UniRef90_H5SAMO
UniRef90_P77836 UniRef90-UPI0002F744F6 UniRef90_UPI0002E0A102 UniRef90_H3K7Z6 UniRef90-G9QPD9
UniRef90-R6DL72 UniRef90_R2TGZ7 UniRef90-D3QIF4 UniRef90 R6GPA2 UniRef90_UPIO00473F5C6 UniRef90-UPI00040DFFFs UniRef90-W4BWW4 UniRef90 S0EW87 UniRef90-A0A033UP05 UniRef90-UPI00028A1B04 UniRef90-D5X7E2
UniRef90_UPI00036836B6
UniRef90-B6G812
UniRef90_UPIO0040C1F04
UniRef90 M1Z6J7
UniRef90-R6WHV4
UniRef90-R6QQX2
UniRef90-R5INQ4
UniRef90-R5INQ4
UniRef90_UPIO0047BBBOFE
UniRef90_UPI000367160D
UniRef90_R5A336
UniRef90_M7NJN8
UniRef90-Q5HM85
UniRef90_UPI00035F263D
UniRef90-A0A023VNJ9
UniRef90_UPI00047E3983
UniRef90-UPIO002890273
UniRef90_F7YXL9
UniRef90_U2VM89
UniRef90_A9AX94
UniRef90-X1JU19
UniRef90 G5JMN4
UniRef90-D4J3J8
UniRef90-R5PZD0
UniRef90-UPIO0036441B0
UniRef90-R2SEQ2
UniRef90_UPI000248C4ED
UniRef90-UPI000248C825
UniRef90-D6TFN7
UniRef90_UPIO00418CB6C
UniRef90_R9PJX7
UniRef90_S6EKS8
UniRef90-D81279
UniRef90_UPIO0034C98CA
UniRef90-R6HZQ4
UniRef90_R7HBA2
UniRef90-R5ZLS2
UniRef90_UPI00046ADB82
UniRef90-F4EFQ3
UniRef90-UPI00046F4091
UniRef90_UPI00026275D3
UniRef90_L7VRC3
UniRef90-W7T6U6
UniRef90_I3VRC8
UniRef90-R9IPL2
UniRef90_R6XLA3
UniRef90-UPIL004177A95
UniRef90-S6BTV8
UniRef90_E4RL43
UniRef90_E6SLB5
UniRef90_A6LP24
UniRef90_F2JS48
UniRef90-A6F6B8
UniRef9O-H2JCWO
UniRef90-R7C1S1
UniRef90_UPI000465A082
UniRef90-UPI00047B7E9E
UniRef90_UPIO0036A6112
UniRef90-AOKPE3
UniRef90-B8E108
UniRef90-F2J2T2
UniRef90_V1CJT3
UniRef90_ROGDZ8
UniRef90_UPI0003B43D39
UniRef90-E8U5S3
UniRef90_X8K4S4
UniRef90-R6UBT2
UniRef90_UPI00047C5DB7
UniRef90-A9NG19
UniRef90_UPIO004766A73
UniRef90_F2NNI4
UniRef90_F5S650

34c98CA

6ADB82

4177A95

$\qquad$
${ }^{2888939}$ U5S3
$\qquad$ 47C5DB7 4766A73
 MRAVDII IKKRDGHELTTAEIEFFVHGFTHGEIPDY AAA






N
$M$

$\sum \sum \sum 2<\leq$

## M

| MRMVDI I MRMVDI I M R A V E FI MRMVDVI |
| :---: |
|  |  |
|  |  |
|  |  |

 $\begin{array}{cc:c}M R A & Y & D \\ M & I \\ M & \text { P Q E } \\ M & I & R\end{array}$
 MRMYD
$M R M Y D L I$

$M$ | $M R$ | $M$ | $V$ | $D$ | $L$ |
| :--- | :--- | :--- | :--- | :--- |
| $M R$ | $T$ | $V$ | $D$ | $L$ |







 $M R M Y D L$
$M L P Q E V$ $\begin{array}{llll}\mathrm{F} T \mathrm{~T} & \mathrm{~V} & \mathrm{E} & \mathrm{l} \\ \mathrm{M} R \mathrm{M} & \mathrm{D} & \mathrm{D} & \mathrm{L} \\ \mathrm{L}\end{array}$



## м

 MRMYEDV FAAVDVI

$M \stackrel{M}{F}$
$M \mathrm{M}$
M
M
M

 F NA M V C
M L
M MRMYD
MRM M I
M $\begin{array}{lll}M & R & A \\ M & D & \text { l } \\ \text { M R M }\end{array}$


$M \stackrel{M}{F}$ MQMVD ${ }^{\text {M }}$ L MMNAVDVI MRPVDFI $M R P \vee D F$ R K K R D GKAH

