


## QUERY

UniRef90_J4TGY6 UniRef90-U2S3D2 UniRef90 R7B3U2 UniRef90-UPIO00310B333 UniRef90-R5Y085 UniRef90-R5TNB1 UniRef90- J2ICE4 UniRef90-B3SAE9 UniRef90_D5XCK3 UniRef90- J7IUE3 UniRef90_R4KC00 UniRef90-UPI0003A57CAA UniRef90_E4RMK3 UniRef90'UPI00047889AD UniRef90-Q30RS8 UniRef90-A8MHR9 UniRef90-D9S0D1 UniRef90-ㄷ5X4M6 UniRef90-F6CJDO UniRef90-B2V611 UniRef90_D5V644 UniRef90-Q31FD4
UniRef90
U5R5F7 UniRef90-R7JRB2 UniRef90-AOAO17RUH4 UniRef90-F6B7C2 UniRef90-T1K5Z UniRef90_UPIOO035C5609 UniRef90_K4LDIG
UniRef90
W6N367 UniRef90-A7IBB5 UniRef90-B15T6 UniRef90-UPIO00367C9DB UniRet90_LODYC9 UniRef90_Q5SLF2 UniRef90-L1QED5 UniRef90-X1EJL2 UniRef90_A0A023CQ84 UniRef90-D6DGBPO UniRef90-E8RIA2 UniRef90-E3HCH1 UniRef90-A0LEC1 UniRef90-D8GLZO UniRef90_M3KB47 UniRef90-R5D8G6
UniRef90_R4YYW9 UniRef90-M5RRF3 UniRef90-H2Y4D4 UniRet90_UPI0003F62E36 UniReffo-R6R7N9 UniRet90_R5AN94 UniRef90_UP1000258F21F UniRef90-ETFZA7 UniRef90_K3XC11
UniRef90 GOMXV3 UniRef90-A5G7C6 UniRef90-UPIO0047C9A28 UniRef90_UP10002883060 UniRef90_A0A023FPC9 UniRef90-R5ICN5
UniRef90-b0S052
UniRet90_R5S4M2 UniRef90-UPIOOO36DF79B UniRef90-G5H4744 UniRef90-H1PP24 UniRef90-C6PV89 UniRef90-R7ISJ7 UniRef90-FoK8J3 UniRef90-B7CBK2 UniRef90-Q1NNY9 UniRef90_TOL9C4 UniRef90-UPIOOO3F65702 UniRef90-E9SMF9 UniRe90_-E3JB96 UniRef90_S2XX62 UniRef90-C6CVK7 UniRet90 UPIOOO363818C UniRef90_E1Z8Y3
UniRef90 Q028Z5 UniRef90-H2Y4D3 UniRef90 B3E5H9 UniRef90-V4J5V1
UniRef90
R5UMQ0 UniRef90-A8NTT2 UniRef90-UP100047EDC72
UniRef90_B5Y839
084

100

120
 MGDRDFVK FSMRDCMP FAERDVTP
FSRRDVTP
PAKRDVTP
FAARDVTP
FGPRDVTP
F
FS $\square$ RDVTP Ommmmmmmmmmmmmm


 $A M R A$ | Y S |
| :--- |
| S | AMRA S S L F T K R T ML S AMRAFSMQTKRAMLS AMRHYSMSITNRAMLS AMRQESLKYVPTALLS


?促

LISPDNTP
FSKRDNTP
FAPRDNTP
PAKRDVTP
PAKRDVTP
PAKRDVTP
FSMRDVTP
FSKRDVTPE
GGPRDNTPD
$M G E K D D T M E A$


$\stackrel{L}{\text { L }}$


## V <br> $\stackrel{V}{V}$

SPRRFTP
VSPRDVTP
S

## F

F S E R D $V$ T T P
F S K
S
PAKRDVTPE

MGDKDMLK


$\begin{array}{lllllllll}P & A & P & R & D & V & P & E \\ F & S & E & R & D & V & P & \end{array}$
$\begin{array}{llll}\text { F S A R D V T } & \text { P } \\ \text { F S M R D Q T }\end{array}$
FS

## 

F AKRDVTP
F S K R DVT P E


| $L$ | $S$ | $L$ | $R$ | $D$ | $V$ | $T$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $F$ | $E$ |  |  |  |  |  |
| $F$ | $T$ | $P$ | $R$ | $D$ | $V$ | $T$ |


| $L$ | $T$ | $P$ | $G$ | $D$ | $V$ | $T$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $P$ | $E$ |  |  |  |  |
| $G$ | $P$ | $S$ | $D$ | $V$ | $T$ | $V$ |

F S P R D T T P E
L A P R DVT P

| $P A$ | $P R D V V$ |
| :---: | :---: |
| $V$ | $P$ |

V S P R DVTP
FS S R DV T P E

A TVLVCBC
A K
E A$T$ T A

| $A$ | $A$ |  |
| :--- | :--- | :--- |
| $P$ | $E$ | $A$ |
| $P$ | V | $R$ |
| $R$ | $A$ |  |


GE
EAM
K





| QUERY |  |  |
| :---: | :---: | :---: |
| UniRef9 | J4TGY6 |  |
| UniRef9 | U2S3D2 |  |
| UniRef9 | K4ATA1 |  |
| UniRef9 | R7B3U2 |  |
| UniRef9 | UPI000310B333 |  |
| UniRef9 | R5Y085 |  |
| UniRef9 | R5TNB1 |  |
| UniRef9 | J2ICE4 |  |
| UniRef9 | B3SAE9 |  |
| UniRef9 | D5XCK3 |  |
| UniRef9 | J7IUE3 |  |
| UniRef9 | R4KC00 |  |
| UniRef9 | UPI0003A57CAA |  |
| UniRef9 | E4RMK3 |  |
| UniRef9 | UPI00047889AD |  |
| UniRef9 | -Q30RS8 |  |
| UniRef9 | -A8MHR9 |  |
| UniRef9 | D9S0D1 |  |
| UniRef9 | R5X4M6 |  |
| UniRef9 | F6CJD0 |  |
| UniRef9 | B2V6I1 |  |
| UniRef9 | D5V644 |  |
| UniRef9 | Q31FD4 |  |
| UniRef9 | R5R5F7 |  |
| UniRef9 | R7JRB2 |  |
| UniRef9 | A0A017RUH4 |  |
| UniRef9 | F6B7C2 |  |
| UniRef9 | T1K5Z4 |  |
| UniRef9 | UPI00035C5609 |  |
| UniRef9 | K4LDI6 |  |
| UniRef9 | W6N367 |  |
| UniRef9 | A7IBB5 |  |
| UniRef9 | B1I5T6 |  |
| UniRef9 | UPI000367C9DB |  |
| UniRef9 | LODYC9 |  |
| UniRef9 | Q5SLF2 |  |
| UniRef9 | L1QED5 |  |
| UniRef9 | X1EJL2 |  |
| UniRef9 | A0A023CQ84 |  |
| UniRef9 | D6DGP0 |  |
| UniRef9 | E8RIA2 |  |
| UniRef9 | E3HCH1 |  |
| UniRef9 | R6EYF1 |  |
| UniRef9 | A0LEC1 | Q |
| UniRef9 | D8GLZ0 |  |
| UniRef9 | M3KB47 |  |
| UniRef9 | R5D8G6 |  |
| UniRef9 | R4JYW9 |  |
| UniRef9 | M5RRF3 |  |
| UniRef9 | H2Y4D4 |  |
| UniRef9 | UPI0003F62E36 |  |
| UniRef9 | R6R7N9 | R |
| UniRef9 | R5AN94 |  |
| UniRef9 | UPI000258F21F |  |
| UniRef9 | E7FZA7 |  |
| UniRef9 | K3XC11 |  |
| UniRef9 | -G0MXV3 |  |
| UniRef9 | A5G7C6 |  |
| UniRef9 | UPI00047C9A28 |  |
| UniRef9 | UPI0002883060 |  |
| UniRef9 | A0A023FPC9 |  |
| UniRef9 | R5ICN5 |  |
| UniRef9 | B0S052 |  |
| UniRef9 | R5S4M2 |  |
| UniRef9 | UPI00036DF79B |  |
| UniRef9 | G5H474 | R |
| UniRef9 | C9LWF5 |  |
| UniRef9 | H1PP24 |  |
| UniRef9 | C6PV89 |  |
| UniRef9 | R7ISJ7 |  |
| UniRef9 | F0K8J3 |  |
| UniRef9 | B7CBK2 |  |
| UniRef9 | Q54KM0 |  |
| UniRef9 | -Q1NNY9 |  |
| UniRef9 | T0L9C4 |  |
| UniRef9 | UPI0003F65702 |  |
| UniRef9 | E9SMF9 |  |
| UniRef9 | E3JB96 |  |
| UniRef9 | S6A9T6 |  |
| UniRef9 | S2XX62 | R |
| UniRef9 | C6CVK7 |  |
| UniRef9 | UPI000363818C |  |
| UniRef9 | E1Z8Y3 | E |
| UniRef9 | Q028Z5 |  |
| UniRef9 | H2Y4D3 |  |
| UniRef9 | B3E5H9 |  |
| UniRef9 | V4J5V1 |  |
| UniRef9 | -R5UMQ0 |  |
| UniRef9 | A8NTT2 |  |
| UniRef9 | UPI00047EDC72 |  |
| UniRef9 | B5Y839 |  |






