVEGIGGL
TPRRWपKPGETVTCEDA
EHDELQAGTQDVVT TSFRVDRQQ
PGDTI E I E I P GI GTLSNPVAE
PGDEVEIEIEGUGTLSNPVVAE
$P E D D E Q V Y$ KKPNDEVTVEVEK
D GDVDEAG■T D $\square$ TEMQ
$P G \quad K P Y \square R A G D T V T V E \square E R \square G$
A GDRVEVDDEGDGVLSN
A GDRMEVDIEHVGVLVNPVVAE
$G V F L \quad K P P Q Y \square K V G D V V E C K \square S S$
S G DLI R $\square E \square E G \nabla G V L E N Q V G S$
$N$ PPVF LKKGDVVECQDDQV
$\square G D R \square R \ A D E G \square G E \square E N$
GLGRELAPLKPGDTVALTVE
A AMDPRVFLQPGDRVRCEVDT $\square G$
MKPPVFLQEGD IVELGAD
PGDT $\square \mathrm{E} \square \mathrm{E} \square \mathrm{E} G \square \mathrm{G} T \square \mathrm{~V} \mathrm{NP} \square$
TPPVWMKAGDRVEVDDERVG
EPAQFLHDGDVVKVE IEA GG
QGDEVDAEVEGVARLVNR\TSQTDY
AGDVI ECEI AEI GTLRNTFVTAR
$\vee G Q E V A V T V E R L G A l R N R V$
S P PRYLRHGETMRLGIS
MKPPRYLRPGDRVATEVKGDG
N


UniRef90 UPI00026CC592 UniRef90-D1CFU7
UniRef90-B9LB72
UniRef90 E1Q146
UniRef90 A8L561
UniRef90-Q39RG9
UniRef90-UPI00037EEE68
UniRef90 E3BB72
UniRef90 UPI0003691BDD
UniRef90-W2ELQ1
UniRef90 E8UQW8
UniRef90 UPI000288E65B UniRef90-UPI000413B72C UniRef90-I016G3
UniRef90-SOEVD
UniRef90-K4R9N5
UniRef90-Q0A6D6
UniRef90 K 1 Z0C1
UniRef90 I4F2JO
UniRef90-UPI000371DA92
UniRef90-UPI000363718B
UniRef90 B1ZQS9
UniRef90-W9KP06
UniRef90-Q5WFZ7
UniRef90-W0HYH2
UniRef90 UPI0002892A3B
UniRef90-L1KTH7
UniRef90_UPI00034D5156
UniRef90 UPI00037E8598
UniRef90- UPI0003B44332
UniRef90-D2QEC2
UniRef90-UPI0003761959
UniRef90 UPI000309FD38
UniRef90 Q0BUD0
UniRef90_UPI0002F3C2F4
UniRef90 17IJM7
UniRef90 S3BUP3
UniRef90_G2Q6B4
UniRef90-A9D619
UniRef90_M7X605
UniRef90 F4CVZ8
UniRef90-UPI0003759089
UniRef90-W5J0X4
UniRef90 LODA07
UniRef90-UPI0003102534
UniRef90-Q13HB6
UniRef90 W9UZS2
UniRef90-K1ZG69
UniRef90_UPI00046FFE58
UniRef90-UPI00016C544F
UniRef90 F9UDH9
UniRef90-H8MT26
UniRef90-G8N4L7
UniRef90- UPI0002630876
UniRef90-D8K131
UniRef90_W5W6M0
UniRef90 K4TSW8
UniRef90-UPI000470FB67
UniRef90-A0A024PBW1
UniRef90-A0A010Z182
UniRef90_D8FZ47
UniRef90-E3CVE0
UniRef90-K9U117
UniRef90_C5CAC0
UniRef90-UPI00047B372D
UniRef90-H2SRW8
UniRef90 UPI0003B45878
UniRef90 V4HAC1
UniRef90-W4QCU2
UniRef90-M2WR59
UniRef90_LOEGN2
UniRef90 Q0B7L5
UniRef90_UPI00029A5E21
UniRef90-C1BUX2
UniRef90 UPI000469A4ED
UniRef90-C1BMB0
UniRef90-K9PYP3
UniRef90-UPI00036F9F08
UniRef90 C6XPJ7
UniRef90_UPI00035ED510
UniRef90_A0A059KGY6
UniRef90 UPI000346B433
UniRef90-UPI0003F6C298
UniRef90-G9YBA1
UniRef90_A0A023DIP2
UniRef90 UPI000349C986
UniRef90-UPI0003763024
UniRef90_A0A022FPD9
UniRef90 TOMEV0
UniRef90-V5PT83
UniRef90_UPI000258DA89

LGE QRQTVIP

# GLGSLSNTV $G L G R Q R Q T L G Q A$ 

GLGTDRNVV
GLGRQRQELKDA
GLGA L $\operatorname{RN}$ N MV

GLGEQNQT
GLGA $\square E N R V E P$
GLGEQKQTAVA

GLGE Q R Q T
T G A Len K VVA
GVGVCTNKV GVGTCTNKV GLGEQNQKVV.

G L G E Q R Q R TVAA
$\square G T \square R N R V V$

LGEQDHRVV. $G L G V Q R Q R V L A$

E LGT】CNKVM
GLGEQQQNVVA
$G \square G R Q R Q Q$

G L G R Q R Q T F R S A

G $\square G Q L V N P V V A$

L G A LT N R F V A
$\square \mathrm{GS} \mathrm{V} \mathrm{INK】V}$
GA $\square$ R NTVV
G T G T LT NTVV
A $\square$ EAEMVGEV
$G L G Q Q R Q T V V$


```
30
40
```



``` V VCCV VGKN Y A D H A A E M G T A V P S E P L L \(C \square G \square N Y\) YA HAEEAARFHDEAFGGERP QPI Y \(\square G L N Y \square D H A K E L D M M D P K E P V I\)
F G \(\square \mathrm{G} L \mathrm{~L}\) Y T E GV \(\left.\begin{array}{lllllllll} & S & E & S & A & K & S & L & D\end{array}\right] \quad S\)
```



``` GRNYADHVAEVFQKSADDLP I GLNYKHHAAESGARVPE DP IL \begin{tabular}{l|llllllllllllllll}
\(V\) & \(G R\) & \(N\) & \(Y\) & \(H\) & \(A\) & \(H\) & \(A\) & \(K\) & \(E\) & \(L\) & \(Q\) & \(A\) & \(S\) & \(V\) & \(F\) & \(K\) \\
\(V\) & \(D\) & \(I\) & \(V\) \\
\(V\) & \(G R\) & \(N\) & \(Y\) & \(A\) & \(Q\) & \(H\) & \(A\) & \(K\) & \(E\) & \(L\) & \(G\) & \(N\) & \(E\) & \(I\) & \(P\) & \(S\) \\
\hline
\end{tabular} \(\begin{array}{llllllllll}V & G R N & Y & A & Q & H & A & K & L & G \\ I & N & E & P & S & E & P & F & F \\ I & G & N & Y & R & H & A & L & E & S \\ M & M & P & P & K & F & P & V & V\end{array}\)
\(F G \square G L N Y\) V \(\square\) E H V E E S S R S L D D T S A A D L P K Q P I I
```



``` VICVGMNYAAHAAESGAEPPKNMVI
```




``` G VGKNYAGAAGKNYEAHAREMGASAPKDPVL
```



```
IGRNYREHAA
```



```
K E
\(\square\) \begin{tabular}{llllllll}
\(P\) & \(E\) & \(L\) & \(P\) & \(R\) & \(Q\) & \(P\) & \(V\) \\
\(R\) & \(I\) \\
\hline & \(K\) & \(P\) & \(E\) & \(Y\) & \(P\) & \(T\) & \(F\)
\end{tabular}
```



``` EEQDKEAPAEP
AESGAEPPKNM \begin{tabular}{ll}
V & l \\
L & L \\
\hline
\end{tabular}
```

[^0]

```
A P \D D P R K F LAA
```



```
G G N Y P D H DA E F ER D IP A H P V I
```


$\qquad$

```\(V G B\)
```



```
I GMMNY Q K H L E E L LGVVARSKKH QVVW
```



```
\(\square\)
\(\left.\begin{array}{l|lllllllllllllll}I & G & M & N & Y & Q & K & H & A & D & E & A & A & A & A & V \\ V & T & S & Q & L & W \\ G & R & N & Y & L & D & H & \square & R & E & M & G & H & D & L & P\end{array}\right]\)
```




```
FA TAS NYYE HAAEMGT QLAAARSE
```




```
V
```



``` \(G R N\)
```



```
\(V S F N Y Q K H A A\)
\(M G T Q L D A R S E\)
\(V G N F V V D A B\)
A R


```

        T PPS \RDFMAFEAHVK
    ```
\(\qquad\)
``` VGFNYRADNRE
```




```
F G \(\square G L N Y V E H V A E S S R T L D K S\)
``` \(\qquad\)

```

AC $\square \mathrm{A} Q \mathrm{P}$ GNF $\square \mathrm{A}$

```
\(\qquad\)
``` I G L \(\vee G R\) NY A NYRAHGEETGTKPP
```


## $\square G L N Y Q D H C D E Q N K P A P K$

``` MGRNYAE HVAEGGHELP EAPVL \(\square G V N Y\) LA HAQETGQHAEPAEPVVM CGLLNYHEHVQQETNREVVTEQPTMF IGGRNY A D H lla E LLN N T RP K K P F F I GLNYR D HAAAETGA QLPTCEPVV
```



```
DGSAYVNHVELVRKARRAK MPESFWTD
```


