## QUERY

UniRef90_K9W3W4
UniRef90-K9QCR8 UniRef90_UPIo00411B2C9 UniRef90_K9SR84 UniRef90_U5QCJ9 UniRef90-K9ZCU3
UniRef90-Q8DJ79 UniRef90-B8HKN7
UniRef90-K9R715
UniRef90 - B4WQ12
UniRef90-UPIO004675E8C
UniRef90-K9YKU1
UniRef90-UPIO0020015DC
UniRef90 LoA775
UniRef90-UPIO0037ED9FE
UniRef90-B2JEU5
UniRef90 S5R484
UniRef90-A0A016QM33
UniRef90-N6Z514
UniRef90-UPI0003648013
UniRef90_D9SHJO
UniRef90-M1FEG9
UniRef90-IOK948
UniRet90_D7DHQ3
UniRet90-W0VB03
UniRef90-Q33DM5
UniRef90-UPI0004695469
UniRef90-E1ZNI9
UniRef90_UPI00035D617D
UniRef90_UPIO00255A392
UniRef90-CON262
UniRef90-C5BJB5
UniRef90-UPI00046FF9F6
UniRef90_UPIO003A85FC0
UniRef90-Q2CJO9
UniRef90-D6Y379
UniRef90_UPIOOO36CC504
UniRef90-SgzRJ0
UniRet90_K2LRQ7
UniRef90-H6SQKO
UniRef90-D3NT46
UniRef90- AOAO24KD46
UniRef90_N1V1RO UniRef90-UPI00036ABOFA UniRef90_UPIO0037EEFFB UniRef90-Q01637
UniRef90-VIWE8
UniRef90 S2L9C8
UniRef90-UPIIO0035CE53F UniRef90-WOSBB2
UniRef90_UPIO003B45273
UniRef90-E3HVK8
UniRef90-W7DKN1
UniRef90-131711
UniRef90-UPI000376FF66
UniRef90_U2AD50
UniRef90-UPIOOO426E1AE
UniRef90-HOPWR2
UniRef90-F5SMA2
UniRef90-UPIOOO3B67348 UniRef90-H6RDS9 UniRef90-12JJE1 UniRef90_UPIo0036226FF UniRef90 UPIO00382B942 UniRef90-Q2G579 UniRef90-D8N5L6 UniRef90-A4A410 UniRef90_UPIO003716C56 UniRet90_C8XKL1 UniRef90_UPIO003638AA4 UniRef90-C8PVG2 UniRef90-14XU43 UniRef90-UPI000255B33E UniRef90-F5XEY6 UniRef90-F8E214
UniRef90
U4VF34
UniRef90-A4VLP4
UniRef90_K5D6E8
UniRef90-U5MV25 UniRef90_UPI0004028B95 UniRef90_UPIO002E9E09E UniRef90_UPIOOO410769E UniRef90_UPIO003711168 UniRef90-J7LX99

10
10 P $\square$ A $\square D$
30030


| 40 |
| :--- |
| G |

GNSRG NNGEG

| W |  |
| :--- | :--- |
| $w$ | $S$ |
| $w$ |  | GTMSG NTVRNVTGPGFDFCSLANARTL NISDQLNEHFDD NCLRNITTDARAGIDPDEPFDVSAYAHAIFEYFLRN NCDRN VT

RGTMA
M

FDNPRNVTG

|  |
| :---: |
|  |



INFi SDTTTDALA

NTVRN MIS CPGGDFCAL


## QUERY

 UniRef90_UPI000411B2C9 UniRef90 K9SR84 UniRef90-U5QCJ9 UniRef90-K9ZCU3 UniRe90_Q8DJ79 UniRef90-K9R715 UniRet90-K1W439 UniRef90_B4WQ12 UniRef90-UPIO004675E8C UniRef90-K9YKU1 UniRef90-UPI00020015DC UniRef90 LoA775 UniRef90-UPI00037ED9FE UniRef90-B2JEU5 UniRef90- $55 R 484$ UniRef90-A0A016QM33 UniRef90-N6Z514 UniRef90 UPI0003648013 UniRef90_D9SHJO UniRef90-M1FEG9 UniRef90-10K948 UniRet90_D7DHQ3 UniRef90_WOVB03
UniRef90 G1Y428 UniRef90-G1Y428
UniRef90 O33DM5 UniRef90-UPI0004695469 UniRef90-E1ZN19 UniRef90_UPI00035D617D UniRef90-UPIO00255A392 UniRef90-CON262 UniRef90-C5BJB5 UniRef90-UPIO0046FF9F6 UniRef90_UPIO003A85FC0 UniRef90-Q2CJ09 UniRef90-UPIo00360F7BA UniRef90-D6Y379 UniRef90_UPIOOO36CC504 UniRef90-S9ZRJO UniRef90-K2LRQ7 UniRef90-H6SQKO UniRef90-D3NT46 UniRef90_R7QAL9 UniRef90-A0A024KD46 UniRef90_N1V1RO UniRef90-UPIO0036ABOFA UniRef90 UPIO00377EEFFB UniRet90_Q01637
UniRef9-VVIWE8
UniRef90_S2L9C8 UniRef90_UPIO0035CE53F UniRef90-WOSBB2 UniRef90_UPIooo3b45273
UniRef90-E3HVK8
UniRef90-W7DKN1
UniRef90-131711
UniRee90-UPI000376FF66
UniRef90_U2AD50
UniRef90-UPIOOO426E1AE UniRef90-HOPWR2
UniRef90-F5SMA2 UniRef90-UPIO003B67348 UniRef90-H6RDS9 UniRef90-12JJE1 UniRef90_UPI00036226FF UniRef90-UPIO00382B942 UniRef90-Q2G579
UniRe90_D8N5L6
UniRef90-A4A410
UniRef90_UPIO003716C56 UniRef90-C8XKL1 UniRef90_UPIIO003638AA4 UniRef90_C8PVG2
UniRef90 $14 \times U 43$ UniRef90_UPIOOO255B33E UniRef90-F5XEY6
UniRef90-F8E214
UniRef90-84VF34
UniRef90_AVVLP4
UniRef90_U5MV25
UniRef90-A1WQY1 UniRef90 UPIOOO4028B95 UniRef90OUPIOOO2E9E09E UniRef90-UP10000410769E UniRef90_UPIO003711168 UniRef90_J7LX99
UniRef 90 G6xM91
48013 ,

NPAVSNLPRKWNPCVVGSHDTYEHPHTNDLOAYMPATKDGR NPSFTNLPRKFNTAIAGCRDNSVHAEINDLAFMPAYKNGV



## N <br> N

N
N
H

## H D

$M D H \boxed{L} Y \mathrm{D}, \mathrm{G}$


 HPE F S F L P R K FK I A I TG S SA D R A A DCI H D V G L I A K R D D D G


 N

## LᄂYDLGGDLD

 NREFSNLPRKWNTAVA
H
H
D
F S E P
FSEP पGEDENISG HPEFAFDPRKFK NVGCPNSCARIQVADI GLKGQNGEQV NPEFAFLPRKFKI AFNSAAEDRVVLRVYDIGGLSVRNDAG HPEFTYLPRKFKI AVTGSPNDRAAVKVHDIGLRMHQNDGE

 | D |
| :--- |
| N |
| P |

## ,

D A

##  <br> L

, |  | $D$ | $C Q$ | Y V |
| :--- | :--- | :--- | :--- | HDLG

LLFDLGDTDC
HPEFDYLPRKF
HD
HPEFAF LPRK
LUYELGDLSLRRKA R
$\mathrm{H} D$
H
HDEFGIDGEIRLNMS
PEFDFLPRKFKIADCSAREDRAADMMHDIGGLYRDWRGQ DPQFSNLPRKFKTATSASDADTGLSYMHDLGF AKIIENGV FSNLPRKFKSAVSGNRRQDITHEIQDLSFIGSEHEHG

## NKDFSNLPRKFKSAV

DLGNIDLN
SPEROAEDGQKDK GCMNACGHHH GH GLLG VKKG NKDFSNLPRKFKISISASVHNAAHAQINDISFTPAIQNTD HPEFAFLPRKFKIAVSGASDDRAATGWHDI GLLVRNGAGE QREDGELLIGETRLNISS
P ロCGEMGRKFKMSFS
ND

GEVDLH1

100
110
120
QUERY
UniRef90_K9W3W4
UniRef90_K9QCR8
UniRef90_UPIO00411B2C9
UniRef90_K9SR84
UniRef90_U5QCJ9
UniRef90_K9ZCU3
UniRef90_Q8DJ79
UniRef90_B8HKN7
UniRef90_K9R715
UniRef90_K1W439
UniRef90_B4WQ12
UniRef90_UPI0004675E8C
UniRef90_K9YKU1
UniRef90_UPI00020015DC
UniRef90_L0A775
UniRef90_UPI00037ED9FE
UniRef90_B2JEU5
UniRef90_S5R484
UniRef90_A0A016QM33
UniRef90_N6Z5I4
UniRef90_UPI0003648013
UniRef90_D9SHJ0
UniRef90_M1FEG9
UniRef90_IOK948
UniRef90_D7DHQ3
UniRef90_W0VB03
UniRef90_G1Y428
UniRef90_Q33DM5
UniRef90_UPI0004695469
UniRef90_E1ZNI9
UniRe90_UP00035617D

## UniRef90_K9W3W4 UniRef90 UPI000411B2C9 URef90 K9SR84 UniRef90-K9ZCU3 UniRef90 ${ }^{-} 88 \mathrm{HKN} 7$ UniRef90-K9R715 UniRef90 ${ }^{-}$B4WQ12 UniRef90_UPI0004675E8C UREOKKM UniRef90 L0A775 <br> UniRef90_UPI00037ED9FE <br> UniRef90_B2JEU5 <br> UniRef90_A0A016QM33 <br> UniRef90_N6Z5I4 <br> UniRef90 ${ }^{-}$D9SHJ0 <br> UniRef90-M1FEG9 <br> UniRef90_10K948 <br> UniRef90_W0VB03 <br> UniRef90-Q33DM5 <br> UniRef90_E1ZNI9

UniRef90_UPI00035D617D
UniRef90_UPI000255A392
UniRef90-C0N262
UniRef90_C5BJB5
UniRef90 N2JK77
UniRef90 UPI00046FF9F6
UniRef90_UPI0003A85FC0
UniRef90-Q2CJ09
UniRef90_UPI000360F7BA
UniRef90_D6Y379
UniRef90_UPI00036CC504
UniRef90_S9ZRJ0
UniRef90 K2LRQ7
UniRef90_H6SQK0
UniRef90_D3NT46
UniRef90-R7QAL9
UniRef90-A0A024KD46
UniRef90_N1V1R0
UniRef90_UPI00036AB0FA
UniRef90_UPI00037EEFFB
UniRef90_Q01637
UniRef90_V6IWE8
UniRef90_S2L9C8
UniRef90_UPIO0035CE53F
UniRef90_W0SBB2
UniRef90_UPI0003B45273
UniRef90_E3HVK8
UniRef90_W7DKN1
UniRef90-I31711
UniRef90_UPI000376FF66
UniRef90_U2AD50
UniRef90_UPI000426E1AE
UniRef90_HOPWR2
UniRef90_F5SMA2
UniRef90_UPI0003B67348
UniRef90_H6RDS9
UniRef90_I2JJE1
UniRef90-UPI00036226FF
UniRef90_UPI000382B942
UniRef90_Q2G579
UniRef90_D8N5L6
UniRef90-A4A4IO
UniRef90_UPI0003716C56
UniRef90_C8XKL1
UniRef90_UPI0003638AA4
UniRef90_C8PVG2
UniRef90_-14XU43
UniRef90_UPI000255B33E
UniRef90_F5XEY6
UniRef90-F8E214
UniRef90-B4VF34
UniRef90-A4VLP4
UniRef90_K5D6E8
UniRef90-U5MV25
UniRef90_A1WQY1
UniRef90_UPI0004028B95
UniRef90_UPI0002E9E09E
UniRef90-UPI000410769E
UniRef90 UPI0003711168
UniRef90_J7LX99
UniRef90_G6XM91

