## QUERY

UniRef90_A0AO23DAKO
UniRef90-E3DY88
UniRef90-E3II66
UniRef90_C5D976
UniRef90_M5P075
UniRef90_UPIO0047977B7
UniRef90_C9RWL5
UniRef90-13E1G2
UniRef90-UPI00047D0D6F UniRef90-W1SKY2 UniRef90-K6D229
UniRef90_UPIO00300496D UniRef90_UPI0002F38970 UniRef90-U5LIU9
UniRef90-UPIO0036B37AA UniRef90-I8AEU8

## UniRef90-F7YZT9

UniRef90_UPI000479BC75 UniRef90-NOAY33
UniRef90_UPI00047B29AB UniRef90-UPI0002F300BC UniRef90_UPIO0047B7765 UniRef90-W8R0V1
UniRef90_UPI0001E89E8E UniRef90_A6CSS5 UniRef90_UPIO00471C211 UniRef90_UPIO0047433D0 UniRef90-R9C3K0 UniRef90-B7GMD9 UniRef90_UPI000255BDCD UniRef90_V6T753 UniRef90_UPI0003735FF9 UniRef90-D5DM46 UniRef90_UPIO0036574B5 UniRef90_K6BV74 UniRef90 V6IYD8
UniRef90-UPI0003485132 UniRef90_G9QJ75 UniRef90_UPI000368639F UniRef90_A7GV39
UniRef90_UPI0002889A89 UniRef90-IOJS10

```
UniRef90-X0R8B1
```

UniRef90_L5NEX7
UniRef90_A0A024PCJ6
UniRef90-D3G0F0
UniRef90_UPI0002F955F3
UniRef90_J8TEZ4
UniRef90-UPI0004019BE9
UniRef90-M8D7S3
UniRef90-J3A8N4
UniRef90-V6MBR9
UniRef90_D5WX44
UniRef90_L5MSW6
UniRef90-UPIO00469E191
UniRef90-Q9K6H9
UniRef90-W4QHB6
UniRef90-W7ZJV6
UniRef90-UPI0004728816
UniRef90_UPI000407C65F
UniRef90_UPIO00423DAA3
UniRef90_UPIO0037385F6
UniRef90-E6TX88
UniRef90-W4QNF4
UniRef90-N4WBF4
UniRef90_UPIO003768B9D
UniRef90-R9BWL1
UniRef90_UPI0002F96D8E
UniRef90_UPI0003F9E136
UniRef90_UPI00030FFA08
UniRef90_F7NIU3
UniRef90-Q5WB81
UniRef90_UPIO00262609B
UniRef90_W7YVQ9
UniRef90-J8TBG9
UniRef90_UPIO0041CE2F2
UniRef90-UPIO0036A3BCC
UniRef90-U1WET1
UniRef90_UPI0003B39199
UniRef90-I8S4P7
UniRef90-F5LA57
UniRef90-UPIOO0415A294
UniRef90-A1HRD6
UniRef90_UPI00034A21EC
UniRef90-UP1000225AE8C
UniRef90-UP10001E2CC25
UniRef90-A0A024Q7V7
UniRef90_Q8RD89
UniRef90_UPIO002E43A3D
UniRef90_W4VH74

10
${ }^{10} \mathrm{GMERQDVSTD}{ }^{20}$
 $\begin{array}{lllll}H & A & K & Q \\ Y & T & R & E \\ H & A & K & K \\ Y & T & R & E \\ Y & T & R & E \\ H & T & K & K \\ H & A & R & E \\ Y & T & R & E \\ Y & A & R & E \\ Y & A & R & E \\ F & Y & A & R & E \\ F & Y & A & R & E\end{array}$
 $\begin{array}{llllllll} & & & & & \\ K & E & F & Y & Q & K & V \\ N & D & F & F & K & K & L \\ K & E & F & Y & K & K & V \\ A & A & F & F & K & K & L \\ A & T & F & F & K & K & L \\ S & E & F & F & E & K & M \\ Q & E & A & K & A & F & T \\ A & D & F & F & K & K & M \\ Q & E & & E & T & A \\ Q & E & V & K & D & Y & A \\ Q & E & V & K & E & Y & A \\ Q & E & V & Q & E & Y & A \\ K & A & F & E & S & K & A\end{array}$

40


S D L L A I MV TVLLK
S D A R MV E V L K H E K MKI I K E W S VV I A A R



| $T$ |
| :---: |
| N |
| H |
| H |
| R |


|  | $L$ | $A$ |
| :--- | :--- | :--- |
| $P$ | $L$ | $L$ |
| $P$ | $L$ |  |
| $P$ | $L$ |  |
| $P$ | $M$ |  | K

A
$R$
K

H S S
K LA S VLQDENULI T GWSV
T

NTMFNVI QTRGGKVERWLLLLRR

## $\square$ N R

L | $E$ | $L$ | $A$ | $Y$ | $A$ | $V$ | $Q Q$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $F$ | $E$ | $V$ | $M$ | $N$ |  |

LNR A LFA HVMN
MHKLQHMVEQL E
K ME S M M A A L E E K N G A T

```
T P
```



## $E L M D D$

 LA $A$$F A$

, |  | $L$ | $M$ | $F$ | $A$ | $S$ | $A$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $E$ | $E$ | $F$ | $A$ |  |  |  |  |
| $D$ | $L$ | $I$ | $L$ | $D$ | $L$ | $A$ | $Q$ |
| $D$ | $V$ | $M$ | $N$ | $Q$ | $V$ | $D$ | $K$ |

$P$ E
$V A R L V D V L D E G S G A R V A S V E V R T R D S L D E M M K D L A A K W A$


## 

VAPTAFLVEKASATGARVE GWS I L NHELLMSTD

SRSDSLLLKK
$G V S$ I $Q V R A R V A M G E V L R R B M A$ $S$ L K E WTVVYWR


## K QLLEV N E WTI

TI R R E
A K M N T SVVSK I I EQEMDKES FK Q HV K V S T N E A DK I K

| $A$ | $Q$ | $Q$ |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $D$ | $D$ | $F$ | $K$ | $Q$ | $V$ |  |  |
| $A$ | $D$ | $T$ | $E$ | $K$ | $F$ | $A$ | $K$ | $E$ |