| Uni | K1QYH1 |  |
| :---: | :---: | :---: |
| UniRef9 | A0A023BXQ0 |  |
| UniRef9 | D2A001 |  |
| UniRef9 | I7BTN5 |  |
| UniRef9 | S7VGX6 |  |
| UniRef9 | A0A023DCY3 |  |
| UniRef9 | C8KZN0 |  |
| UniRef9 | T1JB58 |  |
| UniRef9 | D2Z8P7 |  |
| UniRef9 | X8JWA9 |  |
| UniRef9 | UPI00036F548B |  |
| UniRef9 | Q5P7P9 |  |
| UniRef9 | W5JCU1 |  |
| UniRef9 | F9MUJ6 |  |
| UniRef9 | I3C8V9 |  |
| UniRef9 | G1Q149 |  |
| UniRef9 | B3EHH0 |  |
| UniRef9 | UPI00046221C4 |  |
| UniRef9 | J9JRK6 |  |
| UniRef9 | YOKJD2 |  |
| UniRef9 | A4TQG3 |  |
| UniRef9 | UPI00038046F2 |  |
| UniRef9 | B8HK73 |  |
| UniRef9 | IOXTH0 |  |
| UniRef9 | UPI00039E54AF |  |
| UniRef9 | N1WD73 |  |
| UniRef9 | G2YM15 |  |
| UniRef9 | UPI000465CF5F |  |
| UniRef9 | G8NSJ3 |  |
| UniRef9 | C6BYR9 |  |
| UniRef9 | UPI000469D205 |  |
| UniRef9 | C8WZL0 |  |
| UniRef9 | H8ISP2 |  |
| UniRef9 | E9GEV6 |  |
| UniRef9 | D3BJV5 |  |
| UniRef9 | UPI0003818458 |  |
| UniRef9 | S2JRG0 |  |
| UniRef9 | B3QWW7 |  |
| UniRef9 | E0VI26 |  |
| UniRef9 | F4QAI9 |  |
| UniRef9 | D3PL90 |  |
| UniRef9 | C7N1E6 |  |
| UniRef9 | E4UX67 |  |
| UniRef9 | U5EWG7 |  |
| UniRef9 | E6W4G0 |  |
| UniRef9 | S6CFG0 |  |
| UniRef9 | J911P7 |  |
| UniRef9 | C0C3E5 |  |
| UniRef9 | A0A024UTC4 |  |
| UniRef9 | UPI000300D0C2 |  |
| UniRef9 | UPI0003B6D74B |  |
| UniRef9 | UPI00035E06CF |  |
| UniRef9 | G1XIE9 |  |
| UniRef9 | UPI0002F4EBDA |  |
| UniRef9 | K9YV12 |  |
| UniRef9 | K6GA40 |  |
| UniRef9 | C5CFK2 |  |
| UniRef9 | K9HQRO |  |
| UniRef9 | A1W4W1 |  |
| UniRef9 | UPI0003F5F98A |  |
| UniRef9 | E3S4Y1 |  |
| UniRef9 | TOCQU7 |  |
| UniRef9 | UPI000307BEAE |  |
| UniRef9 | G4D3J4 |  |
| UniRef9 | Q13VF9 |  |
| UniRef9 | UPI000255A879 |  |
| UniRef9 | B9L040 |  |
| UniRef9 | UPI00047068C4 |  |
| UniRef9 | F3KYD4 |  |
| UniRef9 | E6ZW59 |  |
| UniRef9 | M8E780 |  |
| UniRef9 | B2V7D0 |  |
| UniRef9 | B0WB77 |  |
| UniRef9 | A0A011NT90 |  |
| UniRef9 | E8SEV2 |  |
| UniRef9 | Q8YYP6 |  |
| UniRef9 | UPI00036FE983 |  |
| UniRef9 | H6RMP9 |  |
| UniRef9 | W3Y378 |  |
| UniRef9 | -10JPR1 |  |
| UniRef9 | UPI00036399E2 |  |
| UniRef9 | O34457 |  |
| UniRef9 | -G9PWZ2 |  |
| UniRef9 | Q4P115 |  |
| UniRef9 | -18TP50 |  |
| UniRef9 | A6E7T0 |  |
| UniRef9 | G2FFZ0 |  |
| UniRef9 | CONPH6 |  |
| UniRef9 | W4BR84 |  |
| UniRef9 | M3TVW8 |  |
| UniRef9 | Q9K814 |  |
| UniRef9 | B8DRK1 |  |


UniRef90_C8PX71 UniRef90-E2N4Z2
UniRef90_UPI0004 UniRef90_UPIO00403CF7F UniRef90_N8TE71 UniRef90_UPI0003FFF3E0 UniRef90_R5D2H5 UniRef90-R9TZE2 UniRef90_UPIO0017468B1 UniRef90-UPIO003781F3B UniRef90_G4LZ84 UniRef90-F6FQP3 UniRef90-U1GA89 UniRef90_UPIO0046485CD UniRef90_UPI0004755ACA UniRef90-K2QUW8 UniRef90-K9ST61 UniRef90-N1V4Z8 UniRef90-D6E8V0 UniRef90-X1AT59 UniRef9-H5WZ18 UniRef90-T1CCC3 UniRef90-W7QXN6 UniRef90_UPI0003717FA8 UniRef90-A6FMM3 UniRef90-U5WFI4 UniRef90_UPIO00304D9AE UniRef90_Q0FVR3 UniRef90_V4JD80 UniRef90_F9UFI7 UniRef90-A9WDP0 UniRef90-K4KP09 UniRef90-H2BW34 UniRef90-E6QKA8
UniRef90 E1VI89 UniRef90_UPI00034B6E1E UniRef90_UPI000346D439 UniRef90-A7HR03 UniRef90_LOJ5V3 UniRef90-A0R447 UniRef90_UPIO003785A54 UniRef90-UP10003F4BF7A UniRef90-B4WSH0
UniRef90-H3KCS4
UniRef90-F8JX79
UniRef90-H6BN09
UniRef90_UPI00026C6C42
UniRef90_Q49ZJ3
UniRef90-13ZM09
UniRef90-Q13BU9
UniRef90-H8L410
UniRef90-F1Z791
UniRef90-UPIO00379464B
UniRef90_I4BPC6
UniRef90_B8FAF8
UniRef90-R1IQ50
UniRef90_A0A024HB95
UniRef90_A0L7R1
UniRef90-M5JHT9
UniRef90-W6MXP0
UniRef90-X1MM16
UniRef90_UPI00036FAC48
UniRef90_UPI0003784404
UniRef90-UPIO003784404
UniRef90-R4V352
UniRef90-A7NNY8
UniRef90-TOLZC3
UniRef90-C7RBX0
UniRef90_UPIO003B6E159
UniRef90 Z5X3D0
UniRef90-B2VBW6
UniRef90_UPIOOO4214519
UniRef90-K7AU51
UniRef90-F9NVA6
UniRef90-D7B7T5
UniRef90-E2XTU8
UniRef90-I6YEN6
UniRef90-W3AANO
UniRef90-B2U8M0
UniRef90_UPIO002F30C27
UniRef90_H8GRT2
UniRef90-H8GRT2
UniRef90-H2J480
UniRef9-A5WBY6
UniRef90-B3PHC3
UniRef90_UPIO0035F46F9
UniRef90_UPI00047172C9
UniRef90_UPIO0036F94A9
UniRef90 C6WHY3
UniRef90-C6WHY3
UniRef90_W5YNE3
UniRef90-UPIO0020017D7
UniRef90_K9TEJ4
UniRef90_UPI00036E9431
 AIDATYTI DADEIADIQSNDKKAVDAGTSLVVLITGGTG
 $G F Q T V G Y N V V P D E R G A V T A L V K K G L E H P D V D V I L D N G G T G$ GQHVI FAKALPVDKKVLSTVMQRMADGNMADIVETNGGGAGG GHEIVVYEIVKDEKEMIQKAVLEGCDDDRDDAILDNGGTG GWTVLAEAVVPDDQGAIGQAIRSFSAQ GCGAVLTTGGTG
 GWSVVAVRVVPDGEPVRAALGGGPGGGRAPDAIVTSGGTG WTEPWIVEVPDDATRIANAGRKWTDHNNANMIITMGGTG


 $S H V V \square V K D E R A D I A A A I V A A C D E L D A D I V L T C G G S G$ YKLDDYKTVPDDKGMIK K TLTDFCDKKKVDLI FTTGGTG SYEVPEPVVVPDGEPVAQAL RESDSDEVDVVDTTGGTG GAELVNAEVLPDDLASLAEALTRLAAS GIDLVLCTGGTG GHKVVERTIVKDDI YQURAVLSAWIA SANVQAVVCTGGTG SPWRTEKRLVPDEVDTISKTLVELVDDDGCDLVLTTGGTG
 SPWQMETRLIPDERSLIDEKTLIELVDDGGCDLVLTTGGTG GHDLAARAI CTDDRDKIA A QLRAWVADGEIDDVILSTGGTG
 $V \operatorname{VPRVVPDGDPVGRALREAVAE~GVDLIITSGGTG}$ GHNVVQYAVVRDEPAQIVEMVRRFAAE GCKVIITNGGTG GHTLGAREIVKDD $\quad$ GYQI RAAVSGWDAQPD $Q Q A V L \square T G G T G$ P TIT I PDEAEEIRSVLKNAKT DLVI FTGGTG

 GHHLVDRAIVPDDCEAUVDRLKTWISNPDIVDVISTGGTG DPRIVADG CPVGEALREELTAGSRVIITTGGTG GHNLAARSUVSDDIVLIRRLLKQWVADSRIDVVISTGGTG $A P V V$ V $\quad$ P D GADVSRALSSAA $\square G E N$ GYDVTEQMVVPDG | V S R |
| :--- |
| D |




 S $\quad V \operatorname{E}$ K Q V V A D G P E V G R A L A A E A D A D GHTVLADVR E L V
 S P WQLDE T RLI A D DRAAI EAALIDELVDDVARCDLVITT GGTG


GHKVIE HFVTPDLA GHEQL A D K K 1
 $N V V D Y E E V K D D R E A, Q A A I Q S A G A \quad E V D V I L M N G G T G$
 G H A
 GHTVVLR Y M V V K D E P A Q I V D
 GHRRLLDRA I L R D DKYRRLRA QV SA WI A D E E CDDGI L V T G G T G DASVVVDGSAVGDA LRAAIDAGADVVIITSGGTG GHQVLDRAVVPDNRYRDRAVVSSWDASRDVQVVLDNGGTG $G \square D V G E V V L I P D G D E H V Q A A \quad L Q S A L D A G A R V I I T V G G T G$
 GHNNV DH K K I V DD D K F Q I R A V V S N WI A A A DI Q V I L V T G G T G