QUERY
UniRef90 K9W3W4 UniRef90－K9QCR8 UniRef90－UPI000411B2C9 UniRef90 K9SR84 UniRef90－U5QCJ9 UniRef90－K9ZCU3 UniRef90 Q8DJ79 UniRef90－B8HKN7 UniRef90＿K9R715 UniRet90＿K1W439 UniRe90－B4WQ12 UniRef90－K9YKU1 UniRef90－UPI00020015DC UniRef90 LoA775 UniRef90＿UPIO0037ED9FE UniRef90－B2JEU5 UniRef90－${ }^{\text {S5R484 }}$ UniRef90－A0A016QM33 UniRef90＿N6Z514 UniRef90 UPI0003648013 UniRef90－D9SHJo UniRef90－M1FEG9 UniRef90－I0K948 UniRef90－D7DHQ3 UniRef90 WOVB03 UniRef90－G1Y428 UniRef90－O33DM5
UniRef90－UP10004695469 UniRef90－E1ZN19
UniRef90－UPIOOO35D617D UniRef90 UPIOO0255A392 UniRef90－CON262 UniRef90－C5BJB5 UniRef90＿N2JK77 UniRef90 UPIO0046FF9F6 UniRef90－UPI0003A85FC0 UniRef90－Q2CJO9 UniRef90－UPI000360F7BA UniRef90－D6Y379 UniRef90＿UPIOOO36CC504 UniRef90－S9ZRJO UniRef90－K2LRQ7 UniRef90－H6SQKO UniRet90－D3NT46 UniRef90 AOAO24KD46 UniRef90－N1V1R0 UniRef90－UPI00036ABOFA UniRef90－UPI00037EEFFB UniRef90－Q01637
UniRef90－V6IWE8
UniRef90－ $\mathrm{S} 2 \mathrm{L9C8}$ UniRef90－UPIO0035CE53F UniRef90－WOSBB2 UniRef90＿UPIO003B45273 UniRef90－E3HVK8 UniRef90－W7DKN1 UniRef90－131711 UniRef90－UPI000376FF66 UniRef90 U2AD50 UniRef90＿UPIO00426E1AE UniRef90－HOPWR2 UniRef90－F5SMA2 UniRef90＿UPIO003B67348 UniRef90－H6RDS9 UniRef90－12JJE1 UniRef90＿UPIo0036226FF UniRef90－UPIO00382B942 UniRef90－Q2G579 UniRef90－D8N5L6 UniRef90－A4A410 UniRef90－UPI0003716C56 UniRef90－C8XKL1
 VYRNNGLRANRQKARMMYLIEDWGUEKFRSEVEKQUGHSL VFRDNGSRANRLKSRLMWLLDEWG｜DKFRAEVEQRLGKSLI VFRDHGLRENRQKSRLMWLIDEWG VYSDYGPREARTRARMIVYLI EDWGIEKFRAEVEAGAGGL FRRDHGPRGNRQKARLRWLIDEWGLEKFRAAVVAKLPFEL
 VFRDKGSRGNRQQTRLMWLIEEMGLDAFRAAVEEEMGTTL LYTRYGLRGNRAKARVLWLVEAWGVDVFRAKLEAEDGDR IWRDNGERDKRPKGRFRLYLDEVGLEAFRAMVEERFGPDT AYRDHGFRVNRKKSRLKYLI DDMGVEKFREIVENDYGGYK VYNDHGRRDNKYKARCKYLVRAMGPENFAAAVEKEWEHCK IYNQYGRRDNIYKSRIKLLKSIGDENFQFQVNEEWKNLK AYRDHGYRVSRKKSRLKFLIKDGGPEKFREVVETEYGGRP VYNDHGRRDNAYKAR｜KKLVKALGVEEFARQVEAEF：HCLK VYVENRYDDE RFIDTVRRLGFEPFKTYVYAEVENDK VYVDQ RRENESFAQVVLRVGTKPFKERV
VFDRYGERTKRHKARMKYLLNDLGLETFLEKVQEEW VYNLHGRRDNAYKAR【KILVKALGIEEFKRQVEEEWSHLK VYVRERYEDE RFVDTAQRLGLAPFKEYV VYNAYGRRDNDYKARTKILVHELGIDAFRDEVEAEFARMP AFRDLGFRGNRQKCRMMWLIDELGVEGFRAEV VYVEQRLEDE GKVDTYHRIGMKPFKERV VFRDHGARDDRGARLMWLVEAMGVDAFRGAIEQRMGQ VYNLYGRRDNKYKARIKTLVHETGLEEGKADIEAEFEKTR VYNRHGRRDNKYKARIKILVKALGI DAFASEVEREWEQIR VFITHRELDE VYVEKRNESEL QFTDTFQRIGUEPFKERV VYNRYGRRDNKFKAR KILVKALGEEAFAEKVEAEWAH $\mathrm{K}_{\mathrm{K}}$ LWRDNGERSKRPKGRFRFYLDAVGVEAFRAMVEERFGPLE VYNRHGRRDNKYKARDKILVKALGIDAFAAEVEREWEQUK AY DVRESADETFLQAY RRLGPDPFKAAL NYiDHRHEDE RFDDTVRR乌GTESFKTRUYTERDER NYLKHRNEGE
VYNRYGNRDNKYKARTK LVKAWTPEVFAKRVEEEWANDK VYNRWGRRDNAWKARIKILVKALGVDAFRREVEDEWA VYNRFGRRDNKYKARUKILVHEI GVEEMQRLVEEEWAQDK
 WFRDNGDRKNRMSSRLMYMVDKLTMSGFREVIQEEFG SK AYVA RRESPAETFDAAFRRLGEAPFKEAL
MFRYGYRRGRNKARLKFLMKDWGAEKFRRVLEEEYDGFA VYNRFGRRDNKYKARIKLVKKLGPETFADMVEEEWKYLK VYNLNGRRDNKYKARIKILVQALGAEEFARLVEAEWEQIK LWRDNGERNKRPKGRFRMYLDQLG川DAFRSEVESLFG
LYRDFGYRKSRARARLKYLVADWGI EKFEEKVLELTG P VYVEQRHDDE
IFRDYGYRRLRNKARLKFLLAEWGTEKFRQVLQDEYLGYA VNRHGRRDNAYKARGKVLVKAVGGEEEFSRQVEEEYSHYAQ VFRDYGYRRLRNKARLKFLLNDWGTEKFRQVLEQEYLGRA VYNLHGSRNNLYKSRIKILVENLGTDAYREQVEKEFATMD VYV ANRTDEEL FIDTYRRIGAAPFKEKV I FRDYGYRRDRNRARLKFLVAQWGDEKFRQVLEEQY GYS IVRDYGYRRLRNKARLKFLLADWGPEKFREVLETEYLGYA VFDRYGERNNRNKARMKFLVNKMGDDEVLRLVEEE
 IFRDYGFRRLRNRARLKFLLAEWGTEKMRQVLQDEYLGYE IFDRLGERAKRLKARMKYLIKDLGKDAFMDLVNE TFVSLRQPEE RFLDTFRRVGTDPFKER TYLQYREAEE TFVDTLNRIGLGPFKE LYVE QRQDGEH FI ETVRRIGLDPFKERV VYNRYGRRDNKYKARIKILVHEI GADEYRRQVEEEFKHIL TYLAHRDSD AERFVDVVGRIGDEPFQAAV VYNLHGRRDNKYKARDKILVKAMGVEAFSNAVDAEW D VY DFRDYGYRRDRNRARLKFLVADWGVEKFREVLESEY品KRP TY DS R RRETPDETFLAA AYRRLGQAPFKEAL
VYLKYRQATDFGSETFAEVVDRIGTEPFKEYVYRDKSEQP VYNRHGRRDNKYKARDK ILVKALGI EAFAKEVEEEWQHLK VFDRYGERKSRAKARMKFLLKDIGGDAFKELLEQE I FRDYGYRRLRSRARTKFLIADWGPEKFREVLETKYDQRK FRDYGYRRLRNRARLKFLVAEWGVEKFRQVLEDDYEERK I FRDYGYRRLRNRARLKFLVADWGPAKFRQVLEDEYLERK VYVEQRTEDEKEEQFIDTFRRIGIDPFKERVV
 VYNARGRRDNKYKARIKTLVKAEG QQY DDDVEEEFRQiV LYARRE GSERFLDTFRRLGTAAFKDVV VYVQNRHEGE GSGRFIETVRRIGMEPFKQHV IFDRHGERARRNKARMKFLVKDLGIEAF LDLVEKE CYVADRERRGERRETFDETVRRVGLDPFK CF RDYGYRRMRTKARLKFLMNDWGPAKFRQULEDEYGGFK

| QUERY | $\text { LE R A S P E D } \begin{array}{r} 170 \\ \mathrm{LV} Q \end{array}$ |
| :---: | :---: |
| UniRef90_K9W3W4 | QTAAEKDEI |
| UniRef90-K9QCR8 | LPAAPKDEI |
| UniRef90-UPI000411B2C9 | ELEAEKDE |
| UniRef90-K9SR84 | L P A S PKDElE |
| UniRef90-U5QCJ9 | LTPAASEEF |
| UniRef90-K9ZCU3 | FKTAAPKDE |
| UniRef90-Q8DJ79 | LSAAAKDEI |
| UniRef90-B8HKN7 | L S A A |
| UniRef90-K9R715 | ESAAAKDE |
| UniRef90-K1W439 | APAALKDEITQ |
| UniRef90-B4WQ12 | LP A A PEDAlT E |
| UniRef90-UPI0004675E8C | LETAAP |
| UniRef90-K9YKU1 | LEFA A P D E D |
| UniRef90_UPI00020015DC | PDPGSVFD |
| UniRef90-L0A775 | $\square \mathrm{P}$ D G |
| UniRef90-UPI00037ED9FE | D A P SREED\\|VR |
| UniRef90_B2JEU5 | DGPSTLTE |
| UniRef90_S5R484 | NGPSTL |
| UniRef90-A0A016QM33 | $\square R D G P P A P V A R$ |
| UniRef90-N6Z514 | DGPSTLTQ |
| UniRef90_UPI0003648013 | LADGAPEEPVQ |
| UniRef90-D9SHJ0 | ELIA G $\square$ D Y E LL K |
| UniRef90-M1FEG9 |  |
| UniRef90-I0K948 |  |
| UniRef90-D7DHQ3 | D A P T $\square$ P E |
| UniRef90-W0VB03 |  |
| UniRef90_G1Y428 | VA Q Y R L E P A $\square$ |
| UniRef90-Q33DM5 |  |
| UniRef90-UPI0004695469 |  |
| UniRef90_E1ZN19 |  |
| UniRef90-UPI00035D617D |  |
| UniRef90_UPI000255A392 | E G A A E L T L A E |
| UniRef90-C0N262 |  |
| UniRef90_C5BJB5 |  |
| UniRef90-N2JK77 | D G P S T L I E |
| UniRef90_UPI00046FF9F6 | P D P G |
| UniRef90-UPI0003A85FC0 | D G P A R |
| UniRef90-Q2CJ09 |  |
| UniRef90_UPI000360F7BA |  |
| UniRef90-D6Y379 |  |
| UniRef90-UPI00036CC504 | D G P S T |
| UniRef90_S9ZRJ0 | $\square \mathrm{AK} \mathrm{D} \mathrm{GPSTITE}$ |
| UniRef90-K2LRQ7 |  |
| UniRef90-H6SQK0 |  |
| UniRef90-D3NT46 |  |
| UniRef90-R7QAL9 | F R R A |
| UniRef90-A0A024KD46 |  |
| UniRef90-N1V1R0 | LP D G |
| UniRef90_UPI00036AB0FA | D GP G R $\square$ T Q |
| UniRef90-UPI00037EEFFB | A EQPELE |
| UniRef90_Q01637 |  |
| UniRef90_V6IWE8 | LP T A GK D E 1 V |
| UniRef90-S2L9C8 |  |
| UniRef90-UPI00035CE53F | LP P A A P R P A |
| UniRef90-W0SBB2 | D GP A T L T |
| UniRef90-UPI0003B45273 | LPEARP |
| UniRef90-E3HVK8 | L $\square \mathrm{K}$ G GPD T $\square$ T Q |
| UniRef90-W7DKN1 | LDQ Y R L D |
| UniRef90-l31711 |  |
| UniRef90-UPI000376FF66 | LP D GAPSNLV |
| UniRef90_U2AD50 | LP D GP P |
| UniRef90-UPI000426E1AE |  |
| UniRef90-H0PWR2 | D GPN |
| UniRef90-F5SMA2 | F T K D P P L |
| UniRef90-UPI0003B67348 | LP D GP P E P T E |
| UniRef90-H6RDS9 |  |
| UniRef90-I2JJE1 |  |
| UniRef90-UPI00036226FF |  |
| UniRef90-UPI000382B942 |  |
| UniRef90-Q2G579 | LEPPAAE |
| UniRef90_D8N5L6 |  |
| UniRef90-A4A4IO | S HRGGPNTLTE |
| UniRef90-UPI0003716C56 |  |
| UniRef90-C8XKL1 | LD G P A P VD |
| UniRef90-UPI0003638AA4 |  |
| UniRef90_C8PVG2 | V E |
| UniRef90-14XU43 | D GP A QLT E |
| UniRef90-UPI000255B33E |  |
| UniRef90-F5XEY6 | LP D G A P E T |
| UniRef90-F8E214 | L T DGPEPET |
| UniRef90-B4VF34 | LT D G |
| UniRef90-A4VLP4 |  |
| UniRef90-K5D6E8 |  |
| UniRef90-U5MV25 |  |
| UniRef90-A1WQY1 | E $\square$ D G G P H T $\square$ S Q |
| UniRef90-UPI0004028B95 |  |
| UniRef90-UPI0002E9E09E |  |
| UniRef90-UPI000410769E |  |
| UniRef90-UPIO003711168 |  |
| UniRef90-J7LX99 | $\square \mathrm{P}$ P A A P K P |
| UniRef90_G6XM91 |  |

UniRef90_s2YVI7 UniRef90_A0A059DXA2 UniRef90-S6AMC1 UniRef90_UPI000382093C UniRef90_V8AAH7 UniRef90-S0ET72
UniRef90 K0ESR88 UniRef90-A6FNQ0 UniRef90-V4YQ07 UniRef90_UPI00029A059B UniRef90-UPIO003648492 UniRef90_UPI0003718891 UniRef90-A3PH93
UniRef90_UPIO0037AEC5D UniRef90_UPI0003AD5F9E UniRef90-L1MAV4
UniRef90-I7KJW2

## UniRef90_R7X1U0

UniRef90_A0A031K735 UniRef90-A0A031MAU8 UniRef90-H0HJ10 UniRef90-UPIOO04734464 UniRef90-X6L3H5 UniRef90-F6AIE2
UniRef90-G9Q156 UniRef90-H2BVX8 UniRef90-QOVQB2 UniRef90-A0A022LEE2 UniRef90_B6IP64 UniRef90_S9Q659 UniRef90-W9BRC1 UniRef90_UPIO003462B3A UniRef90_A0A058ZNS6 UniRef90_UPI00036C51F6 UniRef90-C5CJI2 UniRef90-Q0G235 UniRef90-N6YCU5 UniRef90-B7RHE1 UniRef90-H1FZL7 UniRef90-H5Y4N5 UniRef90-A8HUA9 UniRef90-X0QVG4 UniRef90-13Z280
UniRef90_UPI0003B42498
UniRef90-D4GSB2
UniRef90_JOMSA1
UniRef90-F2JU444
UniRef90-A0A031I2T6
UniRef90_A0A011RRM7
UniRef90_UPI0002F39974
UniRef90-D8U921
UniRef90_UPI0002DC779D
UniRef90_A3K1L2
UniRef90_A3TKI0
UniRef90 ${ }^{-}$K7RLQ0
UniRef90_UPIO00372123D
UniRef90-W6RF17
UniRef90-10WKH7
UniRef90-A6VXT8
UniRef90-A3WA17
UniRef90-D3SMH7
UniRef90_W7PRGG7
UniRef90_UPIO003B57452
UniRef90_UPI000464308A
UniRef90_UPIO003748805
UniRef90_UPI00037C7966
UniRef90-UPIO002F61409
UniRef90_UPIO003622BAA
UniRef90_UPIO0047099BB
UniRef90_UPI0003B4AD2A
UniRef90_UPI000467D8DC
UniRef90_UPI0003782B76
UniRef90-Q8YEW1
UniRef90-H1G4W6
UniRef90-UPI00035E0C8A
UniRef90-C9KKQ3
UniRef90_I3UPF0
UniRef90-IOHRQ0
UniRef90-WODC00
UniRef90_UPI0003666F84
UniRef90-UPI00036C92CE
UniRef90-V7D383
UniRef90_UPIO003B637EF
UniRef90_V4GTL8
UniRef90-D6Z7B2
UniRef90_UPIO0047999F7
UniRef90 B7QY99
UniRef90-F3KR45
UniRef90-M1NQB2
UniRef90-M2XD40
UniRef90_O66583
UniRef90_C6W2I1


UniRef90_S2YVI7
UniRef90_A0A059DXA2
UniRef90_S6AMC1
UniRef90_UPI000382093C
UniRef90_V8AAH7
UniRef90_S0ET72
UniRef90_K0ESR8
UniRef90_A6FNQ0
UniRef90_V4YQ07
UniRef90_UPIO0029A059B
UniRef90_UPI0003648492
UniRef90_UPI0003718891
UniRef90_A3PH93 UniRef90_A3PH93
UniRef90_UPI00037AEC5D UniRef90_UPI0003AD5F9E UniRef90_L1MAV4
UniRef90_I7KJW2
UniRef90_R7X1U0
UniRef90_A0A031K735 UniRef90-A0A031MAU8 UniRef90-H0HJ10 UniRef90_UPI0004734464 UniRef90_X6L3H5 UniRef90_F6AIE2
UniRef90_G9QI56
UniRef90_H2BVX8 UniRef90_Q0VQB2
UniRef90-A0A022LEE UniRef90_A0A022
UniRef90 B6IP64 UniRef90_S9Q659 UniRef90_W9BRC1 UniRef90_UPI0003462B3A UniRef90-A0A058ZNS6 UniRef90_UPI00036C51F6 UniRef90_C5CJI2 UniRef90_Q0G235 UniRef90_N6YCU5 UniRef90_B7RHE1
UniRef90 H1FZL7
UniRef90-H5Y4N5 UniRef90_A8HUA9 UniRef90-X0QVG4 UniRef90_I3Z280 UniRef90_UPI0003B42498 UniRef90_D4GSB2
UniRef90 J0MSA1 UniRef90_F2JU44 UniRef90_A0A031I2T6 UniRef90_A0A011RRM7 UniRef90_UPI0002F39974 UniRef90 D8U921 UniRef90_UPI0002DC779D UniRef90_A3K1L2 UniRef90_AЗTKIO UniRef90_K7RLQ0 UniRef90_UPI000372123D UniRef90_W6RF17 UniRef90_IOWKH7 UniRef90_A6VXT8 UniRef90-A3WA17 UniRef90_W7PRG7 UniRef90_UPI0003B57452 UniRef90_UPI000464308A UniRef90_UPI0003748805 UniRef90_UPI00037C7966 UniRef90_UPI0002F61409 UniRef90_UPI0003622BAA UniRef90_UPI00047099BB UniRef90_UPI0003B4AD2A
UniRef90 UPI000467D8DC UniRef90_UPI0003782B76 UniRef90_Q8YEW1 UniRef90_H1G4W6
UniRef90_UPIO0035E0C8A UniRef90_C9KKQ3
UniRef90_I3UPF0
UniRef90 IOHRQ0
UniRef90-WODC00 UniRef90_UPI0003666F84 UniRef90_UPI00036C92CE UniRef90_V7D383
 VGFEVHVGGGQGRTPH LATLVNEFVPEAELLDYLEAIMR