$\qquad$
GLNYVAHASEATYETPRHPVV
HVVAAPVNYRKH $\quad$ VGE $\square$ GARSVVSGN
FCVGRNYAEHAREMGHDPDREP PRF

```


UniRef90 B6H5V5 UniRef90_A0A024QIE3 UniRef90_UPI0003453643 UniRef90_UPI00035F2753 UniRef90_R6Q182 UniRef90_A6URC6 UniRef90-A0A031JWD2 UniRef90 G0A6F0 UniRef90-L8LJG6 UniRef90_UPI0003677227 UniRef90_S5T266 UniRef90 W0J7K5 UniRef90-UPI000371B890 UniRef90-Q86122
UniRef90_E6QML2
UniRef90-UPI0002F19D16 UniRef90_E9F4P9
UniRef90_D3QAP5
UniRef90 UPI0004751D7A UniRef90_A3SW66 UniRef90_L2G740 UniRef90-A0A017SPP2 UniRef90_E9C0F1 UniRef90_R1GDD1 UniRef90_W9GJL3 UniRef90 \({ }^{-}\)D3LWH1 UniRef90_UPIO004781CCA UniRef90_UPI000225B691 UniRef90 A0A014PIH4 UniRef90_UPI0001FFDFB1 UniRef90_UPI0002E26534 UniRef90_UPI0003C365C2 UniRef90_UPI000255902F UniRef90_UPI00041A8915 UniRef90_I3T8S9 UniRef90 T0G9S9 UniRef90_UPI0003736994 UniRef90-J2JLN1 UniRef90_M4X2Z6 UniRef90 D1C9W0 UniRef90_D4XFF7 UniRef90_UPI000380375A UniRef90 C2CMU4 UniRef90-M2RPN1 UniRef90-V2Y1X1 UniRef90_UPI00026575DF UniRef90-UPI00031684F7 UniRef90_F2LJ02 UniRef90_E8LB17
UniRef90 J0K713 UniRef90-T2MB80 UniRef90-I5C526 UniRef90_K4TAH7 UniRef90_C5C3C UniRef90_I2BD52 UniRef90_D5RSE8 UniRef90 A5EF32 UniRef90_W0HZ52 UniRef90_Q4PK72 UniRef90 J0UWR9 UniRef90_C5CXA3 UniRef90_J3DTK5 UniRef90 H8FQS1 UniRef90_H0W756 UniRef90-F2LK26 UniRef90 UPI00045DE5AC UniRef90_A0A031LRW3 UniRef90_B9K0R7 UniRef90 B4M0N4 UniRef90_UPI000379C6FE UniRef90_D5UTP2 UniRef90_D5WKF3 UniRef90 C5PBB5 UniRef90_A6WFR6 UniRef90_UPI00046871A5 UniRef90_H0TT76 UniRef90 B9R6D7 UniRef90_UPI0002626C8B UniRef90_K0JXC0
UniRef90 F8C8F9 UniRef90_E0VV30 UniRef90_A4XI46 UniRef90_U2A9G2 UniRef90_F4GSG7 UniRef90_V8QRT6 UniRef90_X4ZAF4 UniRef90 UPI000255F291 UniRef90_W0JP08
UniRef90_F3KL24

4



 ELSTEARLQTF \(\_N D E T K P R Q S A C\)
 NGEVLQDWN

UniRef90 B6H5V5 UniRef90-A0A024QIE3 UniRef90-UPI0003453643 UniRef90_UPI00035F2753 UniRef90 R6Q182 UniRef90-A6URC6 UniRef90-A0A031JWD2 UniRef90 G0A6FO UniRef90 L8LJG6 UniRef90-UPI0003677227 UniRef90_S5T266 UniRef90 W0J7K5 UniRef90-UPI000371B890 UniRef90_Q86122
UniRef90-E6QML2
UniRef90-UPI0002F19D16 UniRef90-E9F4P9
UniRef90-D3QAP5
UniRef90 UPI0004751D7A
UniRef90-A3SW66
UniRef90-L2G740 UniRef90 A0A017SPP2 UniRef90-E9C0F1 UniRef90-R1GDD1 UniRef90-W9GJL3 UniRef90-D3LWH1 UniRef90_UPI0004781CCA UniRef90_UPI000225B691 UniRef90 A0A014PIH4 UniRef90_UPI0001FFDFB1 UniRef90_UPIO002E26534 UniRef90_UPI0003C365C2 UniRef90-UPI000255902F UniRef90_UPI00041A8915 UniRef90_13T8S9 UniRef90 T0G9S9 UniRef90-UPI0003736994 UniRef90-J2JLN1 UniRef90_M4X2Z6 UniRef90-D1C9W0
UniRef90-D4XFF7 UniRef90-UPI000380375A UniRef90 C2CMU4 UniRef90-M2RPN1
UniRef90- V2Y1×1 UniRef90-UPIO0026575DF UniRef90- UPI00031684F7 UniRef90-F2LJO2 UniRef90_E8LB17 UniRef90 JOK713 UniRef90-T2MB80 UniRef90-15C526
UniRef90 K4TAH7 UniRef90 \({ }^{-} 5 \mathrm{C} 3 \mathrm{C} 1\) UniRef90-I2BD52 UniRef90_D5RSE8 UniRef90_A5EF32 UniRef90-W0HZ52 UniRef90-Q4PK72 UniRef90-J0UWR9 UniRef90_C5CXA3 UniRef90_J3DTK5 UniRet90_H8FQS1 UniRef90_H0W756 UniRef90-F2LK26 UniRef90 UPI00045DE5AC UniRef90-A0A031LRW3 UniRef90-B9KOR7 UniRef90-UPI000379C6FE UniRef90-D5UTP2 UniRef90-D5WKF3 UniRef90 C5PBB5 UniRef90-A6WFR6 UniRef90_UPI00046871A5 UniRef90_HOT176 UniRef90_B9R6D7
UniRef90_UPIO002626C8B UniRef90_KOJXC0 UniRef90 F8C8F9 UniRef90-E0VV30 UniRef90-A4XI46 UniRef90_U2A9G2 UniRef90 F4GSG7 UniRef90-V8QRT6 UniRef90-X4ZAF4 UniRef90 UPI000255F291 UniRef90-W0JP08 UniRef90-F3KL24

\begin{tabular}{|c|c|c|}
\hline Ref90 \(\mathrm{B6}\) & KPA 250260 & \[
\mathrm{WL} \mid \mathrm{K} D G{ }_{\mathrm{D}}^{270|V| E / V S|L| E}
\] \\
\hline Ref90－A0A0240IE3 & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{DGDETSCEMAEMGULRNAVKQ R}} \\
\hline UniRet90－UP100034536 & & \\
\hline UniRef90－UP100035F27 & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline UniRef90－R6C
UniRef90－A6L & & \\
\hline UniRef90－A0A031JWD2 & \multicolumn{2}{|l|}{KGDTVEDEDENGLLRN} \\
\hline UniRef90－G0A6FO & \multicolumn{2}{|l|}{PGQSVRDEIEGI GCL} \\
\hline UniRet90＿L8LJG6 & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{PGDVLECGVEKIGTLRHPVV}} \\
\hline \begin{tabular}{l}
UniRef90＿UPIO00367 \\
UniRef90－S5T266
\end{tabular} & & \\
\hline UniRef90＿W0 & \multicolumn{2}{|l|}{AGBSVAVEVAGAGRLENPVDDEP} \\
\hline & \multicolumn{2}{|l|}{AGDVVRVEIDG｜GALENK} \\
\hline iRef90－08 & \multicolumn{2}{|l|}{TPKRWLLAGEtVTVS㽞E} \\
\hline UniRef90－UPI0002F19D16 & \multicolumn{2}{|l|}{PGDVVES} \\
\hline －90－E9F & \multicolumn{2}{|l|}{\multirow[b]{2}{*}{}} \\
\hline UniRef90 D3C & & \\
\hline UniRet90－A3SW66 & \multicolumn{2}{|l|}{（ KPPVYLQPDDVVELGUE} \\
\hline  & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline UniRef90－W2RFY1 & & PGDRVEVEVTGLGRLQNVIG \\
\hline UniRef90－E9C0F1 & \multicolumn{2}{|l|}{\multirow[b]{2}{*}{DGDVVEVEIGGLGADANKMAFTK}} \\
\hline UniRef90－R1GDD1 & & \\
\hline UniRef90－W9GJL3 & \multicolumn{2}{|l|}{PGDVVELELEGLG} \\
\hline & \multicolumn{2}{|l|}{\multirow[b]{2}{*}{}} \\
\hline UniRef90－UP10004781CCA & & \\
\hline UniRef90－A0AC & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{PGDVTVEDEGTGA}} \\
\hline UniRef90－UP10001FF & \multicolumn{2}{|l|}{\multirow[b]{3}{*}{MEPQRFLQPGDVRCEVE}} \\
\hline UniRef90－UPIO & & \\
\hline UPI & & \\
\hline & \multicolumn{2}{|l|}{NGDRTEVETSGTGTTSNPT} \\
\hline UniRef90 UPI00041A8915 & \multicolumn{2}{|l|}{DGDVVEATVEGUGTVIVNTVKERKR} \\
\hline UniRef90－ToG9s9 & \multicolumn{2}{|l|}{VGDVMKVEI DGGLGHIENTVVAE} \\
\hline niRef90－UP1000373 & \multicolumn{2}{|l|}{PGDEVEVAIEGUGTL} \\
\hline niRet90＿J2JLN1 & \multicolumn{2}{|l|}{} \\
\hline iRet90＿M4X2Z6 & \multicolumn{2}{|l|}{\multirow[b]{2}{*}{\(P G D V V E I E E G V G V L R N G V V A E\)}} \\
\hline & & \\
\hline UniRee90＿D4XFF7
UniRei9O＿UPIO00380375A & \multicolumn{2}{|l|}{SGDDIDGEIIEQVGSLRVSVA} \\
\hline UniRet90－C2CMU4 & \multicolumn{2}{|l|}{PGDTLEDEUPGLGSLINPL} \\
\hline & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline IRef90－V2Y1X1 & & \\
\hline UniRee90－UP100026575 & \multicolumn{2}{|l|}{DVMEDEDAGLGRQR} \\
\hline & \multicolumn{2}{|l|}{DPSVV} \\
\hline iRef90－E8LB17 & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{EGDETTVETEGMGKMSNRV}} \\
\hline \(90^{-}\)T2 & & \\
\hline － & \multicolumn{2}{|l|}{PGGEVMVAS：AQUGALEN} \\
\hline iRef90－K4TAH7 & \multicolumn{2}{|l|}{EGDEVVCETEG} \\
\hline niRef90－C5C & \multicolumn{2}{|l|}{PGQRVEVTVEGUGTLGNPV} \\
\hline NiRef90－28D5 & \multicolumn{2}{|l|}{AGQSTRLGDQGLGE} \\
\hline UniRef90－A5EF： & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{KGUVELTSGPEAYPWLSEGDRVRDSADGLG}} \\
\hline UniRet90－WOHZ522 & & \\
\hline UniReef90－Q4 & \multicolumn{2}{|l|}{KNDVVRTELENVGThENKVILEP} \\
\hline UniRef90－ToL & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline UniRee90－JoUW & & \\
\hline UniRef90＿J3DTK5 & \multicolumn{2}{|l|}{} \\
\hline UniRef90－H8F & \multicolumn{2}{|l|}{PGDVCEDEDEGU GILRNPVDAE} \\
\hline UniRer90－HoW756
UniRet90
F2LK26 & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{P GDVMEALGVAGL}} \\
\hline UniRe90－S2JC & & \\
\hline UniRef90－UP100045DE5， & \multicolumn{2}{|l|}{ENDEIQAG｜DGVVSMRFKV} \\
\hline UniRef90－AOAO31LRW3 & \multicolumn{2}{|l|}{\multirow[t]{4}{*}{\begin{tabular}{l}
TQTFLKPGDVVRVEVQ \\
SPPEYLKPGDVIKTEI \\

\end{tabular}}} \\
\hline UniRef90 B9K0 & & \\
\hline UniRef90－UP10003790 & & \\
\hline UniRet90－D5UTP2 & & \\
\hline niRef90－D5 & \multicolumn{2}{|l|}{\(A G D V V E D E V E R \square G V L R N P \square A D E Q \quad\) ald} \\
\hline UniRee90－C5F & \multicolumn{2}{|r|}{\multirow[t]{2}{*}{ALGQPDPKPY尼PGDVVEC TDG可 ATPPVYLRAGDVMSGGUD}} \\
\hline UniRef90－UPIO0046871A5 & & \\
\hline 90－ & \multicolumn{2}{|l|}{PGDVVEVESTRDGDRNAVAEEK} \\
\hline  & \multicolumn{2}{|l|}{PGKSLADGGAGYSC TVENGET} \\
\hline UniRef90－KOJXC0 & \multicolumn{2}{|l|}{PGDVVEVAVDDTERLRNTVREAEP可APGARVTREDKAAA} \\
\hline & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline iRef90－E0 & & \\
\hline UniRef90－U2A9G2 & \multicolumn{2}{|l|}{R FPY石AGDVVTLEDD} \\
\hline UniRef90－F4GSG7 & \multicolumn{2}{|l|}{PGdLceveleg TaLls} \\
\hline ee90－V8QRT6 & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline eef90 X4ZAF4 & & \\
\hline 255 & \multicolumn{2}{|l|}{} \\
\hline & \multicolumn{2}{|l|}{} \\
\hline
\end{tabular}

UniRef90 B6H5V5
UniRef90 A0A024QIE3
UniRef90_UPI0003453643
UniRef90-UPI00035F2753
UniRef90 R6Q182
UniRef90-A6URC6
UniRef90-A0A031JWD2
UniRef90 G0A6FO
UniRef90 L8LJG6
UniRef90-UPI0003677227
UniRef90 S5T266
UniRef90 W0J7K5
UniRef90_UPI000371B890
UniRef90-Q86122
UniRef90 E6QML2
UniRef90-UPI0002F19D16
UniRef90-E9F4P9
UniRef90-D3QAP5
UniRef90 UPI0004751D7A
UniRef90-A3SW66
UniRef90_L2G740
UniRef90 W2RFY1
UniRef90 A0A017SPP2
UniRef90-E9C0F1
UniRef90-R1GDD1
UniRef90 W9GJL3
UniRef90-D3LWH1
UniRef90_UPI0004781CCA
UniRef90_UPI000225B691
UniRef90 A0A014PIH4
UniRef90_UPI0001FFDFB1
UniRef90-UPI0002E26534
UniRef90 UPI0003C365C2
UniRef90-UPI000255902F
UniRef90-UPI00041A8915
UniRef90 13T8S9
UniRef90 TOG9S9
UniRef90-UPI0003736994
UniRef90-J2JLN1
UniRef90_M4X2Z6
UniRef90-D1C9W0
UniRef90-D4XFF7
UniRef90-UPI000380375A
UniRef90 C2CMU4
UniRef90-M2RPN1
UniRef90-V2Y1X1
UniRef90 UPI00026575DF
UniRef90-UPI00031684F7
UniRef90-F2LJ02
UniRef90 E8LB17
UniRef90 J0K713
UniRef90-T2MB80
UniRef90-15C526
UniRef90_K4TAH7
UniRef90 C5C3C1
UniRef90-I2BD52
UniRef90-D5RSE8
UniRef90 A5EF32
UniRef90-W0HZ52
UniRef90-Q4PK72
UniRef90 TODEC3
UniRef90_JOUWR9
UniRef90_C5CXA3
UniRef90_J3DTK5
UniRef90 H8FQS1
UniRef90-H0W756
UniRef90-F2LK26
UniRef90 S2JQA2
UniRef90 UPI00045DE5AC
UniRef90-A0A031LRW3
UniRef90-B9K0R7
UniRef90 B4M0N4
UniRef90-UPI000379C6FE
UniRef90-D5UTP2
UniRef90-D5WKF3
UniRef90 C5PBB5
UniRef90-A6WFR6
UniRef90-UPI00046871A5
UniRef90_HOTT76
UniRef90 B9R6D
UniRef90_UPIO002626C8B
UniRef90-KOJXC0
UniRef90 F8C8F9
UniRef90-E0VV30
UniRef90_A4XI46
UniRef90_U2A9G2
UniRef90 F4GSG7
UniRef90-V8QRT6
UniRef90-X4ZAF4
UniRef90 UPIO00255F291
UniRef90-W0JP08
UniRef90_F3KL24

G|V|G S C V V N R|V V
\(\mathrm{G} L \mathrm{G} S \mathrm{~L} \mathrm{~T}\) S P VVA
\(G L G R Q R Q V C V A\)
GLGDQRQEVI
\(\square \mathrm{G}\) T LT N T V

GVLRNK \(\square\)
\(G \prod G A T E N R V V A\)
L GKLVNKVVA
\(\mathrm{G} \square \mathrm{GT} \mathrm{L} \mathrm{V} \mathrm{N} P \mathrm{~V} \mathrm{~V}\)

G \(\square\) GEMEQEV

S DVRDERGT
E

GLGG【ENRCVA
VGLGTMTNPVVA
GV \(V\) GE L RNTVV

G LGEQRQSVVGA
EGHS \(\square\) F GA \(\square\) E QTVQQA V
VGGSV
\(G \square G R A E Q R \nabla R D A V\)

UniRef90 TOR2HO
UniRef90-TOR2HO UniRef90-UPIOO0344A985 UniRef90_UPI00030EE5D5 UniRef90 M9M010 UniRef90-A7HTC6
UniRef90 W5JD7 UniRef90-W5JD71
UniRef90
UPIOOOO40234BE UniRef90-T1XAL1 UniRef90-A4A865 UniRef90-UPI0003F58E02 UniRef90-X6NJ92 UniRef90-M3F9V4 UniRef90 B3SB72 UniRef90 UPI0001FFDC63 UniRef90-XORTM5 UniRef90-UPIO0047437EA UniRef90-K2NTJ7 UniRef90-O46978 UniRef90_U1SHG7 UniRef90-J5K814 UniRef90-F5Z5S9 UniRef90-M3DL27 UniRef90-D5G.JP8 UniRef90 S7XIF2 UniRef90-C2KNIO UniRef9-QOOS17 UniRef90_C3Y1X9 UniRef90_UPIO0047589F3 UniRef90-UPIO00367E4CA UniRef90_LOEFW3
UniRef90 J3IYN7
UniRef90-M7NLB3 UniRef90-K6ZE94 UniRef90-UPI00047D4D4E UniRef90 H2ZHM7 UniRef90-N8VH83 UniRef90- 8 BJ3R 7 UniRef90- UPIO0037903BF UniRef90-E4ZVM0 UniRef90-UPIO004151DA9 UniRef90 G709D5 UniRef90-UPI0002D2722E UniRef90-A0A0241BS9 UniRef90-K2SVK4 UniRef90-V719D5 UniRef90-19C1S6 UniRef90-UPI0003B37930 UniRef90-H5WUS6 UniRef90-J2PX41 UniRef90-W9G9L9 UniRet90_TON6X8 UniRef90 UPIO0036B8C92 UniRef90-L1PHY4 UniRef90 V9RTJ3 UniRef90 C1MWH2 UniRef90-D2NSH5 UniRef90-S7ZLH2 UniRef90 UPI00037E7904 UniRef90 WOJVJ1 UniRef90-MoCUS5 UniRef90-UPIO0046E9D1E niRef90 J4Qw 13 UniRef90-UPI0003635754 UniRef90-UPIO003B7268A UniRet90_Q2F600 UniRef90 U1NOH6 UniRef90-UPI0003A628B1 UniRef90_X7Z5Z8 UniRef90 R8BB10 UniRef90-EOMN76 UniRef90-GosUTO UniRet90_B8ENE4 UniRef90 UPIO0035CDE43 UniRef90-UPIO00237935D UniRef90_M3FVF5 UniRef90-HOTH2O UniRef90 UPIOOO37561C0 UniRef90-UPIOOO36D4699 UniRef90 UPI000366FC6C UniRef90 Q11D77 UniRef90-R1MT1 UniRef90 IORG37 UniRef90 UPI0003A4AFEF UniRef90_UPIO0036B6B4E UniRef90_A6CED1 UniRef90 J31XR5 UniRef90-R6J3D9 UniRef90_UPIOOO472EB40


VGRNYAEHAREMGHDPEREPPF VMCI GRNYADHDKELSSATPKQPFF VGHNYRNHIKEMGREVPEFPTL VF VGLNYVDHAIEDDPKRLPEHPV

YEEHVQE VGLLNYRDHTEETGQDEPEHPT L V
1
1 G UNYAAHAAESGAEPPDVPIL VGLINYAEHAKELTGARQDEPLA \begin{tabular}{l} 
NFASHVKDSGLDPDTDPLT \\
\(N F R S H S A E T S M Q E L K E P Y F\) \\
\hline
\end{tabular} VARNYAHAAEAGDP ISP\|P IL \(V I G L G G N Y P A P G G Q R S E D P A R P S V\)
\(V Y C V G N Y A E H A K E M G T G R E D F E\) aps wp
ANWAGTEAPASPQF T] GRYADHIDAELNNTTPKQPFF SVEQUYCVGRNYAAHAREMGYDPDREPPF GLNYYDHAEEQDEEDPEKPML
 GVDKVEAVGUNYRSRAEQRGRTPAEPSY RDFCVGKNYYAHAAEFHNGFDSSAKEQVPSHPVV CVGKNYAAHVA EMGETAPADPVI