QUERY
UniRef90_H5SAM0
UniRef90-P77836 UniRef90-UPIO002F744F6 UniRef90-UPI0002E0A102 UniRef90-H3K7Z6 UniRef90-G9QPD9 UniRef90-_R6DL72 UniRef90-R2TGZ7 UniRef90-D3QIF4 UniRef90 R6GPA2 UniRef90 UPI000473F5C6 UniRef90_UPI00040DFFF9 UniRef90-W4BWW4 UniRef90_S0EW87 UniRef90-A0A033UP05 UniRef90_UPIO0028A1B04 UniRef90_D5X7E2 UniRef90 UPI00036836B6 UniRef90-B6G812 UniRef90_UPIO0040C1F04 UniRef90 M1Z6J7 UniRef90_R6WHV4 UniRef90-R6QQX2 UniRef90-R5INQ4 UniRef90 UPIO0047BBOFE UniRef90-UPI000367160D UniRef90-R5A336 UniRef90_M7NJN8 UniRef90- Q5HM85 UniRef90_UPI00035F263D UniRef90-A0A023VNJ9 UniRef90_UPI00047E3983 UniRef90-UPI0002890273
UniRef90_F7YXL9 UniRef90_U2VM89 UniRef90_A9AX94 UniRef90-X1JU19 UniRef90_G5JMN4 UniRef90_D4J3J8 UniRef90 UPIOOO36441B0 UniRef90 R2SEQ2 UniRef90 UPI000248C4ED UniRef90-UPI000248C825 UniRef90_D6TFN7 UniRef90 R6QDE8 UniRef90-UPI000418CB6C UniRef90-R9PJX7 UniRef90_S6EKS8 UniRef90 D81279 UniRef90_UPI00034C98CA UniRef90_R6HZQ4 UniRef90-R7HBA2 UniRef90-R5ZLS2 UniRef90_UPI00046ADB82 UniRef90 F4EFQ3 UniRef90-UPI00046F4091 UniRef90-UPI00026275D3 UniRef90 L7VRC3 UniRef90 W7T6U6 UniRef90-I3VRC8 UniRef90_R9IPL2 UniRef90 R6XLA3 UniRef90-UPI0004177A95 UniRef90-S6BTV8 UniRef90-E4RL43 UniRef90_A6LP24 UniRef90_F2JS48 UniRef90_A6F6B8 UniRef90-H2JCW0 UniRef90-R7C1S1 UniRef90 UPI000465A082 UniRef90-UPI00047B7E9E UniRef90_UPI00036A6112 UniRef90-AOKPE3
UniRef90 B8E108
UniRef90-F2J2T2
UniRef90_V1CJT3
UniRef90 UPIO003B43D39
UniRef90-E8U5S3
UniRef90_X8K4S4
UniRef90 R6UBT2 UniRef90_UPI00047C5DB7 UniRef90-A9NG19 UniRef90_UPIO004766A73 UniRef90-F2NNI4 UniRef90_F5S650

A $\llcorner$ AMTTIFFH
50
60
A WA MA I F L R GMTPRETADLTLAMAHS GQVL
 A WAMAVYFQGMTPRETADLTMAMVESGDQL S LLLMA I Y F Q D M T E K E R T DLTTMAMVES G D TI I AL AMAI Y F Q D M N D RERAD LT R A MVE S G D T I
S L LM A I F F Q GMTEERERADLTMMAMVRS GD Q I A L M A V Y F R G M T P K E T S ILTTLAMAES GDQI
 ALLMAI YFKGMTAEETASLTLCMAKSGETV AL SMAI FFNGMTEQERADLTMSMVDSGDVI ALMMAI YFKGMSADETAVLTEAMAASGDTI A WA M A V F F K D M T D K E R A DL T M S MVVNS GE T I A WLMAVFDRGMTMQETCALTRAMRD SLAMAI YFQDMTDEERANLTMAMVE AL T M A I Y F R D M S D Q E $\square$ A T L T E A M V A WAMAVFFRGMTERETADLTMAMVRSGEQV AMSMAIF L L G G SMEE』VSLTNAMTHSGDVL A LLM A I Y L R GMSAEETRRLTVLMMMNSGEVV AFAMAVCWRGMSDAETVALLTLAMAESSGSTL ALLMAI YFNKMNKRETIDLTVAMVNS GDDV ALLMAI YFRGMNVDET TCLTMAlTNSGDKV A MMMAVVFRGMDTQETFELTMAMAESGDRL AFAMTVFYKGMTDHETAVLTDAMMRSGDTV A MAMAI FFRGMTPDERANLTMAMVNS GEVI A LAM AVFFNDMNMDERVAFTLAMRDSGQVM A L LM A I F F R GMTRRE T G D LT MEMA H S G D MV AL L M A I Y F E GMA E E E Q A L L T E A MVVD S G D RI SLAMAI F F Q DMNDEERAALTMSMVNSGEKI

 AF TMAVYFKGMTKHEQADFTMAMVQSGDTI AF LMA $V$ YFRGLDERETYD LT DAMARSGE A LLCMAI YFQGMNARETATLTMEMVHS GDVV A WAMAVVLKGMDDRETTDLTLAMAASGDQL A L LMA A Y FQ GMNDEET ITLTVDVMAHSGTML AFAMA I F FKGGMTMRETRDLTMAMVAS GDQL A LLLMA I YFNGMNVRERYDLTMAMRDS GD LL AFSMAVCLKGMDDDETSALTEAMAKS GEVL A LA M A I Y L N G M T A A E T A R WT A A MV D S G E R L
 SFLMAAFFRGMTPMETANMTMAMVASGDTII A WAMAVYFNGMSARETADLT LAMARS GDQV A WLMAV CWRGMDARETRDLTMAMVHS GDEL A LTMAI Y L N GMDEEETTNLTLAMAHSGD LL AFAMAVYFQGMTQDEAAALTYAMAESGDQL AFAMAVYFNSMNGTEATALTTCAMRDSGQVL A LLMAI FFNKMNKRETADLTMAMVRSGDEI AL AMAI F LRGMTSAEDSRWTHAMI ASGERL ALAMAI YFQDMSDRE』ADLTMAMVHSGETL A LTMMAV F L N G L N A A D E TVVA L T M A M R D S G DVL ALLMAVYFQGMNEAETLALTEAMAESGDCL

 ALAMA I WFRDMTLPERVALTLAMRDS GTVL
 ALAMAILLNGMTSDETARWTRAMVESGERL
 AF LMAI YFNGMTNQE AFAMAVCFQGMTRQETDDLTTLAMAAS
 A WAMAVFFRGMDARETADLTRAMAFSG AFDMA I F FK H L NN NE ERANLT E DMAK S G D ML $A L M M A D Y G Q G M S L E E T A Y L T M A M A S S G D Q Q$ AFAMATYFNDMTMDER $\square A I T T A M R D S G E V L$