 E WY QI T L G G S L S GTP TPGK VI GP S FA A A E V A DVV EA L L A E WY QV T L G GA Q G K H S T L G KV I G P S F S A A E I P P Q V I E Q I I A




##  <br> -

 A 4A

## யー

 $3 x^{2}+5$






 Y GF H V $\mathrm{H} V \mathrm{~V}$ G G L L S S QP H $\quad$ L A Q K L E F Y QI T L G GKANHK A R L G E L I G P A V P P E S E VVVDVVER I L D





 V VF NVVVGGFFS $\square$ K R NVMSIVPLGCSVTQDQLMPFTEALL R E WY QV Th G G S D G S GP TVVA GKVV G P S F S S FEEV P DVIDEA L N

 E S Y Q I S L G G S A D E S A A V G T V L G P S $V$ G Y D S V P D D

 VRVVV LA G G GLGGRTPMMGE VVVREDLDPWQHLLDTYL EA L V R
 E WY QV S L G G DQ G H A A R I G R V I G P S F S A E E V P D V V S R I I D EYYQUT L GGNANENAA IGGKVVGPSFSYDS\|VDAVEAVVN
 $\square G Y D L W V G G A L S V V P$ R F A E R L G A WV A P D QVVETWLGVTS $E T G F E V I V G G G Q G R T P H V G V T I K P F V A K D Q L L D Y L D A V M R$



 $E F Y Q V S L G G N A A R G A S L G K D L G P S F A Q D D M A D V I D E K L D A$


 $P G F D L W V G G G L S T N P$ I F A K RVVGVFVRPDEVTEVWGGVCS



 LLFE I LI G G L L S S P K R N E T S L R L L N L WWV P E S S I L A V T R V V L E


| UniRef90_S2YVI7 | ПD G\VA P 170 |
| :---: | :---: |
| UniRef90-A0A059DXA2 | P Q E |
| UniRef90_S6AMC1 |  |
| UniRef90_UPI000382093C | F S K D G P A T $\square$ T Q |
| UniRef90_V8AAH7 |  |
| UniRef90_S0ET72 | PE P A VP |
| UniRef90_K0ESR8 | LD G P A P E Q P T K |
| UniRef90_A6FNQ0 |  |
| UniRef90_V4YQ07 |  |
| UniRef90_UPI00029A059B | R P E EL |
| UniRef90_UPI0003648492 | A AFGGAD |
| UniRef90_UPI0003718891 |  |
| UniRef90_A3PH93 |  |
| UniRef90 UPI00037AEC5D |  |
| UniRef90_UPI0003AD5F9E | L E P A A P |
| UniRef90_L1MAV4 | L A D GP A A P I |
| UniRef90_17KJW2 | L $\square$ D G P K V E |
| UniRef90_R7X1U0 | L |
| UniRef90_A0A031K735 |  |
| UniRef90_A0A031MAU8 |  |
| UniRef90 H 0 HJ 10 |  |
| UniRef90_UPI0004734464 | D G P A T LT E |
| UniRef90-X6L3H5 | A E |
| UniRef90_F6AIE2 |  |
| UniRef90_G9QI56 | LP E A G T D LT K |
| UniRef90_H2BVX8 |  |
| UniRef90_Q0VQB2 |  |
| UniRef90_A0A022LEE2 | LP D G A P E |
| UniRef90-B6IP64 |  |
| UniRef90_S9Q659 | R A R A A |
| UniRef90_W9BRC1 |  |
| UniRef90_UPI0003462B3A | LP D G |
| UniRef90_A0A058ZNS6 |  |
| UniRef90_UPI00036C51F6 | LA D G A P E |
| UniRef90_C5CJI2 | $V E E A A$ |

UniRef90 Q0G235
UniRef90 N6YCU5
UniRef90_B7RHE1
UniRef90_H1FZL7
UniRef90 H5Y4N5
UniRef90_A8HUA9
UniRef90-X0QVG4
UniRef90 I3Z280
UniRef90 UPI0003B42498
UniRef90_D4GSB2
UniRef90-J0MSA1
UniRef90 F2JU44
UniRef90-A0A031I2T6
UniRef90_A0A011RRM7
UniRef90_UPI0002F39974
UniRef90 D8U921
UniRef90_UPIO002DC779D
UniRef90_A3K1L2
UniRef90-A3TKIO
UniRef90 K7RLQ0
UniRef90_UPI000372123D
UniRef90-W6RF17
UniRef90 IOWKH7
UniRef90_A6VXT8
UniRef90-A3WA17
UniRef90_D3SMH7
UniRef90_W7PRG7
UniRef90_UPI0003B57452
UniRef90_UPI000464308A
UniRef90_UPI0003748805 UniRef90_UPI00037C7966
UniRef90_UPI0002F61409
UniRef90 UPI0003622BAA
UniRef90 UPI00047099BE
UniRef90_UPI0003B4AD2A
UniRef90_UPI000467D8DC
UniRef90 UPI0003782B76
UniRef90 Q8YEW1
UniRef90-H1G4W6
UniRef90_UPI00035E0C8A
UniRef90 C9KKQ3
UniRef90_I3UPF0
UniRef90-IOHRQ0
UniRef90_W0DC00
UniRef90_UPI0003666F84
UniRef90_UPI00036C92CE
UniRef90_V7D383
UniRef90 UPI0003B637EF
UniRef90_V4GTL8
UniRef90_D6Z7B2
UniRef90 UPI00047999F7
UniRef90 B7QY99
UniRef90_F3KR45
UniRef90-M1NQB2
UniRef90 M2XD40
UniRef90_O66583
EKGAAQE
LE R G G

LE T A GED L A D G

LAPP

LP D G
EAPALYEDL

LE R $\square K \mathrm{P} Y$
$P$ A A GEDMVR D GPQTLTR

P Y E E A P E

LA D GAPE
LAPAPAKP LT

ETR
$L L R G G E E$
LAD GAPE

LR G GSTTLTE
LPDGPAPD
LETAG
$L \mathrm{~V} P \mathrm{APPQVPTR}$
$\square E$ D G P R Q P $\square$
A $\square$ P S K GK D LV

## UniRef90 в8НзМ3 UniRef90-G8NDY9 UniRef90-D5CQN4

 UniRef90_UPI0003B635B4 UniRef90-Z5XCB6 UniRef90_G2HZC7 UniRef90-A0A024KOS3 UniRef90-A0A024IDX0 UniRef90_UPI00047E4B9C UniRef90-UPI00046AA3C0 UniRef90 A7HIR4 UniRef90_UPIOOO345B865 UniRef90-G8LXY6 UniRef90 ${ }^{-}$I3E356 UniRef90-W4HX59 UniRef90-EORGU5UniRef90-B2GHP3 UniRef90-E4PNR5 UniRef90-I0RR42 UniRef90-UP10002E1DD9B UniRef90_K1ZOC3 UniRef90-DOLWF7 UniRef9O-E7QXE6
UniRef90_UPI0003B72C2F
UniRef90_UPI000381FFA5
UniRef90-U2XXY5
UniRef90-U1HI22
UniRef90-UPI0002ED6A1F
UniRef90 D9W5I1
UniRef90_UPIO003B64BF5
UniRef90-UPI0003646708
UniRef90_UPI0003B314CA
UniRef90_UPI0003B7B4B6
UniRef90_L9VVD1
UniRef90-A0A059KI97
UniRef90_A0A038H267
UniRef90_V4PK78
UniRef90-A9AY07
UniRef90_U5WCY1
UniRef90_C1DCW8
UniRef90-A71198
UniRef90_UPI0004797BC9
UniRef90-W8YTG4
UniRef90-UPI00036AC4AD
UniRef90_UPIO003720B4C
UniRef90-M1SES1
UniRef90-Q7MRV9
UniRef90_V5S9D4
UniRef90-UPI00035E7E7C
UniRef90-N6WRL7
UniRef90-N9USR4
UniRef90-B1ZVT5
UniRef90-14ET60
UniRef90_Q2Y9X2
UniRef90-TOEO92
UniRef90-M5RPN1
UniRef90-W0J777
UniRef90-UPIO0047CAC53
UniRef90-U5MMR4
UniRef90_UPI00036C6689
UniRef90_UPI0004407DA2
UniRef90_S5XK75
UniRef90_MOBM77
UniRef90-A6LRN6
UniRef90_D8Q3J6
UniRef90_UPIO00378F426
UniRef90_UPIO003798218
UniRef90-UPI00047D1A0D
UniRef90-H5WLQ8
UniRef90_G8NNW9
UniRef90-E6QHF6
UniRef90_UPI0003B58D1E
UniRef90-MOAGG2
UniRef90-K5ULA0
UniRef90-N9L480
UniRef90_UPI00047ADA24
UniRef90-D8J567
UniRef90_UPI0003B71AE7
UniRef90-B6HKD5
UniRef90_UPI0001BF6C73
UniRef90_UPI000378DB7F
UniRef90-B3QH93
UniRef90_UPI00041218D9
UniRef90_UPI0001744C2C
UniRef90_UPI000404C40F
UniRef90-AORUH9
UniRef90-F8P3N1
UniRef90-E8V3C6
UniRef90-D3SOV5
UniRef90_M5BPT2
UniRef90_Q2W562

1


 $D C P R V V L G G P D N G E S V D E V D D P S W A D V D E V S R Y V G$ DGPRPI MT CPV S G DDEGEVVDVRELVK QVDTYFDKN $R N L M A C T G I E F C K L S F A E T R D V A Q S L V P E L D A R L E D$




 $\mathrm{N} T \vee \mathrm{R} \mathrm{N}$ D S WRN $\stackrel{T}{ }$


MI
$M$ M C P GLD Y CTLAANARP LA QDISQRFA








 D S A R NV LG CPA A G LDD D H E CF D A Q P V V D A V T D F F T E N R E
 $\square \mathrm{N}$




 DVNRNVMCNPYQSEDHQEIQQDTGAYHEI WLDQEKEEEEP

 NFPRNVADSPDSGVEKGEVVDVTPYAEALDNKIMQNV $N T V R N V M C A P L A G V C R D E A F D A T P Y A Q A T G T F F L R N$

 LP STSAYHE IWLD K K L K DF EP $N T|L R N M T S C A / L A G A C G R E| L V D A G K V A E Q L A R T W M R$

| 50 |  |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
| UPI0003B635B4 HPEFQFDPRKFK |  |
|  |  |
|  |  |
| (VN |  |
|  |  |
| UniRef90 UPI00047E4B9C SPEFSNLPRKFK |  |
|  |  |
|  |  |
| G8LXY6 |  |
|  |  |
|  |  |
| N N |  |
|  |  |
|  |  |
|  |  |
|  |  |
| K1Z |  |
|  |  |
|  |  |
|  |  |
| Ref90 U2XXY5 QYD\GEL Ki Kis iclo |  |
|  |  |
| PPIO002ED6A1F DPAFSNLPRKFKTAVSGSPHHDVAHEVNDVAFVGVVHPEG |  |
| UniRef90-UP10003B64BF5 REEFQNLPRKFKTAISGNARQDVTHEIQDVSFIGANHPEY |  |
|  |  |
|  |  |
| UPI0003B |  |
|  |  |
|  |  |
|  |  |
|  |  |
| U5WCY1 DPRYSNLPRKFKSSLSWDADTPY QVNDISFLGVQHPHG |  |
|  |  |
|  |  |
|  |  |
| W8YTG4 4 DFSNLPRKYKMSVSANI YNNAHAEI NDLAFTPDDGEEV |  |
| UPIOOO3720B4C PEYSDLPRKHK\TVSTCPYWCTAPEINCVAFVGAEKDGR |  |
|  |  |
| RV9 |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| M5RPN1 HREMYGLPRKFNIAFDGGGSDSALDDTNDVGFHAVEVPAG |  |
|  |  |
|  |  |
| UPI00047CAC53 DLYERPRKFNVAFDSGGSTSVLADTND: GFQAVRIPAG |  |
|  |  |
|  |  |
| UniRef90-S5XK75 HGEFQFLPRKFKIAISAGAKERAVIAAHDIGLIVRNDAGE |  |
| UniRef90-MOBM77 Y ${ }^{\text {a }}$ |  |
| - |  |
|  |  |
|  |  |
|  |  |
| UP100047D1A0D NEEFSNLPRKYKMSUSANVNNAGHDRINCLAFTPADKEDD |  |
| YNLPRKFKITVTGCPLWCSYPEDNDVALTAKDGKEE |  |
|  |  |
|  |  |
| MOAGG2 DDEDANMPRKFNISVSGCTVGCAQDSDNDI GFEPADKELD |  |
| 480 |  |
|  |  |
| D8567 ${ }^{\text {d }}$ DTLANLPRKFNVSVTGCREGCAQDSINDIGLEPAEKGRT |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| YTYKLPRKDKV |  |
| 90-AORUH9 PMCQNLPRKFKFNFTCCEDHGM VRMVDVGLVPPQTREMQ |  |
| UniRef90-E8V3C6 |  |
|  |  |
| UniRef90 D3SOV5 UniRef90- M5BPT |  |
|  |  |
|  |  |

## UniRef90_B8H3M3 UniRef90_G8NDY9 UniRef90_D5CQN4 UniRef90_UPI0003B635B4 UniRef90-Z5XCB6 UniRef90- G2HZC7 UniRef90_G2HZC7 UniRef90_A0A024K0S3 UniRef90_A0A024IDX0 UniRef90_UPI00047E4B9C UniRef90_UPIO0046AA3C0 UniRef90 A7HIR4