VRCLGLNYADHAKEFQ
RDFCVGRNYADHVVEMGGDPDREKPDRAEPFF VGQNYSEHAREMGSNPDVDPPF
HTAGNFREHHEDLARVDWSHPVN MGLNYTDHDKEGGYDIPEYPTLL
HTSGNFREHEDESKNVDWSHPMH VGRNYAEHAKEMGFTGREPPFF
VGRNYEAHAREMGHDPDREPPF VGLNYHDHMVETQHMPTQHPTL
VLCVGLNYRKHAEECNFPTPQNPAI
 RPPS \(\square R D C L C F D D H M N C Q Q A\) AGGSRVLKDVWYRDPAF TDLVFPVHRUYCVGRNYAAHAREMGADPTREPPF R【FCVGRNYAAHAREMGRDPDREGGGKAEEKPFF NYSKHDEEGGGKAEEFPYV
\(V F C V G R N Y S E H A R E M G H D P D R E P P F\)
\(V E E A T R\)

\begin{tabular}{|c|c|}
\hline & 8 \\
\hline UniRef90 \({ }^{\text {M4BGD3 }}\) & \\
\hline UniRef90－UPI000344A98 & －TSLVAHEQPLVRPAVASDP SDSLGLDF \\
\hline UniRef90－UPIO0030EE5D5 & FFKPTSSVIGPEDEIVIPKG DDSVKF \\
\hline UniRef90－M9M010 & F LKPTTSYIANNGTVEIPKG【VA \\
\hline UniRefifo－A7HTC6 & FNKQHNC TGPYADIALP \\
\hline UniRef90－W5JD71 & FSKYATTVGPYDDVIRAG AHRISDQIDW \\
\hline UniRef90 UPIO0040234BE
UniRef90 \({ }^{\text {T1XAL1 }}\)－ & YFSNPAG VGPRDAVRRPAGAT CELLEDF \\
\hline UniRef90－T1XAL
UniRe90－A4A865 &  \\
\hline UniRef90－UPI0003F580 & FSKAPNCISGPYDDI \\
\hline UniRef90－X6NJ92 & FMKPRSSICHPLDPILVPKVCDKA EVDY \\
\hline M3 & FSKYANALTGEKDSIEIP\N S S EEVDF \\
\hline UniRef90－B3SB72 & TSSY＇QEGEA】RIPPG GTDDGHNVVRLF \\
\hline UniRef90 D2RIWO & RVDRTVDPET GTIDGHFNVVKELDY \\
\hline \[
\begin{aligned}
& \text { UniRef90-UPIO001FFDC63 } \\
& \text { UniRef90-X0RTM5 }
\end{aligned}
\] & FMKPPSTLIGANDNITYPK PVSPGST \\
\hline UniRef90－UPIOO047437EA & FFKPDSSVIGPGED\｜I \({ }^{\text {deEG }}\) \\
\hline & \\
\hline UniRef90＿Q46978 & KPRNTVIGCGEPVPFPQG DFSNKVLS \\
\hline UniRe & KQNSSVNDPFGDVHRPN A S W Wbi \\
\hline UniRef90－F5z5s & KHPSSIDPSGSTMKYP PQTNNYHY \\
\hline M3DL27 & \\
\hline & T S VACS \\
\hline iRef90＿S7XIF & VTALNTHKGDVV \\
\hline UniRef90＿C2KNIO &  \\
\hline UniRef90－C3YIX9 & （ DGATUGPPGCTDLHH \\
\hline UniRef90－UP10004758 & F \({ }^{\text {UKPTDTVVGPHDPVRVPRGCTATD }}\) \\
\hline UniRet90－UPIIOO0367E4CA & CVIGPGEAI EHNK D \({ }^{\text {a }}\)（QQLDW \\
\hline UniRef90＿LOEI & GPGD \\
\hline & FTRFASAQVGHDQPLILPK ASTAFDF \\
\hline UniRet90－M7NLB3 & TAIMADEEELVR PA PAHAGITES \\
\hline UniRee90－UPIo0047D4D4E & GP FDAAP俍PSSEKYDW \\
\hline UniRet90－H2ZHM7 & \\
\hline UniRef90 N8VH83 &  \\
\hline UniRef90－XJJ3R7 &  \\
\hline UniRef90－UP100037903 & \[
\begin{array}{ll}
A & A \\
D
\end{array}
\] \\
\hline UniRef90－UPI0004151DA9 & KYQESLIGPNDDLALP \\
\hline UniRef90 G7Q9D5 & ASTL GHDAPLLRPR VRSLDY \\
\hline UP10002D272 & KFPQSLGALLDPVEVP E EDHRVDY \\
\hline \begin{tabular}{l}
UniRef90 A0A024IBS \\
Uni ef90 K2syk4
\end{tabular} &  \\
\hline & FTKATNAANGPYSKVPM HEGVTDFVDY \\
\hline UniRet90－19C1S6 &  \\
\hline UniRet90 UPIOOO3B3793C & FFKAANTLGPFDGVD\PRRSTKTD \\
\hline UniRef90－J2PX41 &  \\
\hline UniRet90－W9G9L9 & F \\
\hline TON & H \\
\hline UniRet90＿UPIO0036B8C92 & FARFANALVADGDPV LVPAVSKDLDW \\
\hline UniRet90－L1P & FFKPNAAVGPDDPUVFP SVADGETGKMPYPPWGQEVEY \\
\hline UniRef90－C1MWH2 & FTKAPTSVVGHGGGTVYPTGV \\
\hline UniRef90－D2NSH5 & TVIGPGDPVTLP EYSEAVSA \\
\hline & TSSLLPNS \\
\hline 03 & DAVI PV｜RD \\
\hline & AbM \\
\hline UniRef90MOCUS5 & NALAAHGDTV KPEGATKAD KDRLD W \\
\hline  & \\
\hline UniRei90－UPI0003635754 & FARFADTVVGAGEPLIAP EVVESFDY \\
\hline UniRef90－UP10003B7268A & P P S SV \\
\hline UniRet90－Q2F600 & KFSST1 \\
\hline UniRef90 U1NOH6 & F LikPPNAVAAPEST \\
\hline UniRet90－UP10003A628B1 &  \\
\hline UniRef90－R8BE10 &  \\
\hline UniRet90－EOMN76 & NALT \({ }^{\text {a }}\) QDDVVPYPSHTEDLHH \\
\hline UniRef90－GOSUTO & SSUAGLGDE\｜VIPSLLAEGEKND \\
\hline UniRer90－\({ }^{\text {U8ENE }}\) & FQNTDATIGPDDPTVYPANLTMR \\
\hline UniRee90－UPIO00237935D & GKNSIMAAGQPMVRP ACSQKLDY \\
\hline UniRet90 M3FVF5 & FFQNVDA VGPEEPVI \\
\hline UniRee90－HOTH20 &  \\
\hline UniRei90 UPIOOO36D4699 & FFKPADAVVAPG ADGEFPYPTLSSNVF \\
\hline UniRef90－UP1000？ & RFADSQCPHERPMLL \\
\hline UniRef90－Q1 & ANS SLS GPADPIVLPNL \\
\hline UniRef90－B7X2Y5 &  \\
\hline UniRef90－10RG37 & F \\
\hline iRef90－UPIO003 & APGTI \\
\hline UniRef90 UPIOOO36B6B4E & （ QAGAGEVT \(\square\) PYPPKTANFHH \\
\hline UniRef90－J3IXR5 &  \\
\hline UniRef90－R6J3D9 & Y \\
\hline Ref90＿UP1000472EB40 & FFCKPDNAVVP VA Y DRPL ELIRYPAETENYHY \\
\hline
\end{tabular}




UniRef90-M4BGD3
UniRef90-UPI000344A985 UniRef90-UPI00030EE5D5 UniRef90 M9M010 UniRef90-A7HTC6 UniRef90-W5JD71 UniRef90 UPIO0040234BE UniRef90_T1XAL1 UniRef90-A4A865 UniRef90-UPI0003F58E02 UniRef90 X6NJ92 UniRef90_M3F9V4
UniRef90-B3SB72 UniRef90-D2RIW0 UniRef90-UPI0001FFDC63 UniRef90-XORTM5 UniRef90_UPI00047437EA UniRef90 K2NTJ7 UniRef90-Q46978 UniRef90_U1SHG7 UniRef90-J5K814 UniRef90_F5Z5S9 UniRef90-M3DL27 UniRef90-D5GJP8 UniRef90- S7XIF2 UniRef90_C2KNIO UniRef90-Q0FS17 UniRef90-UPI00047589F3 UniRef90_UPI000367E4CA UniRef90-LOEFW3 UniRef90_J3IYN7 UniRef90-M7NLB3 UniRef90-K6ZE94 UniRef90_UPIO0047D4D4E UniRef90 H2ZHM7 UniRef90-N8VH83 UniRef90-X8J3R7 UniRef90 UPIO0037903BF UniRef90-E4ZVMO UniRef90-UPI0004151DA9 UniRef90 G7Q9D5 UniRef90_UPI0002D2722E UniRef90-A0A024IBS9 UniRef90_K2SVK4 UniRef90 V7I9D5 UniRef90-I9C1S6 UniRef90-UPI0003B3793C UniRef90 H5WUS6 UniRef90- J2PX41 UniRef90-W9G9L9 UniRef90-TON6X8 UniRef90 UPI00036B8C92 UniRef90-L1PHY4 UniRef90_V9RTJ3 UniRef90_C1MWH2 UniRef90-D2NSH5 UniRef90_S7ZLH2 UniRef90 UPI00037E7904 UniRef90_W0JVJ1 UniRef90-MOCUS5 UniRef90-UPI00046E9D1E UniRef90 J4QW13 UniRef90-UPI0003635754 UniRef90_UPI0003B7268A UniRef90_Q2F600 UniRef90 U1NQH6 UniRef90-UPI0003A628B1 UniRef90-X7Z5Z8
UniRef90 R8BB10 UniRef90 EOMN76 UniRef90-GOSUTO UniRef90_B8ENE4 UniRef90 UPI00035CDE43 UniRef90-UPI000237935D UniRef90_M3FVF5 UniRef90-HOTH20 UniRef90 UPI00037561C0 UniRef90_UPI00036D4699 UniRef90_UPI000366FC6C UniRef90 Q11D77 UniRef90-ROIMT1
UniRef90-B7X2Y5 UniRef90_I0RG37 UniRef90 UPI0003A4AFEF UniRef90_UPI00036B6B4E UniRef90_A6CED1 UniRef90_J3IXR5 UniRef90-R6J3D9 UniRef90_UPI000472EB40
\(\qquad\) \(\rightarrow P\)

TGF \(\quad\) DKSRVRDPSQ


 \(\square N D V K V Q S S\) NDEIMQNSN
 F D F \(\underset{P}{\mathrm{~K}} \stackrel{\mathrm{~L}}{\mathrm{P}} \mathrm{A}\)

YKN
VKATKNGQLMQDSS



N GT
1ISPIVPKAECGVIDTGKISLSVNNGDIKQDSE



NGEVRQKGN

MRASVNGVPKQDGA


NGETQQRSD
NARVLQNGT
\(N G K V V Q H S N\)

RDEFSGGL

\(P G A K G \square R L T T S V N G E I V Q E\)

NGEVVQSAN
A A \(\square\) TPVAQAGDDAAAALGLAGNDGVRSFVNGEPRQNGN

LLDDDELKRLDLRLLRLWVRVNGRQDGQVVQNAT
EENEPFHATLOMV
A P HKDDT Q M GKLRQDG
QHAN
NGEERSGS
\(N G Q R K Q A S D\)
ADPHKLDVTTTLNGKVE
\[
\square
\]

1 TVGGDFDPDNTEISVRIVGK
NGQRKQASD
NGVRRQRGK
DGDVVQEGN
ATERQADS
NGETKQSSN
NGEVKQEST


\(V V A A E G L D P A D L R L V T\) V \(V\) R
P
ADEVGDVTELELVTEINGEERQRVHI


VDGELKQDGD
GDPHD \(\frac{D}{D} \frac{1}{M E T L R T V}\)
\(H \square N G Q \square A Q K A\)
\(S G A \square E C K V N G\)
NGDVRQSAD
\(P D A Q N L D M E R R V^{G}\)
LT D DS KQTLDTRL

PDPQALAA

GLK I E S RV
GDEILQSSN
NGVVRQKS N
N GVVERKAP
IHPVAA \(\square \mathrm{GH} \mathrm{H}\) D RGAI WLSV
NGTDRQRSN
\(N G V E K Q R S D\)
CRDNGVTVQAAN


\section*{GA \(\square\) WLEL}

MGPCVTPADDIPDPQTLKMKLSVNGNVE
ASLHPVTQTGHPSKGRDWLEV




UniRef90_M4BGD3
UniRef90_UPIOO0344A985
UniRef90_UPI00030EE5D5
UniRef90_M9M010
UniRef90-A7HTC6
UniRef90 W5JD71
UniRef90_W5JD71 040234BE UniRef90-T1XAL1
UniRef90_A4A865 UniRef90 UPI0003F58E02 UniRef90 X6NJ92 UniRef90-M3F9V4 UniRef90-B3SB72 UniRef90-UPI0001FFDC63 UniRef90-X0RTM5 UniRef90_UPI00047437EA UniRef90 K2NTJ7 UniRef90-Q46978 UniRef90_U1SHG7 UniRef90-J5K814 UniRef90-F5Z5S9 UniRef90-M3DL27 UniRef90-D5GJP8 UniRef90 S7XIF2 UniRef90-C2KNIO UniRef90-Q0FS17 UniRef90-C3YIX9
UniRef90-UPIO0047589F3 UniRef90_UPI000367E4CA UniRef90-LOEFW3 UniRef90 J3IYN7 UniRef90-M7NLB3 UniRef90_K6ZE94 UniRef90-UPI00047D4D4E UniRef90 H2ZHM7 UniRef90-N8VH83 UniRef90-X8J3R7 UniRef90 UPlO0037903BF UniRef90-E4ZVM0 UniRef90-UPI0004151DA9 UniRef90 G7Q9D5 UniRef90_UPI0002D2722E UniRef90-A0A024IBS9 UniRef90_K2SVK4 UniRef90- V7I9D5 UniRef90-19C1S6 UniRef90_UPI0003B3793C UniRef90 H5WUS6 UniRef90-J2PX41 UniRef90-W9G9L9 UniRef90-TON6X8 UniRef90-UPI00036B8C92 UniRef90-L1PHY4 UniRef90_V9RTJ3 UniRef90 C1MWH2 UniRef90-D2NSH5 UniRef90-S7ZLH2 UniRef90 UPI00037E7904 UniRef90-W0JVJ1 UniRef90-MOCUS5 UniRef90_UPI00046E9D1E UniRef90 J4QW13 UniRef90_UPI0003635754 UniRef90_UPI0003B7268A UniRef90_Q2F600 UniRef90 U1NQH6 UniRef90_UPI0003A628B1 UniRef90-X7Z5Z8 UniRef90 R8BB10 UniRef90-E0MN76 UniRef90-GOSUTO UniRef90-B8ENE4 UniRef90 UPI00035CDE43 UniRef90-UPI000237935D UniRef90-M3FVF5 UniRef90-HOTH20 UniRef90 UPI00037561C0 UniRef90_UPI00036D4699 UniRef90_UPI000366FC6C UniRef90 Q11D77 UniRef90-ROIMT1
UniRef90-B7X2Y5
UniRef90_IORG37
UniRef90 UPI0003A4AFEF UniRef90_UPI00036B6B4E UniRef90_A6CED1
UniRef90_J3IXR5 UniRef90-R6J3D9

\(R G C L L E \quad L N T E D G A T P R W L Q P G D L V T \square S A\)

PGDEVDATVAGLDPLRHRVSAAR
KPPEFLKAGDLMRDSVE
KPP LGLKHGDTVKVGVEHIG
N
ANQN \(\square \mathrm{T}\) CG \(\square \mathrm{N}\)
HVDTPDL PKVWLKDGDNLS IK LEK K G

> PQFLKSGDVVECS DE

A AFTGWLQPGDVVSLRGE
AGS I INCHTDETGS LTKN
RGDVV EMSI E GLLGKLITNRV
PGDRVRVLAEGFPPLENPVVDER
\(P G D E A I V H V Q G \square G D L R N\)
\(P G D K V K V E I\) E GLLGYI ENNUIQEP
SGDKIEGAIEKLGNIEL
TPQRF \(\square\) S DGDVVETE \(\square A\)
\(P G D V V Q V S V S N L G T L T N K \prod G T P\)
\(P G D V V E V E V E G L G K L T N R I V A G P T P \square R\)
D GQTMTCEVEGI GTLTNPV
PGDSCVVTI E GVGEITTVI GSR
PNDQLEAEIE GVVAMKFTVGDK
P G
TPY \(\backslash R P G D V M E L E V D L\)
D GDVVT CAVDGПGELTNPVAAPQEWLWPGDVVVATVEK \(\square G\)
PGDVVEVEVEGI GTLKNTVNAE
A GDTVKVSI E GI GTLSN
\(P G D V C E V E V E G L G K L T N R \| V T G P T P V S D\)
PGDVVELEI DGLG
PGDVIHCGI D SVVSMKFPVEEEK
KGDVMRADITGLTGDTVNV
EPKVWDNHGDEDRTYVGG
D G DVVEVETEKTGTLSNPVQAER RGDVCRVEIDGVGAVE
TGDVMRAGL

\(P G D V C E \square E \square E G Y G V L R N P V A D P\)
\(K G G A B D G R\) R W L RAGDVVEVE \(\square T\)
\(P G D V C E \nabla E \square E G \square G L L S N P D\)
\(R \quad P P V F \square K P G D E \square A V S \square T\)
\(K G D\|V R V E V D G\| G Y \prod E N\)
\(R G D T L T A T V T G L S P L I V R V\)
A GDVVEVEI EGLGRQRTVMGS
A GDVVETEI DGIGCLVNTV
PGDEVSVEUSWVGSLNNRVEQEQ
PPRPVEIMAAFLPPFFKRQAQNPKY \(\square K H G D \square V E A S \square G T\)
\(P G D T V E I T V S G L G T \square K H S V V E\)

HGERVEVEVAGDGTLTN

D GNEVEVEVEGIGGSL
A GDVMHASI
A GDLMVTAVEGLGELKVRV
PGDTVEAEVEGLGTLEN
DGD
DGD VVELELEGLG
RGDRVEVEI TGVATLSNPD
\(P G D T V E V E L P G L G L L V N P V V A E\)
\(P G D V V E V E L V G H G S V T S T V V E A P E P L K P\) QPPEYLQPGDVLTSE \(\square E K \square G\)
DGDHVAVE\DG\GTLE
EGDKMKVSI TGLGGLENTIG
D GDTVSITVEGUGTLTNPV
\(K P Q D W \square K D G D V V Q V S L E\)


PGDVVEAEIEGLGGLRNRV

GDPDMYLKPGDVVEAEVERLGG
GGDVVETETSG\|G\|LRNPV
\(R G D V L E G G I D G L G S L R V A\)
\(K G D L M K G G V D G L G E F S V R V\)
D GDVVEVEI ERVGLLRNGVAS
\(P G D A V C I T I A G V G E M R L N G P V H P V W I K D\)
GLIFME PK GFLKDGDEVE \(\square Y\) YVE G \(\square \mathrm{G}\)
A G DVVEVE \(\square E A \square G L L R N P V I A Q\)
H
KGDRMRGGDDGLGEFTV

S GDRLR GGIE GVA QF E
A

UniRef90 T0R2H0
UniRef90 \({ }^{-}\)M4BGD3
UniRef90_UPI000344A985
UniRef90 UPI00030EE5D5
UniRef90 M9M010
UniRef90-A7HTC6
UniRef90_W5JD71
UniRef90 UPI00040234BE
UniRef90-T1XAL1
UniRef90_A4A865
UniRef90-UPI0003F58E02
UniRef90 X6NJ92
UniRef90_M3F9V4
UniRef90-B3SB72
UniRef90 D2RIW0
UniRef90-UPI0001FFDC63
UniRef90_X0RTM5
UniRef90-UPI00047437EA
UniRef90 K2NTJ7
UniRef90 \({ }^{-}\)Q46978
UniRef90_U1SHG7
UniRef90 J5K8I4
UniRef90 F5Z5Ss
UniRef90-M3DL27
UniRef90-D5GJP8
UniRef90 S7XIF2
UniRef90- C 2 KNI 0
UniRef90_Q0FS17
UniRef90 C3YIXO
UniRef90 UPI00047589F3
UniRef90_UPI000367E4CA
UniRef90_LOEFW3
UniRef90 J3IYN7
UniRef90 M \({ }^{-}\)NLB3
UniRef90_K6ZE94
UniRef90 UPI00047D4D4E
UniRef90 H2ZHM7
UniRef90-N8VH83
UniRef90- X8J3R7
UniRef90_K1XTY9
UniRef90-UPI00037903BF
UniRef90_E4ZVM0
UniRef90-UPI0004151DA9
UniRef90 G7Q9D5
UniRef90_UPI0002D2722E
UniRef90_A0A024IBS9
UniRef90 K2SVK4
UniRef90 V7I9D5
UniRef90_-19C1S6
UniRef90-UPI0003B37930
UniRef90 H5WUS6
UniRef90- J2PX41
UniRef90_W9G9L9
UniRef90_T0N6X8
UniRef90 UPI00036B8C92
UniRef90_L1PHY4
UniRef90 V9RTJ3
UniRef90 C1MWH2
UniRef90_D2NSH5
UniRef90_S7ZLH2
UniRef90 UPI00037E7904
UniRef90 W0JVJ1
UniRef90-M0CUS5
UniRef90_UPI00046E9D1E
UniRef90 J4QW13
UniRef90-UPI0003635754
UniRef90_UPI0003B7268A
UniRef90 Q2F600
UniRef90 U1NQH6
UniRef90_UPI0003A628B1
UniRef90-X7Z5Z8
UniRef90 R8BB10
UniRef90_E0MN76
UniRef90_GOSUT0
UniRef90_B8ENE4
UniRef90 UPI00035CDE43
UniRef90_UPI000237935D
UniRef90-M3FVF5
UniRef90 H0TH2
UniRef90-UPI00037561CC
UniRef90_UPI00036D4699
UniRef90-UPI000366FC6C
UniRef90 Q11D77
UniRef90_ROIMT1
UniRef90_B7X2Y5
UniRef90 IORG37
UniRef90 UPI0003A4AFEF
UniRef90_UPI00036B6B4E
UniRef90_A6CED1
UniRef90 J3IXR5
UniRef90_R6J3D9
UniRef90_UPI000472EB40
```