 GYEVD GA QIVPD GPEVGRHHL HELLPDA QRPRILVTT GGTG
 GHNLAD RQLI TD D I Y K I R A V I S G WI A D P EVVHAVMTT G GTGG GHRLLH GRTLVVD D I Y Q I R A V T S Q WI V D P L A QVVVLIT G GT G $D A V V V A D D K D Q R T D D E L F A Q D N L P N V V L T S G G T G$ GHQVAE QLICPDNRYSIRAGVSRWIASEQVQVIIINGGGTG G H T L V D K A I V K D D I Y K K I R E V V




| UniRef90_C8PX71 |  |
| :---: | :---: |
| UniRef90_E2N4Z2 |  |
| UniRef90_UPI000403CF7F |  |
| UniRef90_N8TE71 |  |
| UniRef90_UPI0003FFF3E0 |  |
| UniRef90_R5D2H5 |  |
| UniRef90_R9TZE2 |  |
| UniRef90_UPI00017468B1 |  |
| UniRef90_UPI0003781F3B |  |
| UniRef90_G4LZ84 |  |
| UniRef90_F6FQP3 |  |
| UniRef90_U1GA89 |  |
| UniRef90_UPI00046485CD |  |
| UniRef90_UPI0004755ACA |  |
| UniRef90 K2QUW8 |  |
| UniRef90 K9ST61 |  |
| UniRef90_N1V4Z8 |  |
| UniRef90 D6E8V0 |  |
| UniRef90_X1AT59 |  |
| UniRef90_H5WZ18 |  |
| UniRef90_T1CCC3 |  |
| UniRef90_W7QXN6 |  |
| UniRef90_UPI0003717FA8 |  |
| UniRef90_A6FMM3 |  |
| UniRef90_U5WFI4 |  |
| UniRef90 UPI000304D9AE |  |
| UniRef90_Q0FVR3 |  |
| UniRef90_V4JD80 |  |
| UniRef90_F9UFI7 |  |
| UniRef90_IORFX1 |  |
| UniRef90_A9WDP0 |  |
| UniRef90_K4KP09 |  |
| UniRef90-H2BW34 |  |
| UniRef90_E6QKA8 |  |
| UniRef90_E1VI89 |  |
| UniRef90 UPI00034B6E1E |  |
| UniRef90_UPI000346D439 |  |
| UniRef90 A7HR03 |  |
| UniRef90-L0J5V3 |  |
| UniRef90_A0R447 |  |
| UniRef90_UPI0003785A54 |  |
| UniRef90_UPI0003F4BF7A |  |
| UniRef90-B4WSH0 |  |
| UniRef90_H3KCS4 |  |
| UniRef90_F8JX79 |  |
| UniRef90 H6BN09 |  |
| UniRef90_UPI00026C6C42 |  |
| UniRef90_Q49ZJ3 |  |
| UniRef90_I3ZM09 |  |
| UniRef90_Q13BU9 |  |
| UniRef90_H8L410 |  |
| UniRef90_F1Z791 |  |
| UniRef90_UPI000379464B |  |
| UniRef90_\|4BPC6 |  |
| UniRef90_B8FAF8 |  |
| UniRef90 R1IQ50 |  |
| UniRef90-A0A024HB95 |  |
| UniRef90_A0L7R1 |  |
| UniRef9 | -M5JHT9 |

FY $\square R \mathrm{DQ}$ QP
90
100
110
120
LSPLFDKEVQGFGEMFRALRDE GMSTLQS






## UniRef90 XoSve3 UniRef90-U2Y4K2 UniRef90_UPI00036C1629 UniRef90-F8AW77 UniRef90-B7UXP0 UniRef90_Q0VLW7 UniRef90_D8PGU1 UniRef90_G2R2J5 UniRef90-A3VBZ4 UniRef90-D9UTM4 UniRef90 I2JM42 UniRef90_UPI0003B49D6E UniRef90_UPI000419C6AB UniRef90-C2CSE3 UniRef90_UPI000467F4DA UniRef90-A9WQ16 UniRef90-K2ADW1 UniRef90 B2WGC2 UniRef90-E8N6U7 UniRef90-G9XED3 UniRef90-UPI00037EFF07 UniRef90_TOK134

 UniRef90_A1RTS5 UniRef90-G2PN45UniRef90 D5G7Q4 UniRef90-G6XHH9 UniRef90_L9PGU6 UniRef90_UPI0003645195 UniRef90_UPI00036FCA05 UniRef90-W8GCG2 UniRef90_UPI00036C9DB6 UniRef90_UPI0003B689F2 UniRef90- Q4L8D9 UniRef90-UPIO0037A8E25 UniRef90-B8NU05 UniRef90-B6GCU9
UniRef90_S9PJV2 UniRef90_V9XLQ6 UniRef90-V5IMB4 UniRef90-A3WBS7 UniRef90-M7XVX8
UniRef90 D3Q135 UniRef90-W8X9X3 UniRef90-S7THE5 UniRef90_GOS6E0
UniRef90_F9MPU8 UniRef90-W5XY00 UniRef90-X116A9 UniRef90-W7QQT5 UniRef90-S0G5K3 UniRef90-R1F5V5 UniRef90_CORZR3
UniRef90_UPI00035F6595 UniRef90-W5YKT8 UniRef90_G7ZHE3 UniRef90-D8K021 UniRef90-Q5HLX4 UniRef90_C0QKG2 UniRef90_E1Y9Z0 UniRef90-B6YVA0
UniRef90-D3RYA2 UniRef90-E1RFE3 UniRef90-H3ASQ8 UniRef90_UPIOO034CC79C UniRef90-L7U8T7 UniRef90-M5T7J4 UniRef90_UPI00035FBDE6 UniRef90_UPI00034B1884 UniRef90_UPIO0047CFC08 UniRef90_S9QZK3
UniRef90_UPIO0036CF471 UniRef90-H2Y4D7 UniRef90_U7LW90 UniRef90-F8J944 UniRef90-M2U3R5 UniRef90_C7HVU8 UniRef90-E2SDJ6 UniRef90-A9G1Z6 UniRef90_A0A031FLR3 UniRef90_EODI74 UniRef90-IOIGO2 UniRef90-UPI000348181E UniRef90_UPI000367D24D UniRef90_UPIO002D7879C UniRef90-E4BJI1
 GHKLTARAlEKDNADLLVKRLNSWI DDPQVDAI I STGGTG
 DVVVVPDDESA GHNLAARVLLKDDLYRI RAQVATWI AEDSVQVVLDTGGTG GHTLQARQUVKDDIYQLRKVVSDWIADDRIQGIVTTGGTG GHHI A AYHLVKDEPAEIKARIAEAITNESVQAII IDNGGG WDVAEVKFVADTTEIQRQUMLWTDAADPVNLVITTGGTG
 GHHLID K Q IVKDDVYQIRATVSAWIANPSIEAVLLTGGTG GHRLAARLI KSDDRYGI RAQLSNWLDDDTVDVI II TGGTG GHQVVDKTVVKENMYA RARVSEWI ASDDIQVVLINGGTG NALIV GHQLHEKRIVPDD\YQLRAAVSQWIADPDVQVILTTGGTG YDVLEPLIVADGEPVREAIL QLVGAGAKLVLTTGGTG
 DA IV $\quad \mathrm{VVPDGAESVQAALRSAVAAGPGLIVTTGGTG}$ YKLVNYVIVPDEMDKI EEVI RKNVSE KVNLI LTSGGTG GHQVVDHAVIGDNRYRI RAISRWI ASEDVQVVI INGGTG GHVLADRRI ERDDKSVI VARLHAWI DDPEVDVILTTGGTG GHQVVGRDLIPDDDLYLIRRKTLEALISREDVDIVVVFTGGTG T WKVVARRIVSDDREEDQGALKTLEGPTKLNLIVTTGGTG GHVLSDRALVRDNVPDI KSHELEKWIGDPGTDVVI STGGTGG TPYRLETRLIADEQAQI EATLTELVDTARCHLVLTTGGTG GHEVVGYRVVRDEAPEI RAALE GFMRDATVVLSSGGTG GNVAVAGEAV EIRNALNTAVIGGVDVVITVGGTG GHNIREKAIVVDNDYKIRSQLSSWlADEVTQVIIITGGTG GHTLADRRUVPDDAEQUREAVRGWISDSTVDVVITTGGTG QALVVADH DLAATMEHVIA GDYGPMPDVLITSGGTG NS N YA V K D DKVAMQSQ I EQWDASDDDVII TTGGTG GNEVVGYRII KDEPDQVKAVLNEFAAS DARMI LFNGGTG
 GHTVSGYKVIPDEPEAIRATVAEAREA GARVVLFTGGTG
 GHTIAERAI I KDDAILLVDEIESWDDNPNDDTIISTGGTG A Y R V V A Q G l V P P D E TAE: VE GHVLQARALCPDDRYRI RKVLSDWI ADPDVQVILCNGGTG GHEILFHRVLPDDAAVIRETLLSLLDEHDPDAVLMNGGTG WTVSSEAKIVSDVVTHI QQQUMLWADDADVNLIVTSGGTG


 GHKLVDRALCADNLFRVRAQVSQWIVDDNVQVVLIDNGTG NWHTPVTVIVPDNVEIQRQILSWTDTGNYFNLVITTGGTG GHEVVIHQVLPDDANAITDALEEHDERDAPHAVIMTGGTG GHQLSERVLVKDNVYAI RAVVSRWI ASAQVPVILVTGGTG


 GHNITTFYQVIPDDIYKI AETTREAVFEQKVQALLLTGGTG V $\operatorname{V}$ Y Y T I V V P D
 $G H S \| V A R Q L I A D D V Y R V R A V V A G W D A D P D V Q V V L T T G G T G$ GHNI AGYVVVKDDPEAIRGAVAAAQAAGARALLFTGGGTG GHLVAERIVITDDEGPLRESIEAFVADDSVDAITTTGGTG
 VRAEVQPDGDEPLRSRLVALADEGVRLCLCTGGTG GHVLAARELLPDDRAAIAARLRGWAADPAIDVVITTGGTG GHDLVEKVIVPDNDYKI RAVI S RWDADEASVQVILTTGGTG A A RVVPDADI
GHELADRKLAKDDKAQDR
RSUVEGWINDASVDCVITTGGTG

 P VEVVVP E EPELLLRAAIVQUADAGSADAVVTTGGTG EPVIVADAD@PNHFAQLFGDIASLDQVVLTTGGTG VVRTASTADGREAVERALRDLLAE EPDLLLTTGGTG
GPWVVPDG
GHHLAERED DP RYR VAEALRRALAAGYDAALTGGTG GHRCVRRGLCAGNMYELRKIISDWIADDEIVQAVITNGGTG RPGPVRRVVVPDGMDSVRGALRDVADRHGYQLVVVTNGGTG
 HLMTHLDDSTRSMQLSMWEVRLWCQMMSKRFGRLFDKSAV GHQLVDRQLTPDDRYRDRAVVSGWIADPGVAVVISSGGTG