UniRef90_UPI000345B865
UniRef90_G8LXY6
UniRef90-I3E356
UniRef90-W4HX59
UniRef90_E0RGU5
UniRef90 B2GHP3
UniRef90_E4PNR5
UniRef90_IORR42
UniRef90_UPI0002E1DD9B UniRef90_K1Z0C3 UniRef90_D0LWF7 UniRef90-E7QXE6
UniRef90_UPI0003B72C2F
UniRef90_UPI000381FFA5
UniRef90_U2XXY5
UniRef90_U1HI22
UniRef90_UPI0002ED6A1F UniRef90_D9W5I1 UniRef90_UPI0003B64BF5 UniRef90_UPI0003646708 UniRef90_UPI0003B314CA UniRef90_UPI0003B7B4B6 UniRef90_L9VVD1
UniRef90_A0A059KI97 UniRef90-A0A038H267 UniRef90_V4PK78 UniRef90_A9AY07 UniRef90_U5WCY1 UniRef90_C1DCW8 UniRef90_A7II98 UniRef90_UPIO004797BC9
UniRef90_W8YTG4
UniRef90_UPI00036AC4AD UniRef90_UPIO003720B4C
UniRef90-M1SES1
UniRef90_Q7MRV9
UniRef90_V5S9D4
UniRef90_UPIO0035E7E7C
UniRef90_N6WRL7
UniRef90-N9USR4
UniRef90_I4ET60
UniRef90_Q2Y9X2
UniRef90-T0E092
UniRef90-M5RPN1
UniRef90_W0J777
UniRef90_UPIO0047CAC53
UniRef90_U5MMR4
UniRef90_UPI00036C6689 UniRef90_UPIO004407DA2
UniRef90_S5XK75
UniRef90 M0BM77
UniRef90_A6LRN6
UniRef90_D8Q3J6
UniRef90_UPI000378F426
UniRef90_UPI0003798218
UniRef90_UPI00047D1A0D
UniRef90_H5WLQ8
UniRef90_G8NNW9
UniRef90-E6QHF6
UniRef90_UPI0003B58D1E
UniRef90-M0AGG2
UniRef90_K5ULA0
UniRef90_N9L480
UniRef90_UPI00047ADA24 UniRef90_D8J567


 $P$ GFEVVIV G G G L G RTP FVVGA TVVRK F L P P KA D L L P P





 $P G L D L W V G G G L S T N P M$ L A Q RVVGAWVPDEEVDEVWAAV T S
 EFY Q 1


 GHADVPH Y QMMLLG GSAA E GKADVFGKNDLDKDPASSKVPAAMVK


 $P G F G M W V G G G L S T V P \quad D L A Q H V G D W D P L D D V P D V W V A V A R$ GP GF D C FVVGG GLLSTNP ML A Q S L G A W I P L A L GF KVVFA G G GM GRTPMMIAP LI R EF L P A A E H F DS YL E A C L R $K E F K V Y V G G G G L G P V P V E A K L L I D D F V K D Y E \quad L Y P L I V E S V I V$




 ELGCRII A G G GLLGRTPMRGEVI HEFVESGHLLTYLEAVL R
 DGF H A WV G G GLL SAK P Y $\quad$ LAAK E L L D M F VV R P E E A L K V ELLRA R VL A G G GLLGRTP MI G DVVV R E D L








 Y GF HARVGGGLSD GP RMAS ELDVFVRPKDAVEFCRAVAQ KYFRVFMGGGIUGRNPQVAVEYDELIMPSDVLYMVEAMTS

 GEFHI K V G G GLLS SKP Y L A E E L D D

 $F D V Y C C$ G GLG $\operatorname{L} N N P K M G V Q V G S H I D P K D D L Y Y V N T M V L$



 NGFNVLAGGGMGSTHNNTKTYMFGYIPKDMVMIACEKI ML

 IGF H A MVGGGGLS A K P H L G K Q L D M F I L P D E C L K V A I G V T T






## UniRef90_В8нзмз UniRef90-G8NDY9 UniRef90-D5CQN4 UniRef90_UPI0003B635B4 UniRef90-Z5XCB6 UniRef90 G2HZC7 UniRef90-A0A024K0S3 UniRef90-A0A024IDX0 UniRef90_UPI00047E4B9C UniRef90-UPIO0046AA3C0 UniRef90-A7HIR4 UniRef90-UPIO00345B865 <br> UniRef90_G8LXY6 <br> UniRef90-I3E356 UniRef90-W4HX59 UniRef90-EORGU5 UniRef90-B2GHP3 UniRef90-E4PNR5 UniRef90-10RR42 <br> UniRef90-UP10002E1DD9B

 UniRef90_K1ZOC3 UniRef90-E7QXE6UniRef90_UPI0003B72C2F UniRef90_UPI000381FFA5 UniRef90_U2XXY5 UniRef90-U1HI22 UniRef90-UPI0002ED6A1F UniRef90-D9W5I1 UniRef90_UPI0003B64BF5 UniRef90_UPI0003646708 UniRef90_UP10003B314CA UniRef90_UPIO003B7B4B6 UniRef90_L9VVD1 UniRef90-A0A059KI97 UniRef90-A0A038H267 UniRef90_V4PK78 UniRef90-A9AY07 UniRef90_U5WCY1 UniRef90_C1DCW8 UniRef90-A71198
UniRef90_UPI0004797BC9 UniRef90-W8YTG4
UniRef90-UPI00036AC4AD UniRef90_UPIO003720B4C UniRef90-M1SES1 UniRef90-Q7MRV9 UniRef90_V5S9D4

## UniRef90-UPI00035E7E7C

 UniRef90 N6WRL7 UniRet90-N9USR4UniRef90 B1ZVT5 UniRef90_-14ET60 UniRef90-Q2Y9X2 UniRef90-T0E092
UniRef90 M5RPN1 UniRef90-W0J777
 RY L E ERENGEGFQA $L$ Y LHNKYSDRTKRAKSR DKFLVERFGAEGFDEKYREEFER HFQANRDRGE RFRDYVLRFKDETFRE
VYNMLGRRDNKYKARDKDTLHETGKEELSRLIEARFAE VFRDYGYRRLRSKARLKFLI KDWGVEKFRQVVEEYVGRKL IFRDNGNRDNRNKARVRHLLNDWGUEKFVDEIEKVIGYKL NFVKHRNEGER
AYNRFGRRDNMYKARDKDVKAEG QAFTDQVEAEYRD I I IFRDYGYRRLRHRARLKFLLDDWGAERFREVLEQEYLGRR I YRDHGFRDKRHRARIKYLVAEWGVEKFKEKLEEDMG
 $V$ V NRFGRRDNDYKARDK DLVKAEGGQKFFDAVNAEFDK LL NY LINH RKDNETFHSFVERVGDEYF

 I FRDYGYREKRHHARLKFLVADWGPDKF LAKLETEY KGEM | 1 |  |
| :--- | :--- | :--- |
| $V$ | FRD |

 VFRDYGYRRLRSKARLKFLIKDWGIPKFREVLETEYDKRP VYNMHGRRDNKYKARLK LVVETGGVDEDARD ETEYED DR IFARFGEKKNRNRARIKFLVSDWGIEKFRDAVVEE




 VI
 ELTGRYTAERNEEESFTDYVGRLGKAEDKQULSQYDKDPD $L F R D H G D R E N R Y N A R M K F L V D E W G P E A D R E T L Q A D Y V D F E$
$T Y R E L R Q A D K$
$V$ VYNRYGRRDNKYKARIKILMKAEGQRY\DDVDEEFRQUV

 IYNRYGRRDNKYKARIKILLKAMTPAGFAARVEDEWRHTR SWDAHREEGEA FAHFTRRMDPDADKALAE
IFRDYGYRRSRTHARDKFLMADWGPEKFRQVLQDEYDHAE LFRDHGYREKRHHARLKFLVADWGPEKFQEELLKLI GD VYNQFGRRDNKFKARUK LLVKA LWRNKRYRVSRVKARFKFMVDDYGPERDRSMMEQADGRKL


 VFNEHGDRTNRKKARLKYLLEKCGREKFLEETQKKLA GYQERREPGER
LHNRYSDRTKRAKSRDKFLVDKFGPEGFVEKYREELVRTK LIVEKGNYENKNKARTRYILMEMGEEALI ECYKKHLKEVK VFVKHGDRTDRKKARLKYVLDDWGFEKFUQAVETEMG MWDARRQSGESFVAWTR
VFVENGDRTDRKKARLKY LVDRWGVEKFDAETEKRLA FP


 $V Q R D H G N R A D R K N A R L K Y T V D R L G V V D G F R E E V E K L L G$
$T$
$T$
 TY LQS ASSSKERF DDAARRLGVAPFRAA
IFREQEDRENRTRARDKY LFMRNGWETMLAADDEEKDG FK VFNANGDRTDRKKARLKYLVDKWGDPKFLEETEKKLA
$M F M E H G N Y T N R A K A R S R Y M Q E T L G V E R D Q E E F K E K V E D A K ~$ LYHEYGGRQNRSKNRARFFAEDWGMEKURETVQDEYVGFE



 TY L ARRASPAETFLLAFV




UniRef90_Q2W562


UniRef90 B8H3M3 UniRef90-G8NDY9 UniRef90-D5CQN4 UniRef90 Q01SL4 UniRef90 UPI0003B635B4 UniRef90-Z5XCB6 UniRef90-G2HZC7 UniRef90 A0A024K0S UniRef90 ${ }^{-}$A0A024IDX0 UniRef90_UPI00047E4B9C UniRef90 UPI00046AA3C0 UniRef90 A7HIR4 UniRef90_UPI000345B865
UniRef90_G8LXY6
UniRef90-I3E356 UniRef90 ${ }^{-}$W4HX59 UniRef90-E0RGU5 UniRef90-B2GHP3 UniRef90 E4PNR5 UniRef90-IORR42 UniRef90-UPI0002E1DD9B UniRef90_K1Z0C3
UniRef90-D0LWF7
UniRef90-E7QXE6
UniRef90_UPI0003B72C2F
UniRef90 UPI000381FFA5
UniRef90_U2XXY5
UniRef90-U1HI22
UniRef90-UPI0002ED6A1F
UniRef90-D9W5I1
UniRef90_UPI0003B64BF5
UniRef90-UPI0003646708
UniRef90_UPI0003B314CA UniRef90-UPI0003B7B4B6
UniRef90_L9VVD1
UniRef90 A0A059K197
UniRef90 A0A038H267
UniRef90-V4PK78
UniRef90-A9AY07
UniRef90_U5WCY1
UniRef90_C1DCW8
UniRef90-A71198
UniRef90-UPI0004797BC9
UniRef90 W8YTG4
UniRef90_UPI00036AC4AD
UniRef90_UPI0003720B4C
UniRef90 M1SES1
UniRef90-Q7MRV9
UniRef90_V5S9D4
UniRef90_UPI00035E7E7C
UniRef90 N6WRL7
UniRef90-N9USR4
UniRef90_B1ZVT5
UniRef90 14ET60
UniRef90- Q2Y9X2
UniRef90-T0E092
UniRef90-M5RPN1
UniRef90 W0.J777
UniRef90_UPI00047CAC53
UniRef90-U5MMR4
UniRef90-UPI00036C6689
UniRef90_UPI0004407DA2
UniRef90_S5XK75
UniRef90-M0BM77
UniRef90_A6LRN6
UniRef90-D8Q3J6
UniRef90_UPI000378F426
UniRef90_UPI0003798218
UniRef90 UPI00047D1A0D
UniRef90-H5WLQ8
UniRef90_G8NNWG
UniRef90 UPI0003B58D1E
UniRef90_MOAGG2
UniRef90-K5ULA0
UniRef90 N9L480
UniRef90-UPI00047ADA24
UniRef90-D8J567
UniRef90_UPI0003B71AE7
UniRef90 ${ }^{-}$B6HKD5
UniRef90_UPI0001BF6C73
UniRef90_UPI000378DB7F
UniRef90 B3QH93
UniRef90-UPI00041218D9
UniRef90-UPI0001744C2C UniRef90_UPI000404C40F UniRef90-A0RUH9 UniRef90_F8P3N1
UniRef90_E8V3C6
UniRef90 D3S0V5
UniRef90-M5BPT2
UniRef90 Q2W562

A A R A
PYEEAPE
$\underset{\text { Q }}{\text { L }} \mathrm{E}$ GPAPEP
E TD G A P H T $\square$ T Q

A E GA
T Q D A

LD GPAPEP
PGRGEDKT
$\square P$ D G A P E
LIDGPPPEPV
ARGA
$\square K T A G E D E$
F T R V S P E

L
L L D D G E P
VREEDKDELIQ
PYEEAPE LETAGED

E H D G A P H L I S Q

LVDGPSAELPE EGAAR

LP D G
D G P Q T LT Q
E D
LE E A
EAP

EKCNLDDDLT

LF R C S A E E L E P ARPYT F

RERG EDLTE
LDN NADD L L F VE
TEEAVPADVLR
FD P

MHTAGED
L Q P VR
LRFPA
LRTAGAD
F GEPRPFEF
FGEPRPFEF LEEAKDYHF
$\square Q S \square A P D S P Q$
LARSNQSVLT Q LPPARPYTF
FDPAPAE
LERVEGGELR H LAPAKPYQFT $N L P Q R P$

UniRef90_C9YB98 UniRef90-V4IZ94 UniRef90_UPI000477B9AC UniRef90_UPI000413C846 UniRef90_W7HYZ1 UniRef90_G2DZR1
UniRef90-G8NTK9 UniRef90_G8NTK9
UniRef90-R6ROF9 UniRef90-R6GND7 UniRef90_V4YA19 UniRef90-W7XWU6 UniRef90-UPI00036208B7 UniRef90_SOJ2R5 UniRef90_C0Z9X2 UniRef90_UPI00036F23BC UniRef90-M3AMG2 UniRef90-U5LCU5 UniRef90_UPI0004560285 UniRef90 E9EE70 UniRef90-UPIO0028942F0 UniRef90-R7AZJ4 UniRef90_V5FJ38 UniRef90-M1MED9 UniRef90_UPI00046B01D7 UniRef90_UPI00036216DA UniRef90-D3FQQ8 UniRef90-F4R8P8 UniRef90-D2RTN2 UniRef90-W6N3D9
UniRef90_R6Z7R6 UniRef90_Q59X31 UniRef90-B5RU98 UniRef90-F8J8V5 UniRef90_D4JDA7
UniRef90_A6DTM5 UniRef90_UPI00029AAE0C UniRef90_UPI00036FA8D3 UniRef90-D3RNJ3 UniRef90-R9C9K7 UniRef90-J0JF43 UniRef90_A8FDY3 UniRef9-A6FCB5 UniRef90-W6MU50
UniRef90_D4BZ92
UniRef90_UPIO002893694
UniRef90-D5C0C3
UniRef90_UPI00047B0992
UniRef90_L9X2X6
UniRef90_Q8EQP0
UniRef90-Q5NRM2
UniRef90-B4CXZ8
UniRef90_UPI00047DBC91
UniRef90-D7DZB1
UniRef90_U1FQ49
UniRef90_Y5NR48
UniRef90-D3EL15
UniRef90-UPI0002FD2AA0
UniRef90_G7SQ27
UniRef90-I3BYP1
UniRef90-G7UND8
UniRef90-B0TTE4
UniRef90_UPIO003013B83
UniRef90-M7Y2E2
UniRef90_A4A278
UniRef90-A6Q4Y4
UniRef90_D7DVF9
UniRef90-D4N092
UniRef9O-UPIO0036ADA7D
UniRef90-H1H789
UniRef90- B5JEV9
UniRef90-G8TQF6
UniRef90-B7JW02
UniRef90-D1AMY4
UniRef90_A0A059FIP7
UniRef90_U7V3N3
UniRef90-M9SBP5
UniRef90 G2LPR9
UniRef90_G2LPR9
UniRef90-E8R457
UniRef90-W9H818
UniRef90-D2RLZ1
UniRef90-F1VW86
UniRef90_E3BNX9
UniRef90_UPIO003B4F492
UniRef90-E1SVT5
UniRef90_UPI000409DFD5
UniRef90-K9QQ19
UniRef90_UPIO0035DDEA7
UniRef90-Q1K9C2
UniRef90-V4HCQ1
UniRef90_B0U8Y9
UniRef90_UPI00030C79FC 20 30
N C $I$ R N TT S D E LLA G VA VD E $\square$ A D P R P F A E $\square$ M R Q W