 $\begin{array}{lllllllllllll}R & A & & \\ T & G & V & E & E & K & E & L & L & Q & W & L \\ T & D & D & D & T & K & S & A & Y & Q & Q & F \\ Q & R & L & T & S & E & D & D & F & M & H & D & L \\ N & Q & S & E & H & V & D & D & F & Y & T & Q L\end{array}$ $\llcorner Q P \vee R$
$\qquad$

 LIVAAS GGQVEGWS V NELSQI TK I ANKNNDKVTTVSMY』KEPDGQFTKDLDQAI LLYIVNSLLDEMNAKI SEWSMYYKYDVRYSDSTBREHE




$E L V D L A N Y M M N N S A K V E D W Q V T L K E$
D DELILVEEQDLQLSNLQTIGEEMEIAAD
 N

$T$
 $R L Y D V F K K T H A N I N G W C F C A L E$
T A L H E L I N FA D A Y QY Q I E T G E L L I K E S

## QUERY

UniRef90_A0A023DAK0 UniRef90-E3DY88 UniRef90-E3II66 UniRef90_C5D976 UniRef90_M5P075
UniRef90_UPI0004 UniRef90_UPI00047977B7 UniRef90_C9RWL5 UniRef90_13E1G2
UniRef90_UPI00047D0D6F UniRef90-W1SKY2

## UniRef90 K6D229

UniRef90_UPI000300496D UniRef90_UPI0002F38970
UniRef90-U5LIU9
UniRef90_UPI00036B37AA
UniRef90-I8AEU8
UniRef90_F7YZT9
UniRef90_UPI000479BC75 UniRef90-NOAY33
UniRef90_UPI00047B29AB
UniRef90_UPI0002F300BC UniRef90_UPI00047B7765 UniRef90-W8R0V1
UniRef90_UPI0001E89E8E UniRef90_A6CSS5
UniRef90_UPIO00471C211
UniRef90_UPIO0047433D0 UniRef90_R9C3K0 UniRef90-B7GMD9 UniRef90-UPI000255BDCD UniRef90_V6T753 UniRef90_UPIO003735FF9 UniRef90-D5DM46 UniRef90_UPIO0036574B5 UniRef90_K6BV74 UniRef90-V6IYD8 UniRef90_UPIO003485132 UniRef90_G9QJ75 UniRef90_UPI000368639F UniRef90_A7GV39
UniRef90_UPI0002889A89 UniRef90-IOJS10
UniRef90-X0R8B1
UniRef90_L5NEX7
UniRef90-A0A024PCJ6
UniRef90-D3G0F0
UniRef90_UPI0002F955F3
UniRef90-J8TEZ4
UniRef90-UPIO004019BE9
UniRef90-M8D7S3
UniRef90-J3A8N4
UniRef90-V6MBR9
UniRef90_D5WX44
UniRef90-L5MSW6
UniRef90_UPI000469E191
UniRef90-Q9K6H9
UniRef90-W4QHB6
UniRef90-W7ZJV6
UniRef90_UPI0004728816
UniRef90_UPIO00407C65F
UniRef90_UPIO00423DAA3
UniRef90_UPIO0037385F6
UniRef90-E6TX88
UniRef90-W4QNF4
UniRef90-N4WBF4
UniRef90_UPI0003768B9D
UniRef90-R9BWL1
UniRef90_UPI0002F96D8E
UniRef90_UPIO003F9E136
UniRef90_UPI00030FFA08
UniRef90-F7NIU3
UniRef90-Q5WB81
UniRef90_UPIOOO262609B
UniRef90_W7YVQ9
UniRef90_J8TBG9
UniRef90_UPIO0041CE2F2
UniRef90-UPI00036A3BCC
UniRef90_U1WET1
UniRef90_UPIO003B39199
UniRef90_I8S4P7
UniRef90-I8S4P7
UniRef90_F5LA57
UniRef90_UPIO00415A294
UniRef90-A1HRD6
UniRef90_UPI00034A21EC
UniRef90_UPI000225AE8C
UniRef90_UP10001E2CB5
UniRef90_UP10001E2CC25
UniRef90-A0A024Q7V7
UniRef90-Q8RD89
UniRef90-UPIO002E43A3D
UniRef90- W4VH74
UniRef90_W4VH74 A

Q

EELKKENRAFHWSFDTNHHMQKATGTYQHP FFQEKIQ E E L L K K E N R A F H W S F D T N H H H W DELKRENRAFRWVLEENHHMKKATGDYKHP FFQEKIQL DELKNENRAFHWHFEANHHMKKATGIIYNP FFQEKI QL
 NDLMEQFSDWEWSTSFDAKHKEFKADSASSK
K ELQAKFPDWEWSVKNTSQKWEVTA V S SPTSKKHHN KKLQQQQFPDWDWSETSTGQKWEATAVSPTAKHH
DSLRRKFPDWEWSVTNTSQKWEVTAVSPSKHH


 QTLQDTFPEMHWSVKKDRHVKVLTGKLE KSHYVE E ELKRKFPDWDWSTANTSQKWEVTAVSPASNH KTIQKKFPKWEWTESKDQRHWEAEAVVSPSTST G Q

 NRLKQSMGHLSWNVMEEEDQWKAVGTHYNDLLKQEETLQL ENMQKENPDFSWVYNPNHAGYELKGLNQHETG VEUI KV
 SKLSKVFPNSDWVETKNHQSWQAKMVLQSSS KMEESILL
QQYVRTWSSFRWTVEP DGAGHKMI GKRETSACVETI QLL SDLKA QLDPN WTWESSHGE E HWKSRYPHFRWDKTVTATTWK LEEGTY REGPFTETLQV KSIK S NFRGFKWEVKRERDLWKAIGTM RKGSEDVNEVIL
 RAVLEPGS GWEVSESAEDPHWTAKAVRAHPHDALTEKLT RKLQAEFSHWAWSKNTNSNESSYSAVST
$R Q V K E R A N V A E W E D E Q S K D G Y K A T A Q K K F S S H$ E NDVKEKANVRKWELEQSHDGYKATA HKKFSSYEERVVV SKERNNFSTGNWTAFSSKHGGQLVVRQARKRAGTGETA QLVY