UniRef90 XOSVE3 UniRef90_U2Y4K2
UniRef90_UPI00036C1629 UniRef90-F8AW77 UniRef90_B7UXP0 UniRef90-Q0VLW7
UniRef90-D8PGU1 UniRef90_G2R2J5 UniRef90-A3VBZ4 UniRef90-D9UTM4 UniRef90-12JM42 UniRef90_UPI0003B49D6E UniRef90_UPIO00419C6AB UniRef90-C2CSE3 UniRef90_UPIO00467F4DA UniRef90-A9WQ16 UniRef90-K2ADW1 UniRef90-B2WGC2 UniRef90-E8N6U7 UniRef90-G9XED3 UniRef90_UPI00037EFF07 UniRef90_TOK134 UniRef90-A1RTS5 UniRef90-G2PN45 UniRef90-D5G7Q4 UniRef90-G6XHH9 UniRef90_L9PGU6 UniRef90_UPIO003645195 UniRef90-UPI00036FCA05 UniRef90-W8GCG2
UniRef90_UPI00036C9DB6 UniRef90_UPI0003B689F2 UniRef90_Q4L8D9 UniRef90_UPIO0037A8E25 UniRef90-B8NU05 UniRef90-B6GCU9 UniRef90_V9XLQ6 UniRef90-V5IMB4 UniRef90-A3WBS7 UniRef90-M7XVX8
UniRef90 D3Q135 UniRef90-W8X9X3 UniRef90-S7THE5 UniRef90-G0S6E0 UniRef90-F9MPU8 UniRef90-W5XY00 UniRet90_X16A9
UniRef90_W7QQT5 UniRef90_S0G5K3 UniRef90-R1F5V5 UniRef90-CORZR3
UniRef90 UPI00035F6595 UniRef90-W5YKT8 UniRef90-G7ZHE3 UniRef90-D8K021 UniRef90-Q5HLX4 UniRef90_C0QKG2 UniRef90-E1Y9Z0
UniRef90 B6YVA0 UniRef90 D3RYA2 UniRef90-E1RFE3 UniRef90-H3ASQ8 UniRef90_UPI00034CC79C UniRef90-L7U8T7 UniRef90 ${ }^{-}$M5T7J4 UniRef90_UPI00035FBDE6 UniRef90_UPI00034B1884 UniRef90_UPIO0047CFC08 UniRef90-S9QZK3 UniRef90_UPI00036CF471 UniRef90-H2Y4D7 UniRef90_U7LW90 UniRef90-F8J944 UniRef90-M2U3R5 UniRef90-C7HVU8 UniRef90-E2SDJ6 UniRef90-A9G1Z6 UniRef90_A0A031FLR3 UniRef90_EODI74 UniRef90_IOIG02 UniRef90_UPI000348181E UniRef90-UPIO00367D24D UniRef90_UPI0002D7879C
UniRef90 E4BJI1 UniRef90 ${ }^{-}$H2XXW3 UniRef90 ${ }^{-}$BORHK8 UniRef90_UPIOOOO221AF8 UniRef90-UPIO004717A78 UniRef90-Z5XR09 UniRef90_UPIO0037D4B20 UniRef90_U9VH32
A

90
100

120 LTGRDVTPEALDRLKTRDIPGFGELFRMLYKTIGTATVQS LTGRDITPEALTPLEDKVIDGFSVIFHQVSFQSVGLSTGS
 LTGRDVTVEAVSAVLHKQAP
 LTGRDDVPEAVRPL LDR I TAD

$>$

|  |  |
| :---: | :---: |


 VTGRDVTPEAFSAVIEKS@PGFGELFRMLYQKIGTSTMQS PARRDVTPEATDAVGTREMPGFGEQMRQISDHFVPTALDS
 VSPRDVTPDATSGVLDRPVPGDAEALRASGLAAGVDAGVS
 FTGRDVTPEALEPLFEKRMEFSYVFHRISYEKIGTSTVQS
FAPRDTYODADOALEKTLPGFGEFRMFSYDQVGAAAMLS













I


## -




L
LSKR DNTPEASSLKVIDEK QTP GIISEAIDRLI SKEKTYM WALSS












UniRef90 XOSVE3
UniRef90- U2Y4K2
UniRet90_UPI00036C1629
UniRef90-F8AW77
UniRef90 B7UXPO UniRef90-Q0VLW7 UniRef90-D8PGU1 UniRef90 G2R2J5
UniRef90-A3VBZ4
UniRef90-D9UTM4
UniRef90-12JM42
UniRef90 UPIO003B49D6E UniRef90-UPIO00419C6AB
UniRef90-C2CSE3
UniRef90 UPI000467F4DA
UniRef90-A9WQ16
UniRef90-K2ADW1
UniRef90-B2WGC2
UniRef90 E8N6U7
UniRef90-G9XED3
UniRef90-UPI00037EFF07
UniRef90_TOK134
UniRef90-A1RTS5
UniRef90-G2PN45
UniRef90-D5G7Q4
UniRef90 G6XHH9
UniRef90-L9PGU6
UniRef90-UPIOOO3645195
UniRef90-UP100036FCA05 S
UniRef90-W8GCG2
UniRef90-UPIO0036C9DB6
UniRef90 UPI0003B689F2
UniRef90 Q4L8D9
UniRef90-UPIO0037A8E25
UniRef90-B8NUO5
UniRef90-B6GCU9 R
UniRef90_S9PJV2
UniRef90-V9LLQ6

UniRef90-V5IMB4
UniRef90 A3WBS7
UniRef90-M7XVX8
UniRef90-D30135
UniRef90-W8X9X3
UniRef90 S7THE5
UniRef90-GOS6EO
UniRef90-F9MPU8
UniRef90 W5XY00
UniRef90- $\times 116$ A9
UniRef90_W7QQT5
UniRef90-S0G5K3
UniRef90 R1F5V5
UniRef90-CORZR3
UniRef90-UP100035F6595 K
UniRef90 W5YKT8
UniRef90- G7ZHE3
UniRef90-D8K021
UniRef90-Q5HLX4
UniRef90 CoQKG2
UniRef90-E1Y9Z0
UniRefofo-B6YVAO
UniRet90_D3RYA2
UniRef90 E1RFE3
UniRef90-H3ASQ8 R

UniRef90-UPI00034CC79C
UniRef90 L7U8T7
UniRef90-M5T7J4
UniRef90_UPIO0035FBDE6
UniRef90-UPI00034B1884
UniRef90 UPIOOO47CFC08
UniRef90-S9QZK3
UniRef90-UPI00036CF471
UniRef90 H2Y4D7
UniRef90_U7LW90
UniRef90-F8J944
UniRef90-M2U3R5
UniRef90 C7HVU8
UniRef90-E2SDJ6
UniRef90-A9G1Z6
UniRef90-A0A031FLR3 K
UniRef90-EODI74 E

UniRef90-IOIG02
UniRef90-UPI000348181E
UniRef90 UPI000367D24D
UniRef90-UPI0002D7879C
UniRef90-E4BJI1
UniRef90-H2XXW3 K
UniRef90-B0RHK8
UniRef90-UPIO000221AF8
UniRef90-UPIO004717A78
UniRef90 Z5XR09
UniRef90_UPI00037D4B20
UniRef90_u9Vнз2


UniRef90-E9CPJo
UniRef90_UPIO00477C2E8
UniRef90-UPI000367FA35
UniRef90-B7GLT5
UniRef90_U1NE25
UniRef90-UPI0002DD2BC2
UniRef90-A0A018MGD3
UniRef90_C4LHF7
UniRef90_J6HA16
UniRef90-W5XYZ1
UniRef90-UPIOOO3704642
UniRef90 C6CVK8
UniRef90- ${ }^{\text {Q3IN }}$ N
UniReffo-l3TG18
UniRef90-R5QZU7
UniRef90-UP10003AOBCDO
UniRef90-N9EBU0
UniRef90-UPI0004761C3F
UniRef90-UPI00026CC52C
UniRef90-G710H7
UniRef90-L9Y9W3
UniRef90_L9W097
UniRef90-K2LXI4
UniRef90_UPI000255F23C
UniRef90_UPIOOO3643AOE
UniRef90_UPI00039D037C
UniRef90-M0AL60
UniRef90-W8YQX8
UniRef90 F4R129
UniRef90-R5N9P4
UniRef90-F8A299
UniRef90-E2A1L7
UniRet90-U5RZD8
UniRef90-L9ZBW7
UniRef90-V4NNYO
UniRef90_D3SZH6
UniRef90_Q2IQM6
UniRef90_TOIY93

TAALLIIGNE!LSGRTRDAN
A WLANQK LIFQR
KAAVDTTGSEVYKGRDKDTFTPVIIDK■KEYN VAI FTMSSSRS VSNDAADADAAAFESE IAVLTVSSTR DVEDDPAGDADKTTLTEA LK AGl I TTGSEVFKGR\|KDTFTPVI TEKLKAY KAGIVTTGSEVYHGRIDKDEFTPVVKEKLADD
LKAAAVVVSDRIVGGERENTVTAVLESELLKVAE G
K LRAGLLTTGGEVFSGRDQDRFGPAVRSKLEAF $K V G L L T D S S R T$ IDEEDGAGAIAEAMADA
TTA AVVVMSDRVLSGERPNGAGEACRDRLLAEGLGDV
LKAGII TTGNEVFYGR\|QDTFTPVVVAKLEKY
GTAPRAAMLADGDELLSGRTKDKNDAHLAGLLTMGA


NVAVVTVGDELLAGRTTDTNAAWLCERLAGRGLL VSVVTI S ADRELESDPAGNVMVTALEEA
VRACLI IVGNEMLSGRTHDKNGPYLAEELNKLLPD
RTFASLLIGDELSSGRTQDTNTSFLAKWLNERMM

TAGLITTGGEVHSGRDQDRFGPAVRAKLEALGSA
PSPTAAVLIIGDEVLSGRTRDTNLINTLARFLLA SGGAPL
KRKVGUVTTGNEVFYGRUKDTFTPVIIEKMKSYGAED
TACLITVGDEILRGQTVDTNTSYLAKNLTAA
KVG|VVTGSEVFYGRIKDTFGPVIREKLAEY
PTAALI II GDELLSGRTTDTNVNTIAKFLNAL
NVALLTVGDELLAGQTTNTNASWLAARLSER
RPRVAVLSTGDEVVTGRTPDSNGEAVAGLIRAVGAE

## UniRef90_F0Z4Q9 UniRet90-M0M8 ${ }^{-1} 6$ UniRef90-G8QTB8 UniRef90-LOJWZO UniRef90_J9YVW6 UniRet90-HOEBK7 UniRef90-M0B7M0 UniRef90-UPI000371D20C

 UniRef90- W2BSE66 UniRef90 ${ }^{-}$W4QUH5UniRef90 W7TR83 UniRef90-COFT76
UniRef90-B4RD87
UniRef90_I2FVR1
UniRet90-F9FLU9
UniRef90-G7WM85
UniRef90-B9E9E2

| Uniref90-- |
| :--- |
| UniRef90-M1NKE5 |

UniRef90-M0ЕЗҮ3
UniRef90-T1VS81
UniRet90-K7RT80
UniRef90-B8GGDD3
UniRef90 LODV 9
UniRef90-H1Z3M2 UniRef90-UPIOOO3649C15 UniRef90-DOL210 UniRef90 W5WSB8 UniRef90_H1G2Q6 UniRef90-C8X7S5 UniRef90CC4JDA2 UniRef90 H9ZZM5 UniRef90-Q2FN80 UniRef90-CON8D5 UniRef90_U3GTD7 UniRef90-FOK819
UniRef90
W7L5T2 UniRef90-M0BEC4 UniRef90_L9XKU0
UniRef90-LMMIL3 UniRef90-UPIO00425CA56 UniRet90-X1DPV3 UniRef90_C3PF21
UniRef90 FOK4A5 UniRef90-EODIU9 UniRef90-MOLH86 UniRef90-MOLRJ5
UniRef90 LOWOT7 UniRef90-в9тмоз UniRef90-S4XL29 UniRef90-E9CPJO UniRef90-UPI000477C2E8 UniRet90_UP1000367FA35 UniRef90-R7GLT5 UniRef90_U1NE25