 DV N R N V M C S S L P K I S D H L L P S S T T A Y H E I WL T E A V Q D F E P
 NVACS P

 RGAMAC NTVR NIECSPLS GVS



 DVNRNVMASPTPATDDSELLSTMQAHSVWVEGVQLDLEE $N G 1 R R G I V V D P L A G L A A D E L E D P R P W H A I L D Q W R L T$





 $D \operatorname{GRNV} V G C P \vee A G$ $D V V R N V T A N P V Q T K A H G E A Y R T R A A H E G W L D G Q A P E E E P$

IS A E E HPDVVKA AREKNGNDIDHDS V E P



 DVVN R N V A A A N P L A R R V S E H L L P N T R R A Y Y E



T E V $\stackrel{\text { V }}{ }$

DVNRNVLCNPVESDSEHLLPKTKAYAEDWLDETTESDEP

 VD QIIRNIMTSPTAGDDPQEI I DTRPFVQNWDKYI NE




 UniRef90_UPI000477B9AC UniRef90_UPI000413C846 UniRef90_W7HYZ1 UniRef90_G2DZR1
UniRef90_G8NTK9 UniRef90_G8NTK9
UniRef90_R6R0F9 UniRef90_R6GND7 UniRef90_V4YA19 UniRef90_W7XWU6 UniRef90_UPI00036208B7 UniRef90_S0J2R5
UniRef90_C0Z9X2 UniRef90-UPI00036F23BC UniRef90_M3AMG2 UniRef90_U5LCU5 UniRef90_UPIO004560285 UniRef90 E9EE70 UniRef90_UPI00028942F0 UniRef90_R7AZJ4 UniRef90_V5FJ38
UniRef90_M1MED9
UniRef90_UPI00046B01D7 UniRef90_UPIO0036216DA UniRef90_D3FQQ8 UniRef90_F4R8P8 UniRef90-D2RTN2 UniRef90-W6N3D9 UniRef90_Q59X31 UniRef90_B5RU98 UniRef90-F8J8V5 UniRef90_D4JDA7 UniRef90_UPI00029AAE0C UniRef90_UPI00036FA8D3 UniRef90_D3RNJ3 UniRef90_R9C9K7 UniRef90_J0JF43 UniRef90_A8FDY3 UniRef90_A6FCB5 UniRef90_W6MU50 UniRef90_D4BZ92 UniRef90_UPIO002893694 UniRef90_D5C0C3 UniRef90_UPI00047B0992 UniRef90_L9X2X6 UniRef90_Q8EQP0 UniRef90_Q5NRM2 UniRef90_B4CXZ8 UniRef90_UPI00047DBC91 UniRef90_D7DZB1

## UniRef90-U1FQ49

UniRef90_D3EL15
UniRef90_UPI0002FD2AA0 UniRef90_G7SQ27 UniRef90_I3BYP1 UniRef90_G7UND8
UniRef90-Q4UY08 UniRef90_B0TTE4 UniRef90_UPIO003013B83 UniRef90_M7Y2E2 UniRef90_A4A278 UniRef90-A6Q4Y4 UniRef90_D7DVF9
UniRef90-D4N092 UniRef90_UPIO0036ADA7D UniRef90_H1H789 UniRef90-B5JEV9 UniRef90_B7JW02 UniRef90_D1AMY4 UniRef90_A0A059FIP7 UniRef90_U7V3N3 UniRef90_M9SBP5
UniRef90_G2LPR9 UniRef90_E8R457 UniRef90_W9H8I8 UniRef90-D2RLZ1
UniRef90 F1VW86 UniRef90-E3BNX9 UniRef90_UPIO003B4F492 UniRef90_E1SVT5 UniRef90_UPI000409DFD5 UniRef90_K9QQ19 UniRef90-UPI00035DDEA7 UniRef90-Q1K9C2 UniRef90_V4HCQ1
UniRef90_B0U8Y9
 Y GF H V R V G G G L S D G P R M A S D L DVVFVP P Q H AVVE F C R A V A Q
 $\square G F N V A I G G G M G M T H G D K A T Y \| I G F C T P D K L Y E V A E K T I V T$ A GFNLLVVGGGMGVTHNNKKTYMLGYVSKENVHLACEKVML E LGFRVVVVGGGGGRGPR LAEE LTEFVVHWSHLLTTYCEA LIR VYFRVLLDGGDTGHRQFATDCGL LL RPDQTVAVAAAMVR


 GWNVTVGGGGMGMTH GEPDTVVMLF CKPDEAVRVAEAVVT
 1 GF N V A V G G G M G M T H G DP K T Y V I I G F C T P E Q L I

 D GFNVLAGGGMGATHNNKKTYMMGFCSADEVHDACEKIML
 HGFNVLAGGGMMGTTHNNKKTYMLGFVPAEQAHIVCEMQML


 RGF ELYGGGGGFGGGSPGVVSDKLKDFQRRVPADEAPGAIVRN $F$ V $V$ G G G G O

 HTF DVYCC GGLGGNNPMMGVKVGDHDDPKD L L Y Y Y I N T MVL
 V GYNLTAGGGLGMSHNNPNTFVIDGYITRDQIVNVAK GVLIT








 R G Y GI K I G G GLLS SAP K L A K M V P V F





 L GYNV S I G G GMGASHWPRVANVI GFVT GDQLLLDIA TA V V T V GF NMVAGGGMGSTHGEVSTFPRGYIVAEDSLLKAEAVMT






 K GF K V Y G G G GM GK N P R Q G





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


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




## UniRef90_C9YB98 UniRef90-V41Z94

 UniRef90-UPIOOO477B9AC UniRef90-W7HYZ1 UniRef90-G2DZR1 UniRef90-G8NTK9 UniRef90-R6ROF9 UniRef90-RGGND7UniRef90- V4YA19 UniRef90 - W7XWU6 UniRef90-UPIO0036208B7 UniRef90-SOJ2R5

## UniRef90-C0z9x2

 UniRef90-UP100036F23BC UniRef90_M3AMG2UniRef90 U5LCU5 UniRef90-UPIOOO4560285 UniRef90-E9EE70 UniRef90-UPIOOO28942F0 UniRef90-R7AZJ4 UniRef90-V5FJ38 UniRef90-M1MED9 UniRef90-UPIO0046B01D7 UniRef90-UPIOOO36216DA UniRef90-D3FQQ8 UniRef90-F4R8P8 UniRef90-D2RTN2 UniRef90-W6N3D9
UniRef90_R6Z7R6 UniRef90-Q59×31 UniRef90-B5RU98 UniRef90-F8J8V5 UniRef90-D4DDA
UniRef9O-A6DTM UniRef90-UP100029AAEOC UniRef90-UP100036FA8D3 UniRef90-D3RNJ3
UniRef90 R9C9K7 UniRef90-JoJF43 UniRef90-A8FDY3 UniRef90-A6FCB5 UniRef90_W6MU50 UniRet90-D4BZ92 UniRef90_UPIOOO2893694 UniRef90-D5C0C3 UniRef90-UPIO0047B0992 UniRef90-L9X2X6
UniRef90-Q8EQP0 UniRef90-Q5NRM2 UniRef90-B4CXZ8 UniRef90-UP100047DBC91 UniRef90-D7DZB1 UniRef90-U1FQ49 UniRef90-Y5NR48 UniRef90-D3EL15 UniRef90-UP10002FD2AAO
UniRef90-G7SQ27
UniRef90_l3BYP1
UniRef90-G7UND8
UniRef90-Q4UY08
UniRef90-BoTTE4
UniRet90-UPIOOO3013B83
UniRef90-M7Y2E2
UniRef90-A4A278
UniRef90-A6Q4Y4
UniRef90-D7DVF9
UniRef90-D4NO92
UniRef90-UP100036ADA7D
UniRef90-H1H789
UniRef90-B5JEV9
UniRef90-G8TQF6
UniRef90-B7JW02
UniRef90-D1AMY4
UniRef90 D1AMY4
UniRef9-A0A059FIP7
UniRef90-U7V3N3
UniRef90-M9SBP5
UniRef90-G2LPR9
UniRef90-E8R457
UniRef90 W9H818

| UniRef90-D2RLZ1 |
| :--- |
| UniRef90 |
| 1 WWW8 |

UniRef90- F1VW86
UniRef90-E3BNX
UniRef90-UPIOOO3B4F492
UniRef90-E1SVT5
UniRef90_UPI000409DFD5
UniRef90-K9QQ19
UniRef90-UPIO0035DDEA7
UniRef90-Q1K9C2
UniRef90-V4HCQ1
UniRef90-BoU8Y9
UniRef90_UPI00030C79FC

130
140
150
160

TFKELGDRHNRGVCRMRY LVEQVGPEAFEEAVRER
VQRDHGDRANRKHARDKYTVDDHGADWFRGEVEKRLGY E II QRDYGNRSVRKNARFKYTVVRLGLEVVKAELENRLGGWR VQRDHGDRKNRKHARLKYTVVDMGVDVFRGKVEDLLGBA AYARDGSRSDPYKSRRLK N L I Q R VGGLVEFRA LVET Q WS
 TFVQYGNYENRGKAR TRYMQDTLGPEGYRTAFLENLLSKVM
 L F R E H G D R E D R Y N A R I K F L V D E WG T D K M R R V L Q E D F V D F E
 TF VT Y G N Y E NRGKSRTMRMQDTDGCEGY DQAFQE K L S Q

 I $\operatorname{F}$ R D Y G G Y R E K R R H L A A R L K F F L M A D D W G P E K F K E E K
 L F IH E G D Y K N S G K A R I R Y IMM D R M G K E E F D





LFEAE GDRTNKHKARDRF DVKRDGKEKFI ERFNEEVNKLK TFTAYGDYENRAKARTRYMQDKLGKEEYVKAYQEKLGE
 $V$ QRDWGNRENRARARLLKYTIVEDRGLDNFREEVEKR A GFK
 V Q R D F G N R E D R K L A R L K Y TVIM R M G L E S F K A K V D E Y Y G Q I $V$ YA R D G R QP DP Y K S R L K N L V Q R L G L V E FRA QV V S E WA H



 L L S K Y I D R K N S Y A D F K S Y I E S E G K E Y I L Q L I E E Y L Y H DHGGRTNRSKNRARFFAEEWGMEK LRETLQEEYVDFE








 $V Y$ I DN R Q Q E EK K F F D VFK R I GIIT P F K E K V




 VQR D H G D R T N R R H A R L K Y T I D D R GL P WF K S E M D R V F G R V





VQRDNGDRENRKHARLKYTVDTLGVSTFVEKVEEVLGY K YYHREGNRQNRSKNRARFFVDETGVEEDREAMVERL


UniRef90_C9YB98
UniRef90_V4IZ94
UniRef90-UPI000
UniRef90_UPIO00477B9AC
UniRef90_UPI000413C846

LEAARAYRF
FEPAREFAF
SLRDGPATLTQ I HVPASE
AED
LESAG ED DRE
LAKSKPYQF
LADPKPFAFT
LEQVRPYHF
L EPARAYHF
Q
TEPAG
LAPARDYRF

FAEPRPFKF
S EK
SEK RPM
FEP P DRPYEFT
LEAKPFQF

A E
FDEPRPFKI FEKAKPFEI LGKPKPFKF L
ES E
LEDAKPFEFTR L R D GPATLTK LQEAREFRF
LEPSR P Y HF
L
FETPKADEFT
FAEAKPFE FEPDRPYEFTE