 E ELATEWNNAVIS QERTANAVKYTVVNSHKNKQUVETYS
 H MMS DDDD D WNVVTVD D S A Q E WK A TM T N Q N P DM DVQ E S L T D R L L M M L S E A K WT Q S S
 K E L A N K WP MA D DALAARQDHV V V Y Q ANLF
 QG D
 $Q N G V H M$

## \section*{,}

## .








 E QVMME QFKS DEMTHQQKNKN RIVVKA EQDRS GD HLVVVMVQV EWRTRLT
$\begin{array}{llllll}R & M & V & M & A & R \\ E & L & A & D \\ K & D & E & F & P & H\end{array}$

| H D L |  |  |  |
| :--- | :--- | :--- | :--- |
| L | S S | S | P | D KL S D K N S D DL E G KAL K K S $\mathrm{F} / \mathrm{Z}$ E E T G $\begin{array}{lll}\text { DFSKNTVVN } \\ H & \text { K N K L V T E }\end{array}$ NQFKDH



QUERY
UniRef90_A0A023DAKO UniRef90-E3DY88 UniRef90-E3II66 UniRef90_C5D976 UniRef90_M5P075
UniRef90_UPI0004 UniRef90_UPI00047977B7 UniRef90-C9RWL5 UniRef90-I3E1G2
UniRef90_UPIO0047D0D6F UniRef90-W1SKY2 UniRef90-K6D229 UniRef90_UPIO00300496D UniRef90_UPI0002F38970 UniRef90-U5LIU9 UniRef90_UPI00036B37AA UniRef90-I8AEU8 UniRef90_F7YZT9 UniRef90-UPI000479BC75 UniRef90_NOAY33 UniRef90_UPI00047B29AB UniRef90_UPI0002F300BC UniRef90-UPI00047B7765 UniRef90-W8ROV1
UniRef90_UPI0001E89E8E
UniRef90-A6CSS5
UniRef90_UPIO00471C211 UniRef90_UPIOO047433D0 UniRef90-R9C3K0 UniRef90-B7GMD9 UniRef90-UPI000255BDCD UniRef90_V6T753 UniRef90_UPI0003735FF9 UniRef90-D5DM46 UniRef90_UPIO0036574B5 UniRef90_K6BV74 UniRef90-V6IYD8 UniRef90_UPIO003485132 UniRef90_G9QJ75 UniRef90_UPI000368639F UniRef90_A7GV39
UniRef90_UPIO002889A89 UniRef90-IOJS10

```
UniRef90_UPIO00401DBDF
```

UniRef90-X0R8B1
UniRef90 L5NEX7
UniRef90-L5NEX7
UniRef90-A0A024PCJ6
UniRef90_D3G0FO
UniRef90_UPI0002F955F3
UniRef90_J8TEZ4
UniRef90_UPI0004019BE9
UniRef90-M8D7S3
UniRef90-J3A8N4
UniRef90_V6MBR9
UniRef90-D5WX44
UniRef90-L5MSW6
UniRef90_UPIO00469E191
UniRef90-Q9K6H9
UniRef90-W4QHB6
UniRef90-W7ZJV6
UniRef90_UPIO004728816
UniRef90-UPIO00407C65F
UniRef90_UPIO00423DAA3
UniRef90 UPI00037385F6
UniRef90-UPIO0037
UniRef90-E6TX88
UniRef90_E6TX88
UniRef90_W4QNF4
UniRef90-N4WBF4
UniRef90_UPIO003768B9D
UniRef90-R9BWL1
UniRef90_UPI0002F96D8E
UniRef90_UPI0003F9E136
UniRef90_UPI00030FFA08
UniRef90_F7NIU3
UniRef90-Q5WB81
UniRef90_UPIOOO262609B
UniRef90_W7YVQ9
UniRef90-J8TBG9
UniRef90_UPIO0041CE2F2
UniRef90-UPIO0036A3BCC
UniRef90-U1WET1
UniRef90_UPI0003B39199
UniRef90-I8S4P7
UniRef90_F5LA57
UniRef90_UPIO00415A294
UniRef90-A1HRD6
UniRef90_UPI00034A21EC
UniRef90_UPI000225AE8C
UniRef90_UP10001E2CC25
UniRef90-A0A024Q7V7
UniRef90-Q8RD89
UniRef90_UPIO002E43A3D
UniRef90_W4VH74

VTTGKKHN 90
100
110
VRTVT




 MATHTKQPVNAYIVYSVSGMEWNESSQAFFTRFKNRLTDID

L S TLT NGKAHTYLI YE LSTPTNGYTSSYLI YEATGGDGWGKGTE




 LS T N VVN GK S Y S F LI Y Y E V S GK H WN D K V K N L N K MV S S QL D K L



 TA YP Q GKYYQAVI LYRVVGESFNQKWTQQKK DI NAELKR】 LAYPTHNS R Q IVYM Y DVVMGK WREAN KQK VVTYVVET $\stackrel{\mathrm{V}}{\mathrm{V}} \mathrm{S}$ TWAMENTKENTFIL Y TWSKKNTKENTEII FEVSGEKWDPKNDRKMD
LA Y P VGK L Y R T A TL Y QV Q S E K Y N RN WP V Q E K K I H GE $\square T E$ E I