MCELSDE
GHELAGKGTVRDDVEETRRQTRQWVDE GVEAIVTTGGTG GLTCISRHYVGDQVCKI RSTVQLLFELIEGVDLVVTTGGTG WEIHDTKIVSDDVLAIQRQITTWTDSPDVNLVVTTGGTG DVSRDNYLIAKDDQADIRAASIMKLLHEKADVVIVLCGGTG GQRVAEYHLVANSVADI RECLDRWLAKPDVEAVITTGGTG DFDVDAVVAVRSKKSQLRQA DETAVIGGVDLVLTVGGTG GHEVVVRELVPDEYDSVQGTVDRLARRKDTDAVVTTGGTG VDLEIVGEDVGQIR VALAAALTTAARFVLVLGGTG GDRRSYYVVIPDQUPQUREEFFTALKKANCDCLIFNGGTG
 GHHCLAKSIVPDDKYAIRATLSQWIADENDNATLTNGGTG GHRGFDRQIVRDDKYAIRAVVSAWIHDPECQAI TTGGTG GHRAADRQRVADDIYQIRAVVSAWIAEPEDQVVLTGGTG GSVTV K PSDEVAVRTALNTAVIG GVDLVVTVGGTG KPVL K VPDEKVHIQRQICQWADSEDMNLLIVTSGGTG GFKVDYDFTVPNDPKEI LRVLRKSNSK GHILKNREVVKDDRPLISAKLMEWCKRDDTDT ITTGGTG
 GVVSVAA KRSTIRKAIETAVVGGADLVVTIGGTG YKLHIDYKSTPQSGEQLKNE QNDIKEGYDGIFTIGGTG HSLVGYELVPDNKVKLLKA LLNAVDNDKVDVVVTTGGTG GHEVSERVLVRDDSATI RSTVRELVNRREIDVVVTTGGTG GHDVATREHVSPEHDGVQSTVVRVIERDDVDIVITAGSAS DAAVVADADI AQAVDAALA NGEVRYYKIIPDEKNIIQEELIKAVDKLHLDLILTTGGTG G GFNVLDYSTIKEDKDAIKEKLI Y LCEELKSDVVLTNGGTG GHEVAAVVEVRSKRSQVRKAVIEMGVIGGADLVLTVGGTG GHETRDRLLVRDDYSSIRTAVRGLVARRDIDVVVTMGGTG DCEVAMREHVNKDYDTVQSVVSRLVDRDDVDLIVTSGGTS GHKLTDRAIVQDDRQAI AARVKAWTQTDGIDVVITTGGTG VDAVLTVVESSKASVRQA LETAVVGGADLVITVGGTG
GCRVQEVAIVP
GVEVVFHKRCPDDPDMVTSATQKADDMHVVDMVICTGGMS GHSVSVRRVVDDDYDELQSVVETAISDTDTDVTVTGGTG G DEVSEHCIVDDDKEA乌VKA!A GMRPKVDLICCTGGMS MKK WLEEDIDDVITTGGTG GVEVDAVVRVASRKSKVRGA LETAVVGGVDLAVTIGGVG GVEV AHETVSDDTQMITEALKK LLKSAGCDITCTGGMS NYAVDAVVSVRSDESEI RTA ITETAVVGGADLVITIGGTG GSEVAEQRFAPDDRQUVKEIHYLLEQRYDMILVTGGMS G SLSVVP GVEVCKHVTLGDDKGQ|TKALLD MKEQGCDLIVTVGGMS
 GIRLAEVRVVPDKTDATVEAVN VLRARNDYLFTTGGDG HHEVVAIVHALDSQLHTFNETRRGGNVNKADIVITGGTG GVDVERVTTVPDRVGDTARVVNE YRAEYDAVIVTGGDG GHDIATREHI DADHDRVQSUVSRMDDRDDVDVVVTSGATS GVRLAETRVIPDDEDTIDATVNE CRAGFDYVFTTGGDG GVQLKDHRVVPDGDVPVGEAVAAACFGGARVVLTDGGTG GLELREVRVVPDEEDCIVEAVNA GLRSRYDYVFTSGGIG
 GVDLMEARVVGDRQDQIVGALNA LRAAHDYVFTTGGDG GHIL CNDDMEKITAAIMK LKEEGADLIVCTGGMS GVRVQKVVVVPDGATSVRGA LEAAVAAGAHLVLTSGGTGG DTEVLGQKILNDNPNEVAQA ITKDFANEQAELIVGCTGGMS GNEVTVREMVGADHDKVQSUVSRLIDRDDVDVVISAGATS GATVRRULTVPDDRELI ASTVARWHDNPEFDAI IVTGGUG GATVERRAVPDRLEAVVAAIRE ADASADAVVTIGGVS

## UniRef90 F0Z4Q9 UniRef90_M0M8H6 UniRef90-G8QTB8 UniRef90_UPIOOO4 UniRef90_LOJWZ0

 UniRef90_J9YVW6UniRef90-H0EBK7 UniRef90-M0B7M0 UniRef90_UPIO00371D20C UniRef90-W2BSE6
UniRef90- W4QUH5 UniRef90-W4QUH5
UniRef90-W7TR83 UniRef90_C0FT76 UniRef90_B4RD87 UniRef90_I2FVR1 UniRef90_F9FLU9 UniRef90_G7WM85
UniRef90-B9E9E2 UniRef90-T1A255 UniRef90-M1NKE5 UniRef90-M0E3Y3 UniRef90-T1VS81 UniRef90_K7RT80 UniRef90_B8GGD3
UniRef90 L0DVQ9 UniRef90_H1Z3M2 UniRef90_UPI0003649C15 UniRef90_D0L210 UniRef90_W5WSB8 UniRef90_H1G2Q6 UniRef90_C8X7S5 UniRef90_C4JDA2 UniRef90_H9ZZM5 UniRef90_Q2FN80 UniRef90_E0YOY6 UniRef90_C0N8D5 UniRef90_U3GTD7 UniRef90_FOK819
UniRef90 W7L5T2 UniRef90_MOBEC4 UniRef90_L9XKU0 UniRef90_L1MIL3 UniRef90_UPI000425CA56 UniRef90_X1DPV3 UniRef90_C3PF21
UniRef90-F0K4A5 UniRef90_E0DIU9 UniRef90_MOLH86 UniRef90-M0LRJ5
UniRef90 L9WQT7 UniRef90_B9TM03 UniRef90_S4XL29 UniRef90_E9CPJ0 UniRef90_UPI000477C2E8 UniRef90_UPI000367FA35 UniRef90_R7GLT5 UniRef90_U1NE25 UniRef90_MOIBG0 UniRef90_UPI0002DD2BC2 UniRef90-A0A018MGD3 UniRef90_C4LHF7 UniRef90_J6HA16 UniRef90-W5XYZ1 UniRef90_UPIO003704642 UniRef90_C6CVK8 UniRef90_Q3IN08
UniRef90 $13 T G 18$ UniRef90_U2RQZ6 UniRef90_R5QZU7 UniRef90_UPIO003A0BCD0 UniRef90-N9EBU0 UniRef90_UPI0004761C3F UniRef90_UPI00026CC52C UniRef90_G710H7 UniRef90-_L9Y9W3 UniRef90_L9W097 UniRef90_K2LXI4 UniRef90_UPIO00255F23C UniRef90_UPI0003643A0E UniRef90_UPI00039D037C UniRef90-MOAL60 UniRef90_W8YQX8 UniRef90_F4R129 UniRef90_R5N9P4
UniRef90_F8A299 UniRef90_E2A1L7 UniRef90_U5RZD8 UniRef90_L9ZBW7
UniRef90 V4NNY0 UniRef90_D3SZH6 UniRef90_Q2IQM6
UniRef90_T0IY93