 A M N M A $\quad$ F F K G L D D K D E T L $\quad$ N L T L A M M E S G D T V AFAMAVVFRGMS LDERVVALTEGMRDS GEVL ALLAMAVYFKDMTMDERVALTCAMRDSGMVL ALLMMA Y F R GMNIE E T I T L T K K M A Y S GKVL A L A M A V F F R GLLTLDERVALTGAMRDS GTVL AFLMTLYE QNMNEDEDVFYTVDAMLES GN TLL A L L M A $\quad$ I $\quad$ Y F F N G M T D E E Q A N L T T M Q M L N S S G D R L


 A F L M A VYF N D M D $\square E E S T A A L A L A M R D S$ G EVVL





|  |  |
| :---: | :---: |
| UniRef90＿U1H809 | W |
| UniRef90 D3FHC2 |  |
| UniRef90 H6MUC1 |  |
| UniRef90 N1ZWE0 |  |
| e90 |  |
|  | AMLMAI WHKGMVQEE QALT REMMSSGEVM |
| UniRef90－UP1000412C381 |  |
| UniRet90 UPI0004671F46 |  |
| niRef90＿E0E3B5 |  |
| UTVCR2 |  |
| 促 | GLDD A ALSAWTTAM K SGERL |
| 俍1000462 | ALLMAIVLRGMTRAETARWTAAMLDSGTRM |
| k9 |  |
| UniRef90＿K01 |  |
| UniRef90－UP1000370D85C | ALNMAILLRGMSRREDARWTAAMIATGERM |
| Ret90－Q11C |  |
| V9 |  |
| UniRet90＿－ 2 L4A5 |  |
| niRef90＿UP1000413 | AFAMAVFFRGMTMPERVAFTRAMARSGRVL |
|  |  |
| UniRef90－UPI00036EDA56 | ， |
| UniRef90＿G0QLL 1 |  |
|  |  |
| UniRef90－A7RXX | A AYLMAMVWRGMTPAELLDRWTAAMI D D G GERL |
| UniRef90－H1XPY6 | ALLM |
| UniRef90－S42 | － |
| UniRef90 B7A5U8 | ， |
| UniR |  |
| UniRef90－UP100046［ | － |
| UniRet90＿H9GI |  |
| UniRet90＿UP100046 |  |
| UniRef90＿R6VJR3 | V |
|  |  |
| UniRef90＿W7Y9D4 | AFAMAVCFQGMDDAEVSYLTHEMAFSGDTI |
| UniRet90－UPI000 | WLTEAMARSGKVL |
| UniRef90－A4J313 |  |
| UniRef90－E1L4D2 |  |
| UniRet90＿－9MxC6 |  |
| UniRet90＿R4G7U4 | MA |
| UniRef90＿U2XC | M |
| UniRef90－Q9 |  |
| Rerso |  |
| UniRet90＿Q483R6 | A |
| UniRet90－UP100034 |  |
| niRef90－D0L8M1 |  |
| UniRet90－F1YF | ALLMAIVFRGMSRRETADWTTAMIDSGVRM |
| UP10003B | ALLMAGFLNGFSDSEAAALTDAMLHSGRVL |
|  |  |
| UniRef90－UPIOOO4 | S |
| UniRe990 BovFP4 | AFLMACFLQGLNKQELEALTKTYUDSGGT |
|  |  |
| F2U912 |  |
| ei90＿B5X3F7 | AMLMAIWLQGMVAEETLALTKEMMMSGEVM |
| UniRef90 UPI0003708C7A |  |
| UniRef90 M3VGW3 |  |
|  |  |
| UniRef90－S6G839 |  |
| UniRef90－W0J89 | ALLMA ${ }^{\text {a }}$ YFQQMSAQETAlLTEEMMLSGEVI |
| UniRef90－Q1GGB2 | AI CLINGLPAAARSDLTLAMRDSGDVL |
| 00 |  |
|  |  |
| UniRef90－LokZ79 | MVDSGEKI |
| 砛ef90－W6A7X7 | 佰 |
| A9EOL5 |  |
| Ref90＿UP100033 |  |
| iRef90 | A WLMAAYLNGLDENETMYFTESLAKSGET |
| UniRef90－E0TL78 |  |
| UniRef90－UP10004697729 |  |
| UniRef90 X7EGX5 |  |
|  |  |
| ef90－118201 |  |
| iRet90＿R9TC71 |  |
| UniRet90＿T2MGN6 |  |
| UniRe990＿R6B116 |  |
|  |  |
| UniRef90 S9 |  |
| NRet90 A6UUNO |  |
| UniRet90＿S5M081 | M |
| 俍iRef90＿D7E6W4 |  |
| UniRef90＿U4V828 | D |
| $\begin{aligned} & \text { AOD } \\ & \text { A7l } \end{aligned}$ |  |
|  | AFIT A SYINPLID MEEVEHLTI RAMVETGERI |
| UniRef90－Q0 | AFVTASYUYTMDSDE\EWMTRAMVKTGDQU |
|  |  |
| Ref90－Q16181 |  |
| er90 | GD |
| UniRef90＿UP10003B6158C |  |
| UniRef90 AOAO24IS08 |  |
| Ref90 C7RBY5 |  |