 $F A Y P E N G Q Y R$ L A HTY K L Q G S S L H T L A S Q QL E P L V N K R DD S

 T GVVSKNGTFDTYLVWQLDGNRKSLDPYMESI QEHWTKAL S K TSLKTDSQPDTTLVLRVEHTGGTDGLAAAYDRVKQ TVAS $T G V P K N G S F D T Y L V L Q L S G S R E S D L Y Y I E Q D Q E T A A K A L K N$ IS YP QEKK Q NSNYIVTWS GT QLE P NWVDA YQETEQR IVTH









 FASKNTGGIVLEKSYELIADKAGQTFNR DNLENRLNEL

 $V$ SLYTS GSKSEEVVAGSALTLDRGKENQVPVLRAMMESYLQQ
 I K D P H E T P Q A A K YI Y V W W G T N L D Q L WL D E L R A I T Q T F F I H





## QUERY

UniRef90_A0A023DAK0 UniRef90-E3DY88 UniRef90-E3II66 UniRef90_C5D976 UniRef90_M5P075
UniRef90_UPI0004 UniRef90_UPI00047977B7 UniRef90_C9RWL5 UniRef90_13E1G2
UniRef90_UPIO0047D0D6F UniRef90-W1SKY2

## UniRef90 K6D229

UniRef90_UPI000300496D UniRef90_UPI0002F38970
UniRef90-U5LIU9
UniRef90-UPI00036B37AA
UniRef90-I8AEU8

## UniRef90 ${ }^{-}$F7YZT9

UniRef90_UPI000479BC75 UniRef90-NOAY33 UniRef90_UPI00047B29AB UniRef90_UPI0002F300BC UniRef90-UPI00047B7765 UniRef90-W8R0V1
UniRef90_UPI0001E89E8E UniRef90-A6CSS5 UniRef90_UPI000471C211 UniRef90-UPIO0047433D0 UniRef90-R9C3K0 UniRef90-B7GMD9 UniRef90_UPI000255BDCD UniRef90_V6T753 UniRef90_UPIO003735FF9 UniRef90-D5DM46 UniRef90-UPIO0036574B5 UniRef90-K6BV74 UniRef90 V6IYD8 UniRef90-UPIOO03485132 UniRef90_G9QJ75 UniRef90_UPI000368639F UniRef90_A7GV39 UniRef90_UPI0002889A89 UniRef90-IOJS10

UniRef90_X0R8B1
UniRef90 L5NEX7
UniRef90-A0A024PCJ6 UniRef90-D3G0F0 UniRef90_UPI0002F955F3 UniRef90_J8TEZ4 UniRef90_UPI0004019BE9 UniRef90-M8D7S3 UniRef90-J3A8N4 UniRef90-D5W X44 UniRef9O-L5MSW6 UniRef90_UPI000469E191 UniRef90_Q9K6H9 UniRef90-W4QHB6 UniRef90-W7ZJV6 UniRef90_UPIO004728816 UniRef90_UPI000407C65F UniRef90_UPI000423DAA3 UniRef90-UP10003
UniRef90-E6TX88 UniRef90-W4QNF4 UniRef90-N4WBF4 UniRef90_UPI0003768B9D UniRef90-R9BWL1 UniRef90_UPI0002F96D8E UniRef90_UPIO003F9E136 UniRef90_UPIO0030FFA08 UniRef90_F7NIU3 UniRef90-Q5WB81 UniRef90_UPIO00262609B UniRef90-W7YVQ9 UniRef90_J8TBG9 UniRef90_UPI00041CE2F2 UniRef90_UP100036A3BCC UniRef90_U1WET1
UniRef90_UPIO003B39199 UniRef90-I8S4P7
UniRef90_UPIO00415A294 UniRef90-A1HRD6 UniRef90_UPIO0034A21EC UniRef90_UPIO00225AE8C UniRef90-UPI0001E2CC2
UniRef90-A0A024Q7V7 UniRef90-A0A024Q7
UniRef90-O8RD89 UniRef90-UPIOOO2





150
160

$F Q E K V \vee 1 F$

## 130 <br> 140





$F R G N A T I F$

F R GK P T $V$

FTGKSTVT

F

## F

F
F
FRGNAT T
FHENAEV

FHKSPQ1 F
GLQENDMF
FSHHPLVFSC
F
F SKEPTFF
FS D P TFF T C I K G
F S D Q A T I
F S K T A T I F
$F$
$F$ S Q D S P $\quad$ Y
F S GN T T FF
F S D Q S A $\square$
FTTNVKKF QLKTSE
促
A D
A DF $\| P Q F S T$

## 

 GLGLDTGEAY




 A GVTP Q $\quad$ TSAACI STFYTVQQGTTD IDEQPLYTEASELLVSFSGEELQQ FENKHNLYFTVVKSNDMPSKHQKLSDKANNILDDSPVVELV

 EMESA LL
F TK R S TKF E $\square$ N P A MFF $\mathrm{S} S \prod \mathrm{~F}$
V K K FTEAVKK F

## QUERY

UniRef90_A0A023DAK0 UniRef90-E3DY88 UniRef90-E3II66 UniRef90_C5D976 UniRef90_M5P075
UniRef90_UPI0004 UniRef90-UPI00047977B7 UniRef90_C9RWL5 UniRef90_13E1G2
UniRef90_UPIO0047D0D6F UniRef90-W1SKY2 UniRef90-K6D229 UniRef90_UPIO00300496D UniRef90_UPI0002F38970 UniRef90-U5LIU9 UniRef90_UPI00036B37AA UniRef90-I8AEU8