|  |  |
| :---: | :---: |
| UniRef90 F0Z4Q9 UniRef90-M0M8H6 | ATAGlARDVPVFVLP |
| UniRet90-G8QTB8 | RSVCATRERTLIVNLGSPKAAVENLSAI |
| UniRef90-UPI0004774FAF | RALGGVANGTYVFCLPGSTAACRLA WEQL |
| UniRef90-LOJWZO | RTLAGVSGGVPVFCLPGNRDAVRLGLELLLPEAGHLVSLA |
| UniRef90-J9YVWE | RACAVLAKGKYVFALPGSSGGVTDAWDELL |
| $\begin{aligned} & \text { UniRef90-HOEBK7 } \\ & \text { UniRef90-MOB7MO } \end{aligned}$ |  |
| UniRef90-UPIO00371D20C | RATGGVANATFIFVLPGSPGACKDAWDGI |
| UniRef90-W2BSE6 | RAVVGVTSRTVI ANCPSSSGGVKDTLAVL |
| UniRef90-W4QUH5 | RAI AGVRDGKAIFSMPGADGAVNDAMR |
| UniRef90-W7TR83 |  |
| UniRef90 C0FT76 |  |
| ef90-12FVR1 | RSVTGICKANLLVALPGSPKAV |
| UniRef90-F9FL | AGVRNSSİVTLPGSPKGAKENLQAI |
| UniRet90-G7WM85 | RAAAGVVGGVPVFCLPGSPSAASLGIDLILAEVDHILHHT |
| UniRef90-B9E9E2 | RALCGTKDNTVIFSIPGSVGAVNLAKKL |
| UniRef90-T1A255 | FALHNRPVFAVPGSARACQLAVELI LPTVEHLVEEL |
| UniRef90-M1NK | RGIAGVSGSTVVVNLAASRAAVRDGMATL |
| UniRef90 МОЕЗҮ3 | RAVAGVVSATPVFCLPGSENAVRLGGVEVI |
| UniRef90- K7RT80 | REVVGVTSGALVVASPGSRGGAADTLDVVLPLLLP |
| UniRef90-B8GGD3 |  |
| UniRet90-LoDVQ9 | RALSGVANGTFIFVLPGSRNACRTAWTRI |
| UniRef90-H1Z: | RAIAGIDEKKAVFCIPGSNAAVKLAME】ILKEASHDTH |
| UniRef90 UPIooo3649C15 | RALAGVANSTYLFCLPGSSGACRLGWDKL |
| UniRef90 W5WSB | RGVAGIA S GTVIVNLAGSRGATRDGMATLGPLVRHVIADM |
| UniRef90-H1G2Q6 | RALAGVANGTYVFCLPGSS |
| UniRef90-C8X755 | RGLVGVSGStLVANIAGSRAADRDGMATLTPLADHVIDQL |
| UniRef90_C4 |  |
| UniRef90-H9ZZM5 UniRef90 O2FN80 |  |
| UniRef90-E0YOY6 | RACAGVAHGTYLFALPGSPGACMDGWEELL |
| UniRet90-CON8D5 | RSVAGVANGTFI FSLPGSSGACRTGWDE |
| UniRef90 U3GTD7 UniRef90 F0K819 | RG\|IAGVSGSTVIVNLAPSRAAIVRGMATLGPLVVHHV |
| UniRef90-W7L5T2 | KASAGVLNGKVIYMLPGSPRAVELAMELILPEAPHLVYIV |
| UniRet90-MOBEC4 | AGLAADTPVFCLPGSQSACETCEEL |
| UniRef90-L9XKU0 | RTVAGVAGKPI FCLPGTAAGARLGGEELILPEARHLVML |
| UniRef90-UPIooo425CA56 | RAVAGMTHGTFVMTLPGSRGGVKDGCAVLEPVLGHLLDL |
| UniRef90-C3PF21 | $R G \Pi S G V S G S T V I V N V A S S R A A V R ~$ |
| UniRef90-FOK4A5 | RGISGIMNKSIIINLDGRPNYI RQSLDLI TGPL DYGVKIL |
| UniRef90-EODIU9 | RGLSGVSGSTVVVNMAGSRLAIRDGMATLTPLVHHLVDQL |
| UniRef90-M0LH866 | AGVSEGKPVFCLPGHADAARLGTE I I L P |
| UniRef90-MoLRJJ |  |
| UniRef90-B9TM03 | RATAGVANATFIF |
| UniRef90-S4XL29 | RGVAGVSGSTVVVNLASSRAATRDGM |
| UniRef90_E9CPJ0 | R |
| UniRef90-UP1000477C2E8 | RMARLPQGAEMII CPATIAPGAK |
| UniRef90-UP1000367FA35 UniRef90-R7GLT5 | RNMAAAVGNALVI CiLPGKPKGAVECLGFVV |
| UniRef90 U1NE25 | RATAGITDTVPVFCLPGSENAATLGNELVPEA |
| UniRef90-M0IBG0 | RATAGUVDDTPTFCLPGSENAARLGTEIVAEA |
| UniRef90-UP100022 | DDKPDMGLPGCVMYAKA |
|  | RAVAGTVNNKLIFSIPGSTGAVKLALELVIKPELNHLLHELI |
| UniRef90 C4 | RGIAGISGSTVVVNLASSRAAIRDGMATLTPLVRYVINDM |
| UniRef90 W5XYZ1 | RGLTGVTGRHPVANAPSSKGGVKDTMAVLIPVVPNILEGL |
| UniRef90-UPI0003704642 | RGVAGVSGSTVVVNTAPSRAALRDGMATLLPLVDHVİEQL |
| UniRef90_C6CVK | MLLMGYLNGVPIMGLPGCVMHDPTSFDVLLPRI |
| 隹ee900-Q31N08 | DGAAVFCLPGSENAAQL |
| niRef90_13TG18 | FDGRVMAVLPGSADGVEV |
| UniRef90 - U2RQZ66 | REVVGVTGKALLVCSPGSKGGMSDTLDVVVPLLR |
| UniRef90 UPIOOO3AOBCD | RMARTPEGATLI DNPVSVAPGFRMENVFVMAGVPTIFAAM |
| UniRef90-N9EBU0 | EYQSKDKHNCYILGLPGNPAAVYVCMQIYGKVLLDAL |
| UniRef90-UPI0004761C3F | $R \mathrm{GIVGVTEGTLI}$ ANAPHSVGGVADCL |
| UniRef90-UP100026CC52C | RMARVPEGADLI ENRMSGAPGI RV |
| UniRef90-G71007 | QTQLI INSAGSRGAVRDTLEVVLPLIGDIFRE |
| UniRef90-L9Y9V | GTAALPAGARALHNEPGVAPGAALEGVYVLPGVP |
| UniRef90-K2LXI4 | $R M A R I P V G A E L I Q N P I S K A P G F R M E N V Y V M A G V P M I M Q A M$ |
| UniRef90 UPIOOO255F23C | RGVAGVVDPPLVVT |
| UniRef90_UPP0003643AOE | AKMPRGAGLIYNPSSSAPGFYVKNVFTLPGVPALLQSM |
| UniRet90 UPI00039D037C |  |
|  | GGTPVLGLPGCVMHDPTSFDVLLPRT |
| UniRef90-F4F | RMARVPDGGVLIANPVSGAPGFQVENVFVMAGVPKDMEAM |
|  |  |
| UniRe90--8A299 |  |
| UniRef90-E2A1L7 | RRLAVVPNSEI I NIPGSPKYFEAAADVIIPRLKRC |
| UniRef90 L9ZBW7 | AGVADGTPVFCLPGADAARLALAEIILSEAPVLVGLA |
| V4 | RRMARIPHGALIKNPVSAAPGFQLGNVFVLAGVPKlM |
| UniRef90-D3 | EM |
|  |  |



UniRef90 UPIo003B41C77 UniRef90－XOYK45 UniRef90－D6ZFL1 UniRef90－U1H834 UniRef90－D4GZR6 UniRef90－M9МКК9
UniRef90 ${ }^{-}$Q181K2
UniRef90－UPIOOO3655110 UniRef90－MOHE70 UniRef90＿UPIO00373D433 UniRef90－H1PP21 UniRef90－U2W4D15 UniRet90－E6VWY5 UniRef90－B8J4K6 UniRef90＿UPIO003EAF887 UniRef90－＿11QK74 UniRef90－J71N13 UniRef90－V4ZPHO UniRef90－C6BWC3 UniRef90－D5BRL0 UniRef90－Q16BM4 UniRef90 X7FC02
UniRef90－UPIO003B67F01 UniRef90－G9YG60 UniRef90－E4NLX9 UniRef90－UPIO00224655C UniRef90－V4XX36 UniRef90－UPI0004780E66 UniRef90 A3JRT2 UniRef90－Q8XJG6 UniRef90＿UPI0003DF7D41 UniRet90＿K2GNK4 UniRef90－MOGT56 UniRef90－U2SVU5 UniRef90－Q6iNG7 UniRef90－BONF20 UniRef90－UPIO0037288EB UniRef90＿UPI000400982D UniRef90－A0A059N0E7 UniRef90－J2WXZ4 UniRef90－N9CWR5 UniRef90 U1QQK1 UniRef90－J3FOK2 UniRef90－M5G655 UniRef90－F8X023 UniRef90＿D4MAF0
UniRef90＿UPIOOO36B741E UniRef90－14D766 UniRef90－G212JO UniRef90－UPIOOO4711224 UniRef90－UP10002486E5D UniRef90＿UPI0003B7529D UniRef90＿UPIO0036321A8 UniRef90－MOMKV8
UniRef90－HOZ188
UniRef90－A4J865
UniRef90－TONE34
UniRef90－D8．J5F3
UniRef90－A0A026WK18
UniRef90＿LOJKU4
UniRef90－O28033 UniRef90－E8JH16
UniRef90－M4BVR6
UniRef90＿UPIO00421723C UniRet90＿V9HCP1 UniRef90 UPIO003F1971F UniRef90－UPIO0035072B3 UniRef90－UPIIOOO443ABAA UniRef90－E7QYK1 UniRef90－V4XPP9 UniRef90－D1AIG2 UniRet90＿UP100047AB772 UniRef90－UPIO00426576E UniRef90－X1GUW1 UniRef90－Q2CD40 UniRef90－E4XDL2 UniRef90－F5YPB4 UniRef90－UPI00047AA772 UniRef90－Q1YL19 UniRef90－V6ZL14 UniRef90－A0A059FKG7 UniRef90 UPIOO0047B5EFE UniRef90－E6LY17 UniRef90－UPIOOO2628403 UniRef90＿W4YSG1 UniRef90＿V9H3C9
UniRef90＿MMCR11


पKVGL！TTGSEVYHGRDKDKFGPVIRKKFSKLNS
PTAAIVIGDEILSGRTKDKNDGWLAEQL
FSQ
PNPSAAMLVIGDEILSGRTRDANMYHLAGELTEA
PNPTAAMLVIGDEI LSGRTRDANLAHLAQEFTAA $R V G V V T T G S E V F Y G R D Q D A F G P V L R K K F V A D$ KAGLITTGNEVFYGRI EDTFSPVIEKKLGAF NVAIVTVGNELLAGDI ENTNATWLARELTER
$K Y K A A L I V G D E V R G Q V Q D A N T D Y A K S L Q K$
RVAIVTVGDELLAGEUADTNARWLCERLTE
YKACLLTI GNEILSGRTQDANMAFLGEKLNDL PNPTAAMIVIGDEI LSGRTRDSNMHYLAKQLTAQ

YTAGL ITTGNEVYSGRTKDAFGPVLKEKKKEFN
PRAAMLVIGDEILSGRTRDANMHHLAKRLGA VAlTVGGNELAGDIENTNATWLARRLEE
LRVGVVTTGTEVFLGRIEDTFTPVLAAKLKAFGLADA RMNAALTVGDELLAGDVENTNATWLASRLADR TAGVIIIGDEVLKGHTQDTNSFFMCKKLRS
$\square K V G V T T G S E I V T G R A A D R F G P G R E K L A B Y$ PF
 RAGGVVTGTEVLTGRVTDRNGPWLADRLLE
KロRVGIVTTGSEVYTGLVEDAFYPVLKAKFSAY
QPKDAVLTTGDEVSQSKVFDANAPMVRTWLKEHGFAE NVSVVTVGDELLAGETVDTNSTWLAAQLTDR RVAVVTVGDELLAGDTVNTNATWLCEQLTER TAGCLIVGNEILNGKTHDKNSNTFAKF RVGIVTTGSEIVNHRIVDKFTPVVAQKVEEY LIA RVGLVTTGGEVFSGRIADKFGPVIRNKVEAL
FKVGIVTTGSEVFQGRIQDKFGPVLKAKVEG
PTACLLVIGNEILSGRTQDVNVQYIARRLSE KDTAAIIIIGNEILSGRTQEVNLSHLSDWLNK QPKAAVLITGDEVESSKVFDANAPMILTWLNE KTAAALVI GDEL LSGRTKDKNIGADADFCT
$\qquad$ RVGLVSVGDELLAGDTVNTNAAWLGNRLTER N五 TAGIVVIGDELKGYTQDTNAFFMCRRLRAL $K A G L I V T G S E V Y K G R D T D T F G P V L S E K M A S Y$
R
 NVA VTVGDETLAGSTTNTNASWLAARITER
PRPRVVVLSVGNEARSGDVTNTNAAYMAKKLTRA
FRAGLLTISDRVYAGTVRDMSGPAMAGALRQVDKVR RLKVGLLITGNEVEYGRUQDRYAPVLIEKLNKF KVAIVTTGNEVYYGR荷DAFKDAIEKRV
GRSVTAG Y Y Y RSVTAGIIVGDEILKGHTQDTNTYFLCRTLRSL TAGUVIGDELKGHTQDTNSFFMCRRLRAL VTAGUVIIGDEVLKGHTQDTNTYFLCHMLRSL