L
PGLGELTNP|V
G\GGEQRCRV
E
G\GT\LRNTV
GLGETRQTVRPA
G\GT L R NTV
\squareG R Q R QVLA A A
G\GT L VN K V V
GLGEELKNRVV
GLGRQRNELV
GLGT DRNKVLPA

```
D DGA \(\square \mathrm{D} \square \mathrm{GRQRT} \mathrm{V}\)

A D V R
\(\mathrm{G} \square \mathrm{G}\) S C T N K V

\begin{tabular}{|c|c|}
\hline UniRef90 D5U9T0 & \(60 \quad \mathrm{GRFDSTDECLD}^{80}\) \\
\hline UniRef90－A6GPL3 &  \\
\hline UniRef90－A1VJVg & FDRVAESQTAHEQPLLLP A A S S \\
\hline UniRef90－UP10003B49C86 & FAKYGQTLTGPFSDITVPT EADHRMDY \\
\hline UniRe990－A0A022FMK7 & FHRVAASQVGHLGPLVRPV VSEKFDY \\
\hline UniRef90－008Q & FRKASSALTSSRGDIVKPSRV PA \\
\hline UniRef90－UP10003A4F24 & FMKPADAVV PADAAFDAAGDVPYPETSDLHH \\
\hline UniRef90－UPI000304DODC & FMKPADAVV PAEGVIAYPPLTADLHH \\
\hline UniRef90－UPI00046A2BD2 & A V H \\
\hline & \\
\hline & \\
\hline UniRef90 A0A059E9N6 & FCKFPTAANDPYADVQ】PR P AGHQVDY \\
\hline UniRet90＿UPIooo42065EC & FFKPADAVLQPGESF DDETYPPGSQNVHH \\
\hline UniRet90 & FLKLSETVVGPDVDVILPKSST \\
\hline UniRef90－UPIO00374A7CD & YFTNPHTLLGP \\
\hline iRef90－V4RCB4 & \\
\hline iRef90＿C8PX & \\
\hline \begin{tabular}{l}
UniRef90 A8LSS2 \\
UniR 90
\end{tabular} &  \\
\hline UniRee90－J7G4C & FMKSCPA TGANDDVILPRGSEKTD W \\
\hline UniRef90－19C8D6 & FARYANSQTGHG ASM■APPESDSFDY \\
\hline ef90 B2JLP2 & ATSCUVPASHVVKPN AVIRFLDY \\
\hline UniRef90－UPIOOO312F6DB & KPSSTLVGPNQPILLPV TEEQGMPFPVESKEVTA \\
\hline L9PFC2 &  \\
\hline UniRef90－H5T & ADALTGPYDDVVVPD YAASQLDW \\
\hline －8Ta & FLKPSSSLALIGGTVERPAG CELLGY \\
\hline P100047D0 & \\
\hline 2029 &  \\
\hline UniRef90－Q5P04 & FQKSNSSLVGAADVIELPALL LDNGDFPYPSMGREIHH \\
\hline UniRef90－E6PU83 & MKTPDALLGSG G／VFPYPPASSDVHH \\
\hline TOL & YNGNNDTVIGPEEEVEY GQYLLAQEGQDKKFQTEKLDY \\
\hline UniRef90－L8FGc & FTKFVSSUTGPDETVQLPAGS \\
\hline UniRe90－AOAO52． &  \\
\hline UniRef90－16Y6L6 & FFKSSSSISGPFDDIVKPV AHVKFLDY \\
\hline UniRef90－J6UD60 & FARSASSVVGAGQT \\
\hline UniRet90＿R7ZMR0 & P PDALLKNGAPFYHPEFSEDIHH \\
\hline UniRe990 Opioou476055D & FMKPADAVLPTGGTVERPAGRAGEVGQMHYPGLTRNLH \\
\hline UniRef90－E3 &  \\
\hline UniRef90－A4SYL9 &  \\
\hline 3Y & \\
\hline GO & K A A A \\
\hline & FQKNPDNIV DKDFPYPPETSDVHF \\
\hline  & FTKFPSCITGPVTTLTLP \\
\hline UniRef90－UP100046 & RGKNS MASGAPLVRPN CSTQLDY \\
\hline UniRef90－A0A022MEE7 & SLSGTGDPLVRPAG CELMAF \\
\hline － & \\
\hline A2OHB8 & \\
\hline J2XAJ1 & GIDDEFQWP SFSRAMDF \\
\hline UniRef90－R7BCA7
UniRef90 W1SLG2 &  \\
\hline UniRef90－G8C & FSKPADALVPVADEKRP GSAATVAYPPATN \\
\hline UniRef90－MODOJ4 & FMKPATALVGPGGPTRLPPT SQSERVTA \\
\hline iRef90－UP & DALTGPFDDVL \\
\hline UPil & FLKSPNSFSHHLQAVIRP PHDVGRVVY \\
\hline & F \\
\hline UniRe990 Oplooos29A409 & F KPETALCDMRQPALPEGL \\
\hline Ref90－AOY & CMS STRYPPDTESYHH \\
\hline UniRef90－E9Z6M4 &  \\
\hline UniRet90－K9DGY4 & DSFVGPCDPI AALSEDWGIDL \\
\hline iRef90－S2JX41 & \\
\hline A71 & KNPDTLV PNGATUAYPKMSQDVHH \\
\hline UniRef90－F4GM & （ AGPCDPVLPPGY QQVGDF SREVDY \\
\hline UniRef90－Tol & Q QQSLSERFDF \\
\hline UniRef90－K2IVE6 & Y \\
\hline Ref90－A6SUY5 & ， \\
\hline 俍et90＿E8XX25 & \\
\hline A9DZ70 & KPADA \\
\hline UniRef90－C7DBQ9 &  \\
\hline UniRei90 B5SFK &  \\
\hline UniRef90－V5X4Z2 & FFKSSASITGPFGEVVRP AHVALLD \\
\hline UniRef90 J2NN45 &  \\
\hline UniRef90－UPIO00287EC & MKPADAVVGHMALCASGVAYPPLTEDLEHH \\
\hline UniRef90－ws & LKPATSLLNDPPSPVPLPKDSQDTDSAD \\
\hline UniRef90＿UP100045E9AD4 & FMKQASTVVGPGAPILLP \\
\hline UniRef90－M1 YTQ9 &  \\
\hline UniRef90－B3QZ666 & FSKPASSLIT SGEP】SUSQVNGQPLG \\
\hline iRef90－FONNT9 & \\
\hline UP1000255A660 & \\
\hline A4Q163 & \\
\hline
\end{tabular}


\begin{tabular}{|c|c|}
\hline & \\
\hline UniRef90_D5U9T0 &  \\
\hline UniRet90-A1VJV9 & TVES \\
\hline UniRef90-UPIOOO3B49C86 & D HDAQ \\
\hline UniRef90-A0A022FMK7 & AGDTGANTMV TRLNGVEVQS \\
\hline UniRef90-Q080H3 & NAKLMNLRLVLSVEE VRQD \\
\hline UniRef90-UP10003A4F2 & HPVGQVGYPAKGRIWLEV NGELRQQGD \\
\hline UniRef90-UPIO00464419C & TPSDGl GHPASGRVWLSV NGAARQEGD \\
\hline UniRef90-UP1000304DDDC
UniRef90- UPI00046A2BD2 &  \\
\hline UniRee90-UP100046A2BD2
UniRei90-C7MF47 & SGFIPPLAELG ADPQNLDLKLEV FSAVNGEPRQQRGN \\
\hline UniRef90-UPI00040C51 & PVSEFVP\SDYEDTQNLNFSLDV \\
\hline UniRef90-A0A059E9N6 & LANPSLDPHD\T/ RAWVNGQLRQ \\
\hline UniRef90-UP100042065 & GHPNQGRIWLDV \\
\hline UniRef90-X10 & PDDLKLETY Livevras \\
\hline UniRef90-E8V800 & GDAHDLD TCDV SGE \\
\hline \[
\begin{aligned}
& \text { UniRef90_UPIO00374A7CD } \\
& \text { UniRef90_V4RCB4 }
\end{aligned}
\] & DADGF \({ }_{\text {SGA }}\) \\
\hline UniRef90-C8PXY9 & AR\QQANISLAV NGEPKQQGN \\
\hline UniRef90-A8LSS2 & RLIN NGETRQEGD \\
\hline UniRef90-UPIO0036 & DLVLTVNGALLODAS \\
\hline UniRef90-J7G4Q3
UniRef90 \(19 C 8 D 6\) & SLPMY DVR \\
\hline UniRef90-B2JLP2 &  \\
\hline UniRef90 UPIO00312F6DB & DEFSSLNK KVETVLNGE NGKSN \\
\hline UniRef90 UPIO00423B8 & NGHPTSGK】ELTV \\
\hline & \\
\hline UniRef90 H5TL82 & Did \({ }^{\text {d }}\) \\
\hline iRef90-UPIO0047D & SEDQUADI K Letrvngevras \\
\hline UniRef90-UPIIOOO382E2C9 & VCGHPQAGAI TLSV NGTLRQSGD \\
\hline UniRef90 UPILO0047A7E5D
UniRef90 \({ }^{\text {Q5P041 }}\) - & VTVDKVGHLAKGTIWLK \\
\hline UniRe990-E6PU833 &  \\
\hline UniRef90-TOLJ06 & (eas \\
\hline & PDPDDLELGAETNGE \\
\hline UniRef90 AOA052JIS8
UniRef90 PFFO2 & T \\
\hline UniRef90-I6Y6LE & ELRLQLKVNGQLRQN \\
\hline UniRef90-J6UD60 & VTRv \\
\hline UniRet90_R7ZMRO & QANINFHLDIN NG \\
\hline UniRef90-UPIOOO4760 & PGVLDAA \\
\hline UniRef90 N1U &  \\
\hline UniRef90-A4SYL9 & PNPYDLWMTCSVNGEER \\
\hline UniRef90-E3YSK7 & VNGDVRQSDS \\
\hline UniRef90-GOHC08 & DVDPVAEGAVLRTWVNGELRQEH TREKS \\
\hline niRef90-A0A051T & DEFGDPDDLELECVLNGE NGERVQKAR \\
\hline & \AS \(\square \mathrm{GHPERGA} \mathrm{\square SLK}\) \\
\hline UPIOO &  \\
\hline UniRef90-G4HTC & R \\
\hline UniRef90 A20HB8 & \\
\hline UniRef90-J2XAJI & CLVTADELGDPYDLNMVARVNGEEWG \\
\hline UniRef90 R7BCA7 f9 \({ }^{-W 1 S L G}\) & EELPPKLALRSKVWVNDELRQSAELRQNSN \\
\hline G8 & GHPASGA WLEV \\
\hline UniRef90-MODDOJ4 & LAVPEEPPDLD \\
\hline  & MQS \\
\hline UniRef90 - 5 ARP9 & Q \\
\hline UniRet90-UPIIOOO329A409 & PQNTPLSLK \\
\hline R8 & FSSVGDTDQQNLNITL LRNGTVQQSGN \\
\hline UniRef90 Sgunj7 & APEVFVDLRDER PONTSTGAQQGRDYLKVNDHI RQDGN \\
\hline UniRef90-K9DGY4 & QGSKLHLPLLVTLNGAAFGRPN \\
\hline UniRet90_S2JX41 & GDRPALDLQTRV NGEVRQSTN \\
\hline UniRef90 A77h &  \\
\hline \[
\begin{aligned}
& \text { UniRef90-F4GMRR } \\
& \text { UniRef90- K910C9 }
\end{aligned}
\] & PPQTLK WSKVQVN NGEL \\
\hline UniRef90-ToIPH7 & VNALKLTTRL \\
\hline UniRet90-K21VE6 & AEIEDHTKMRLQTRLNGETVQDT VRONY \\
\hline 25 & D \\
\hline UniRef90-A9DZ70 & SVETGRIWLAV NGELKQEAD \\
\hline iRef90-C7DBQ9 & AVAPVSEVGHLEGARI RCDV \({ }^{\text {deg }}\) \\
\hline UniRef90 N6X9L2 &  \\
\hline UniRef90-V5X4Z2 & dlrirls \\
\hline UniRef90-J2NN45 & ALLICRLNGEVMQ \\
\hline (e) & \\
\hline \begin{tabular}{l}
UniRef90 UPIO00287EC95 \\
UniRef90 W9.JT82
\end{tabular} & NDVERQRGD \\
\hline UP100045E9A & EGV \\
\hline O- & EGNLMSHPFHIETYVNGEKRQD \\
\hline  & V俍AAGTQ PNHTETETK DVQLEAKLNDQVVQNSS \\
\hline UniRef90-FONNT9 & CDTKDE \\
\hline 255 & G \\
\hline UniRef90 R1 & FGGEDAT ADPARLRLKTVVDGEMRQDTEVVOTP \\
\hline UniRef90 & KIVQS \\
\hline
\end{tabular}


\begin{tabular}{|c|c|}
\hline UniRef90_D5U9T0 & E 290 \\
\hline UniRef90-A6GPL3 & \\
\hline UniRef90-A1VJV9 & \\
\hline UniRef90_UPIO003B49C86 & GLGA Q R NVI \\
\hline UniRef90_A0A022FMK7 & \(D G A \ H \square G E Q E S R \| V\) \\
\hline UniRef90_UPI0003A4F27F & \\
\hline UniRef90-UPI000464419C & \\
\hline UniRef90-UPI000304D0DC & \\
\hline UniRef90_UPI00046A2BD2 & \\
\hline UniRef90-C7MF47 & LG S Q R T T F VP A \\
\hline UniRef90_UPIO0040C5107 & \\
\hline UniRef90-A0A059E9N6 & \(\mathrm{G} \square \mathrm{GH} \square \mathrm{E}\) N A F Q P \\
\hline UniRef90_UPIO0042065EC
UniRef90- X1C2G3 & \\
\hline UniRef90-E8V800 & \\
\hline UniRef90-UPI000374A7CD & R G \(\square \mathrm{GS} \mathrm{LS} \mathrm{N} \mathrm{R} \mathrm{V} \mathrm{V}\) \\
\hline UniRef90-V4RCB4 & \(\mathrm{R} \square \mathrm{S}\) S V \\
\hline UniRef90_C8PXY9 & \\
\hline UniRef90-A8LSS2
UniRef90-UPI0003617015 & \\
\hline UniRef90-J7G4Q3 & \\
\hline UniRef90_19C8D6 & \\
\hline UniRef90-B2JLP2 & D G S \(\square\) N \(\square\) G T Q R N V V V \({ }^{\text {a }}\) \\
\hline UniRef90_UPIO00312F6DB & \\
\hline UniRef90_L9PFC2 &  \\
\hline UniRef90-H5TL82 & \\
\hline UniRef90-L8TQM0 & \\
\hline UniRef90-UPI00047D0ED2 & \\
\hline UniRef90_UPI000382E2C9 & \\
\hline UniRef90-UPI00047A7E5D & \\
\hline UniRef90-Q5P041 & \\
\hline UniRef90-E6PU83 & \\
\hline UniRef90-T0LJ06 & G \GVLRNK V \\
\hline UniRef90-L8FGC2 & GV GEFTQRFVTA \\
\hline UniRef90-A0A052JIS8 & \(R \square G \| \quad L R N T V R A\) \\
\hline UniRef90-L2FF02 & \\
\hline UniRef90_16Y6L6 & D D G S \(\downarrow\) C L T Q R T TV \\
\hline UniRef90-J6UD60 & \\
\hline UniRef90-R7ZMR0 & \\
\hline UniRef90_UPI000476055D & \\
\hline UniRef90-N1UY15 & \\
\hline UniRef90_E3HJF6 & \\
\hline UniRef90_A4SYL9 & \\
\hline UniRef90-E3YSK7 & TG T LT N Q V \\
\hline UniRef90-G0HC08 & GLGSVKATV \\
\hline UniRef90-A4G3F2 & \\
\hline UniRef90-A0A051TWJ4 & \(\mathrm{G} \square \mathrm{G}\) A \(\square \mathrm{R}\) Q T C V A A \\
\hline UniRef90-A0A011PLH6 & \\
\hline UniRef90-UPI00046A1246 & \\
\hline UniRef90-A0A022MEE7 & \\
\hline UniRef90-G4HTG0 &  \\
\hline UniRef90-A2QHB8 & GGIGTLVNKV \\
\hline UniRef90_J2XAJ1 & \\
\hline UniRef90-R7BCA7 & \(\mathrm{G} \| \mathrm{GT}\) L V NTV \\
\hline UniRef90-W1SLG2 & DGV \(\square \mathrm{DLGGEQMNKIV}\) \\
\hline UniRef90-G8QNH8 & \\
\hline UniRef90-M0D0J4 & \\
\hline UniRef90-UPI00035C6106 & \\
\hline UniRef90-UPI00047513D4 & \\
\hline UniRef90-Q5ARP9 & \\
\hline UniRef90_UPI000329A409 & \\
\hline UniRef90-A0Y9R8 & \\
\hline UniRef90-S9UNJ7 & \\
\hline UniRef90-E9Z6M4 & \\
\hline UniRef90-K9DGY4 & DGAS \(\square\) FGA】DQEVM \\
\hline UniRef90-S2JX41 & \\
\hline UniRef90 A7IKE8
UniRef90 F4GMR3 & \\
\hline UniRef90-F4GMR3 & L G T Q R \(\square\) T V V \\
\hline UniRef90-K910C9 & \\
\hline UniRef90-TOIPH7 & \\
\hline UniRef90-K2IVE6 & \\
\hline UniRef90-A6SUY5 & \\
\hline UniRef90-E8XX25 & \\
\hline UniRef90-A9DZ70 & \\
\hline UniRef90-C7DBQ9 & \\
\hline UniRef90-N6X9L2 & \\
\hline UniRef90-B5SFK3 & \\
\hline UniRef90_V5X4Z2 & D D GA I D L G A R L T V \\
\hline UniRef90-J2NN45 & \(\vee G L G A Q R Q\) \\