## UniRef90- F7YZT9

UniRef90_UPI000479BC75 UniRef90-NOAY33 UniRef90_UPI00047B29AB UniRef90_UPI0002F300BC UniRef90_UPI00047B7765 UniRef90-W8R0V1
UniRef90_UPI0001E89E8E UniRef90-A6CSS5 UniRef90_UPIS00471C211 UniRef90_UPI00047433D0 UniRef90_R9C3K0 UniRef90-B7GMD9 UniRef90_UPI000255BDCD UniRef90_V6T753 UniRef90-UPIO003735FF9 UniRef90_D5DM46 UniRef90_UPIO0036574B5 UniRef90_K6BV74 UniRef90-V6IYD8 UniRef90-UPIOO03485132 UniRef90_G9QJ75 UniRef90_UPI000368639F UniRef90_A7GV39 UniRef90_UPI0002889A89 UniRef90-IOJS10 UniRef90-UPI000401DBDF UniRef90-X0R8B1
UniRef90_L5NEX7
UniRef90-L5NEX7
UniRef90-A0A024PCJ6
UniRef90-D3G0F0
UniRef90_UPI0002F955F3
UniRef90_J8TEZ4
UniRef90_UPI0004019BE9
UniRef90-M8D7S3
UniRef90-J3A8N4
UniRef90-V6MBR9
UniRef90_D5WX44
UniRef90_L5MSW6
UniRef90-UPI000469E191
UniRef90-Q9K6H9
UniRef90-W4QHB6
UniRef90-W7ZJV6
UniRef90-UPI0004728816
UniRef90-UPI000407C65F
UniRef90_UPIO00423DAA3
UniRef90_UPI00037385F6
UniRef90-E6TX88
UniRef90-W4QNF4
UniRef90-N4WBF4
UniRef90_UPIO003768B9D
UniRef90-R9BWL1
UniRef90_UPI0002F96D8E
UniRef90_UPIO003F9E136
UniRef90_UPI00030FFA08
UniRef90_F7NIU3
UniRef90-Q5WB81
UniRef90-UPIO00262609B
UniRef90_W7YVQ9
UniRef90-J8TBG9
UniRef90_UP100041CE2F2
UniRef90_U1WET1
UniRef90_UPI0003B39199
UniRef90-I8S4P7
UniRef90_F5LA57
UniRef90-UPI000415A294
UniRef90-A1HRD6
UniRef90_UPI00034A21EC
UniRef90_UPI000225AE8C
UniRef90-UPI0001E2CC25
UniRef90-A0A024Q7V7
UniRef90_Q8RD89
UniRef90_UPIO002E43A3D
UniRef90_W4VH74



UniRef90 F4LR46 UniRef90 W4Q619 UniRef90－M1ZK20 UniRef90－D9RZW1 UniRef90 A0A024PNK9 UniRef90－W4V353 UniRef90－A8MJV5 UniRef90 T4W760 UniRef90 ToBYW4 UniRef90－R1CAV6 UniRef90－F6BL62 UniRef90 B0K1G5 UniRet90－E5WRJ9 UniRef90－D7AR67 UniRef90 KOJ047 UniRef90－UPI0001851487 UniRef90－G2MW09 UniRef90－F5SGY9 UniRef90 W9AQB1 UniRef90－J9HFY8 UniRef90－B81586 UniRef90 A5CYE0 UniRef90 UPIO002891CE1 UniRef90－UPIOOO2E926F4 UniRef90－G8M1W4 UniRef90－UP10004786821 UniRef90－S0FSF5 UniRef90－R9C415 UniRef90 KoAWY2 UniRef90－UPI00040F7B35 UniRef90－A0A031 WCZ8 UniRef90－B2A3F9 UniRef90 A6TK69 UniRef90－UPIO00479481D UniRef90＿W4Q831 UniRef90－UPI00047C3405 UniRef90 UPIO002DE8215 UniRef90－UPIO0047C48E2 UniRef90＿UPIOO0379CE65 UniRef90 F4A0R8 $\square A E \square K E \square I E V T K T E K 乌 D V Q S W S V Y S K R K M V R D S Q S V D Q M I$

## LLEAFTATGADVTDWSVINRKFMDFSDKHTAENV

 AL K E A F V A S G A T L A NTEFY A WS K TEEK S F E ELLSK M A

$\square N Y \square Q T A M S A M K A T G Y A \square H D W T V L D D E Y H \quad T E K Q L E T \square A$
NDVSVIEEAFSKTGANDNGWAKLNSDFTSQMNK VENLI
 TSLNQLIQFAHEHQYQIESGQLI IKEAFSTTEQDHIEK

## NTGAKYEYANDNA WAK $\square$ NNDFTSFYKII LLRVVDRTGAKMDRAMLHARASESVASEDDPGLA 

ASGAEFESVNTT GW VRADESAGDPEALAERAA NDLIDMKELAHKNNVEI QS WMALSRGT IGQVNKEMENQI

$\square K T \ V N Q Q S \square N A D \square S Q W S D Y T K K E K N T S D N D Y Y Q R E$ LIKAFEKTDSNFQSFNI NYRGVLSTNIEDLRQTT

$D \square K Y$ LLE $\|V N D \square D G K \square Q V G T V N T R T S L S E M E Q\| V N Q L \sqrt{A}$

S DYEVLADYVIEQDWDVHSFNVTMKLNGEKSEVLS LKKV AS GAE $\square$ NAVNINGWAM！QDKFVDQSKNWMEDA I
 YLETSFGATGATVIGYMIHDYGTLSLSQTELAH』A

HAGEAAF LETG
LTEMEALETIFNTAGASVGEVQFYAAESRYYTMDEDESTL QFLMSALRATGATIHDWTQLNSSFMNETQLAAAQVV

## 

DMELTEETRQTML
DMELTDANKKKMLL
$S E X E Y N \square S K$
S $\square$ SK D Q AKTAA
NGSKEKNL
F $\square$ E $\square$


DAKEQA
 SMELTDTAKE $\qquad$
$\square Q T L I T M G H A A E G T \square R \square I S K W Q G T W N D D P K F E G N A F P D A A$ WQTY ENQDEFE A LDFK K VI
$\square D$ YFEKF $\square$ NT T GSK V $\square E$ YG $V$ NTKFETT $\square$ NGQE $\square$ FS C F