LHRAGEDFRE L E GKRHYEF FEASRPFTLT LERHTD FEVVK

LESPREFHF
ISEAREFKF LEAAKPFHF
 LSKVRAFEF FQPARPFAF LQPAQPFAFAH FEPRR
LARQKPE FAEPRPFKF LPEPHPADV LANAG

LQPARAYEFTE
LGEAKPFQFT
LEEPMPYTFT
LEPFKP
KEKD
FAKARAFEFT V E

F ERM R D D Y T F
TEPPRPNPVT
LEDPRP

FAASRFYEFT
LEPAPRPYEFT

FEEARDHP
$\square R E P K P F Q F T$



|  |  |
| :---: | :---: |
| UniRefo Tow 8 |  |
| UniRef90-16NC | GFNLYVGGGMGTTHNNKKTYPRIFVPVDEVYNVIEKIV |
| UniRef90-10JZH5 | FTVLVGGSHGMTHGVVKTYPKFYIPKEKLTETAIAIVT |
| UniRef90- $77 \mathrm{K9Xg}$ | EGFNILAGGGLGRTHNKEETFPRMYVDKADVYDVIKA |
| UniRef90-UPI | IIGNVAVGGGMGSTHGEPETYVLGYVSKDKLIDVAEKVLM |
| UniRef90-UP100047D8A77 | EGFDVFAGGGLGRTHNKEETFARCYVAKEEVYDLVKAVVA |
| UniRet90-P47169 | Q YNVFVGGGMGTTHNNKKTYCLGFVKTEDI |
| UniRef90-S3VLQ1 | T IYFVFAGGGFGMTHNKAETY L |
| UniRef90 LoSvz9 | AGYNVSIGGGMGASHGDAETYVIGFIAREQ |
| UniRet90_K9XWR8 | GFNVLAGGGLGRTHKKEDTFPRIMVAKEDVYDLMKALVA |
| UniRef90-C8WS | AGYTLLIGGGMGRTASDKETHPAAFVTPGE |
| UniRef90-UPI000362EC7E |  |
| UniRefoto-boJW71 | QGFNVLAGGGLGRTHNKEETFPRMYVDKEEVYDLVKA |
| 矿 90 B8EK15 | M G |
| UniRet90-K0B2Y | KFEVVGGGF GGGSRLSLL |
| UniRef90_upio | VEYTLLAGGGHGMTHGLRQTQPHFYVPKERVQEAAIDAVVT |
| UniRef90 UPIC |  |
| UniRef90-E4L | M |
|  |  |
| - |  |
| UniRef90-Q0AGU3 |  |
|  | VGGGLSIEHGNKKTYARTYLPLLEHTLAVAEAVVT |
| UniRet90 UPI00042 | EPFNVYVGGGMGRTHPRLAEPLLGYVPKEDEVYAVAKA |
| 3B67DC7 | NVSVGGGMGNTDGDSETYVIGFCLPEQVL |
| UniRee90-Q0BTF | LGYNMAVGGGLGMTHNKPETYVIGSVGPDELL |
| UniRet90 ${ }^{\text {a }}$ SGGS8 | GNFA GGGMGRTDQAPETY GFVSADVEACADAVM |
| UniRef90- J2XNF7 | RLLAFGLAGCPTDTP |
| UniRef90-K9H6X7 | R/VF VG |
| UniRef90-K9E | GFNVLTGGGMGRTHNKEETFARGYVHKDDIYSLLRAIGA |
| UniRef90-UP100036CEBEF | GGGMGMTHGDTSTYPQLARSD GFVTPDRILDVAEKTVT |
| UniRet90-4FDNO | NNY |
| $\begin{aligned} & \text { UniRef90-X5JIO3 } \\ & \hline \end{aligned}$ | GFNIFAGGGLGRTHNKEETFLDGYVTKEDIVNV |
| UniRef90 U6ZYY7 | RLL AFGLA GCPVDAPLLAA |
| UniRet90_H2AW41 |  |
| 2BES | NVLVGGGLSMEHGNRKTYPNTFI GLD KVLDCAAAVVS |
| UniRet90_UPIO00404F64D | VGYTVLI GGGMGRTAGDAKTYPRAFVTRDELVEVCEA |
| UniRef90 UP10003007BC0 | EPEKClif V Va |
| UniRet90 J2M9S2 |  |
| E34 | VGYNVYAGGGMGRSHRNNDTPRGFVGKDDLIMAVKA AC |
| UniRet90 UPIOOO2EOD016 | GLA GC |
| UniRee90-UP10003450123 | VYAGGGMGRTHNKEETFPRITVEHGDIVYVVKAVA |
| UniRef90-UPIOOO47448 | RLLCLAFGLLAGCPAYDAPLAAVPFEQGHELVVAVLE |
| UniRet90 W7TUN3 | VGFNVMVGGGMGRTHNKEQSFPRGFVAKDDVFELMKCIVA |
| UniRef90-J7R2R2 | DIYNMYTGGGMGTTHNNKKTYLLGFVAPEEVVAAIEAVMI |
| UniRef90_Q31M38 |  |
| UniRet90 UPI0002001E90 |  |
| UniRef90_Q7XBB4 |  |
| UniRe90-_2F051 | AFGLIAGCPTDAPLAAVLLRDG |
| UniRet90_Q114B3 |  |
| UniRef90KK7T124 |  |
| UniRet90_F9ULL4 |  |
| UniRef90 EOUQH3 | YGYNMFLGGKVGMMAKSADIFLKGTNEEEVLKAYGSLIE |
| UniRef90'F2ZFS | VLLAFGLAGCPASDRPLAAVPLAAGQVLVIALL |
|  |  |
| UniRef90 UPIO003616713 | GVHVVATELLCLVETAEEVEEICKAYLQ |
| UniRef90-13BL | GLKVRVTDLLTKVETEEEVLEYCGAFCQ |
| UniRef90-UPIO003B50A54 | DRAPETYVIGYIDVEQLLPTIEAVMG |
|  | GC PPRETGDAPALAAVPGARV |
| C60 |  |
| 9ZLT4 | GMKVRAADLLAKV |
| UniRef90_UPIO0035F9559 | NGGDKVRACDYLCKVSTEEEVMEYAGAFMQ |
| UniRe | A |
| UniRef90_A9S411 |  |
| A5 | LHV GGNGGIKLRGTDLLCKVATEQQALDHIAAFIQ |
| UniRet90-\5ATN7 |  |
| iRet90_S6H1U1 |  |
| Unil | Q |
| UniRe990_A8JB15 |  |
| UniRet90-F8FL75 |  |
| UniRef90-Losx33 |  |
|  | YGGNGGITKLRGTDFLCKVETPEEVLEYCAAFLQ |
| UniRef90-U5VYF1 | atlrkgdLlatvospdev |
| UniRef90 C6PU74 |  |
| UniRef90 U5V8Q9 |  |
| UniRef90-EORFC9 | DSLCKVKTDAELIDIVGSVMQ |
| UniRef90-W7214 |  |
|  |  |
| 俍ef90_C9RT20 |  |
| UniRef90 UPI0003B7AAE1 | Q |
| UniRef90 A7GKB7 |  |
|  | Q |
| 7ZNF3 | AGAAGME VKETEVLAKVTTEDEAUEMISAMTQ |
| ee90-11XLZ2 | GNGGIKVRATDFLCKVATEEEAMEYCAAFMQ |
| UiRef90_D5WXH1 |  |

UniRefoo Asbple
 UniRef90 10.12 ZH 5 UniRefi90-B7K9X9 Unirefopo-uploo 04666029 UniRef90_UPI00047D8A77 UniRef90-P47169 UniRef90-S3VLQ1 UniRef90-LOSVZ9 UniRef90-K9XWR8 UniRef90-C8WSE5 UniRef90_UPI000362EC7E UniRef90-B0JW71 UniRef90-B8EKI5 UniRef90-KOB2Y2 UniRef90_UPI00037369B9 UniRef90_UPI0002DD2FD6 UniRef90_E4LEX8 UniRef90-J2Y1Z5 UniRef90_Q0AGU3 UniRef90-W1EYW5 UniRef90_UPI00042B8F2E UniRef90_S9TJL2 UniRef90_UPI0003B67DC7 UniRef90-Q0BTP5 UniRef90_15BGS8 UniRef90_Q1QQC7 UniRef90-J2XNF7
UniRef90-K9H6X7 UniRef90-K9ERA1 UniRef90-UPIO0036CEBEF UniRef90-I4FDN0 UniRef90-IOINEO
UniRef90_X5JI03
UniRef90_U6ZYY7
UniRef90-H2AW41
UniRef90-F2BES3
UniRef90_UPI000404F64D
UniRef90_UPI0003007BC0
UniRef90-J2M9S2
UniRef90-C1EE34
UniRef90_UPIO002E0D016
UniRef90_UPIO003450123
UniRef90_UPI0004744876
UniRef90-UPIO0046ED6F8
UniRef90-W7TUN3
UniRef90-J7R2R2
UniRef90-Q31M38
UniRef90_UPIO002001E9C
UniRef90_Q7XBB4
UniRef90_S2F051
UniRef90_Q114B3
UniRef90_K7T124
UniRef90 F9UHL4
UniRef90-J7IWF2
UniRef90-EOUQH3
UniRef90-F2ZFS3
UniRef90-UPIO003616713
UniRef90-I3BUTO
UniRef90_UPIO003B50A54
UniRef90-U3HBG9
UniRef90_C6D618
UniRef90 F9ZLT4
UniRef90_UPI00035F9559
UniRef90_Q7U790
UniRef90_A9S4I1
UniRef90-A5V704
UniRef90-X5A1N7
UniRef90_S6H1U1
UniRef90 R3U948
UniRef90-A8JBI5
UniRef90_F8FL75
UniRef90_LOSX33
UniRef0_W4VPL8
UniRef90_UPIO0042A0077
UniRef90_U5VYF1
UniRef90_C6PU74
UniRef90-U5V8Q9
UniRef90-EORFC9
UniRef90-T4W214
UniRef90_W7D1H1
UniRef90-C9RT20
UniRef90-UPIO003B7AAE1
UniRef90-A7GKB7
UniRef90_W4PZP9
UniRef90-A0A037ZNF3
UniRef90-I1XLZ2
UniRef90_D5WXH1


| UniRef90 A5BPL8 | F E P 170 |
| :---: | :---: |
| UniRef90-T0W8X4 | F E P $\square$ R P F K F T |
| UniRef90-16NCY6 | F A P ER P Y $\square$ |
| UniRef90-10JZH5 | E A P |
| UniRef90-B7K9X9 |  |
| UniRef90_UPI00046E6029 | LE E Q R A Y R F |
| UniRef90-UPI00047D8A77 | LEP F K P |
| UniRef90-P47169 | FEP ERP F E F |
| UniRef90_S3VLQ1 | I Q R S LP |
| UniRef90_LOSVZ9 | LQP T R A F A A H |
| UniRef90_K9XWR8 |  |
| UniRef90-G5H3Q7 | S E |
| UniRef90_C8WSE5 | A P P R E L V |
| UniRef90_UPI000362EC7E | A D P G |
| UniRef90-B0JW71 |  |
| UniRef90-B8EKI5 | LE P A R P F E F V |
| UniRef90-K0B2Y2 |  |
| UniRef90_UPI00037369B9 | P E P P R P F S T |
| UniRef90_UPI0002DD2FD6 |  |
| UniRef90_E4LEX8 | E V E |
| UniRef90_J2Y1Z5 |  |
| UniRef90-K0KHC7 | FEPERAYE |
| UniRef90-Q0AGU3 | LE P A R P Y H F T |
| UniRef90_W1EYW5 | FEP ${ }^{\text {P }}$ R P Y E F T |
| UniRef90_UPI00042B8F2E | FEP |
| UniRef90_S9TJL2 | LE P P R P F V/F T |
| UniRef90_UPI0003B67DC7 |  |
| UniRef90-Q0BTP5 | A E P L P M E P F |
| UniRef90_15BGS8 | FESARAFEFT |
| UniRef90_Q1QQC7 | LE P A Q P Y T F T |
| UniRef90_J2XNF7 | I T D S GPD T L |
| UniRef90_K9H6X7 | L E D A R P |
| UniRef90_K9ERA1 |  |
| UniRef90-UPI00036CEBEF | L E A A R P F T F |
| UniRef90-14FDN0 |  |
| UniRef90-IOINE0 |  |
| UniRef90- X5JI03 |  |
| UniRef90_U6ZYY7 | L |
| UniRef90-H2AW41 | F A P ERPYHF |
| UniRef90-F2BES3 | FQPVRPYRFT |
| UniRef90_UPI000404F64D | L N P P R P |
| UniRef90_UPI0003007BC0 |  |
| UniRef90_J2M9S2 |  |
| UniRef90_C1EE34 | LA DLP P F T M |
| UniRef90-UPI0002E0D016 |  |
| UniRef90- UPI0003450123 |  |
| UniRef90- UPI0004744876 |  |
| UniRef90-UPI00046ED6F8 | F E P A K K V]E L |
| UniRef90-W7TUN3 | DE P WR P |
| UniRef90_J7R2R2 | D P R A A $\square$ R D Q VK |
| UniRef90- Q31M38 |  |
| UniRef90_UPI0002001E9C | E P K A K L E D |
| UniRef90_Q7XBB4 | E E |
| UniRef90_S2F051 | M E P |
| UniRef90 Q114B3 |  |
| UniRef90-K7T124 |  |
| UniRef90-F9UHL4 | F |
| UniRef90- J7IWF2 |  |
| UniRef90_E0UQH3 | F A T A G D T M Q |
| UniRef90-F2ZFS3 |  |
| UniRef90-W0J6R6 |  |
| UniRef90-UPI0003616713 | A L M A R |
| UniRef90_I3BUT0 | L H |
| UniRef90_UPI0003B50A54 | L A P A K A K F T |
| UniRef90_U3HBG9 | L HEA G |
| UniRef90_C6D618 | L V E R L EK T L |
| UniRef90_F9ZLT4 | ELLA E RLD |
| UniRef90-UPI00035F9559 | A F H R |
| UniRef90 ${ }^{-}$Q7U790 |  |
| UniRef90-A9S4I1 | FKE@VPFEF |
| UniRef90-A5V704 | A LTAR |
| UniRef90-X5A1N7 | A L A Q R |
| UniRef90- 56 H 1 U 1 |  |
| UniRef90_R3U948 | L L A A LDE |
| UniRef90-A8JBI5 | QEP |
| UniRef90-F8FL75 | A L A A R M E T |
| UniRef90 L0SX33 |  |
| UniRef90-W4VPL8 | L N E R M D E A L |
| UniRef90-UPI00042A0077 |  |
| UniRef90-U5VYF1 |  |
| UniRef90_C6PU74 |  |
| UniRef90_U5V8Q9 |  |
| UniRef90 E0RFC9 |  |
| UniRef90-T4W214 |  |
| UniRef90-W7D1H1 | LKA S LD E A L |
| UniRef90-C9RT20 | L L E |
| UniRef90_UPI0003B7AAE1 |  |
| UniRef90-A7GKB7 |  |
| UniRef90-W4PZP9 | L |
| UniRef90- A0A037ZNF3 | A L A D R F E |
| UniRef90-11XLZ2 | 1 L A Q R |
| UniRef90 D5WXI |  |


|  |  |
| :---: | :---: |
| UniRef90－NOAUSO | RTVKTCVGEQFCRFGTQDSMALGGALEKKFQGLQTP |
| UniRef90－Q64BK4 | CVRSVKICPGTTFCKKGDSDSLGLGMALHDEYHGMS |
| UniRef90－DIJATO | CVRSVKICPGTTFCKRGKQDSVKLGME F |
| Ref90－DOCT90 | RTVKTCVGTDHCRFGTQDSTGL |
| UniRef90－M3K | DDVRNVMVSPTAGDDPNQTSDVTGLA |
| UniRef90－A5GB | CVRSVKICPGTTHCKRGVQDSVSLGL |
| UniRet90－K8EJ | CVVSVQACPGSSFCKYGKQDSLS |
| UniRef90－LOEH64 | RTVKTCVGs |
| Ref90 Q47 |  |
| OD |  |
| UniRef90 M4） | DVRNLLVSPALGLDAGTAFDAQPLARQ |
| UniRef90－F8A9M7 | CVRS KVCPGTT |
| UniRet90－OPIo0031 | RTVKCVGESFCRFGODSMG |
| UniRef90－A1ALQ4 | VRSVKDCPGTTYCKRGVQDSTSLGLKUDDKYHAM |
| UniRef90－V9W8W5 | RTVKTCVGAAYCRFGTVDSMG MGARLER |
| UniRef90－v97 |  |
| UniRef90－14YRW4 UniRef90 Lok50 | RSVKKCCPGTTFCKRGQQDSVGL |
| UniRef90－OKK5Q | K |
| UniRet90－WoPC |  |
| iRef90－K9DMF3 | R S |
|  | RTVKTCVGSEWCRMGTQDSTATAEEDDERYGKDLER |
| UniRet90－UPIOO | RAVKGCAGAALCPRADANA |
| Reef90 A1W9 | RTVKTCVGSEWCRMGTQDSTQLGKDLEHA |
| UniRef90－C1DHDO | S R R VKC ${ }^{\text {d }}$ |
| UniRef90－Q390N9 | CVRSVKICPGTTWCKRGVQDSVALGLK |
| UniRef90 ${ }^{\text {AOAAO1 }}$ | RTVKTCVGAEHCRFG TQLAMD |
| $\begin{aligned} & \text { Unip } \\ & \text { UniF } \end{aligned}$ | VGS DWCRFGTO |
| UniRef90－T0JUV5 |  |
| UniRef90－LTEQX9 | VRNVKGCAGSD |
| UniRef90－UP100034D | RSVKSCVGKSFCRFGTQHTTQLG RLEKTF DEK |
| iRef90－W1W9D9 | TTFCKRAKQDSVHLGMQ |
|  | GTDWCRFGTQD |
|  | R |
| UniRef90－UPI00037BD |  |
| UniRef90－A9AHY2 UniRef90－C0QMA5 |  |
| UniRef90－L7KYX9 | RTVKTCVGTDYCRFGLGDSTQLGD D DET |
| W1 | KNVEMCP AGFCKREK |
| UniRef90 K2RQ | VRSTKFCPGTTHCKRAEQDSUKMGUA】DEKFQG |
| UniRef90 Q3A611 |  |
| UniRef90－UPIO002888BCB | SVKNVEMCPAGFCKRSKHNTIGLGMK |
| UniRef90－R6DRB3 | VRTVTACQGNQVCPSGNDDSNHIAQELDKRYFAR |
| UniRef90－UPIO002D41A21 | SVRTVKSCVGSTWCRYGVDDSVGFALNI EDRYKGLRSP |
| UniRef90 K1YQ | VQACPGTEVCKFGVRDSLGFGLM |
|  | T LRNVKSCVGSTWCRYGDGDSVGLADRLEQR K |
|  | P |
| UniRef90－J7J1V4 | MLSPLAGDDPAALLDSRALASPL |
| UniRef90 Q3A4JO |  |
| VKZS |  |
| A4JEB | NLLLSPLAGLDRAALVDSRALARPLLDMLTH |
| UniRef90－R6P5P3 | VQSVVFCPGDTFCKRGK |
| UniRef90－X7E3X0 | RTVKSCVGSTWCRYGVNDSMTMA |
| UniRef90－C4ZFT1 | VRTVTACQGSEDCPSGCDDTYTLAKELDERYFGR |
| 0029 |  |
| Ref90＿Q9UV | 㜢 |
| UniRef90 K9PWG1 | RTVKSCVGSTWCRYG |
| iRef90－F6B3L5 | IRSVKACPGAELCPRALGPALELG |
| UniRef90－GOB | WCR Y GV |
| 8A | ATLACPGK |
| UniRef90－X7Z127 | RTVKSCVGSTWCRYGVQDSVAMA |
| UniRef90－A4BAX | SVRTVKSCVGSTWCRYGVQDS |
| UniRef90－UPI0003800 |  |
| iRef90＿A4J66 | NKURSVKACPGAELCPRSLGPALELGMELQERYLG |
| UniRef90－F4A7B6 | NSTKNVEMCPAGFCKRSKYNT1G |
| UniRef90－B1V2C0 | TVRAVVACKGT VCKHGLTDTRKTGELFEEKFLGR |
| UniRef90－15AV | RTITACQGANICSNGC |
| UniRef90－U5BUC2 | STWCRYGVQDAVSYA【RVEER R |
| UniRef90－N1ZMP9 | RPLVCCKGT VCKFG |
| UniRef90－FOQSV7 | NSVRNPILPC TSQFCPYAHVN |
| UniRef90－GOA711 UniRef90 K0VFE6 |  |
| UniRef90－UPIO0046A950F | RTVK S CVG S D WCR Y G |
| $00-\mathrm{Q}$ |  |
|  |  |