\hline UniRef90-UPI000413734D & GLLGRDENS \(\square\) \\
\hline UniRef90-UPIO00287EC95 & \\
\hline UniRef90- UPI00045E9AD4 & \(\mathrm{GLGGTLVNP} \mathrm{\ V}\) \\
\hline UniRef90-M1YTQ9 & \\
\hline UniRef90-R9P163 & S H G VGG T L I N Q \(\square\) \\
\hline UniRef90-B3QZ66 & \\
\hline UniRef90-FONNT9 & \\
\hline UniRef90-UPI000255A660 & \\
\hline UniRef90-R1G706 & \\
\hline UniRef90- A4Q163 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90_K9DUF6}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90_A3UJ30}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90 UPIO003479CE5}} \\
\hline & G0S640 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-A7NGI3}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRe} \\
\hline \multicolumn{2}{|l|}{\multirow[b]{2}{*}{UniRef90-AOAO16}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-W81755}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-UiPSJo} \\
\hline UniRet90- & UP1000 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UP100029AF938}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-M1XSG5} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-R71WY7}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-EOSIH3} \\
\hline UniRef90 & UP100 \\
\hline \multicolumn{2}{|l|}{UniRef90-C6AV} \\
\hline \multicolumn{2}{|l|}{\multirow[b]{2}{*}{UniRef90- F4NGY9}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-B3PT44} \\
\hline \multicolumn{2}{|l|}{niRef90-S3V420} \\
\hline UniRef90 & W6W2 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIO0011CBB02B
UniRef9- W9xBx2}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-H0QTB2} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIO0035EAL}} \\
\hline & UniRef90 UPIOOO3035FO \\
\hline \multicolumn{2}{|l|}{UniRef90-UP100037} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90 UPIO00262A0D6}} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-17IL}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-R1HWQ0} \\
\hline \multicolumn{2}{|l|}{UniReef9-UPI00040452} \\
\hline \multicolumn{2}{|l|}{UniRef90-Q7MLD0} \\
\hline \multicolumn{2}{|l|}{UniRef90-G4CR8} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-AOAO}} \\
\hline & UniRef90-M2N \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-J8UX73}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-BOT241}} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRee90-O12CS4}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRef90-AOAO59D
UniRef90_UP10036} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRef90-U7FZU0} \\
\hline \multicolumn{2}{|l|}{UniRef90-V5PXK4} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-J1QG21}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-G7QP09} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-A0A023W}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-T2GSN2}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-A0A058Y} \\
\hline \multicolumn{2}{|l|}{UniRef90-AOAO
UniRef90 \({ }^{\text {D7 }}\) (} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRei90-UPIO0037BB990} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-B7QTH1} \\
\hline \multicolumn{2}{|l|}{UniRef90-X1CAS5} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRer90-UPIOOO379EA60
UniRet90-F8GYE1}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIO0037AC9AE}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRet90-UP100028}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-M3k576} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{niRef90-UP1000376}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{niRef90-V8FQK9}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-H5TLV7 UniRef90 R0EB99} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRef90-F6CVK8
UniRet90-T1C5M4} \\
\hline \multicolumn{2}{|l|}{UniRe90-R6WXD7} \\
\hline \multicolumn{2}{|l|}{niRef90-U1RL} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{niRef90-HORAZ5
niRef90-A5VHD3} \\
\hline \multicolumn{2}{|l|}{UniRef90 A5VHD3} \\
\hline Ref90 & UP1000468AA26 \\
\hline
\end{tabular}

1
10
20
NFHADGQK \({ }^{30}\) 30

40 RCTGLNYLAHIDRETGLAPPGEPGY
 - -10 20



\(\qquad\)









 \begin{tabular}{l|l}
\(T\) & \(L\) \\
\(I\) & \(F\) \\
\(A S\)
\end{tabular}


L


D F P V
\[
\begin{array}{c|c}
V & G S \\
V & G R \\
V & G \\
V & L \\
I & G R
\end{array}
\]
\[
\begin{array}{l|c|ccccccccc:c}
V & R & N & T & E & T & L & D & Q & M & D & Y \\
\hline & D & R & P & S \\
V & G & L & N & A & T & H & A & A & E & V & V \\
R & D & A & G & D \\
I & G & R & N & Y & V & D & H & A & T & E & L \\
\hline
\end{array}
\]
\(\qquad\)
D G S A Y VN HVEE LVV|










\section*{\footnotetext{

}}
















\(\qquad\)

V G M N Y M GANYAAHIKE \(\square\)
FEQTAD
LM
\[
\begin{array}{l|l}
\hline \mathrm{M} \\
\mathrm{~T} & \mathrm{~L} \\
\hline
\end{array}
\] \begin{tabular}{l} 
Y \\
F \\
\hline
\end{tabular}

\[
F F
\]

\footnotetext{


}

\[
\begin{array}{ll}
L \\
L & L \\
M
\end{array}
\]
FCVGKNYHEHAREFAQSDSSAAAGA PAAAP
Y F
F



\footnotetext{

}
\[
\begin{aligned}
& \begin{array}{l}
\text { V I } \\
\hline \text { F F }
\end{array}
\end{aligned}
\]\({ }^{-}{ }^{\text {L }}\)

\footnotetext{
\footnotetext{


ne
}

\footnotetext{
\section*{ \\ \section*{\[
\pi--\square
\] \\ \\ 䚡 \\ \\ 䚡 \\ \\ \\ \\ 7 —}
}
} \\ \\ \\ \\ 7 —}
}
} \\ \\ \\ \\ 7 —}
}
} \\ \\ \\ \\ 7 —}
}
}







UniRef90 K9DUF6
UniRef90－F7WCF0
UniRef90－A3UJ30
UniRef90 T5KQL3
UniRef90 UPI0003479CE5
UniRef90＿G0S640
UniRef90－A7NGI3
UniRef90＿H6RU25
UniRef90 Q11FD6
UniRef90－A0A016XHM7
UniRef90－L8JGW8
UniRef90 W817S5
UniRef90－A4TJH8
UniRef90＿U1PSJ0
UniRef90 UPI00037B5382
UniRef90－UPI00029AF938
UniRef90－V8D1M4
UniRef90－M1XSG5
UniRef90 R7IWY7
UniRef90－U1IC62
UniRef90－EOSIH3
UniRef90－UPI0003B35EC4
UniRef90 C6AVJ2
UniRef90－A313E2
UniRef90－E4NGY9
UniRef90 B3PT44
UniRef90－S3V420
UniRef90－W6W295
UniRef90 UPI0001CBB02B
UniRef90 W9XBX2
UniRef90 \({ }^{-}\)H0QTB2
UniRef90＿UPI00035EADDE
UniRef90＿UPI000305F047 UniRef90－UPI00037F5B83
UniRef90＿UPIO00262AOD6
UniRef90 I7IL01
UniRef90 V4YL96
UniRef90－R1HWQC
UniRef90－UPI0004045273
UniRef90 Q7MLD0
UniRef90－G4CR86
UniRef90＿A0A017T490
UniRef90－M2NMK8
UniRef90 J8UX73
UniRef90－A0A021VQ01
UniRef90－B0T241
UniRef90 Q12CS
UniRef90－U7UID9
UniRef90－A0A059DTW2
UniRef90＿UPI000365DD6C
UniRef90 V6EZC8
UniRef90－U7FZUO
UniRef90－V5PXK4
UniRef90 J1QG21
UniRef90 G7QP09
UniRef90－E8YPE1
UniRef90－A0A023WNT3
UniRef90 UPI0003627624
UniRef90－D2BZI6
UniRef90＿T2GSN2
UniRef90 G9ENA3
UniRef90 A0A058YM18
UniRef90＿D7CDY8
UniRef90＿A5FVK8
UniRef90 UPI00037BB990
UniRef90－Q2W396
UniRef90－B7QTH1
UniRef90 B0PGR8
UniRef90 X1CAS5
UniRef90 UPI000379EA60
UniRef90－F8GYE1
UniRef90＿UPI00037AC9AE
UniRef90＿UPI00046842BD
UniRef90－UPI00035FB5EO
UniRef90＿UPI00028878CB
UniRef90 M3K576
UniRef90－UPI000376FE69
UniRef90－D3F4E8
UniRef90 V8FQK
UniRef90 \({ }^{-H 5 T L V 7}\)
UniRef90－R0EB99
UniRef90－F6CVK
UniRef90 T1C5M4
UniRef90－R6WXD7
UniRef90＿U1RLM0
UniRef90 H8KZN4
UniRef90 \({ }^{-}\)W9Z5K2
UniRef90－G3AP55
UniRef90＿HORAZ5
UniRef90 A5VHD3
UniRef90－E0VV80
UniRef90＿UPI000468AA26

D D G A \(\square \mathrm{D} \square \mathrm{GR}\) QRCHV
G I G L E N T T \(G \vee G \| L R N S V V\)

AGHS \(\square\) FGA \(\square \mathrm{EQTV}\)

A D R R \(\square \mathrm{D} \square \mathrm{G} \mathrm{D}\) Q

SGS S \(\quad\) GGADDQQV
QGKSI FGAI EQRV

QGQSI FGA！EQQV


E
AGHS \(\square\) FGA \(\square\) EQTV
DGNN】 FGD \(\square\) CQQVV
QGKS \(\square\) FGA \(\square\) DQAVAP
DHR】DLGEQ【LN【VEA
AGQS \(\square\) FGA \(\square \mathrm{DQQV}\)

DDEKLDLGTQHNSVRAS QGKSL FGAlEQIVERAF

AGQSV FGA IDQTVQP

NGVS L FGA \(\square \mathrm{DQKVV}\)

\(D G R E G P F G \| Q Q R V V Q A\)
GES \(\square\) FGAIDQVVI

E
\(G \square G E L R N\)
\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90_MONMZ2}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-A9C214} \\
\hline UniRef90 & A5F9Y5 \\
\hline \multicolumn{2}{|l|}{UniRef90-D5x0.J1} \\
\hline UniRef90 & UP1000377BDD4 \\
\hline \multicolumn{2}{|l|}{UniRef90} \\
\hline Re & \\
\hline \multicolumn{2}{|l|}{UniRef90-A3UWQ} \\
\hline UniRef90 & UP100037005 \\
\hline \multicolumn{2}{|l|}{UniRef90-UP1000360} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIOOO36C2016
UniRef90-D3NXH5}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90_K2ADAE} \\
\hline UniReef90 & V9WN26 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-V5C151}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIOOO34CD5C0
UniRef90- UP10003B3A514}} \\
\hline & UP10003B3A514 \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRet90-UP100047E97C1}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-A3} \\
\hline UniRef90 & Q084 \\
\hline \multicolumn{2}{|l|}{UniRef90-W4C4Y2} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UnRef90-UPIO002E994DB}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRee900 \({ }^{\text {C6HW }}\)} \\
\hline \multicolumn{2}{|l|}{\multirow[b]{2}{*}{UniRef90-14JK12}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRee90-UP100037DCBC8}} \\
\hline & IOGF57 \\
\hline \multicolumn{2}{|l|}{UniRef90-H4FCA} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIO0047E9BC7
UniRef9-HOWWA7}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRee90-H1X163}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90 \({ }^{13 T \times 38}\)} \\
\hline \multicolumn{2}{|l|}{UniRef90} \\
\hline \multicolumn{2}{|l|}{UniRet90} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90 UPIO0}} \\
\hline & UniRef90-UPIC \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UP10004
UniRef90}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRef90-UP10003A8FE
UniRef90-V5PL89} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRet} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-I3YLTO}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90 R5JIA2} \\
\hline \multicolumn{2}{|l|}{UniRef90-UPI0003B41F03} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRee90} \\
\hline \multicolumn{2}{|l|}{UniRef90-Q11918} \\
\hline & UPIOC \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-A0A}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRet90-H7RRQ4} \\
\hline \multicolumn{2}{|l|}{UniRef90-UPIOOO34594
UniRef90-D4GDE6} \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRet90-17CVT1} \\
\hline \multicolumn{2}{|l|}{UniRef90-J3CN28} \\
\hline \multicolumn{2}{|l|}{UniRef90-W7DN34} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-H1S8P5}} \\