|  |  |  |  |
| :---: | :---: | :---: | :---: |
| UniRef90_UPI000248B1FF | A F\|L|TASA|VLPLDEE | D LT A A M $\square$ GV |  |
| UniRef90-G8M1H9 | S F I T A L R I K G E T I E | T G CAKVMREKADRI |  |
| UniRef90-R5C2G2 | A Y LTALS L K GETI D | T A S A A GMRA |  |
| UniRef90-UPI000470570C | G F L VGL R M K G $\quad$ TV E | A A A AR\MR |  |
| UniRef90-H6SPP9 | A F L M L R VR GETVE | I T A A A R I MRA |  |
| UniRef90_U2KGX4 | AFLMALKMKGETAD | I A GVVR A L |  |
| UniRef90-F9ZKV8 | A LLVAL R M K G ERVE | L V A T R A L R A |  |
| UniRef90_B8GNI1 | G FLVGL A M K GETV D | $V T$ A A A R V M R D |  |
| UniRef90-B8JAL5 | A FLAALRMKGETVD | A GAADVMRQRADRV |  |
| UniRef90_I3TLG0 | GFLMALRVRGETVE | T A GAEVMRAKATTV |  |
| UniRef90_D3NV10 | GFLMALRVRGETV D | A GAARVMR |  |
| UniRef90_UPI0004659AAB | GFLMALRTRGETVD | S G A V A TMRA |  |
| UniRef90-A6TM73 | GFLTAL R M K G E TVE | T A S AKVMR |  |
| UniRef90-W7YTL7 | S LL T I M R Y R G E T I E | T GFAK A M R E |  |
| UniRef90-Q0VQ04 | A FL MLL RVKEET P D | LAGF ${ }^{\text {a }}$ D |  |
| UniRef90_R7KH76 | ALLM A I CLN DMTDK | TVMMLT D $\quad \mathrm{F}$ L L S G ERL |  |
| UniRef90-E4U563 | A L L A A L K V R G E T P D | A GFA H A R E |  |
| UniRef90_R5QJH0 | A Y L T AL T M K GETID | T GSAEEMRNHAVQL |  |
| UniRef90_X0UT57 |  | A G L A S VM R A |  |
| UniRef90-R7R9D2 | A F L T ALRMKGETVE | TAFAK GMRKHG |  |
| UniRef90-M4WTB1 | AFLMGMRMKSETI D | VGAVA VMRELIA D QV |  |
| UniRef90-A0A059FIC3 | A F ISACST LK LDD L G | MKALTHAMVGAGERLL |  |
| UniRef90_Q2J8C1 | GFAVALRS K G ETPE | A GLVEA ML A S |  |
| UniRef90-F3NRL8 | G F AVAL R A K GETVQ | T G F V R A M Y E A HV I |  |
| UniRef90-K2LUB7 | AFLMALRLDRGEVD | T G A A R V M R |  |
| UniRef90-E5WJU7 | A F MVVSLK TKGETVE | A G V V A M R D |  |
| UniRef90_A4YHE2 | $\mathrm{G} \\| \mathrm{L} V \mathrm{~A}$ L K M K G E T P D | \GFVNS M R |  |
| UniRef90-J3JC42 | SLLLTALLALLK GET\D | A G A AKAMRA |  |
| UniRef90-D1Z2R0 | G F L T A M R M K G V S V E | V T A F ARGMRA |  |
| UniRef90-F8ANJ8 | A Y L A A L Q K GFT SE | A GF ARAMRD |  |
| UniRef90_C8WX61 | A LV SVMA Y R G EQP A | A GF A R A M S S H A VR L |  |
| UniRef90_Q4J8X7 | A L L T S L A M K GESFE | VGFARAMRN |  |
| UniRef90-W5YH02 | A FLT T A H L R GETV T | L E A A V R A M R A |  |
| UniRef90-UPI000466470A | GLLMALRVRGETV | T GAASAMRR |  |
| UniRef90-N6W680 | A L L M G L R M K S E T I D | T GATEV ${ }^{\text {G }}$ M E |  |
| UniRef90_UPI00035C92C7 | G F MVAL R A K G E TV E | V TGLVE S M |  |
| UniRef90-B1M5Q2 | A F LTA L K VR GESVE | $\checkmark$ G A A A MRA |  |
| UniRef90_UPI0003787B24 | GFLMAL RVRGETVD | A G A V S TMRA |  |
| UniRef90-R4YN93 | GFLVGLRMK G E T I D | T GATAVMRE |  |
| UniRef90_F2NNJ6 | GVLIAL R T R GETV D | I A GFARAMREHALLRI |  |
| UniRef90-A0LJ59 | A FMGALATKGETTE | LA GAARTMRRKAARI |  |
| UniRef90-Q31J09 | A ILVALRAKGETVE | T A A A SVMR |  |
| UniRef90_UPI00037CFD6C | GFLVALRMK S E S I D | T GA A QVMRD |  |
| UniRef90-O66576 | ALVMM TKMKGETPE |  |  |
| UniRef90-N2JJ98 | A FLMLLRHKEESAE |  |  |
| UniRef90-X1A9H6 |  | S GFSRAMLDD |  |
| UniRef90-W4QAE6 | S LLT I L R F R GETVE | $M 1 / \mathrm{F} V \mathrm{R}$ A M R |  |
| UniRef90_UPI00047A3F9E | G FLVGL R A K G E S V E | LTGLVEEAMLARAHR! |  |
| UniRef90_Q97EF2 | A F LTGLRMKGEEVE | LGCARAMKE |  |
| UniRef90_S6BVX6 |  | A A A A S VMRE |  |
| UniRef90-UPI00024901EB | SYLTALLSMKHETVE | AGSAK SMRD |  |
| UniRef90-R6FL62 | A L L T A F Q M R G $\square$ T V D | L $\$ G F R E A L M E T  \hline UniRef90_G8QQT2 & S FLT T A L S LK G E T I E & TGSAEAMR  \hline UniRef90-B1I3Z8 & A LL A G L RLLKKETAA & RGFARAMRARAEQV  \hline UniRef90-UPI00047351B4 & GIL T L L T YRGETVE & V G F VK G M R N  \hline UniRef90-UPI0003712979 & A FIT TAL R MKGETVA & T GAARVMRE  \hline UniRef90-K9HKB6 & A F L M A R V R GETVE & I T GAARTMRAKAARII  \hline UniRef90_UPI00047B9AFD & $A D L M G L R V R G E T I E$ | I A GAVTSMR |
| UniRef90_Q3J897 | GLL L G L R M K G E TV E | A A A ARVMRE |  |
| UniRef90-B2IKP4 | G F L M M R VR GETV D | 1 GAV T A MRA |  |
| UniRef90_DOMHIO | GLLM GLRARGETLD | L V GFTRVMR |  |
| UniRef90_UPI0004671809 | S Y L TAL S LK G E T I D | T G S A A GMRE |  |
| UniRef90_G4E2E7 | GFLIGLRMKGETVE | $\checkmark$ a a a a V MRE |  |
| UniRef90_U2KR05 | GLLVA L R M K G T I A | T GF A K GMR |  |
| UniRef90-L0DSU6 | ALLVALRMKGETPD | VA A A R VMRE |  |
| UniRef90_UPI00036E6FF3 | G FAl A L R A K G A T V E | $V \mathrm{~T}$ G L A G G M L D N A VQ】 |  |
| UniRef90_R4K543 | A F LVGL R M K G E TV E | T GAARAMRDNASVV |  |
| UniRef90-S0FID4 | S F L T A M R M K G E T I E | I T A CATVMRD |  |
| UniRef90-UPI00047A73A0 | A F LTALRAKGETVE | L T GLVEAMLDD |  |
| UniRef90_UPI00047D12C4 | GFLMALRVRGETVE | I A G A V S S M R |  |
| UniRef90-R4KU15 | GLLT T A L K L K GE T TS | I T GFARVMR |  |
| UniRef90-UPI000364B5CE | S FIT T GL R M K GET $\square \mathrm{D}$ | T GAALVMRD |  |
| UniRef90-R6C5U2 | A LLT A MRMNVENAD | T GCAMGMRE |  |
| UniRef90_V4P4A6 | A AVVT A $\$ R $\square$ R GETVG | A A CARAMRK |  |
| UniRef90_G2FR25 | AFLAALRMKGESI D | T GSALAAMRE |  |
| UniRef90-Q1NUF5 | ALLVTAL R L K GE TV A | SGAARVMRA |  |
| UniRef90-B7KUV9 | A FLTALSVRGESED | VGAVS A M R A |  |
| UniRef90-V4ZJM4 | A LLAALRAK GETEA | A G F ARGMRDAARTI |  |
| UniRef90-R4V5W5 | G F V V G A M K GETVT | I A A A A RVMRE |  |
| UniRef90-R7CMJ5 | AFL A A L S L K GETVG | I T GFARAMRD |  |
| UniRef90_H5X1F4 | GFAVALRAKGETAA | I A GMARAMLA H A R RV |  |
| UniRef90_F6FWJ3 | GF LV G L R A K G VTVT | L T A L A D A ML G H A R RLL |  |
| UniRef90-UPI0003480488 | GFA A L R A K G E S V S | $V$ t gla a r g m L D |  |
| UniRef90-UPI000465E932 | GFLI GL R M K G E T L D | I T GA A M A M R E |  |
| UniRef90-UPI00036B074B | GL L T A L R M K GETVE | I T GFAEAMR |  |
| UniRef90-P00500 | ALMMGLRMKGESI D | T A A A V V R E |  |
| UniRef90-B5I284 | G FVVAL R A K G E TV E | NGLVRAMYEHANV |  |
| UniRef90-E8JLI4 |  | H GLA A A MQD |  |
| UniRef90-G4R8X7 | A F L M M R V K G E TV | A A AVS $\square$ M R N |  |
| UniRef90-UPI00046FB79E | AFVTALRLLKGETV D | V GLVRTMRA |  |
| UniRef90-UPI0003B572FA | GFLVA L R S K GE TV D | $\checkmark G F R D A \ L E$ |  |
|  |  |  |  |