D WT S Y GEDPADM A VQ｜A K E K QVVMLERREE Y | I |
| :--- |

## UniRef90 F4LR46

 UniRef90 W4Q619 UniRef90-M1ZK20 UniRef90_D9RZW1 UniRef90 A0A024PNK9 UniRef90-W4V353 UniRef90-A8MJV5 UniRef90 ${ }^{-}$T4W760 UniRef90-TOBYW4 UniRef90-R1CAV6 UniRef90-F6BL62 UniRef90-E5WRJ9 UniRef90-D7AR67 UniRef90 KOJ047 UniRef90-UPI0001851487 UniRef90-G2MW09 UniRef90-F5SGY9 UniRef90 W9AQB1 UniRef90-J9HFY8 UniRef90-B81586 UniRef90-A5CYEO UniRef90-UPIO002891CE1 UniRef90-UPIO002E926F4 UniRef90-G8M1 W4 UniRet90 UP10004786821 UniRef90-S0FSF5 UniRef90-R9C415 UniRef90- KoAWY2 UniRef90 UPIO0040F7B35 UniRef90-A0A031WCZ8 UniRef90-B2A3F9 UniRef90 A6TK6s UniRef90-UPI000479481D UniRef90-W4Q831 UniRef90-UPI00047C3405 UniRef90 UPIO002DE8215 UniRef90-UPI00047C48E2 UniRef90-UPIO00379CE65 UniRef90 F4A0R8UniRee90 UPI0003FD1E3C UniRef90-GOV415 UniRef90-F8FP95 UniRef90 A0A017RYM5 UniRef90-Q0AUD7 UniRef90-C0GGV4 UniRef90 B7DS36 UniRef90- T4ZP82 UniRef90-R5X324 UniRef90_O2RFY1 UniRef90 R7RMP9 UniRef90 F819T9 UniRef90-W2EA54 UniRef90-D7CJR5 UniRef90 K4LJ42 UniRef90-R5JU37 UniRef90-R5E863
UniRef90 A9KK90 UniRef90-R6JWE? UniRef90-UPIOOO467391F UniRef90-A0A015KQK6 UniRef90 R5L9F2 UniRef90-D3EIU3 UniRef90-R7N9Z8 UniRef90 S9T6Y6 UniRef90 R5P222 UniRef90-T4QYQ7 UniRef90-R7BL36 UniRef90 K4ZCL5 UniRef90-UPI000470FA7E UniRef90-R5DLB8 UniRef90 W4CIA9 UniRef90- R7INI2 UniRef90-UPIO004138D20 UniRef90_UPI00037AD208 UniRef90 R7H9E2 UniRef90-UPI0002E52214 UniRef90-C4Z4M6 UniRef90-R6R8M4 UniRef90 W7YA73 UniRef90-UPIO00288CDB3 UniRet90_EORCR8 UniRef90 R6KZU9 UniRef90-F4A717 UniRef90-G7VY12 UniRet90_C6CVS5 UniRef90_UPIOOO4717858 UniRef90-R6BK71 UniRef9O_UPIO0047284C8
 QDLEKENREFDWNEERNGEYRKRVGTKQTSDG NTERVVI LRTFGASRKNFTSTQESDDMYRIINLKGDDDTHLQVIVQS



$K N M N D N K Q K T \Pi S R D E E N N F R Q V E V E Y T E N T R H T N D A V Q$ EQLAGELGGAVHSKSMTDGMYEADGKW NRNLQVEMVVI TKMKKEGLQATKKETENSTNYSLA DTQNSSKLNV QEFGLTNANDTSRQLSNESFWQVDGQWPNAT RVQL EQLGULLSQHKTEKWQNQYACGAKMEGAVAGGVKVSAMAS ETFMSNHDSYSWKLEEENSHYVWQGKKENELG ITESI KL RRDSEQTHDRGAVQLEQGTGYQKASDKQHDAGFSSELIVRLC
$\square$ NQEEGYNQDTATAVDVRGKLTVF $\square \square$ SELKKK EANYSKNSASTDTGUKRELSGTTKDGVKISAMAS EDISKSПGLTK\EEIEETNMNQVTTYAQDDSERN DRVRQEMAQSGAKLTHTKMLKKAVYVAVEGETAAGGKiS NNLKLDKKGINWNQKGSGDKIQLCATIKGSDKEDS DKLKLEKDDENYSTKSSDHGNKSQKMVMAKAGTEKLDTQT NNDGDEESNTK W EENWNKSEKQ【YAQVKTQEKSUSI

LNNETKD
KHPHKGGVYDETLYT KQL NLHGVRDTEKSYRGFNEVKMEYSDEDRRI VIV EEDDNGVK YYAQDKDNSYNVSFT DIIKSPYR CDVVDDEAQHWIKMYSDN

Vs Vs V KNLGLKGTKTEGRSVNGENAYQMTGI WEGNTTVSTFLSSF ПKVSKGNDTVIEFDGAQ RRLSERLGLPPAELRSGGDHILYKASGPD SGGI RRTLLW SEปKGEYKปF TDDMTHLVLKNNNFEAHபKGR

D Y R Q Q DEVADLLGDEGGPVDRGEESFRVLDVYGETAFGPKAHVVL QELGLAKVQTQATQLENETYWRAVGVWPS GTRTEVVL

## Q $\quad$ YYNYNDKNTG

KDVADVGHTSGAPVSQSGTTYDKVTVSQQTAGVTT NRLAGQFGLTRSSLLEESGHADYEGKTTLPGGAP

## $Y / V$ $R / 1$ $\frac{L}{R} \begin{aligned} & \text { I }\end{aligned}$

KNDAGQDDGYAVTATQGDSFQESTDTKDGKYGKTVLQUVS $\square N F A D K L G D T G Y T F R N G T G D H F T K K M L V K K G K Y T V E L Q L$ FDQQAENNETAERKETVFVREAKRAKTTLKV
EKLKKVLFNTVKTFGVSQNETVYDENWNNKKKEDFTNVEL GKLSEKLGLPRGTIEM HG\|HPVYKVKVSGANGGNIALTL