\hline & \\
\hline UniRef90-UP10002551
UniRef90_8GY & - \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-UPIIOO0474B}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-UPIOOO36969E4} \\
\hline \multicolumn{2}{|l|}{UniRef90 G8TLL4} \\
\hline \multicolumn{2}{|l|}{UniRef90-V8GAB0} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-S22TF4
UniRef90- 2 UPP 2}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-U2EPN2} \\
\hline \multicolumn{2}{|l|}{UniRef90-U2X980} \\
\hline UniRet90-U2X980 & UP10003B3A7FD \\
\hline \multicolumn{2}{|l|}{UniRef90-UPIO00422154D} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-D31LL2}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{} \\
\hline \multicolumn{2}{|l|}{UniRet90-W2C4G6} \\
\hline \multicolumn{2}{|l|}{UniRef90-R7DL19} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRee90_UPIOO03660F27
UniRef90-UPIO0047C3071}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{UniRef90-G4QLS1} \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{UniRef90-HOHO56}} \\
\hline & \\
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \\
\hline & \\
\hline UnRef9 & D9V1K2 \\
\hline
\end{tabular}

D A VR P A EPAS

I GRRNY T N H DE E L K N E R P D E P V V
DASAFLHHGRLMEQAFN TAPDPDFDTDPVM

 DGSAYVNHVELVRK ARGAEMPESFWSDPGM









\(V L G I G L N Y R L H V K E A G F P M P S E P V L\)

 \(V\) R Y A A A A M A
\(\square R C I G G L N Y\) VQ HAKEAKMAALPT DPT L

 DGSAF \(\square N\) VFAIGG L NYA DHATE TGGHAAPGV F C V G L N Y A S Hi Q H A R R G M A A A V I P E R P E I G Y R

A S \(\square A T V N D S \square A S \square G K\)
\(V Y C V G R N Y A A B A\)
\(V Y C V G R N Y A A H A V E\)

P Q MRDCSCFELHLEA V \(\operatorname{SR}\) R R S MET
VGRNYAAT DDSMGYDTPAEPDF I GRNYAAHAE


V V C
GVA
DGSAFESHGELMSRVF
E F VD GSAY L P HVERVR
R A \(G R N Y\) V

VF CVGMNYADKRQEFAATQDAPTLD V GRNFATTLD QMAYERPDEPDF \begin{tabular}{llllllllll|llll|llllll}
\(I\) & \(G\) & \(R\) & \(N\) & \(Y\) & \(A\) & \(A\) & \(H\) & \(I\) & \(R\) & \(E\) & \(L\) & \(N\) & \(N\) & \(P\) & \(L\) & \(P\) & \(D\) & \(S\) & \(L\) \\
\(I\) & \(V\) & \(Y\) \\
\(I\) & \(G\) & \(R\) & \(N\) & \(Y\) & \(S\) & \(E\) & \(H\) & \(A\) & \(K\) & \(E\) & \(L\) & \(G\) & \(N\) & \(E\) & \(I\) & \(P\) & \(E\) & \(N\) & \(P\) \\
\(I\) & \(V\) & \(I\) \\
\(G\) & \(R\) & \(N\) & \(Y\) & \(S\) & \(E\) & \(H\) & \(A\) & \(E\) & \(E\) & \(L\) & \(G\) & \(N\) & \(K\) & \(V\) & \(E\) & \(A\) & \(E\) & \(P\) & \(I\)
\end{tabular}

VD F T T R E HV IA L H L N Y P S R IA Q R G R S P Q F P G Y AL NFKSHVAE TGQTNADYPHLL
VFAVGLNYDDHAAES GFEAPHLPPV Y P S QVA A I GL N Y A D HAAAE T GYEVVPT L P P V \(G \left\lvert\, \begin{array}{lllllllllllllllllllll}I & G & L & N & Y & K & T & H & I & L & E & A & G & F & P & T & P & K & H & P & T \\ V & G & R & N & Y & V & A & H & A & K & E & L & G & N & E & V & P & D & E & P & I \\ V\end{array}\right.\) VNRAFCIGRSYAAHAAEMGSSVKXDPFF PRAS GEAPPRPRGMQG
 GYNSLLHTQQMGAS GYNYR GHVPD P TA D DP A F P DV \(\square R D G \square T\) F G T H \(\square E N Y\) F K NVAK T K P \(\quad\) VR A VY E R P G Y \(\square\) GMNYA Q H NKELD GTLPETPVV \(G V G L N Y L E H L K K L G S E A P P H P L S\)



D G S A YVNHVELVRK ARGAE DPASFWTDPDM
NF R Q LAA A K L S VP E P E E P L Y
II A \(\square\) G R N Y A K H \(\square E E L Q N E R P S E P V V\)
\(\square R\) D Y LT Y T QHAK GSGLLT V P P A FA A M P I C

UniRef90_MONMZ2
UniRef90_S6HBW2
UniRef90_A9C2I4
UniRef90_A5F9Y5
UniRef90_D5X0J1
UniRef90_UPI000377BDD4
UniRef90_W8GSR2
UniRef90_F2K4P3
UniRef90_A3UWQ7
UniRef90_UPI0003700544
UniRef90_UPI000360A43E
UniRef90_UPI00036C2016
UniRef90_D3NXH5
UniRef90_K2ADA6
UniRef90_V9WN26
UniRef90_V5C151
UniRef90_H5WIU3
UniRef90_UPI00034CD5CC
UniRef90_UPI0003B3A514
UniRef90_UPI00047E97C1
UniRef90_B6B399
UniRef90_A3V8B3
UniRef90_Q084Y1
UniRef90_W4C4Y2
UniRef90_R6N6Q2
UniRef90_UPI0002E994DB
UniRef90_UPI000289BA10
UniRef90_C6HWT6
UniRef90_A0A014QV24
UniRef90_I4JKI2

UniRef90_14JKI2
UniRef90_UPI00037DCBC8 UniRef90-IOGF57
UniRef90_UPIO0047E9BC7
UniRef90-HOEWA7
UniRef90-H1 XI63
UniRef90_UPIO004795136
UniRef90_I3TX38
UniRef90 UPIOOO
UniRef90-UPIO00465772F UniRet90_XOPV90 UniRef90_UPIO0037E0B7C UniRef90-UPIO0035F74D9 UniRef90-X0QLM9
UniRef90_UPIO003A8FE15
UniRef90-V5PL89
UniRef90 V4XV77 UniRef90-K9DBY5
UniRef90-I3YLTO
UniRef90-R5JIA2
UniRef90_UPIO003B41F03 UniRef90-UPI00047E906C UniRef90_M4K4C3
UniRef90_Q11918
UniRef90_UPI00034B8FB7 UniRef90-A0A021WAB1
UniRef90_H7FRQ4
UniRef90-UPIO003459435
UniRef90-D4GDE6
UniRef90_I7CVT1
UniRef90_Q754P8
UniRef90_WCN28
UniRef90_W7DN34
UniRef90-H1S8P5
UniRef90-UPIO00255F3D0
UniRef90-F8GYU4
UniRef90_UPI000474B1C1
UniRef90_UPIO0036969E4
UniRef90_W3XQI6
UniRef90-G8TLL4
UniRef90-S2ZTF4
UniRef9O-U2EPN2
UniRef90-W0BC19
UniRef90_U2X980
UniRef90_UP10003B3A7FD UniRef90_UPIO00422154D
UniRef90-D3ILL2
UniRef90_E4PI92
UniRef90_W2C4G6
UniRef90_UPI000262AF93
UniRef90_R7DL19
UniRef90-G5H9H6
UniRef90 UPI00036 UniRef90-UPIO0047C3071 UniRef90_G4QLS1 UniRef90-G6Y8L2
UniRef90 HOHQ56 UniRef90-UPIO0036ED49E UniRef90_K7PPB1
UniRef90_D9V1K2





UniRef90 M0NMZ2 UniRef90-S6HBW2 UniRef90_A9C214 UniRef90_A5F9Y5 UniRef90 D5X0J1 UniRef90_UPI000377BDD4 UniRef90-W8GSR2 UniRef90 F2K4P3 UniRef90 \({ }^{-}\)A3UWQ7 UniRef90_UPI0003700544 UniRef90 UPIO00360A43E UniRef90- UPI00036C2016 UniRef90-D3NXH5 UniRef90-K2ADA6 UniRef90 \({ }^{-}\)V9WN26 UniRef90-V5C151 UniRef90-H5WIU3 UniRef90_UPI00034CD5CC UniRef90 UPI0003B3A514 UniRef90-UPI00047E97C1 UniRef90-B6B399 UniRef90 A3V8B3 UniRef90 Q084Y1 UniRef90-W4C4Y2 UniRef90-R6N6Q2 UniRef90 UPI0002E994DB UniRef90_UPI000289BA10 UniRef90_C6HWT6 UniRef90-A0A014QV24 UniRef90 I4JKI2 UniRef90-UPI00037DCBC8 UniRef90-I0GF57 UniRef90-H4FCA
UniRef90-UPI00047E9BC7
UniRef90-H0EWA7 UniRef90 H1XI63 UniRef90 UPI0004795136 UniRef90-13TX38 UniRef90-UPI000465772F UniRef90 XOPV90 UniRef90-UPI00037E0B7C UniRef90_UPI00035F74D9 UniRef90-UPI0004784540
UniRef90 X0QLM9 UniRef90-UPI0003A8FE15 UniRef90_V5PL89 UniRef90 V4XV77 UniRef90 \({ }^{-}\)K9DBY5 UniRef90-13YLTO UniRef90-R5JIA2 UniRef90 A8TTE5 UniRef90- UPI0003B41F03 UniRef90_UPIO0047E906C UniRef90_M4K4C3 UniRef90 Q11918 UniRef90_UPI00034B8FB7 UniRef90_A0A021WAB1 UniRef90-H7FRQ4 UniRef90-UPI0003459435 UniRef90-D4GDE6 UniRef90_17CVT1 UniRef90 Q754P8 UniRef90-J3CN28 UniRef90-W7DN34
UniRef90 UPIO00255F3DO
UniRet90-FIOMO
UniRef90-UPI000474B1C1
UniRef90-UPI00036969E4
UniRef90-W3XQI6
UniRef90-G8TLL4
UniRef90_V8GAB0
UniRef90-S2ZTF4
UniRef90-U2EPN2
UniRef90_WOBC19
UniRef90 U2X980
UniRef90-UPI0003B3A7FD
UniRef90_UPI000422154D
UniRef90-D3ILL2
UniRef90-E4PI92
UniRef90-W2C4G6
UniRef90 UPI000262AF93
UniRef90 R7DL19
UniRef90 G5H9H6
UniRef90_UPI0003660F27
UniRef90 UPI00047C3071
UniRef90 G4QLS1
UniRef90_G6Y8L2
UniRef90-HOHQ56
UniRef90_UPIO0036ED49E
UniRef90_K7FPB1
UniRef90_D9V1K2

A G D TVV|RAEVVIV \({ }^{250}|\mathrm{GA}| \mathrm{L}\)
SGDVI SAGI A GI GKFEVRDG
\(P G D R I T G H V Q G V G E D A L T V G Q P\)
PNDVLEGFLEDKKLFRI QV
RGQVLHGTIDGLTPLQVRI
AGSACISERRVLEMI DRGEAHT PFMHFGDRVRMAATDTR

DKDQVSVT IE GVGTVVNEV
SPQRFLQPGDVVESWVDGDG
RGYSCDAE \(\square\) RMDET TRDGSPSTPFMQFGDKI HME MLDG PGYSCIAEIRTVETILRGQAET PFLQHGDT:RMEMKDA

A GDY I EGG\|DGLMPVRL
GYSCIVEKRVVE I I ETGVA \(\quad\) GT EFMRFGDK \(\square R \square E \quad M \square D G\)


DGDVVEVEIEGLG
\(P G D V I E V E V G I G A L V N T V A D E\)
KGDVMEMEIAGLGSLTVTV
AGSSCLAEKRMLEIIADGKAST PFMHFGDTVR】EMF DD
AGDVLELAWDG

\section*{KPGKWLKSGDEVVCED}

QPQRFIKPGETLRSWIEGDG
VGSACDSERRADEMDDHGQPLTGFMQFGDR IR DEA LDS
I G D R M TVEVSGli P

PGDLVEDEVQGDGVLRTRVGTATNF
TGDALE
HGDVVEDDTTGVGT\RNRFVREPQ
AGDVLVGEI EGLETLEIKIG
\(P G D V L Q G M I E G L A Q V E L T I G A P Q\)
DPKEY \(\square R D G D E\)
PGD
RGDSFHAA LDEGDATDD
RGSCCDAERRMLETIDAGKPST PFMSFGDRVRDE MTDR
EGDC IVVE \(\square\) SHGGRLSNSVISEKR
T P A R Y \(\square A S G D T V R T R \square E G \square G\)
KGSACDAERRADEADEHGAPRT PFMRFGDRVRMEARQDG
\(P G K T L S V T I T G L G T L S N P V\)
RGDRLD GAVEGVGTLADTVA
A GDALKLKLGAHE
RGDRIACSI EGVGD

PDDVI ELEVEGLGGLR
\(P G D N L\)
\(V G Q H E L\)
\(V\)
HGYSCDAEI RMDETIAGGKPTT PFMSFGDRDRDEVTG R
RGQRVEAGVDGVGELD
VGDELVLELAG
PGDRVTVEIDGLGQLTNPIVAEQ
VGSSCIDARRAD ELLD A GESRT PYMRFGDRVAMQA DDE
\(L G A S C F A E K R T V E T L E H G K P S T \quad P F M K F G D T V R \square E A M D D A\)
\(P D D V L E G F L E G H K L F R \square Q V\)

PGDTVEITYDGVGTLRN
PGDHI SAS L
END LLEAFMENEKMLDTRT
HGDQLELITESQKMADLKV
PGDVISASIEGVGAMQVSV


N
\begin{tabular}{|c|}
\hline \multirow[t]{4}{*}{} \\
\hline \\
\hline \\
\hline \\
\hline
\end{tabular}
\(\bar{V} G D E L E A F D E D D S L L S\)
PGDSSVGKI DGLE NLTL
PGDVVRGEVQHLGVIENTV
PGMRLSLS
\(\square G D Q V T L E \square E G L G K Q E K H V I K E\)
A AHRPLRPGDAVTVRDER LGG
\(P G D V V E D E D E G G T \square R N Q \square A A T K\)

PGDLMEARI ER \(\square\) GVLSNS \(\square\) AARRQ
DGDHLEGFIGDKRLLD
PGDVVE IEV
DDDHLQGFLGDRKVLDFRV
PGDRLTASLEGYTLLD
SGAELVLELVGQPRF
\(P G D A C V A R L D R L V E L R C Q V G\)
HGSSIAEGGVGYSCIT IRDGKPSTFMAFEDS \(\square\) R \(\square E M F \quad D R\)
\(P G D E V E D E Q G D G T L R N T V A\)
D A S TV SVTI E GllGTLSN
AGDRLEAYIEDEKLLD
K S PVF LTKRGDVVQCE \(\square \mathrm{D}\)
\(P G D V \underline{V} L A A S G V G M \square R N P V G Q R Q V\)

UniRef90 MONMZ2
UniRef90 - S6HBW2
UniRef90_A9C2I4
UniRef90 A5F9Y5
UniRef90 D5X0J1
UniRef90_UPI000377BDD4
G G R
PFGVIDQRVVRA
UniR - F2K4P3
UniRef90-A3UWQ7
UniRef90_UPI0003700544
UniRef90 \({ }^{-}\)UPI000360A43E UniRef90 UPI00036C2016
UniRef90_D3NXH5
UniRef90-K2ADA6
UniRef90_V9WN26
UniRef90 V5C151
UniRef90-H5WIU3
UniRef90 UPI00034CD5CC
UniRef90 UPI0003B3A514
UniRef90_UPI00047E97C1
UniRef90_B6B399
UniRef90_A3V8B3
UniRef90 Q084Y1
UniRef90_W4C4Y2
UniRef90-R6N6Q2
UniRef90 UPI0002E994DB UniRef90_UPI000289BA10
UniRef90_C6HWT6
UniRef90_A0A014QV24
UniRef90 14 JKI 2
UniRef90_UPI00037DCBC8
UniRef90_IOGF57
UniRef90 H4FCA1
UniRef90-UPI00047E9BC7
UniRef90_HOEWA7
UniRef90 H1XI63
UniRef90 UPI0004795136
UniRef90_I3TX38
UniRef90_UPI000465772F UniRef90 X0PV90
UniRef90- UPI00037E0B7C
UniRef90_UPI00035F74D9
UniRef90_UPI0004784540
UniRef90 X0QLM9
UniRef90_UPI0003A8FE15
UniRef90_-V5PL89
UniRef90_V4XV77
UniRef90
UniRef90_I3YLT0
UniRef90_R5JIA2
UniRef90 A8TTE5
UniRef90-UPI0003B41F03
UniRef90_UPI00047E906C
UniRef90 M4K4C3
UniRef90 Q1I918
UniRef90_UPI00034B8FB7
UniRef90_A0A021WAB1
UniRef90 H7FRQ4
UniRef90_UPI0003459435
UniRef90_D4GDE6
UniRef90 I7CVT1