NVALVTVGDEILSGDTVNTNAAWLGERLTER VAALITVGDELLSGDTVNTNANWLAGRLAER D $\square$ $\stackrel{\text { Lín }}{\mathrm{P}}$
VKAEI
PNPSAAMLVTGNEIYKKRIQDKFGLVIRKKLEY LSVGSIVIGDEILKGYVQDTNTAFLASTL FKN ALILTGNEILSGRTKDENTQFLALLRLGEL KAA LRAGVVAIGDELESGRTKDKNDGHLAEFLT KAA！VTUGDEILIGQ\｜IDTNSGF！AKSLA

|  |
| :---: |
|  |  |
|  |  |

LINAE\｜VAVGTELLLGQTANTNAQWTSEKLAS KPTAGII IIGDELKGOTLDTNSHFICTELL

## Y K $K$

 RVAAVTVGDELLVGDTVNTNAAWLGER｜LTERUniRef90 UPIO003B41C77 UniRef90-XOYK45 UniRef90-D6ZFL UniRef90-U1H834 UniRef90-D4GZR6 UniRef90-M9MKK9 UniRef90 Q18IK2 UniRef90-UPIOOO3655110 UniRef90-M0HE70 UniRef90_UPI000373D433 UniRef90 H1PP21 UniRef90-U2W4D1 UniRef90-E6VWY5 UniRef90-B8J4K6 UniRef90_UPI0003EAF887 UniRef90_Q1QK74 UniRef90-J7IN13 UniRef90-V4ZPH0 UniRef90-C6BWC3 UniRef90-D5BRL0 UniRef90-Q16BM4 UniRef90-X7FC02 UniRef90_UPIO003B67F01 UniRef90_G9YG60 UniRef90-E4NLX9 UniRef90_UPIOOO224655C UniRef90-V4XX36 UniRef90-UPI0004780E66 UniRef90-A3JRT2 UniRef90_Q8XJG6 UniRef90_UPI0003DF7D41 UniRef90-K2GNK4 UniRef90-M0GT56 UniRef90-U2SVU5 UniRef90-D2S009 UniRef90_Q6ING7 UniRef90-BONF20 UniRef90_UPIO0037288EB UniRef90_UPI000400982D UniRef90_A0A059N0E7 UniRef90-J2WXZ4 UniRef90-N9CWR5 UniRef90-U1QQK1 UniRef90-J3F0K2 UniRef90-M5G655 UniRef90-F8X023 UniRef90_D4MAF0 UniRef90-UPIO0036B741E UniRef90-I4D766 UniRef90-G2I2J0 UniRef90-UPI0004711224 UniRef90-UPIO002486E5D UniRef90_UPI0003B7529D UniRef90_UPIO0036321A8 UniRef90-MOMKV8 UniRef90-HOZ188 UniRef90-A4J865 UniRef90-TONE34 UniRef90-D8J5F3 UniRef90-A0A026WK18 UniRef90_LOJKU4 UniRef90_O28033
UniRef90 E8JHI6 UniRef90-M4BVR6 UniRef90-A1HSF3 UniRef90_UPIO00421723C UniRef90_V9HCP1 UniRef90_UPIO003F1971F UniRef90_UPIO0035072B3 UniRef90_UPIO0042029A2 UniRef90-E7QYK1 UniRef90-V4XPP9 UniRef90-D1AIG2 UniRef90_UPIO0047AB772 UniRef90-UPIO00426576E UniRef90-X1GUW1 UniRef90-Q2CD40 UniRef90_E4XDL2 UniRef90-F5YPB4
UniRef90 F1YT74 UniRef90-UPI00047AA772 UniRef90_Q1YL19 UniRef90_V6ZL14 UniRef90-A0A059FKG7 UniRef90_UPI00047B5EFE UniRef90-E6LYI7 UniRef90_UPIOO02628403 UniRef90-W4YSG1 UniRef90-V9H3C9

GVVTVKAK
50
K K S K ITRQA I E T A V VGGVD LVVVTDGGT G GAELQQGQTFCPDNDEEIMKAILQQFRKQGADLIAALSGGMS
 GIIDL K E V R V V A D DEAD 1














 GI D L A E V
 $G V E L A E \| R V V H D D P D A I V G A I R A \quad L S D A Y D H V F T S G G I G$



 GAVVLGGQK VG D Q K A D 1







 G V R V
 GI S V V N E V $\operatorname{K}$



 GSSVERVLTI PD DRDLI A DTVARR WSDAFDAVIVTGGI G
 $\square E V V S A K V V P D E V D Q U Q A V V K E W P K P S R C Y T R S S Q S T S G$






$\mathrm{G} V$
G




 GVRVVERVSVI H D DLSVI AEEVASFSKRYTH


UniRef90 UPIO003B41C77 UniRef90-X0YK45 UniRef90-D6ZFL UniRef90-U1H834 UniRef90-D4GZR6 UniRef90-M9MKK9 UniRef90 Q18IK2 UniRef90_UPIO003655110 UniRef90-M0HE70 UniRef90-UPIO00373D433 UniRef90-H1PP21 UniRef90-U2W4D1 UniRef90-E6VWY5 UniRef90-B8J4K6 UniRef90_UPI0003EAF887 UniRef90_Q1QK74 UniRef90-J7IN13 UniRef90-V4ZPH0 UniRef90-C6BWC3 UniRef90-D5BRL0 UniRef90-Q16BM4 UniRef90 ${ }^{-}$X7FC02 UniRef90_UPIO003B67F01 UniRef90-G9YG60 UniRef90-E4NLX9 UniRef90_UPIO00224655C UniRef90-V4XX36 UniRef90-UPIO004780E66 UniRef90-A3JRT2 UniRef90_-Q8XJG6 UniRef90_UPI0003DF7D41 UniRef90-K2GNK4 UniRef90-M0GT56 UniRef90-U2SVU5 UniRef90-D2S009 UniRef90_Q6ING7 UniRef90-B0NF20 UniRef90_UPI00037288EB UniRef90_UPI000400982D UniRef90-A0A059N0E7 UniRef90-J2WXZ4 UniRef90-N9CWR5 UniRef90-U1QQK1 UniRef90-J3F0K2 UniRef90_M5G655 UniRef90-F8X023 UniRef90_D4MAF0 UniRef90_UPIO0036B741E UniRef90-14D766 UniRef90-G212J0 UniRef90-UPIOO04711224 UniRef90_UPI0002486E5D UniRef90_UPI0003B7529D UniRef90_UPIO0036321A8 UniRef90-M0MKV8
UniRef90-H0Z188
UniRef90-A4J865
UniRef90-TONE34
UniRef90-D8J5F3
UniRef90-A0A026WK18
UniRef90_LOJKU4
UniRef90_O28033
UniRef90-E8JHI6
UniRef90-M4BVR6
UniRef90-A1HSF3
UniRef90_UPIO00421723C
UniRef90-V9HCP1
UniRef90_UPIO003F1971F
UniRef90-UPI00035072B3
UniRef90_UPI000443A08A
UniRef90-ETQYK1
UniRef90-V4XPP9
UniRef90-D1AIG2
UniRef90_UPI00047AB772
UniRef90_UPIO00426576E
UniRef90-X1GUW1
UniRef90-Q2CD40
UniRef90-E4XDL2
UniRef90-F5YPB4
UniRef90_UPI00047AA772
UniRef90-Q1YL19
UniRef90_V6ZL14
UniRef90-A0A059FKG7
UniRef90_UPI00047B5EFE
UniRef90-E6LYI7
UniRef90_UPIO002628403
UniRef90-W4YSG1
UniRef90-V9H3C9
UniRef90_M0CR11

VIGPRDKTPEA V

 VDPDDVTPSADRSTGA



 VTBPDDVTADA

 VDPDDVTRQ PTHDDVTFEAVAQAFGKPHPK $\quad$ EAATKALGGEGWEK LS LV PTHDDITADSVAKAFGVGDDHRPEVVERFKERYKKPGELVN


 PTHDDITADCIAEAFDRTIDVRADARALLEAHYAKNAARQ
 $\checkmark$ GTPDDLTMPGVAAGLDRTIDRGLERKPD\EFDLKVEWYAS PTHDDVTYEGVKAFPDQPEAKRMAVVPCPCEDVSVKRQGS

 VD P D DV T P T A I K K E CGGELI TYG S



 PTADDLTVETVARFCGR VDPDDLTPLAIKQTGAEIVTHGGTPVLPGS AESKDCTVEAVLDLDTHAATPYDCTFTKGHGRHVKDGV VGDYDLI RPVSMALGAKE! FWQVAQKPGKPLYF PTHDDRTMAAVAAAVGRELEHHPEAEAWLTNDGGYDDLDA PTHDDLTMDAVAAAFGREVAEHPDAWFDDHDGYSGTDLAE

 $V$ VPDDRTPGA I A GVGAE VVRYGTPMLPGS $V \mathrm{D} P \mathrm{DDVTPTAIKEM}$
PTHDDI TSACVAESFGVPWVHHPETFRLLEAHFAPDAFNA PTHDDITAESISKAFNLNYEDHHEAFNGLEKYYKFNKGRQ VGDYDLDRP ISMT SGAK PTHDDITADAMAAAFGVEDPRADE LLLQFDKPENDNEARR
 $P T H D D V T F E A V A K A F G E R V V L H P E L V A L V R E F F G K T E M K S$
$V D P D D V T P G G I V N S G A E I I V Y G A P A L P G A M$
$V$