 NN $\square \mathrm{K} \square \mathrm{DKK} \mathrm{K} \square \mathrm{NWNQKGSGDK} \mathrm{\square Q} \mathrm{\square CAT} \mathrm{\square KGSDKE} \mathrm{\square S}$
EQWQKDTGTTQLTQKQEQGKNVYRGKFVSDS DEEAVLW SSLSKSL GLQAVVKSEEEGHGAYR SSHKNGSMKTSLFW ENUAEKUNHYMUSDLVDEEYNSVKTDSQTSVNG DVILK ПDLAHKПGISNSLVYDTVTEAQTTTSSLIRSSDNVCTVLK DMLAHRLQQPERVLQTGHDVYRSEMVANAHQAGI
EAWSEGLLARKKIELJQTKNGKVIVASWQVNGSRVNW EKAAEK $\|$ G $\square$ NRYTIEQTSRDNVETMQLS $Q N G E N G S V L C R F$

KQLARRDQLPEVQQDEESGHTAYRVLDERNEVNTRFNWEE EQl| A G PP PIDHAKMTYNDKGQRVAGSWT LQLDNAVQTVRM
 KDRDP \IGYLKLNTYENKGNYHMEFKNSNDKGYI AR पADQLNDPAVSKVEENGHTVYRSVGSSGELKDRDNV DQL NTPAVNKVEENGHTVYRSVGSSGELKGRKNVMES RQI AASLGLSSVYRTYGEDSQSVVLQKEG ANADTVLRL A Q $\triangle A A Q L N M P A V N R V V E N G H T V Y R S V R D S K N L D R L N$

## UniRef90 F4LR46

 UniRef90-W4Q619 UniRef90-M1ZK20UniRef90 -D9RZW1 UniRef90-A0A024PNK9 UniRef90 W4V353 UniRet90-A8MJV5 UniRef90-T4W760 UniRef90-TOBYW4 UniRef90-R1CAV6 UniRef90-F6BL62
UniRet90 ${ }^{-10 K 1 G 5}$ UniRef90-E5WRJ9 UniRef90-D7AR67 UniRef90_KOJ047 UniRef90-UPI0001851487 UniRef90-G2MW09 UniRef90-F5SGYY UniRef90-J9HFY8 UniRef90_B81586 UniRef90-A5CYE0 UniRef90_UPIO002891CE1 UniRef90-UPIO0022E926F4 UniRef90-G8M1W4 UniRef90-UPI0004786821 UniRef90-SOFSF5 UniRef90-R9C415 UniRef90-KoAWY2 UniRet90_UPI00040F7B35 UniRef9-AOAO31WCZ8 UniRef90-B2A3F9 UniRef90-A6TK69 UniRef90-UPIO00479481D UniRef90-W4Q831 UniRef90-UPI00047C3405 UniRef90_UPIO002DE8215 UniRef90-UPIOOO47C48E2 UniRef90-UP1000379CE65 UniRef90-F4A0R8 UniRef90-UPIO003FD1E3C UniRef90-GOV415 UniRef90-F8FP95 UniRefgo-A0AO17RYM5 UniRe99O-QOAUD7
UniRef9O_COGGV4 UniRef90-B7DS36 UniRet90-T4ZP82 UniRef90-R5X324 UniRef90-Q2RFY1
UniRef90 R7RMP9 UniRef90-F819T9 UniRef90-W2EA54 UniRef90-D7CJR5 UniRef90_K4LJ42
UniRef90
U5JU37 UniRef90-R5E863 UniRef90-A9KK90 UniRef90-R6JWE2 UniRef90-UPIOOO467391F UniRef90-A0A015KQK6 UniRef90_R5L9F2 UniRef90-D3EIU3 UniRef90-R7N9Z8 UniRef90-s9T6Y6 UniRef90-R5P222
UniRef90-T4QYQ7 UniRef90-R7BL36 UniRef90_K4ZCL5 UniRef90-UPIO00470FA7E UniRef90-R5DLB8 UniRef90-W4CIA9 UniRef90-R71N12 UniRef90-UPI0004138D20 UniRef90_UPIO0037AD208 UniRef90 R7H9E2 UniRef90_UPIO002E52214 UniRef90-C4Z4M6 UniRef90_R6R8M4 UniRef90_W7YA73
UniRef90_UPIO00288CDB3 UniRef90-EORCR8 UniRef90-R6KZU9 UniRef90-F4A717 UniRefofo-G7VY12 UniRef90_UPIOOO4717858 UniRef90-R6BK71 UniRef90_UPIOO047284C8

|  |  |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  | LKTGENGEYQQMDLSDTTOXNPDYMMQCKEMLEDQYRSV VTVDQDGEPEQYIVTN:TTRQEMEPADSLYRKVKRYYEEV

 TNGGKKNSNEAYLUVVDISEHKVYKHIEDDYNELEKLLKNY DDAGKTYLVITRQSLGEQSLQQEDWKQNTSMKLKA

KQGHSYVRVMLVGEAAAQEMVS DQQHVQERMENT MGDKATDEDKNYUSUHIKGKGVTSTTMAYKAKLEKDCND QEENGRVYYTUSIQGSARTGMTQSAAEQLMKKLSSH $\square K G D N K N N K E Y Y V V D T D N K V Y K N K E V N Y S N V E N V A D N K$ TNESGNYTTQYVYVKINAYNNTECAADYRELVEGTFDA F QEDDGRAYYTISIQGSARTGMTQAAAERIJMKVPAR FTTHEMGEGESYVIVTVESADLTAGLAETAERTGGTLGAS VNVVDTGDNGYYV VVQISGDTDRKADMTVHEQVDQLLVDS LLTTESRKNENEISFVEIEFDNSLESAFYYKDLDRKAFES VNVVVTGENEYYAIVQLSGNEDHRLLTALHEQVSQLLT DS DMAVQREANRFFWVYQVEAKRLYSEVVATQEKFVRQLNDLD QEADGRDYYTVKI QGKGGMSASAQEGERLINALSDN $\square S \square K K S S T G E Y F D T D V E L Y K G F E S T S D Y E K L M K Q V L E E$ VSS TQSYVIVQETENKDS【GFMEQDQDEAGQQMKD
 NMM ERQTGQWYVVVQLESNDAGRERLDQLHKLCAEQLKS
 F PLTSEHQA AGQW MMERQAEQWYVVVQLDSSDAGREQLVRLHKLCAKLLKS