UniRef90_Q754P8
UniRef90_J3CN28
UniRef90_W7DN34
UniRef90 H1S8P5
UniRef90_UPI000255F3D0
UniRef90_F8GYU4
UniRef90 UPI000474B1C
UniRef90 UPI00036969E4
UniRef90-W3XQI6
UniRef90-G8TLL4
UniRef90_V8GAB0
UniRef90 S2ZTF4
UniRef90_U2EPN2
UniRef90 W0BC19
UniRef90 U2X980
UniRef90_UPI0003B3A7F
UniRef90_UPI000422154D
UniRef90 D3ILL2
UniRef90 E4PI92
UniRef90_W2C4G6
UniRef90 UPI000262AF93
UniRef90 R7DL19
UniRef90-G5H9H6
UniRef90_UPI0003660F27
UniRef90-UPI00047C3071
UniRef90 G4QLS
UniRef90-G6Y8L2
UniRef90-H0HQ56
UniRef90 UPI00036ED49E
UniRef90_K7FPB1
\(G L G \square R R N D V\)
\(E E V S \square F G A \square D Q K \square V\)
\(\mathrm{G} P \mathrm{~V}\)
\(F G A \square D Q R \square V R A\)

DGASV FGAVDQVV
G \(\square\) G T \(\square \mathrm{EHP}\) H

D GKAGPFGRワDQKVVPA
DGSSLFGAIEQR GIGELHQRFVAA


NGVS \(\square\) F G S \(\square\) D Q K VV

EGESV FGA \(\square D Q R L V\)
\(R \square \quad G T \square R N K M V\)
\(\mathrm{G} \square \mathrm{GT} \square \mathrm{EHP} \square\)

E

UniRef90 D9V1K2

UniRef90 L8TPZ1
UniRef90-UPI000365CDD7 UniRef90-D5BJB1 UniRef90-U1LC44 UniRef90_D6V9F7 UniRef90-G7DRW5 UniRef90-B6IU13 UniRef90-V8YPX5 UniRef90-K2M9Z7 UniRef90-R5KYVs UniRef90_UPI00037BE8A4 niRet90 R5W5W UniRef90-UPIOOO47774A6 UniRef90-E2PFS6 UniRef90-R9PIY2 UniRef90- 3 Y Y 2 R 5 UniRef90-S4MFR5 UniRef90-Q22Y44 UniRef90 UPI00028813C0 UniRef90-FOLTH2 UniRef90-M4V8AO UniRef90 - I2QAY UniRef90-S3DBX2 UniRef90-W9XVG8 UniRef90 E6X7C5 UniRef90 D9RR76 UniRef90-UPIOO0401CED9 UniRef90_TOIRA1 UniRef90 UPI000289B1D2 UniRef90-A0A010YSW9 UniRef90-F7P105 UniRef90 U5A9S6 UniRef90-C3K764 UniRef90-E4NN48 UniRef90-UPIO0047AD4CC UniRef90 UPI000464004A UniRef90-UPIO00379BAFE UniRef90-Z5XA12
UniRef90- S6AR36
UniRef90-D5UGZ7
UniRef90-S3ACG0
UniRef90-K9DU21
UniRef90 UPI000464DCFD UniRef90-EONNS6 UniRef90-R1GJV4 UniRef90 I4NAKO UniRef90 V9DFZ5 UniRef90-H2BU31
UniRef90-F4AJF2
UniRef90 G7Q7S3 UniRef90-R9P9P6 UniRef90-UPIO0028A158E UniRef90 H1HLA6 UniRef90 G4R7C0 UniRef90-D9QIT7 UniRef90-UPIO00381516B UniRef90 UPI0003787B5F UniRef90 U4T8U1 UniRef90-A8TXM5 UniRef90 G7CAY4 UniRef90 J2CV10 UniRef90-D7JEG3
UniRef90-E3RU90
UniRef90_Q15S27
UniRef90 D3EA79
UniRef90-B8NX90 UniRef90 K6VEU2 UniRef90 FOMAH5 UniRef90-V4HTJ UniRef90-UPIO0042445A1 UniRef90 X0PMB7 UniRef90-B0T815 UniRef90-FOY9FC UniRef90 UPIO00248CC57 UniRef90 BOV6S6 UniRef90-V5FZ6a UniRef90-A0A024PVJ8 UniRef90_UPI0003B7741E UniRef90 \({ }^{-}\)xoR6J4 UniRef90-N8QDF1
UniRef90_Q0YQXO UniRef90 UPIO003636C9A UniRef90 W4Q314 UniRef90-N8YFU7 Unie NaZND UniRef90-DONW45 UniRef90 A6W055 UniRef90 UPIOOO2558263 UniRef90_G4RF55
UniRef90-ЕОТЕ76

YRKHVIDLAAAHREPGEDEEEVRAKTAAM D GSAY \(\square\) N HVVLV RK ARGAEVPESFYS DP LM VFAMH \(M G Y R G R A A Q Q K G R T M P E D A P G F\) \(\square G R N Y A A H A \square E R G S D P R E P P F F\)

DGSAYVNHVALVRK NF H A L A A K L N QPEPPEP LY ARGAEMPDSFWTDPLM
\(R \square F C \square G K N Y\) A E HVVREMGSDPS D GKAF WDP P CVV

DGSAFGTHGDLMQVAFN TDG
G GL
G

AVCVGQNYVAHMQEMKGGAPV
VK Q A V L



ARGAEMPPSFWTDPLM

 \(\begin{array}{lllllllllllllll}V & G L & N & Y & R & S & H & A & K & E & A & K & L & N & V \\ V & P & V & P & P & V \\ G & K & N & Y & V & N & E & L & S & E & M & P & S & G & K \\ V & V & P & I & V\end{array}\)
AETVGMNYAEHNKSLNETLK
GD口AAMMDRAAE
DGSAFPNHGDLMQTAFN
LP P DE T D K P LM
V Y CVGRNY R Q H A A E L G N DV P E E P M F

EKVFAVGMNYVSHAAS
D A S A F L N H G NL M E Q A Y K L
 \begin{tabular}{l} 
L P P \\
\(K\) \\
\hline
\end{tabular}

YR Q H V ID LE VA HRSAD DP DRRAA E NFASHVID
DGSCFLSHGELMQRAFNLD
TGGDPK
V GLNYRHHILEMGRELPTHPTLL
\(\begin{array}{ll}V & L \\ \text { L } & \text { Y A S R A D Q R GR R R P A S P S }\end{array}\)





VGMNYALHNLT LQAERPETPVI
D GSAYESHGKLMDKVFGISAGGD
\(K T R P L M\)
DGSAFRSHGQLMEQLFGSPPPPPG
I GMNYA EHNKALHSNRPE \begin{tabular}{lll|lllllllllll}
\(V\) & \(Y\) & \(C\) & \(G\) & \(R\) & \(N\) & \(Y\) & \(K\) & \(A\) & \(H\) & \(A\) & \(E\) & \(E\) & \(L\) \\
\(V\) & \(G\) & \(N\) & \(D\) & \(V\) & \(P\) \\
\(V\) & \(V\) & \(G\) & \(R\) & \(N\) & \(Y\) & \(\square\) & \(D\) & \(H\) & \(\square\) & \(H\) & \(E\) & \(L\) & \(N\)
\end{tabular}

REPPFF
PPTEPAY
DGSAFPQHGELMQKAFN
LP P \(\square E T\) D

V VCVGRNY L E HI Q EL N NEVPNEPL L
\(C A L V N N V Y C V G R N Y Q L H A A E L G N A V P E E P M\) M


UniRef90 L8TPZ1
UniRef90－UPI000365CDD7 UniRef90－D5BJB1 UniRef90 D6V9F7 UniRef90－G7DRW5 UniRef90－B6IU13 UniRef90＿V8YPX UniRef90＿K2M9Z7 UniRef90－UPI00037BE8A4 UniRef90 R5W5W UniRef90－UPIO0047774A6
UniRef90－E2PFS6
UniRef90－R9PIY2
UniRef90－F3Y2R5
UniRef90－S4MFR5
UniRef90－Q22Y44
UniRef90 UPI00028813C0
UniRef90－FOLTH2
UniR Ref90－M4V8AO
UniRef90 L7KDE2
UniRef90－12QAY1
UniRef90
S3DBX2
UniRef90－W9XVG8
UniRef90－E6X7C5
UniRef90－D9RR76
UniRef90－UPIO00401CED9 UniRef90 ToIRA
UniRef90 UPIO00289B1D2 UniRef90－A0A010YSW9 UniRef90－F7P105
UniRef90 U5A9S6
UniRef90－C3K764
UniRef90－E4NN48
UniRef90－UPIO0047AD4CC
UniRef90 UPI000464004A UniRef90－UPIO00379BAFE
UniRef90－Z5XA12
UniRef90 S6AR36
UniRef90－D5UGZ7
UniRef90－S3ACGO
UniRef90＿K9DU21
UniRef90 UPIO00464DCFD
UniRef90－EONNS6
UniRef90－R1GJV4
UniRef90＿4NAKO
UniRef90－VDFZ5
UniRef90－－ 2 ZBU 1
UniRef90－F4AJF2
UniRef90＿G7Q7S3
UniRef90－R9P9P6
UniRef90－UPIO0028A158E
UniRef90＿H1HLA6
UniRef90＿G4R7C0
UniRef90－D9QIT7
UniRef90－UPIO00381516B
UniRet90 UP10003787B5F
UniRef90－U4T8U1
UniRef90－A8TXM5 UniRef90 G7CAY4
UniRef90＿J2CV10
UniRef90－D7JEG3
UniRef90－E3RU90
UniRef90 Q15S27
UniRef90－D3EA79
UniRef90－B8NX90 UniRef90 FOMAH5 UniRef90－V4HTJ7 UniRef90－UPIO0042445A1 UniRef90＿XOPMB7 UniRef90－BOT815
UniRef90 FOY9F0 UniRef90－UPIO00248CC57 UniRef90 BoV6S6 UniRef90－V5FZ6a UniRef90－A0A024PVJ8 UniRef90－UPI0003B7741E UniRef90 \({ }^{-}\)xoR6J4 UniRef90－N8QDF1 UniRef90－Q0YQXO

MDKRA
50
\({ }^{60}\)

F LKPATSLSTGGEVV
FQKPTDAI Q NVPTGKV
LLKATTTMTTPGAVRRRPS
YQGGSDSFLGPRDPI
F \(\square\) K \(\square\) AS VMTPHDSAVARPCGVLA
FMKPTDCLVV
FTKADSSLLKDGKPF
FARWTASLTVDGTPV
FMK
YQGMSDRFLAPNDPV
PDTALDRNNDTFWUPPGERGLDWM
FMKPSGSTLNSGGTILLP
FNKPPSAFVSFDNGV AIIPKGL
FMK
PDTALHNLE \(\square\) PYY \(\square\) PDFTHNLHH
Y LAASSGVSAPGARVVIPQSATEPD
F QKPHSSVL
FMKPASAVVSTRQGVIRPN
YQGGSDTFIGPKDDI
YQAES
FLKAPTSVLAAGRTVELPYT
YITNRFSVRGTNTTVKWPR
FTKPPDALGGPYEPAHMSR
F T K
FTKADSAL
F TGLPSSVTGPYDDVVIP PDTtLLENNEDLVLP


Y QGLSH
FLKPGHALLP
FYKPASC）AGHGDE \(\square K \square P A \square\)
F \(\square K P N T A V V D T N Q P F\)
LPSSLILSGET四HAPFDA
QFLSAVADVPFPSWCAEPDW MDGRTLPEPANDDYVDF

ONVHF
YQGAGDDFMGPCDDVEYP YPVQGEEHQIDF

FLKPASCLUGHNEPI QLPT
F GLPSATTGPYDDVVLPSWAQQPD
FFRKASSUTGPVDDIVKPTHVRLLD

YQGAGDDFLGARQD：
FAKFPEALIGPYDP：
VLP
FFKPSSSUAASGAQIERPAG
FhKAYGALIGANDPIRYP
FLKGDHTIVGPGEPIVVP
FTKNDDR I GTGDT
WYKPPTALANPGQDI
F \(\square_{K P G S C V V}\)
FFKPNTCLQDHDAPVVIPK■
F KPDTAVLLKKQPFFIP
FKAYGALIGANDDMRYPRA
FLKPPSAVIGSGQGIVLPRAA
FYKPLSTLSGPSQDUVIPRAA
KK
FTKCDTALLKDGKPFF】P
YQGLSDRF
YQGLSHRFLSATEDVVLPRT
FTKADTALLKDGKPFFIP
F LK PS HAlV AV
FMKPTSAMIDLTTP DQWPT
FMKPADALVTGG
FLKPPSALVGHGDP\｜VVPSEFGL
\(\square\) PPHADVP \(\square \mathrm{P}\) S
PD\GKVTS
PIDEEAPTDCADY
PGSAKATANFLDYY

YQGLSDRFLSGTQDVVLPDTALDRDNKPFFDPSEADGDDF FLK C FIKPNTALCDLAEPLVIPKGL FLKPSHAVVP

\section*{\(\square D G S V L K \square P M D R G S G H F\)}
\(F \square K P P S S V G G E Q G \square S W\)
FARWTQSLSVGGRP
FIKPASAFC
NPAWGDC
H
APVPSNEDGDDW F【KPASAFCPPKAP TKPVNTFASAGPAFTINEQLGKHHY FTKFPSSVTGPFNEIALPSSA
YQGASDGFLGPRDAI
FFKGSNSYAHPGDVVEDPAFSTRPD
FFKGSNSYAHPGDVVEपPAFSTRPD
PLADEAWG \(\frac{V}{C D} \frac{\square}{Y}\)
FTKPTHALAA FTKPPSSLDG LDEGDSWNPAWGSCHF

YQGUSDRFQSPVEPSVFPSVQ
\(Y\) QGMSDRFYGPTDPV
FARWPASLTV
DGAEPADPAHG｜DF
FMKPPSSL TD VITMPVFHGSPDEKGDSWNPAWGNCHH

FSKPSHSLIANGQTLVMPKDQ GODUH
FПKPPSSLII
FIKTPNTRNQSGQAVIDKRAGEILQAGPAV
FMKPSHAVV FLKPTPSYVRNGGSVLLPPGVGVVVIGKGGK VQPPKTPVIKTDNTH \(V G Y G K S D K L P S D K G A V F A\) YQGMSHCFLGGAQDV
YQGGSDSFVAPMAPVVPEDGDA
FSKPT
\(F S K P T \quad V G V S A P T D Q \quad S A E S V V V S Y P A A T D V D F\)

UniRef90 L8TPZ1 UniRef90-UPI000365CDD7 UniRef90-D5BJB1 UniRef90_U1LC44 UniRef90_D6V9F7 UniRef90-G7DRW5 UniRef90-B6IU13 UniRef90-K2M9Z7 UniRef90-R5KYV9 UniRef90 UPI00037BE8A4 UniRef90 R5W5W UniRef90-UPIO0047774A6
UniRef90-E2PFS6
UniRef90-R9PIY2
UniRef90-F3Y2R5
UniRef90-S4MFR5
UniRef90-Q22Y44
UniRef90 UPIO0028813C0 UniRef90-FOLTH2 UniR Refo M 4 V88AO UniRef90 L7KDE2 UniRef90-I2QAY1
UniRef90 S3DBX UniRef90-W9XVG8
UniRef90-E6X7C5 UniRef90-D9RR76 UniRef90-UPIO00401CED9 UniRef90-TOIRA1 UniRef90-UPI000289B1D2 UniRef90-A0A010YSW9 UniRef90-F7P105 UniRef90-U5A9S6 UniRef90-C3K764 UniRef90-E4NN48 UniRef90-UPI00047AD4CC UniRef90 UPIOOO464004A UniRef90-UPI000379BAFE
UniRef90-Z5A12 UniRef90 S6AR36 UniRef90-D5UGZ7 UniRefigo-S3ACG0 UniRef90-K9DU21 UniRet90_UPIO00464DCFD UniRef90-R1GJV4 UniRef90-14NAKO UniRef90-V9DFZ5 UniRef90 H2BU31
UniRef90 F4AJF2 UniRef90-G7Q7S3 UniRet90-R9P9P6 UniRef90-UPIO0028A158E UniRet90_H1HLA6 UniRef90-G4R7C0
UniRef90 D90iT7 UniRef90-UPIOOO381516B UniRee90-UPI0003787B5F UniRef90_U4T8U1 UniRef90-A8TXM5
UniRef90 G7CAY4 UniRef90-J2CV10 UniRef90-D7JEG3 UniRef90-E3RU90 UniRef90-Q15S27 UniRef90-D3EA79 UniRef90-B8NX90 UniRef90-FOMAH5 UniRef90_V4HTJ7 UniRef90-UPIOOO42445A1 UniRef90-X0PMB7 UniRef90-BOT815
UniRef90 FOY9F0 UniRef90-UPI000248CC57 UniRef90_BOV6S6 UniRef90--VFZZ22 UniRef90-UPI0003B7741E UniRef90-X0RGJ4 UniRef90-N8QDF1 1 UniRef90-UPI0003636C9A UniRef90-W4Q314 UniR Refo-N8YFU7 UniRef90-N8ZN71 UniRef90 W7YDB9 UniRef90-DONW45
UniRef90 A6W055 UniRef90_UPIOOO2558263 UniRef90-G4RF55
-
\(\square\)


90
ELLELAAVIGKE EAEVCVVTGD VPN 110
-


Unef90_E0TE76

UniRef90 L8TPZ1 UniRef90_UPI000365CDD7 UniRef90-D5BJB1 UniRef90_U1LC44 UniRef90 D6V9F7 UniRef90-G7DRW5 UniRef90-B6IU13 UniRef90-V8YPX5 UniRef90 K2M9Z7 UniRef90_R5KYV9 UniRef90 UPI00037BE8A4 UniRef90 R5W5Ws UniRef90-UPI00047774A6 UniRef90-E2PFS6 UniRef90- R9PIY2 UniRef90- F3Y2R5 UniRef90-S4MFR5 UniRef90_Q22Y44
UniRef90 UPIOOO28813C0
UniRef90-FOLTH2
UniRef90-M4V8AO
UniRef90_L7KDE2
UniRef90-I2QAY1
UniRef90-S3DBX2
UniRef90-W9XVG8
UniRef90 E6X7C5
UniRef90 D9RR76
UniRef90_UPIO00401CED9
UniRef90 TOIRA1
UniRef90 UPIO00289B1D2
UniRef90-A0A010YSW9
UniRef90-F7P105
UniRef90 U5A9S6
UniRef90-C3K764
UniRef90-E4NN48
UniRef90-UPI00047AD4CC
UniRef90 UPI000464004A
UniRef90_UPI000379BAFE
UniRef90-Z5XA12
UniRef90 S6AR36
UniRef90-D5UGZ7
UniRef90-S3ACG0
UniRef90-K9DU21
UniRef90 UPI000464DCFD
UniRef90-EONNS6
UniRef90_R1GJV4
UniRef90-I4NAK0
UniRef90-V9DFZ5
UniRef90-H2BU31
UniRef90-F4AJF2
UniRef90_G7Q7S3
UniRef90-R9P9P6