## UniRef90 UPIO002485E96

 UniRef90-LOIAU6 UniRef90_UPIO003B6695E UniRef90-W7CF76 UniRef90_Q8KC17 UniRef90-R2VJ48UniRef90 D5DHZ4 UniRef90-D5DHZ4
UniRef90-S6BZR0 UniRef90_J9H9U0 UniRef90-A8H3J5 UniRef90-E5YAD8 UniRef90_UPI00037B8647 UniRef90-IOR074
UniRef90-F8L7Z3
UniRef90_E8XSU9 UniRef90_U7DBA0 UniRef90-UPIO0039417B6 UniRef90_C7LU92 UniRef90-E9V1P7 UniRef90-Q2PYI5 UniRef90_Q02000 UniRef90_UPI0003657693 UniRef90_Q5YZ21 UniRef90_UPI00042A9325 UniRef90-UPIO003B2EEAD UniRef90-U5VWT2 UniRef90_C6XAX9 UniRef90-D2TQB6 UniRef90-A9B9W1 UniRef90-M7MIH7 UniRef90-UPI0003F845A5 UniRef90-IOZ6U7 UniRef90-UPIO00472F785 UniRef90-F7ZOA0 UniRef90-X0QC46 UniRef90-W5W3B4 UniRef90-19WAB2 UniRef90-LOL1T3
UniRef90-B0SYZ3 UniRef90-B0SYZ3
UniRef90-D8PAC7 UniRef90-A5F210 UniRef90_UPIO002891469 UniRef90_UPI000363E93A UniRef90-A0A058ZPC3 UniRef90-K5YWJ5 UniRef90-Q8VP84 UniRef90-C2KZB2 UniRet90_D5ALM7
UniRef90_I1JX86 UniRef90-A1ZFH4 UniRef90-F3Z2N8 UniRef90-UPIO00421682B UniRef90-B9E148 UniRef90_UPI0003654B70 UniRef90 ${ }^{-}$B6ESB5 UniRef90_UPI00036AE63C UniRef90-A0M4T1 UniRef90 G7H7L2 UniRef90-Q1N6X4 UniRef90-D8U603 UniRef90-M7NDH2
UniRef90- X8M063 UniRef90_X8M1063
UniRef90_UP100034559F3 UniRef90_C7NIC5 UniRef90_G7J5E0 UniRef90-H1HSS1 UniRef90_UPI000287E07B UniRef90_UPIO003638DE2 UniRef90-G1URX7 UniRef90-A0A024Q4H1 UniRef90-I3DI54 UniRef90_D4YNW3 UniRef90-R8APK1 UniRef90-ROFY55
UniRef90 B8D972 UniRef90-B8D972 UniRef90_UPIO0036B0D34 UniRef90-UPI0004674C6B UniRef90-X3ENQ7 UniRef90-F0S4H3 UniRef90-C9RJN9 UniRef90_LOH1A4 UniRef90_E1L125 UniRef90_R5PYR1
UniRef90-E7B3L6 UniRef90_UPI0004718D2E UniRef90-Q15RZ7 UniRef90-R5Z4E3 UniRef90-UPI00036DC184 UniRef90-D2RG58 UniRef90-14BKY7