 UniRef90_NOAUSO UniRef90-Q64BK4 UniRef90_D1JAT0 UniRef90_DOCT90 UniRef90_U1IMH6 UniRef90_A5GBX3 UniRef90_K8EJC0
UniRef90_LOEH64 UniRef90_L0EH64
UniRef90_Q47HV9 UniRef90_L0DYD6 UniRef90_M4XAX7
UniRef90 F8A9M7 UniRef90_UPI0003157CD3 UniRef90-M7AVY0 UniRef90-A1ALQ4
UniRef90- V9W8W5 UniRef90_UPI00035E5F22 UniRef90_V9T4G0 UniRef90_14YRW4 UniRef90_LOK5Q0 UniRef90_Q3SGI8 UniRef90_W0PC28
UniRef90 K9DMF3
UniRef90-D0IZ85
UniRef90_UPI000319FE46
UniRef90_UPI000375F0B9 UniRef90_A1W9Q5 UniRef90_C1DHD0 UniRef90_D8EVT4 UniRef90_Q39QN9 UniRef90-A0A011NA94 UniRef90_U7PFS9 UniRef90_Q0BRC7 UniRef90_T0JUV5 UniRef90_L7EQX9
UniRef90_UPI00034D935E UniRef90_UPI0004689ECE UniRef90_W1W9D9 UniRef90_D8JV92 UniRef90-F4C004 UniRef90_UPI00037BD5B4 UniRef90_A9AHY2 UniRef90_C0QMA5
UniRef90_L7KYX9 UniRef90-W1U9M7 UniRef90-K2RQC8 UniRef90_N1UJ81 UniRef90-Q3A6I1
UniRef90-UPI0002888BCB UniRef90_R6DRB3 UniRef90_UPI0002D41A21 UniRef90_K1YQF9 UniRef90-I1B1R4
UniRef90_A4ZQ19
UniRef90_A3W031
UniRef90_J7J1V4
UniRef90_Q3A4J0 UniRef90-A0A024K8X5 UniRef90_V7KZS5 UniRef90_A4JEB4 UniRef90_R6P5P3 UniRef90_UPIO00379BC2E UniRef90_X7E3X0 UniRef90_C4ZFT UniRef90_UPIO0029A8FFA UniRef90_Q9UVH8 UniRef90_K9PWG1 UniRef90_UPIO0036CB14D UniRef90_F6B3L5
UniRef90_G0B4X2
UniRef90_F8AL22
UniRef90-X7Z127
UniRef90_Q2RL53
UniRef90_A4BAX5 UniRef90_UPI000380094C UniRef90_A4J6D5 UniRef90_UPI000262940D UniRef90_F4A7B6 UniRef90_B1V2C0 UniRef90_I5AWR3 UniRef90_U5BUC2 UniRef90_UPI0003490EC6 UniRef90-N1ZMP9 UniRef90_F0QSV7 UniRef90_G0A711 UniRef90_KOVFE6
UniRef90 UPI0004 UniRef90_UPI00046A950F UniRef90_G4NB36 UniRef90_Q05805 9







 FTVLI GGNAGAAPHIGK V A G GLTEROVVDLATRLI N


$\qquad$ G C
$\qquad$ GGCGGAKPRMAQTLTAENISS
E

## 

FEIYVV

 | $R I L$ | Y |
| ---: | :--- | :--- |
|  | $V$ | G $G N G G G 1$

$G N$
$C$

$C$ | $R$ | $R$ |
| :--- | :--- |
| $R$ | $L$ |

## HGY M

$M Y V G G A G A$

## $G \begin{array}{lll}Y & V & S F G \\ Y & D V & 1 \\ V\end{array}$

## $M \mathrm{Y}$ VA

 GCPAR F E IHF G LAASSPDK Q AF L A L G I S

 E Q L L P | $E$ | $A$ | $A$ | $A$ | $D$ | $K$ | $I$ | $I$ |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $E$ | $M$ | $M$ | $M$ | $S$ | $S$ | $A$ | $F$ | $L$ | $Q$ | 1 $\qquad$ Y

V
V

V GF Q $\square$ | V | G |
| :--- | :--- |
| Y | V |
| Y | V | $\square \mathrm{HFFA}$ $A$

V
V
V
A
A
V
V
G
G
G H G G $H \quad 1$
$K$ $\square$
FS $\square Y Y V G G S A G S H P R L A D K L I E S L D Y$
F S Y 1 G GRGGSKK P I H GK LI
 $\square \mathrm{S} \square$

 $V$ E G I H F A GAA GLD DK GT | $A$ |
| :--- |
| $\frac{A}{D}$ |

F E
F AGGSSGVK T RIAA GLLA GCPPTSRGTAAPAGVVDVA D
GK WE I

$W N L Y$ A G G S G GYNPRLA DV A K K D





 AP $\quad$ RI A A GLLA GCPPVAP GD RPA SF DVAP H V V P

 $P G Y \square V$ S FG G LIF GNH $\square Y K G E Q L V P \square I R D K$





Y DVYL G G R G G S R K P $\square H A T R I A A T G I T G K G V E D L L A W D L E$ NGWNLYVCGNGGMKPRHADLFAATDLDDETLIRYIDRIFM



 $K$ G WN L Y V C G N G G S K P Q H A Q L L I N D V V D D
 FD I Y L GGG $\square G$ E HAFSAKLAFTDV D

 NGWNLYVCGNGGMKPRHADLFASDLDDA TLIDRYVDRLLMM
F NIVYVA GNGGAKPRHAELLAKDVPPSEVVP



|  |  |
| :---: | :---: |
| UniRef90-NOAUS0 | LiN TRME RTLL |
| UniRef90-Q64BK4 |  |
| UniRef90-D1JAT0 |  |
| UniRef90-D0CT90 |  |
| UniRef90-M3KGE9 |  |
| UniRef90-U1IMH6 | A L F A R |
| UniRef90_A5GBX3 |  |
| UniRef90_K8EJC0 |  |
| UniRef90-L0EH64 |  |
| UniRef90-Q47HV9 | L Y A A L L D S L |
| UniRef90-LODYD6 | LESQGP |
| UniRef90-M4XAX7 | $L\llcorner R \square G P$ |
| UniRef90_F8A9M7 |  |
| UniRef90_UPI0003157CD3 |  |
| UniRef90-M7AVY0 |  |
| UniRef90-A1ALQ4 |  |
| UniRef90_V9W8W5 | K LVA R M E |
| UniRef90-UPI00035E5F22 |  |
| UniRef90_V9T4G0 |  |
| UniRef90-14YRW4 |  |
| UniRef90_LOK5Q0 |  |
| UniRef90-Q3SGI8 |  |
| UniRef90-W0PC28 |  |
| UniRef90-K9DMF3 | A A D |
| UniRef90-D0IZ85 |  |
| UniRef90-UPI000319FE46 |  |
| UniRef90-UP1000375F0B9 | $\square$ T E G E P E |
| UniRef90_A1W9Q5 |  |
| UniRef90-C1DHD0 |  |
| UniRef90-D8EVT4 |  |
| UniRef90-Q39QN9 |  |
| UniRef90_A0A011NA94 | A L H G R |
| UniRef90_U7PFS9 |  |
| UniRef90-Q0BRC7 |  |
| UniRef90_T0JUV5 | S T A I E P |
| UniRef90_L7EQX9 |  |
| UniRef90-UPI00034D935E | L |
| UniRef90_UPIO004689ECE | L A A R F DL S Q |
| UniRef90-W1W9D9 | AESKSDEPAV |
| UniRef90-D8JV92 |  |
| UniRef90-F4C004 |  |
| UniRef90-UPI00037BD5B4 |  |
| UniRef90-A9AHY2 | T A D P A |
| UniRef90_C0QMA5 |  |
| UniRef90-L7KYX9 |  |
| UniRef90-W1U9M7 |  |
| UniRef90-K2RQC8 |  |
| UniRef90-N1UJ81 |  |
| UniRef90-Q3A6I1 |  |
| UniRef90-UPI0002888BCB |  |
| UniRef90-R6DRB3 |  |
| UniRef90-UPI0002D41A21 | E L E A |
| UniRef90-K1YQF9 |  |
| UniRef90-I1B1R4 | L VE |
| UniRef90-A4ZQ19 | ELEKQMQD I V |
| UniRef90-A3W031 | RLIA A F E |
| UniRef90_J7J1V4 |  |
| UniRef90_Q3A4J0 | D D L A A |
| UniRef90-A0A024K8X5 |  |
| UniRef90-V7KZS5 | EFEAAME |
| UniRef90-A4JEB4 | A A P A |
| UniRef90-R6P5P3 |  |
| UniRef90_UPI000379BC2E |  |
| UniRef90- X7E3X0 | E LD A A M D |
| UniRef90-C4ZFT1 |  |
| UniRef90-UPI00029A8FFA | Q E K |
| UniRef90-Q9UVH8 |  |
| UniRef90-K9PWG1 | ELEA Q M T L V |
| UniRef90-UPI00036CB14D |  |
| UniRef90-F6B3L5 | D EFA A |
| UniRef90-G0B4X2 |  |
| UniRef90-F8AL22 |  |
| UniRef90-X7Z127 | ELEA A M E |
| UniRef90_Q2RL53 |  |
| UniRef90-A4BAX5 | ELEAQMQHLI |
| UniRef90_UPI000380094C | ELDA |
| UniRef90-A4J6D5 | A Q D |
| UniRef90-UPI000262940D | D LD A Q M T HVE |
| UniRef90-F4A7B6 |  |
| UniRef90-B1V2C0 |  |
| UniRef90-15AWR3 |  |
| UniRef90-U5BUC2 | L E R |
| UniRef90-UPIO003490EC6 | LE E A |
| UniRef90-N1ZMP9 |  |
| UniRef90-F0QSV7 |  |
| UniRef90-G0A711 | E L E Q Q M Q HV I |
| UniRef90-K0VFE6 | EFEAAME |
| UniRef90-UPI00046A950F | D E |
| UniRef90-G4NB36 | ALEA A MEELV |
| UniRef90-Q05805 |  |
| UniRef90 ${ }^{-}$V5FN15 | A E |

UniRef90 FoJEV7 UniRef90 ${ }^{-A 5 D 3 K 4}$ UniRef90－UPI000422B200 UniRef90－W9G734 UniRet90 M5P318 UniRef90－W2U2D8 UniRef90－A3ZZT44 UniRef90 C7R1K3 UniRef90－Q6WRS9 UniRef90－UPIO0047ADDEE UniRef90－UPI0002F6315A UniRef90－UP100035D4FCA UniRef90－Q2JEW4 UniRef90－U1Z9R5 UniRef90－U9VKY3 UniRef90－A4FG98 UniRef90＿UPIO0047689F9 UniRef90 A8ZX76 UniRef90 W4Q6R7 UniRef90－B6H4U6 UniRef90－BoSEN9 UniRef90 F2P8V8 UniRef90－UPIO004670685 UniRef90－L7VXN1 UniRef90 R5XNC9 UniRef90－UPIO004006FEA UniRef90－15AZC3 UniRef90－UPI000346DE6F UniRef90 ${ }^{-}$X6GLYO UniRef90－Qow2S5 UniRef90－F4H447 UniRef90－K9UQ15 UniRef90－M5ETS4 UniRef90－M2SJW4 UniRef90－UPIO0047D189B UniRef90 UPIO0037C211C UniRef90－U1YLM4 UniRet90－G9SK22 UniRef90－I0VOA5 UniRef90－B5EA04 UniRef90－F2LPT2 UniRef90－UPIO00262A3F0 UniRef90 D9VV89 UniRef90－UPIO0035E466D UniRef90－UPI0003B314D6 UniRef90＿U4JH38 UniRet90－D9PVS6 UniRef90－G0SA68 UniRef90－UPIO00255B0BB UniRef90－UPI0003B60D35 UniRef90－U1GV67 UniRef90－R4KJI8 UniRef90－UPI00036553D4 UniRef90 Q084F5 UniRef90－V5SCJ2 UniRef90－Q0YP72 UniRef90 U4L6W1 UniRef90－K9DE93 UniRef90－×6C141 UniRef90－S2IUF7 UniRef90 Q31GH1 UniRef90－A0A011QK31 UniRef90＿S2DMI2 UniRef90 A0A010QDC5 UniRef90－F5Z4X9 UniRef90－Q47UD7 UniRef90－G2NWPO UniRef90－IOKDX3 UniRef90－D3SFT6 UniRef90－Q13YT4 UniRef90－UPI0004656263 UniRef90－T2GC31 UniRef90－Q1QY15 UniRef90－Q6LS87 UniRef90－UPIO003788BFA UniRef90－UPIO0037950BD UniRef90＿UPIO00364F58F UniRef90 UPIOOO40766C9 UniRef90－A3HUT5 UniRef90＿UPIO00379B623 UniRef90 P08201 UniRef90－Q469B5 UniRef90－G7WAD3 UniRef90＿UPI00047A0130 UniRet90＿K6ZNY1 UniRef90＿N8Q0U5 UniRef90－J2IWP0 UniRef90－K2GKG8 UniRee90＿UPI00037A6B5A