UniRef90-UPIO0028A158E
UniRef90 H1HLA6
UniRef90-G4R7C0
UniRef90_D9QIT7
UniRef90-UPI000381516B
UniRef90- UPI0003787B5F
UniRef90-U4T8U1
UniRef90-A8TXM5
UniRef90-G7CAY4
UniRef90 J2CV10
UniRef90_D7JEG3
UniRef90-E3RU90
UniRef90 Q15S27
UniRef90-D3EA79
UniRef90_B8NX90
UniRef90-K6VEU2
UniRef90-FOMAH5
UniRef90_V4HTJ7
UniRef90-UPI00042445A1
UniRef90 X0PMB7
UniRef90-B0T815
UniRef90 FOY9F0
UniRef90-UPIO00248CC57
UniRef90 B0V6S6
UniRef90-V5FZ62
UniRef90-A0A024PVJ8
UniRef90-UPI0003B7741E
UniRef90 X0R6J4
UniRef90-N8QDF1
UniRef90-QOYQX0
UniRef90-UPI0003636C9A
UniRef90-W4Q314
UniRef90-N8YFU7
UniRef90_N8ZN71
UniRef9O-W7YDB9
UniRef90-DONW45
UniRef90 A6W055
UniRef90-UPIO002558263
UniRef90_G4RF55
UniRef90_E0TE76

130
140
MPATGSDW
YVFRKD
FGF GGSD W
LIPNELGKGFGFFQSKPSSAFSPVAVTPDELGEAWSGGKL
L QAKLKAPWEKAKGFDGAAVIGEKW
LRWVDK GANDRSKGGDGMTPI GP
LQNEMKKPWE \(\square G K S F D H A A V L G P\)
L LTS DPTFPQWAKGDDDYGPFGPVIAT G DD

V QALLK R RRLPWDMAKSFD
\(L Q R R E G K P W E L C K G F D G A A T \square G E W\)
AQGASAQWTL GKNSDRSGPMGP
LQRAAAQGHPWEIGKAFDRS AADAPRWLGLA I AP DEMKTGFGWVQAKPACSMAPFA ITPDALGAAWRDGRV I QCRLKKGLPWLKAKGFRHS A ACVSDFVAASKVSCQPF
I QLELKQRHPWERAKAFDQSCV
LQREESLSWEKAKAFD
I MRATGTPA LAKSHPGFTPLGPSVRTPEDFTD
LQAAAKKAGFPWKGQDKF LPD S S F
LQTELLKHPWERAKCFDGACIVLADWL
LIPGELAKGFGFFQSKPSSAFSPVAVTPDELGEHWDGGKV
LIPAELAQGFGFFQSKPNKADSPVAVTVDEL
MRGGEDRSTRKSFDTFTPVGPFLVTP
AQR \(\square E M E G P A K G K S F D G G N V M G P W I V T P D E \square\)
WQMPERCQHGPSKSFDKFAPIGP
FQLPAQGQFFYAKAFDKFAPI GPVLISPEDFQ
VLRETKGPWALAKGFDGATPI APFY

VAPAEMKTGFGWIQAKPACSIIAPFALTPDELGDGWRDGRV \(V Q T A L K R K G H P W L A A K G F\)
\(I L R L N P R Y L T V V K G F D T F L T F G P Q L V T P D E \square P D V S A S A P L\)

\(H L D K E V S I G F G P G R S K P S T V F A P V A V T\)
\(Q A G R T A R\)
\(\square \mathrm{Q}\)
MRAQDMVHYYALYPSK ENPDVVEKREQHLSYTARYKGTD

LAPREMKTGFGFVQAKSSSSFAPVAVTPDELGDAWR
YQYRTAQWLQ GKTFEATTPFGPW
LRANDKGSNVRSKGGDGYTPIGPTVIDAAGI


VQKEKGDPWEDAKSFDG
Lick

TRMF AVPQWGLGK SFDGWLPI GPCLV
LQREAGQPWDKAKCRDGFCAV GP
I APDEMKTGFGWVQAKPACSMAPVAVTPDELGAAWR
LAPVEMKTGFGWVQAKPACSAAPFAVTPDSLGEAWR
L QKKLKKPWE \(\square\) SKGFDGSAA \(\square\) GDWM
VQREQGNPWTPAKGF
LQNQLKDNGHPWKSFDGSCVLSPFMH
LQ GEAKRPWDMGKGFDKSAPLAP
LKDRDSMELTPTVGADWREVRGPEDRSVYLTYHARSKGCD
I APDEMKTGFGWVQAKPACSVAPFAVTPDELGDAW
LQAECRR L RMPAGGQFGYAKSFDGFAPGSPW VGAABAKAFDNSAV
FQMPAGGQFGYAKSFDGFAPDGPCVVAPEVVEK
IQDRLKQPWERAKSFDASCPMS LFFVAQ
VQTVIKEKGHPWTAAKAFKSSAP
FQLPEASRMQFGHSKSFYQ FGP \(\square P Y T \square\)
\(\square Q K R K G Q P W E R A K A F D G S C \square L A D W\)
RRAQKLTSQWULGKNGDAS
\(\square Q K R Q G H P W E R A K A F D G S A S L T P F M P V T E D\) DSVYRPA \(\begin{aligned} & \text { KKEKARDGFCP I GPWVVT }\end{aligned}\)
WQMTPPAPQQFSKSFTGFAPIGPTLVTP
LIPAEDAKGFGFVQSKPASAFSPVAVSVDALGEAWK
YQ DD GGQWSFSKSLDTHAPLGPSLLSAAAL
VQSALKKKGHPWL
LQNELK QP WERAKAFDGSCDLADWVDVSEDTNW
FQLPEQSGGQFFKAFDKFAPIGPVLVNPSTFAKSKATA
LGPDEMKS GF GMLQCKPRCSMAPVAVT

LQKKKGQPWERAKAFDGSCVLADW
EQLAKKSGNPWLKSKGFRKS
AQREDPDWT T AKSRSGFSPDGPWDET
VQAEDKKKGHPWDRAKGFKNSAVVT
LQAKLKGQPWERAKAFDGSCVLAD WVSVDEVKDWS
ESYYRPADKAK CQDGFCVLA WVSVDEVKDWS
VQNVIKKKGHPWTAAKGFKS G SAP \(\square\)
\(L Q A K A K K P W A H A K G L D T F T P D\)
\(T\)
\(T\)
\(\prod A P V E M K T G F G W V Q A K P A C A V A P V A L T P D E L G E A W R\)
VLNDLQNGFGFFHAKPATSFAPIFVT
L Q MA A KA GNP WDLGK GFDGS

UniRef90 L8TPZ1 UniRef90-UPI000365CDD7 UniRef90-D5BJB1 UniRef90_U1LC44 UniRef90_D6V9F7 UniRef90-G7DRW5 UniRef90-B6IU13 UniRet90_V8YPX UniRef90 K2M9Z7 UniRef90_R5KYV9 UniRef90 UPI00037BE8A4 UniRef90 R5W5W: UniRef90-UPI00047774A6 UniRef90-E2PFS6 UniRef90-R9PIY2 UniRef90 F3Y2R5 UniRef90-S4MFR5 UniRef90_Q22Y44 UniRef90 UPIOOO28813C0 UniRef90-FOLTH2 UniRef90-M4V8AO UniRef90-I2QAY1 UniRef90-S3DBX2 UniRef90-W9XVG8 UniRef90 E6X7C5 UniRef90-D9RR76 UniRef90_UPI000401CED9 UniRef90 TOIRA1 UniRef90 UPI000289B1D2 UniRef90-A0A010YSW9 UniRef90-F7P105 UniRef90 U5A9S6 UniRef90-C3K764 UniRef90-E4NN48 UniRef90_UPI00047AD4CC UniRef90 UPI000464004A UniRef90-UPI000379BAFE UniRef90-Z5XA12 UniRef90_S6AR36 UniRef90-D5UGZ7 UniRef90-S3ACG0 UniRef90-K9DU21
UniRef90 UPI000464DCFD
UniRef90-EONNS6
UniRef90-R1GJV4
UniRef90 \({ }^{-}\)I4NAKO
UniRef90-V9DFZ5
UniRef90-H2BU31
UniRef90-F4AJF2
UniRef90 G7Q7S3
UniRef90-R9P9P6
UniRef90-UPIOOO28A158E
UniRef90_H1HLA6
UniRef90 G4R7C0
UniRef90-D9QIT7
UniRef90-UPIOOO381516B
UniRef90- UPI0003787B5F
UniRef90 U4T8U1
UniRef90-A8TXM5
UniRef90-G7CAY4
UniRef90 J2CV10
UniRef90-D7JEG3
UniRef90-E3RU90
UniRef90 \({ }^{-}\)Q15S27
UniRef90-D3EA79
UniRef90_B8NX90
UniRef90-K6VEU2
UniRef90 FOMAH5
UniRef90-V4HTJ7
UniRef90-UPI00042445A1
UniRef90 X0PMB7
UniRef90-B0T815
UniRef90-FOY9F0
UniRef90-UPI000248CC57
UniRef90 B0V6S6
UniRef90 V5FZ6
UniRef90-A0A024PVJ8
UniRef90_UPI0003B7741E
UniRef90 \({ }^{-}\)XOR6J4
UniRef90-N8QDF1
UniRef90-QOYQX0
UniRef90 UPI0003636C9A
UniRef90-W4Q314
UniRef90-N8YFU7
UniRef90-N8ZN71
UniRef90-W7YDB9
UniRef90-DONW45
UniRef90_A6W055
UniRef90 UPI0002558263
UniRef90_G4RF55
UniRef90_E0TE76

UniRef90_EOTE76
 HLPMLSTY NDKPFGKPECDV LNKNQFSD LINNTNFS \(\square\) KKNDEIVQNG
\(D G E \operatorname{VQR}\)
NGTVRQDAD

\(T K \square A V R T I L N G A E R Q N Y P!\)
HRP
LLS WTN GQPF GRPDAGT
ADEVPDPAQLELSLSVNGEPRQHGSC


NGDVRQNDT
\(\square R L V T R V N G E I V Q D G D\)
A LGRPVGE \(\square R F G\)
MA
\({ }_{\mathrm{F}}^{\mathrm{C}} \mathrm{F}\) S
\(M D \square Q \square D W N G K P F G R A\)
SAFKP TTCLSEDADVS \(\square Q \square K\)
\(\square R Q N G \square L R Q R G N\)
QNGAVKQQGS
VGTF \(\square\) PKTELPELNHLNFRLE \(\quad\) RA \(\square R\) RRTRNNGKTVQAGN


NDTLKQDGD
\(T \square P \quad L L S T Y N G V P F\)
A G D WK DGRVH LP LLVKHNSEFFGKA DEAGDLSTMRLQTRVNGE LRQDAD
T ILSPRAFQENFNGLADKTYV NEDLRQDAR QNKEVK VIK
\(R F H \square D D_{L}^{N} N D T L R L N G D V M Q D E\)
ADFPDV GQTVQEGC
\(C \square P\)
RKN G \(\square\) TVQS \({ }^{N} \mathrm{~N}\)
GDFKPYPGLDK L R T T L F Q L
LRVEVNGAWFGHP
LEVATDHNGAVHAKNT
VA A DELGDAQQLQFSLKVNGELRQQG
DVELT T
PDELGRDWCDGRVHLDLHVHCNGELFGHP DLDPEGIDMTTHVG

TFGPMGPY VTKDEVPDPHTDDV SFKQNGVLKQQGE
\(P A G S V A D P G D L R V T L R L \quad R A W H K D E I I A E D S\)
LVDRDELARFDDLRLRLKVNGQLRONGETMQDES
LTVADGRVHLPLKVEWNGQWFGHPH

SLRVATDHNGAVHREDT

VAPGTFPDVTD
 DPSDLGLGRLRTNDRLVQEEGVRQDGN
SASNPRG \(\square\) SNPDAIHLTTKLNNSIMQDG
\(E L I P T A Q \square S D P H S L A \square T L Y V \quad N G Q \square R Q Q N T\)
\(K T K P V Q Q L R F R L D V\) R \(\quad N G K P V Q E G Y\)
DHRVDLPLHVTWNGKPFGAAGGY
DGRV HLP TVDWNGQRFGAPQGGV
KSAPDKDK \(D\) K D DQS LLQFHLDGNGNTVQEGF
SHQDKQLDNI EFKLSUNNE \(\square\) RQHGLA

SFAPMGPWLVTTEAVGDPNNLDVTCLL DDEVILADS

■SEFVD VQAVGGQH \(\square G F S\) S
\(\square A F P G T A K D E D K D F \quad T V W K N G A Q V Q R G N\)
VTTSEDQDPKD \(\square R\) L VAP \(V N G E V K Q Q\)
VSLEE DKDWKNTHYSLQV NEALRQEGD
GPLGPLVTANEVGDLRDGLRVQTRVN WQNGVVQDGN

DEFENCTDLNN NCYLSGTKMQDGHTRELIF DGKLS GALLVELNGEEFGRADAGV
GDGGGLRLTTRVNGELRQN GVEVQRGN QVK QVE YSLN RNGLEVQRGN



GPLVPAPEVED


NAVAKDQVTDVDHLELRVYVNGELKQNDVRTGN
 PNKLSIUKT F \(\quad\) KNDALVHETN DSRIDLPLQVDLNGTRFGLAEGYP
PDELGGENWKDNLHLKVRVHVNNS LYGQPNAG



UniRef90 L8TPZ1 UniRef90 UPI000365CDD7
UniRef90-D5BJB1
UniRef90 U1LC4
UniRef90 D6V9F7
UniRef90-G7DRW5
UniRef90-B6IU13
UniRef90 V8YPX5
UniRef90-K2M9Z7
UniRef90-R5KYV9
UniRef90-UPI00037BE8A4
UniRef90 R5W5Ws
UniRef90-UPI00047774A6
UniRef90-E2PFS6
UniRef90 \({ }^{\text {R9PIY2 }}\)
UniRef90 F3Y2R5
UniRef90-S4MFR5
UniRef90_Q22Y44
UniRef90 UPIOOO28813C0
UniRef90-FOLTH2
UniRef90-M4V8A0
UniRef90-17KDE?
UniRef90-I2QAY1
UniRef90-S3DBX2
UniRef90-W9XVG8
UniRef90 E6X7C5
UniRef90-D9RR76
UniRef90-UPIO00401CED9
UniRef90 TOIRA1
UniRef90 UPI000289B1D2
UniRef90-A0A010YSW9
UniRef90-F7P105
UniRef90 U5A9S6
UniRef90 C3K764
UniRef90_E4NN48
UniRef90 UPI00047AD4CC
UniRef90 UPI000464004A
UniRef90-UPI000379BAFE
UniRef90-Z5XA12
UniRef90 S6AR36
UniRef90-D5UGZ7
UniRef90-S3ACG0
UniRef90-K9DU21
UniRef90 UPI000464DCFD
UniRef90-EONNS6
UniRef90_R1GJV4
UniRef90-14NAKO
UniRef90-V9DFZ5
UniRef90-H2BU31
UniRef90-F4AJF2
UniRef90 G7Q7S3
UniRef90-R9P9P6
UniRef90-UPI00028A158E
UniRef90 H1HLA6
UniRef90 G4R7C0
UniRef90-D9QIT7
UniRef90-UPI000381516B
UniRef90 UPI0003787B5F
UniRef90-U4T8U1
UniRef90_A8TXM5
UniRef90 G7CAY4
UniRef90 J2CV10
UniRef90-D7JEG3
UniRef90-E3RU90
UniRef90 Q15S27
UniRef90-D3EA79
UniRef90_B8NX90
UniRef90 K6VEU2
UniRef90 FOMAH5
UniRef90-V4HTJ7
UniRef90_UPI00042445A1
UniRef90 X0PMB7
UniRef90-B0T815
UniRef90-FOY9FO
UniRef90-UPI000248CC57
UniRef90 BOV6S6
UniRef90-V5FZ6
UniRef90-A0A024PVJ8
UniRef90_UPI0003B7741E
UniRef90 X0R6J4
UniRef90-N8QDF1
UniRef90_Q0YQX0
UniRef90 UPI0003636C9A
UniRef90-W4Q314
UniRef90-N8YFU7
UniRef90 N8ZN71
UniRef90 W7YDB9
UniRef90-DONW45
UniRef90_A6W055
UniRef90 UPI0002558263 R D Q A P L F G A I D Q Q V V
UniRef90-G4RF55
UniRef90_E0TE76

GTVRNP\VAA
DGSSPFG】IEQRV

HGQTI FGSTEQRVV GENIFGRIYQKVIKA VRNRILIPEGRQAVL
\(S D G S V L F G A T D Q R V V Q A\) \(G L G E L R N D V V A\)

G \(\square\) G S L I N GV

DGTPП FGA DDQKVIKA PDGRTLFGAIDQTV

G N N R S VF G N \(\square\) N Q Q \(\|\) I A A

KGHT \(\square\) F GA \(\square E\) QA \(V\)

DDTPL FGAlCQQVV
ADGSTPFGAI DQQVVQA
\(\square G T L R N T V V A\)


VAS FRDAALYVAHMAQASKGFFPVADSCGHAVQGVPPF


NK \(\quad\) VCVGGRYVEHVKE \(\square\) N NKMPSEPVY \(V G P N Y A A R V R E T G T S F P T V P V F\)



UniRef90_Q7VGX9 UniRef90-A0A010QD86 UniRef90-B8H960 UniRef90_G7WI93 UniRef90-S9WFT6 UniRef90-W1IRP2 UniRef90-W0SGK8 UniRef90_U2L4Q3 UniRef90_J2PAB8 UniRef90_L8TUT9 UniRef90_C5KEB0 UniRef90-W3XJT2 UniRef90- S5ECK6 UniRef90-T1X9Y9 UniRef90-FOY1M5 UniRef90_UPI00045DAEFB UniRef90 UPI00035FBFB2
UniRef90_Q0CHX0 UniRef90-A8LFT1 UniRef90 F8DAP3
UniRef90-B9L873
UniRef90_C9Z9Z9 UniRef90 UPIO00368A0CO UniRef90 F9TRJ1 UniRef90-K2BWT9 UniRef90-E8LRL3 UniRef90 F9RSS9 UniRef90_Q7ML44 UniRef90_G2HYO2 UniRef90-E6V1A8 UniRef90 FOQYL1 UniRef90-I2GLQ4 UniRef90_A0A023DHD4 UniRef90_J2ZWL3
\begin{tabular}{|c|}
\hline  \\
\hline
\end{tabular}



\footnotetext{
lupas_21
lupas_14
lupas_28
jnet conf sol25
sol5
sol0
jhmm
jpssm
}
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|l|}{\multirow[t]{34}{*}{}} \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline & & \\
\hline
\end{tabular}
170

\footnotetext{
lupas_21
lupas_14
lupas_28
jnet
conf sol25
sol5
sol0
jhmm
jpssm
}



\footnotetext{
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm
}

```


[^0]:    