MQAHVERVTDGIDLDQRQARAAATSLFDEATDAQIG MD $\square K E A L N R A V S H L D S T A E M Q S V M R Q M M G Q C T D A Q V G$ MRQQETLQKLLEGDLSMDEARVAGNRLFDNTLSDSEVA MQELFEKVYRGNDLSTREMQQVGKAI FDRQLTDTQQS
 LVQTADRTVVAGQQTVVTADAFMNEWMQGRVTQAQAA LI QTLARGKKGAATLTVEQSYQLIRGYELGYGSTSQLS MDTPQAALDTLASGQDLTADMASAGFSAMMDGTMTPSQAG EVLTSLVSGQDLTRETASWAMMQUMSGSATASQLG QVIEQLINGEDLTHDVCEKVIHEMISGRNESQMA LIKKVGRGKNHARDLNREQSHALYRHMLAGEVPDDQLG MKDLLRRLTQGEELTTGEAHTLLIEOTEGKHTSAQUG MNTDSHILEHLTTGADLSAPQAKEAFDLLLTGEVSPVQAG EVLTTLVAGQSLSAHQSAWAMGEILSGEATSAQHA LEKVMSGRDMTENEMNMLANSVIDGELSEEQUA QMLESLLNGENLSVRQATWAMEQVMQGNDSEAKLA LV RKTAMGEKLSMEEAGAGFDDIMQGKLEESEGA MTVKAALQKLIQHQNFTHGEMLSHMRQVMGGELTPAQUA MDYRKI RGKNHARDLDQDTARGLYSQMLSGEVPEREMG MNMKQ
$\qquad$ LNRLINQESIS ILTTLISGQHLSAEDSWWFVDDLMRGNAEPAAVG Q LEALLEQRDLTEDQTQEALTALVDGAHQTQMA FREILAALLARHPLSPAMAGAAFGQIMDGAVGEDPLA MKPYLEKILAQEGLTVEEMREASRALFSDEVTEGEMG EDLAGEESSWAMDQVMSGLATPAQTA ПKEПGRGVKGARPLPRADVETLFEAMLQGRVSDDELG MQSYLQKVSAGENLTLQEAEKADTEEFTGQATDAQVAA MQHLLAKVAKGQKLTWEEAKQAMRLMIEGTATPAQIG MQTIINKLYEQQGLTQAESQQLFDQIIRGEMDPVLMA MKEYIEKVKNNESLTMEQMKRAAEAIFNEETPASTIE F IAANIIRGKKGARDLTRPDARADYRAMLDGTVSDLELG PLTREEAAEAFGVLFDGDATPSQI G $\square F T H Q P \square E K L F K S Q S M T Q E E S H Q L F A A I V R G E L E D S Q L A$ QECIKKLVLGED
$\square P Q Q V I E T L T S G V D$ PLTRAEAETAFE FFNGAATPAQMG MKAILNHLFEGKKLSKEEAEAEVLTVIIAQGKYNHALII A VLENLAQGLDLTSEQAEGAFGRLMAGELSEGQAG MKEILNQLI EHQTLSQSQAREVLKNIASGAYNQSQVA EALKEVLSGKDLSESQSEQVMEN:MNGQESSACLA MSWAEVLDTLTTGGDIGAEGASWAMNE\|MSGSATPAQ\|A MSSUIEGGKTVRSRKPLTFDQAYLVMEEYLAGDVSSDKMA MKELLNRLISHETLSTDEAKQVIFNISEGKYNDTQUA VRILGKGRKGSRYTYEEAHTAMGMI DRGEVEDVQLG QVIEKLIRREDLTKELAEETLGALLDDFVSE QAA MREFTQKVRNGNDLSYEEMTEAALFMFDERTPEEEVG MQNTYDKLFKAQALTHQESQYLFNADDQGEDTEPQLA MKDILNQLIEHKSLDRETARELILLTQGEYNQSQ1A RSLLSELLAGRDLGGDAASWAMDEVMSARASDVEVA DKEALDKVVNKEDLSYDEAYAVMNEVMSGESSQVQNA LLECLARKEDLTAAEAEQAFAMLDGQVDPVQLGG MKHYLEKKLINKE SLSAEMAATGFSSLMDGKMSPAQAG MQT QTAGLLEKLYQSQPLSVGESEFLENQUMQGQFSNEQUS MQAILDKLFRRDSLTRDESHTLEDSITQGAMPPELLAA MRNDLKMYDSKFLNQEESYQLFTLISSGKDTDTLA EALEAVTNRKNLDYESVRRIDDTIDDELDEGKFG LTREELREAFRLALAGEAQPEALG KSRRPLTEEASDAGSMILAGDVTDKQLG QPILEKGYQAQTLTQQESHQLFSAVVRGELKPEQLA ■DMRG| LNTLTAGKDLTRETAEMFMEDMTSDGAMMERQMA EAIKKIVNKEDLTYDESYMVMNEIMDGATTATQNA DDSVRRKINGGDSANEYRALDADVAAFRYTPDELA MNMKEVGRGKNHARDLDQDTACELYKAMLTGQVPALELEG LLLETLYQGKALSQNETVDVFSQUVTGQVDNALLS DKEA乌AKVVRREDLTFDEAYTVMNE:MSGQTTQVQNA LEKTVEGKNLSFEEAYEDFNQLIEEECDPLRLI A LGRLTTGQTUDPGQARWAMDQUMTGAATPAQUA EIGRGKNHARDLDRDARSLYAHMLDGDVPEDEMG
 UniRef90_UPIO003B6695E UniRef90_W7CF76 UniRef90 Q8KC17 UniRef90_R2VJ48
UniRef90 D5DHZ4 UniRef90 S6BZR0 UniRef90_J9H9U0 UniRef90_A8H3J5 UniRef90_E5YAD8 UniRef90 UPI00037B8647 UniRef90_IOR074
UniRef90-F8L7Z3
UniRef90_E8XSU9 UniRef90 ${ }^{-}$U7DBA0 UniRef90_UPI00039417B6 UniRef90_C7LU92 UniRef90_E9V1P7 UniRef90-Q2PYI5
UniRef90-Q02000 UniRef90-UPI0003657693 UniRef90 Q5YZ21 UniRef90_UPI00042A9325 UniRef90_UPI0003B2EEAD UniRef90 U5VWT2 UniRef90_C6XAX9 UniRef90_D2TQB6 UniRef90-M7MIH7 UniRef90_UPI0003F845A5 UniRef90_IOZ6U7 UniRef90 UPI000472F785 UniRef90_F7Z0A0 UniRef90-X0QC46 UniRef90_W5W3B4 UniRef90 I9WAB2 UniRef90-LOL1T3 UniRef90_B0SYZ3
UniRef90 ${ }^{-}$A5F210 UniRef90_UPI0002891469 UniRef90_UPI000363E93A UniRef90 A0A058ZPC3 UniRef90_K5YWJ5 UniRef90_Q8VP84 UniRef90_C2KZB2 UniRef90 D5ALM7 UniRef90_I1JX86 UniRef90_A1ZFH4 UniRef90 F3Z2N8 UniRef90-UPI000421682B UniRef90_B9E148 UniRef90_UPI0003654B70 UniRef90 B6ESB5 UniRef90_UPI00036AE63C UniRef90_A0M4T1 UniRef90 G7H7L2 UniRef90_Q1N6X4 UniRef90_D8U603 UniRef90_M7NDH2 UniRef90_X8M063
UniRef90_UPI00034559F3 UniRef90_C7NIC5
UniRef90_G7J5E0 UniRef90-H1HSS1 UniRef90_UPI000287E07B UniRef90_UPI0003638DE2 UniRef90 G1URX7 UniRef90_A0A024Q4H1 UniRef90_I3DI54 UniRef90 D4YNW3 UniRef90_R8APK1 UniRef90_R0FY55 UniRef90_B8D972 UniRef90_UPI00036B0D34 UniRef90_UPI0004674C6B UniRef90_X3ENQ7 UniRef90_F0S4H3 UniRef90_C9RJN9 UniRef90_LOH1A4
UniRef90 E1L125 UniRef90_R5PYR1
UniRef90_E7B3L6 UniRef90_UPI0004718D2E UniRef90_Q15RZ7 UniRef90_R5Z4E3 UniRef90_UPI00036DC184 UniRef90 D2RG58 UniRef90_14BKY7 UniRef90_K8B651