NADRSVKACSGPGLCPRALADALGLGDELQNRYMG
TVRAVDACKGN VCDHGLDDTKLGNELEDKFFGR RTVKSCVGSSWCRYGVQDSVGMA
 SVRTVKSCVGSTWCRYGI GDSVGFAIIATEER
VRATLACPGKENCGSGLIDTTADCKTIEERFMEKPTP RNVKTCVGSTWCRYGMLDSVA MGUSLEL RTVKTCVGEQFCRFGTQDSTGLGTKLEQLL RTVKSCVGSTWCRYGVQDSVAMAZ RTVKSCVGSTWCRYGVDDAVGMA RTVVCCVGSE CYYS
DDVRNLLLSPAAGLDPQARMDVRPLAAQL RTVKSCVGSTWCRFGVQDSTSLAME RTVKSCVGNDWCRYGVQDSVAMAI CVRSVKACPGTAFCRLGQRDSLGMGMKDDE
NTVQNIKTCDGETVCKCEKQSALDLAD
 SMRTVKSCVGSTWCRFGVQDSTSFADKDEERYKG RLRAP
LDAVRNDLISPTAGTDPQSVIDTRPLLKASDDHLARDETP保
NSLKNVELCPANFCKRSKYPTIGTGMRLSRKFQG VRTITACQGNAVCRSGLIDTAKLAEEFAERYAGKM VQACPGTDWCKFAKQDAMGLAQD
VETGPLAGLDPQEIADPRPAAERTRAATARALEE

 VETGPLAGLDPQEปADPRPLAERリRAA $\square \mathrm{DEAG}$ RTVKSCVGSTWCRYG■HDSVGFA $\square Q \nabla E E R$ RLE E $R T V K T C V G R T W C R F G V Q D S S A M A$ $R T V K K S C V G S T W C R Y G V Q D S T A M A$ $\square R T V K S C V G S T W C R Y G Q Q D S V G L A D$
 $R R \square H R R_{F}^{L} \frac{L}{G}$ K Leし

$$
4
$$

RTVKSCVGSTWCRYGVQDSVTMA $\square R \square E E R$
 VRATDACPGRENCGSG\｜DTTADCSADEERFREMPAP RTVKSCVGSTWCRYGUGDSVGMA $\square$
 RTVKSCVGSTWCRFGMGDSVGMA VGMEE TVRAVKAC GAGLCQRALGDALDLGVVMQEKYLGR LEE RTVKSCVGSTWCRYGVQDMVEK
SVRNVMVSPGSGLDPSECLDVRPLAAAL
DLEN
VRVIVACPGEETCRWGNIDTKKIARELDRREKALAE RTVKSCVGSTWCRYGVGDSVGFA Ta Len RYKGRLEA E VVRTVETGPLAGDDPQELADPRTLAE R $\square R A A V E E$ RTVKSCVGSTWCRYGDDDSVTMADDMENRYKGLRSP $\square$ CCPGGD $\square C A \square A N A R S V \square A D A V N E K F$ FA $\square R \mathrm{~V}$ E RLE RTVKSCDGSTWCRYGVQDSMSMA■

RMA DD EH
FAVELEN
VRNVLAAPVTDDDPEAAMDVQPVARDLVRALGE
RTVKSCVGSTWCRYGVGDSVGLAVEMENRYKGDRTP VRPVVSCKGT TCQYGLDDTFHLSEMDHERFYHG RNVQACPGTDHCSHAVQDSLAMGRQLEALVFGR RTVKSCVGSTWCRYGVQDSVGMADRLEERYKGLRSP

LEN
RTVK SCVGSTWCRYGVQDSV
$R M A \square D L E L L$
FADEIEN
RTVKSCVGSTWCRYGMHDSVSFA DR DEERYKGLLRSP DKVRPVTSCKGT VCKFGK DDTHS $\mathrm{DA}^{\prime}$ KEAHDRFYMG

VraVVACQGDRVCRNGLINCESLASRTDEKYFGELEN
 RTVKSCVGSTWCRFGVQDS VAQAM DLEN
 RTVKSCVGSSWCRYGVQDSVGMAGYVEER $\lfloor V A C \quad D F C D G E K T E A 乌 P Y A E E L H Q L L H G$




UniRef90 F0JEV7
RiRe90 A5D3K
UniRef90_UPI000422B20C
UniRef90_W9G734
UniRef90 M5P3I8
UniRef90-W2U2D8
UniRef90-A3ZZT4
UniRef90 K2RB47
UniRef90_C7R1K3
UniRef90-Q6WRS9
UniRef90_UPIO0047ADDEE
LMERLEEE
E E L $\underset{E}{L} E A$
LETA

UniRef90 UPI0002F6315A
UniRef90_UPI00035D4FCA
UniRef90-Q2JEW4
UniRef90 U1Z9R5
UniRef90-U9VKY3
UniRef90-A4FG98
UniRef90_UPI00047689F9
UniRef90 A8ZX76
UniRef90-W4Q6R7
UniRef90-B6H4U6
UniRef90_BOSEN9
UniRef90 F2P8V8
UniRef90-UPIOOO4670685
UniRef90-L7VXN1
UniRef90 R5XNC9
UniRef90-UPI0004006FEA
UniRef90-I5AZC3
UniRef90-UPI000346DE6F
UniRef90 X6GLY0
UniRef90-Q0W2S5
UniRef90-F4H447
UniRef90 K9UQ15
UniRef90-M5ETS4
UniRef90-M2SJW4
UniRef90 UPI00047D189B
UniRef90 UPI00037C2110
UniRef90_U1YLM4
UniRef90_G9SK22
UniRef90_I0V0A5
UniRef90-B5EA04
UniRef90-F2LPT?
UniRef90 UPI000262A3F0
UniRef90 D9VV89
UniRef90_UPI00035E466D
UniRef90_UPI0003B314D6
UniRef90_U4JH38
UniRef90-D9PVS6
UniRef90_G0SA68
UniRef90-UPIO00255B0BB
UniRef90 UPI0003B60D35
UniRef90-U1GV67
UniRef90-R4KJI8
UniRef90 UPI00036553D4
UniRef90 Q084F5
UniRef90-V5SCJ2
UniRef90-Q0YP72
UniRef90 U4L6W1
UniRef90-K9DE93
UniRef90-X6C14
UniRef90_S2IUF7
UniRef90 Q31GH1
UniRef90-A0A011QK31
UniRef90_S2DMI2
UniRef90 A0A010QDC5
UniRef90-F5Z4X9
UniRef90_Q47UD7
UniRef90_G2NWPC
UniRef90_IOKDX3
UniRef90-D3SFTE
UniRef90-Q13YT4
UniRef90 UPI0004656263
UniRef90-T2GC31
UniRef90-Q1QYI5
UniRef90 Q6LS8
UniRef90 D4ZBU5
UniRef90_UPI0003788BFA
UniRef90-UPI00037950BD
UniRef90-UPI000364F58F
UniRef90-UPI00040766C9
UniRef90-A3HUT5
UniRef90_UPI000379B623
UniRef90 P08201
UniRef90-Q469B5
UniRef90-G7WAD3
UniRef90-UPI00047A0130
UniRef90 K6ZNY1
UniRef90-N8Q0U5
UniRef90_J2IWP0
UniRef90 K2GKG8
UniRef90-UPI00037A6B5A
ELERQMEELV
ELEAQMQHVV
E LD K Q ME QLV
RRGASQE
S L E A Q M Q ELV
ADEAQMETVV

A E

Q E

E E
LIEREMAEAD

UniRef90_UPI00046F75F6

UniRef90 U2PXG4 UniRef90-I8T7Y2
UniRef90-TOUEG2
UniRef90 UPI000412CD8
UniRef90- T4VWV7
UniRef90-UPI00016A8299
UniRef90 UPI00016C0C7E
UniRef90 H5XSE5
UniRef90 W4F465
UniRef90-UPI0003F6B0C4
UniRef90 E5WPT2
UniRef90 $\mathrm{X6B1V} 3$
UniRef90-E1RDS7
UniRef90_C5EVG3
UniRef90 M1ZWJ9
UniRef90-M8ECK7
UniRef90-UPI00036A76C2
UniRef90 H6LCM1
UniRef90 UPI00030728AB
UniRef90_UPI000475CD93
UniRef90-UPI0002891D1A
UniRef90 W4RLS0
UniRef90-R5X8G5
UniRef90_A0A014DHA3
UniRef90 C7P7T3
UniRef90 UPI00034BEE91
UniRef90-UPI00047A2647
UniRef90-T4VU54
UniRef90 D8GU05
UniRef90-F4BXI9
UniRef90-B1QT85
UniRef90-A0A023DCY4
UniRef90 D6Z2Z0
UniRef90-M1MK08
UniRef90-UPI00035C0F58
UniRef90_B2TPE0

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


UniRef90 U2PXG4
UniRef90-I8T7Y2
UniRef90-TOUEG2
UniRef90 UPI000412CD8
UniRef90-T4VWV7
UniRef90-UPI00016A8299
UniRef90-UPI00016C0C7B
UniRef90 H5XSE5
UniRef90-W4F465
UniRef90-UPI0003F6B0C4
UniRef90-E5WPT2
UniRef90- X6B1V3
UniRef90-E1RDS7
UniRef90-C5EVG3
UniRef90_M1ZWJ9
UniRef90-M8ECK7
UniRef90-UPI00036A76C2
UniRef90-H6LCM1
UniRef90 UPI00030728AB
UniRef90_UPI000475CD93 UniRef90_UPI0002891D1A
UniRef90-W4RLS0
UniRef90-R5X8G5
UniRef90_A0A014DHA3
UniRef90 C7P7T3
UniRef90-UPI00034BEE91
UniRef90-UPI00047A2647
UniRef90-T4VU54
UniRef90 D8GU05
UniRef90-F4BXI9
UniRef90-B1QT85
UniRef90-A0A023DCY4
UniRef90 D6Z2Z0
UniRef90-M1MK08
UniRef90_UPI00035C0F58
UniRef90-B2TPE0
 KCKDGISSGCGRNCPDAMVKDIAFI GTSQG





 $K L P V K F K T A$
$D$
$L$ YFGYELPSKFKITLVGCPNNCAKASDNDDGIMGQEFDEE GGQEMPKELKI GVNGCGMACYGAVQEDIGLV GRK
 GGVNMPKVTKI GFNGCGMACYRAVQDDIGIVY R R K QLE GLSMPASISVSLS CETDCTDA AIDQDVGAI RNSERT
 VY DLGHDD EGVWVPKKVK NVSGCPNSCTAHRFCDI GGLCADDWKHK




[^0]66433467726888744777643221004148887218880 $\begin{array}{llllllllll}6 & 6 & 4 & 3 & 3 & 4 & 6 & 7 & 7 & 2\end{array}$ B B B


[^1]

UniRef90 U2PXG4
UniRef90-I8T7Y2
UniRef90-TOUEG2
UniRef90 UPI000412CD87
UniRef90 ${ }^{-}$T4VWV7
UniRef90_UPI00016A8299
UniRef90_UPI00016C0C7B
UniRef90 H5XSE5
UniRef90-W4F465
UniRef90_UPI0003F6B0C4
UniRef90 E5WPT2
UniRef90- X6B1V3
UniRef90-E1RDS7
UniRef90-C5EVG3
UniRef90 M1ZWJ9
UniRef90-M8ECK7
UniRef90_UPI00036A76C2
UniRef90-H6LCM1
UniRef90 UPI00030728AB
UniRef90_UPI000475CD93
UniRef90-UPI0002891D1A
UniRef90-W4RLS0
UniRef90-R5X8G5
UniRef90_A0A014DHA3
UniRef90 C7P7T3
UniRef90 UPIO0034BEE91
UniRef90-UPI00047A2647
UniRef90_T4VU54
UniRef90 D8GU05
UniRef90-F4BXI9
UniRef90-B1QT85
UniRef90_A0A023DCY4
UniRef90 D6Z2Z0
UniRef90-M1MK08
UniRef90_UPI00035C0F58
UniRef90-B2TPE0

CPTGAWTRSEKKYYR $\square \mathbf{A D} \square \mathrm{M}$
 RYK MGNREAFPNERFHKFFQRVG

CPTGAWVRDEKKYYR DADM
TY LDD $\quad$ L RTEGERFVDTYRRVGDQPFKER
LYAKFG KGRMADFVEDYGIENLKNNDKE
LYQTQG KKREKFFKFVERYGLENVRKEL
CPAHADESDSEK $\square D \square V \mathrm{D}$ D $\square$ GGRMGREA $\square R K K F K E E$
YYRQTGNKGE
RIS GVMD RIGGKEKFIA DV
VYKEGAKPGM RMREFIDNSIGFEEFKRRV

EYKERAHPNERFHKFFQRVKQVGGF
Y H

RY 1 S DGFPNERFHKYFKRVKQVEGFEH
YYREVGQPGE R $\quad$ RSKVMDRMGKEEF $\square$ NNVLKR


| UniRef90 U2PXG4 | 170 |
| :---: | :---: |
| UniRef90-18T7Y2 | E LIE A |
| UniRef90-TOUEG2 |  |
| UniRef90-UPI000412CD87 | LE P A |
| UniRef90_T4VWV7 |  |
| UniRef90_UPI00016A8299 |  |
| UniRef90-UPI00016C0C7B | L |
| UniRef90-H5XSE5 |  |
| UniRef90-W4F465 |  |
| UniRef90-UPI0003F6B0C4 |  |
| UniRef90-E5WPT2 |  |
| UniRef90-X6B1V3 |  |
| UniRef90-E1RDS7 |  |
| UniRef90-C5EVG3 |  |
| UniRef90-M1ZWJ9 |  |
| UniRef90-M8ECK7 |  |
| UniRef90-UPI00036A76C2 |  |
| UniRef90-H6LCM1 |  |
| UniRef90_UPI00030728AB | $\square E P$ A |
| UniRef90_UPI000475CD93 |  |
| UniRef90-UPI0002891D1A UniRef90 W4RLS0 | LLE S LQ T D L |
| UniRef90-R5X8G5 |  |
| UniRef90-A0A014DHA3 |  |
| UniRef90_C7P7T3 |  |
| UniRef90-UPI00034BEE91 |  |
| UniRef90-UPI00047A2647 |  |
| UniRef90-T4VU54 |  |
| UniRef90-D8GU05 |  |
| UniRef90-F4BXI9 |  |
| UniRef90-B1QT85 |  |
| UniRef90-A0A023DCY4 |  |
| UniRef90_D6Z2Z0 |  |
| UniRef90-M1MK08 |  |
| UniRef90-UPI00035C0F58 |  |
| UniRef90_B2TPE0 |  |
| lupas_21 |  |
| lupas_14 |  |
| lupas_28 |  |
| jnet |  |
| conf | 77777777889 |
| sol25 | B B |
| sol5 |  |
| sol0 |  |
| jhmm |  |
| jpssm |  |


[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

[^1]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