 DERTISI SYQT DYMGAGVQMKQGTANLQLAIHETRIISFGT DETTASSI SYTVPSIRHTLQSGTHRLAMQAAVHKDRVTIGF


 MEDVYTVYAYNKGIKNYIMIGKDKVNVNDCINETTVYLAT DERTISVSYDTDYMGQGVKMKQGHANLQLAVHETRISFGT


 TMDMFVVYAYDRYESSYVMLLGKNKVNVNISMEYD
$\square N D G F S T C A Y T T Q Y E P K$ RNNGKLMDLNYA LSNAY $\square T \square A T$ DATTVAVSYEAPK LPDAVQSGEHQVHMQMAVHETRITIGF
 $D G N L Y T V Y A Y S P C F S E S V R Q G T T R V N L A L T M Y Y N S R T Q Q T$
$D A T T A A V S Y E A P E L P L S I Q S G E H R I H M Q M A V H E T R \square T L G F$

| UniRef90_F4LR46 | V I |
| :---: | :---: |
| UniRef90-W4Q619 | P 1 |
| UniRef90-M1ZK20 | P 1 |
| UniRef90-D9RZW1 | P V I |
| UniRef90-A0A024PNKS | P |
| UniRef90-W4V353 | P V |
| UniRef90-A8MJV5 | P L |
| UniRef90-T4W760 | P |
| UniRef90-T0BYW4 | P |
| UniRef90-R1CAV6 | P |
| UniRef90-F6BL62 | P V |
| UniRef90-B0K1G5 | P 11 |
| UniRef90-E5WRJ9 |  |
| UniRef90-D7AR67 |  |
| UniRef90-K0J047 | P I L M T |
| UniRef90-UPI0001851487 | P |
| UniRef90-G2MW09 | P I |
| UniRef90-F5SGY9 | P I |
| UniRef90_W9AQB1 | P 1 |
| UniRef90-J9HFY8 | P |
| UniRef90-B81586 | P V V |
| UniRef90-A5CYE0 | P V I |
| UniRef90_UPI0002891CE |  |
| UniRef90-UPI0002E926F | P L V |
| UniRef90-G8M1W4 | P V |
| UniRef90_UPI0004786821 | P L I T |
| UniRef90-S0FSF5 | V V N |
| UniRef90-R9C415 | Pl I T |
| UniRef90-K0AWY2 | P 11 T |
| UniRef90-UPI00040F7B35 | P 1 I TV |
| UniRef90-A0A031WCZ8 | P |
| UniRef90_B2A3F9 | P L V |
| UniRef90-A6TK69 | PLI T T |
| UniRef90-UPI000479481D | P I I |
| UniRef90-W4Q831 | P I I TV |
| UniRef90-UPI00047C3405 | P I I |
| UniRef90_UPI0002DE8215 | P |
| UniRef90_UPI00047C48E2 | P I I T T |
| UniRef90-UPI000379CE65 |  |
| UniRef90-F4A0R8 | P L I T V |
| UniRef90_UPI0003FD1E3C | P |
| UniRef90-G0V415 | P 1 |
| UniRef90-F8FP95 | P V |
| UniRef90_A0A017RYM5 | P 11 l |
| UniRef90_Q0AUD7 | L |
| UniRef90-COGGV4 | L |
| UniRef90-B7DS36 | $V$ |
| UniRef90-T4ZP82 |  |
| UniRef90_R5X324 | PI 1 |
| UniRef90-Q2RFY1 | P L L |
| UniRef90-R7RMP9 | P L |
| UniRef90-F819T9 | PLI T ${ }^{\text {P }}$ |
| UniRef90-W2EA54 | PVI T S |
| UniRef90-D7CJR5 | P L |
| UniRef90-K4LJ42 |  |
| UniRef90-R5JU37 | P Y |
| UniRef90_R5E863 | P L V N T |
| UniRef90-A9KK90 | P\| 1 |
| UniRef90-R6JWE2 | P V |
| UniRef90-UPI000467391F | P |
| UniRef90-A0A015KQK6 | L |
| UniRef90_R5L9F2 |  |
| UniRef90_D3EIU3 | P V $\square$ T |
| UniRef90-R7N9Z8 |  |
| UniRef90_S9T6Y6 | P L I |
| UniRef90-R5P222 |  |
| UniRef90-T4QYQ7 |  |
| UniRef90-R7BL36 | P V |
| UniRef90_K4ZCL5 | P L |
| UniRef90-UPI000470FA7E | P L I |
| UniRef90-R5DLB8 |  |
| UniRef90_W4CIA9 | P V I T |
| UniRef90-R7INI2 |  |
| UniRef90-UPI0004138D20 | P V I |
| UniRef90_UPI00037AD208 | P L I T |
| UniRef90-R7H9E2 |  |
| UniRef90_UPIO002E52214 | P L |
| UniRef90_C4Z4M6 |  |
| UniRef90-R6R8M4 | P L |
| UniRef90-W7YA73 | P V I |
| UniRef90_UPIO00288CDB3 | PV |
| UniRef90-E0RCR8 | P L I T |
| UniRef90-R6KZU9 |  |
| UniRef90-F4A717 | P\| I |
| UniRef90_G7VY12 | P L I |
| UniRef90-C6CVS5 | P L I |
| UniRef90-UPI0004717858 | P |
| UniRef90-R6BK71 |  |
| UniRef90_UPI00047284C8 | P L I T |