AFAYG RVK G
A A ELLS SAASTM ALLA GLRAKGETEAEIAGFAEGMREAARTV GF L VAMRMKSESDDEVVGAVQVLRES GEHL AFLIALKVKGETAPEI AGDVQAMRA A I LALLQKKGATPAEVIG
$G L L V G L K V K G V A A A E L T G L A Q V M$
AFFI A ERIVKTENA DE LLGGFVVHAFRE

A ALMLMRVRGETAAE IAGVVLADADSDDT
SFLMGLRMKGESPLEMAHATRA
A I L DGLRVKTESVSEDAAAAQVMRE
GFMTALRAKGETAAELGGLVDVML
$A F L V L M R Q K G E T A D E L G G G V V K A M R$
ALLI AFR IDKGEAEEEMLGFYQAM
ALL ALFSMRQ LTPAELDGFRRALLE
A ML T A L K LLK GETPEEV S GAVQALLDD
AFLMGLRAKGETAAELSAAVEA
A F AVGLRAKGETVDELA GVAD GMLDA


A WLI A L R AK GESVVE E LVGFR D A
$A V L I A M R \square R G E T P E$ E $V$ A $A$ A A A A A M GFAVALRAKGETPGELVGLVQAMLANATVV $G L L I G L R V K G E T V D E L A A A A A E V M R E$
GILIAL R I K GE GEAEMRGFYEAMRN
AFLAAFRSKNVSGLELAAMAKVLRD
S F LTVGMMRSIT TVEELFGFRDALLE

AFLTALHMRGESVTELHAAVRAMRA
AFLAALKCKGETAEEIAGLVEVIRE

A I LMA YR $\square K G E T P E E L A G M L D A$
GLL MALLKMKGETADEIAGFACGM
A A V T A M R L $\quad$ R GE T V GE I T
AFLTAMRFKSESVTELAAFT
AVLTALK $\mathrm{V}_{\mathrm{F}} \mathrm{K}$ GETPDE
Q F L R A L S EK GE TADD


A F LTALACREENDTEITAFAKAMRE
GLLMALRTRGETVDEIAAAASVMR
A LLVLL RAKGETVEEVVGLARAM
A FLTVVY IMMRS DSVE EL E GFRREAMLDN
A MLMGLRAKGETPQELAAAVGA
AFITVYMMRSVVTVE E


AFF I A E RVKGETVVDELLAF $W E A A R E R S T V I$
AF LTVYMMRS DT I E ELEG FRDALLE
GFGLLAVKMK GAAPRELD GLADAMLLEHATRV
AVMMLLRVKEENAEELSGFAQATRE
A F LVLLRAKGETSDEIA GLA Q A MLLA
EFLAALADKGETAYEVAALTRGMA
A VL $\square$ S MKMRGEQPQEI A GAA L A
$A F L T V Y Q M R S D T V E E L Q G F R E A M L E$
GF L V AL RA K GES V A EVVRA LA D V M V E
$A \vee L \vee L L R A K G E T V E E$
A F L A A M S T K S E T T D E I


$A L L I A L K \square R G E T P E E V Q G A V N A$
S F L V A HHAK GETVDEIINGLVRSMYEHADR■
AVLI ALKMRGETPQEIAGAASALLA
TLLVS I TRGLDAEETLALAQA
S ILTAAMK $\square R G E S$ GEE I TGADIKAF LD
AFLAALKTKGETVDE\|LAFIDDA
A MLLMLLRYRSEDAAEATG VVEAMRET
AFLLL MRANGETPSELIGFVKGLRKT
A A L V SMK I R GEHPNEIAGAATALLE
AFI T A YCMRNDT DE ELS GFRDAMLE
A IL T A L S S K G PVAA E E A G C A K
VFL $\square$ AL R MKRETDDELKKGILDA $\quad$ RR
AFLAALSTKSET DDEI CGCALAMREHARTV
SFLVSNA SFMSPQEVLSMTVALIDE
A IL I A F R IIK GESEQEI LGGFYQAM
AFL A A ERI KMESVVE ELEAFVLTCRKHACR
S L L T A L K I K GE TPE E I A GAATAMD
A F A A L S TK S ET DDE I S GCVVTAMRE
$A F L M L L D V K E E S P D E L A G F V E A$
GLTALQTKGYTAEELAGGAKAMRDKGDVI
$G F G V A M K M K R P T S A E V V A E D A D T M D E H A R R V$
$A I L I$
$A R I V G E G E A E M R G F Y D A M$

UniRef90_E1ZQ25 UniRef90_KOYR89 UniRef90_D6XUZ3 UniRef90_K9EE22 UniRef90 UPI000288A089 UniRef90-J4JW09<br>UniRef90_UPIO0047C9B92 UniRef90_UPIOMSM<br>UniRef90-K9WSR4<br>UniRef90-FOLNY5<br>UniRef90-F6DCH2<br>UniRef90_UPIOOO302570B<br>UniRef90_UPI000364DC76<br>UniRef90-A5WFZ6<br>UniRef90_G4Q5U0<br>UniRef90_A0A011PXU7<br>UniRef90_UPI000368FA99<br>UniRef90-B7RPR3<br>UniRef90_UPIO003686D22<br>UniRef90-D3VGQ8<br>UniRef90-A0A024IFB3<br>UniRef90-I6ZDJ6<br>UniRef90-A3Y7M6<br>UniRef90 UPIO0037210BA<br>UniRef90_UPI00041FCC87<br>UniRef90_B1BYL1<br>UniRef90-W7QSH7<br>UniRef90 T2J616<br>UniRef90-UPI0003B4054C<br>UniRef90-F5RE72<br>UniRef90_U7USR2<br>UniRef90-R6IPF8<br>UniRef90-C7QBL7<br>UniRef90-J1FCG7<br>UniRef90_G9YJZ1<br>UniRef90-D0U4C8<br>UniRef90-E4THW0<br>UniRef90_A3YYC6

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm

UniRef90_E1ZQ25 UniRef90-K0YR89 UniRef90-D6XUZ3 UniRef90-K9EE22 UniRef90 UPI000288A089 UniRef90-J4JW09 UniRef90_UPIO0047C9B92 UniRef90_K9WSR4

```
UniRef90 FOLNY5
```

UniRef90-F6DCH2
UniRef90-UPIOO0302570B
UniRef90_UPI000364DC76
UniRef90-A5WFZ6
UniRef90_G4Q5U0
UniRef90-A0A011PXU7
UniRef90 UPI000368FA99
UniRef90-B7RPR3
UniRef90-UPI0003686D22
UniRef90 D3VGQ8
UniRef90 A0A024IFB3
UniRef90-I6ZDJ6
UniRef90-A3Y7M6
UniRef90 UPI00037210BA
UniRef90-UPI00041FCC87
UniRef90_B1BYL1
UniRef90 W7QSH
UniRef90 T2J616
UniRef90-UPI0003B4054C
UniRef90-F5RE72
UniRef90_U7USR2
UniRef90-R6IPF8
UniRef90_C7QBL7
UniRef90-J1FCG
UniRef90 G9YJZ1
UniRef90-D0U4C8
UniRef90-E4THW0
UniRef90_A3YYC6