 $P T H D D L T$ GTPDDVTVEAVADGDEREFVVHGEVRERLVEKAAAFRDEN ATHDDVTAEGIARAFNRKLVISKEVYEWLSKGSKNEEAVR Y GS GDTVREVLGS LDGTVRFDNVAA WPGHILGVGT QRNSRVSYK VDPDDVTPEADR AAGAAVVSYGSPVLPGA PTHDDITAACIAEAFGTT $\square E \square H Q D T A A R M E A H Y G V D Q F R H$ VDADDLTPKAI R PTHDDVTFEAVAQAFGDELKPHPELEAAIRALGGKGFEKA PTHDDVTFEAVAKAFGEKVAPHPELVALVHKFFGKTDMQC | $P T H D D V T F E A V A Q A F G E E L K P N P E L Q A A V$ |
| :--- |
| $V$ |
| $V$ | PTHDDLTMEGIAAAVGVPVEEHTEAVEWVHSDYSHADLTS GTPDDVTMEAVADAFGRDVEERGRQUATRLDDRELNVDVD DDPPD DV T P DAI K PTQDDLTKAEYFHCPDKEVPEAVEADTAFFKRRGREMTPD VDPDDLTPGADRESGAKVVTYGA PTHDDITAECI ARAFGVGIDVRDDARQLLAEHYARTEAGN PTHDDITFESVAQSFDEDVAIDSELRKGVRKDFGDVADDS VDPDDNTPGAI RQSGAADVSYGAPVMPGVMFVLGYYE PTHDDDTAPCVAEAFGVPWEFHPPTFKGLETYFGPEEFNA PTKDDITKKTFCDYFDDELIENEAVLTHVKSIIIEGFYKRP


 PTKDDVTKKTFCDYFE
VSARNVVPETTQAVCDVEDPGDAEQDRAVGDKNTPQSVLS
 $V D P D D V T P T A V K E C G G E L V T Y G S$
$P T H D D L T M D G V A A A F G H E V V E S D E A L E W L A E E G G Y D D P G A$
$V$

UniRef90 UPIO003B41C77 UniRef90-XOYK45 UniRef90-D6ZFL1 UniRef90-U1H834 UniRef90-D4GZR6 UniRef90-M9МКК9 UniRef90 ${ }^{-}$Q181K2 UniRef90-UPIOOO3655110 UniRef90-MOHE70 UniRef90_UPIO00373D433 UniRef90- H1PP21 UniRef90-U2W4D1 UniRef90-E6VWY5 UniRef90-B8J4K6 UniRef90_UPIO003EAF887 UniRef90_-Q1QK74 UniRef90-J7IN13 UniRef90-V4ZPH0 UniRef90-C6BWC3 UniRef90-D5BRL0 UniRef90-Q16BM4 UniRef90- X7FC02 UniRef90-UPIOOO3B67F01 UniRef90-G9YG60 UniRef90-E4NLX9 UniRef90-UPI000224655C UniRef90-V4XX36 UniRef90-UPI0004780E66 UniRef90-A3JRT2 UniRef90-Q8XJG6 UniRef90-UPIOOO3DF7D41 UniRef90-K2GNK4 UniRet90-MOGT56 UniRef90-U2SVU5 UniRef90-D2S009 UniRet90_O6ING7 UniRef90-BONF20 UniRet90-UPIO0037288EB UniRef90-UPI000400982D UniRef90-A0A059NOE7 UniRef90-J2WXZ4 UniRef90-N9CWR5 UniRef90-U1QQK1 UniRef90_J3FOK2 UniRef90-M5G655 UniRef90-F8X023 UniRef90-D4MAFO UniRef90_UPIO0036B741E UniRef90-I4D766 UniRef90-G212JO UniRef90-UPIOOO4711224 UniRef90_UPIO002486E5D UniRef90_UPI0003B7529D UniRef90-UPI00036321A8 UniRef90_MOMKV8 UniRef90-H0Z188 UniRef90-A4J865 UniRef90-TONE34 UniRef90-D8J5F3 UniRef90-A0A026WK18 UniRef90_LOJKU4 UniRef90-O28033 UniRef90-E8JHI6 UniRef90-M4BVR6 UniRef90-A1HSF3 UniRet90-UPIOO0421723C UniRef90-V9HCP1 UniRef90 UPI0003F1971F UniRef90-UPIo0035072B3 UniRef90_UPIO00443AOBA UniRef90_UPIO0042029A2 UniRef90-E7QYK1 UniRef90-V4XPP9 UniRef90-D1AIG2 UniRef90-UPI00047AB772 UniRef90-UPIO00426576E UniRef90-×1GUW1 UniRef90-Q2CD40 UniRef90-E4XDL2 UniRef90-F5YPB4 UniRef90-F1YT74 UniRef90-UPI00047AA772 UniRef90-Q1YL19 UniRef90-V6ZL14 UniRef90-A0A059FKG7 UniRef90-UPIOOO47B5EFE
UniRefgo- $6: Y 17$ UniRef90-E6LYI7 UniRef90-UPIo002628403 UniRef90-W4YSG1 UniRef90-V9H3C9 UniRef90_MOCR11
 MFMLAYLGKTALIGIPGASLSYKNTLDDVLPRI RGVAGVSGSTLVVNLAGTRAADRDGMATLIPLAANVIHQL
 PYASMPADAEVLPNEEGLAPGCRAGNVYVLPGIP RMAMLPEGSTPIENADSAAPGFSDGNVHVMAGVPSDFAAM PNDDVDIDDARPLLNTEGLAPGCVVENVYVLPGLPSELKTM
RGLAGVAGRA RMARIPHGAELIENTVSGAPGFQIGNVFVMAGVPKDMQGM MFLLSYDGDVPVMGPGCVMAKRTMFDLVLPRV

PSSARLHYGTPCTGQPFRFPLVSVRNVYLFPGTPELLR $R M T R\|P D G A E L I Q S A T L A P G F R\| G N V V M A G V P S 甘 M Q A M$ K 1 PIMGLPGCVMYSKTAFDLIAPRL
RATAGVAGAVPVFCLPGSRQAAEFGTELVLPVVAHLVGL
GYLINGVPI VGLPGCVMYYRASFDLIVPRI
KMADMPMDADLI DNPLSAAPGFILHNVHVLPGVPSILQAM RMARIPEGGVLIDNPVSVAPGFIVENVYVMAGVPSVFRAM RMARIPDGATLI VNAVSAAPGFTLLENVHVMAGVPSVFRAM AYAQGAAGRVPVLGLPGCVMYHKASFDLVVPRLDAGDE
LLSYTDDNRPVVGLPGCVMYARTDFDLVLPSL MP AGATPIPNPEGLAPGCVAENVYVLPGIP DGEYSVIKANNVY IDPGSPRYFRAGVDAIVPGL
AEGTADIGARFLENDAGVAPGAVVESVYVLPGVP
RMAHVPEGAELVENDПS\APGYRMGNVFVMAGVPKПMQSM RMARIPDGATLI DNPVSTAPGFTLKNVHVMAGVPSVFEAM
 RMARIPEGATVIENPVSAAPGFSLKNVHVMAGVPQDFAAM LDVA WYAGAEVLPNDEGLAPGCRAGNVYVLPGIP RQ VTVMGLPGCVMFDKATIFD ILPRADA EAARYPSEGRIVPNEEGUAPGWVIANVYIVPGLP RLNYGTDKRTGDCFKY PRGVVGNVYVFPG| PSLLE


MFLLAYKGEQT! IGLPGGVFSEKTVFDLLLPRL
RDAVGEFDDALIISLPGPNDEVRSSMPLVMEGL
AEYQTDYHHSYLI GLPGNPAAVLTCLAVVVSTLLAAL GTTDLPAGARMLPNEVGVAPGAVIESIYVLPGVP

 MFMLAYKGNVPGVLPGCVMYARTVFDLDLPRL

RMATMPQGATPПRNMAGVPRTMRAMFEEVLPT保HG
KMAMMPSKAILIYNPTSGAPGFSVENVFCLPGVPSILLQSM EYQQ DDHHAYL DGLPGNPAAVLTCLAVHVSTLMAALQGD KMAKMPRGAKLIYNPSSAAPGFMTKNVLSLPGVPSTLNSM RMARDPRGADLVMNRVSKAPGFWПENVIVMAGVPSVVQAM AGTADLPTGARVLNEAGVAPGCVVESVYVFPGVP RLNYGTDGHT GSTFKYPLVSVRNVYIFPGIPALME FLMMAYKGDVAVLGDPACGMYFRTTLDLVLPGL DASLFTYRKKII FTLPGSEDAQGDAYSUI SEVVPHLFHET GTADLPAGARPLHNEAGVAPGAALEGVYVLPGVP
RLAVAPSSCKVIYVLPGSPKYFEPAVDAIIPRL
$P D L V E Y G A T P I V I D E G W A P G C V E N V Y V F A G I P$
$K D S S V P E G S E D V W N D V G A A P A F I V E N V A V M P G V P$
VSSVPEGSEIVWNDVGAAPAF VVENVAVMPGVP
MFMLAY पDDTAVIGMPACGMYAKTTFDLVFPRI RMAMLPKGATPIINKASVAPGFTDGNVHVMAGVPSDMQSM MFLISYKGNDP ILGLPGGVIFSKTTFDVILPRV RLHYGTDPHT GRPFKFPLVSVRNVYLFPGUPELLR P EM
$A V V P A H Y G T D P R T G Q S F R F P L V S V H N V Y L F P G \Pi P E L L R$ $P V A L G Q \square G G V P L L G D P G N P V A A M V T F L L V A P G L D H L$ GTTHLPKGSRMLPNDVGVAPGAEIEDIYVLPGVP AEAALPEESRPLDDAGLAPGCVLENVYVLPGIPPEELKAM MFLLGYVKEKVIMGDPGGVVFSKNSFDLLLPRI RRWKGD NVLQGHRNGTYWMSMPGVPHEMKLVKDFVLPKLPTLFDL MFMTAYLIGNTVLLGVPGCAMYYRTTLDVVLPRI RMARTPEGARLIDNPDSVAPGFTLGNVHVMAGVPSTFEAM PHMKLCRSSKLLFGTPFRYPIVTVNNVYVLPGIPSLFE RMAKLPQGADPRVNPVSLAPGFSIGNVHVMAGVPRGMRGM EQALVPTKAKVLFNQAGTAPGMKENTVFILPGVPYEMKYG RMTRTPEGATLIDNPVSKAPGFRVDNVFVMAGVPQGFQAM
$E N V V G I T K Q A L V P A R P G A D M S A G D V L I V V L P G P P H E L Q R M$ ENVVGDAKQALVPARPGADMSAGDVLIVVLPGPPHELQRM
RAVVGVTSRTVIVNCPSSSGGVSDADQVVLPLLHYDIEQL RKQAVFAGSDVIENNTGMASGMSLSYEFFLPGVPREMKQM KMALVPKSSTLTFNLKTGQKMDSVKNVYIFPG|PKLLE MFLLAYYKD DPILGVPSCAMYSRTVLDLVLPRI



## UniRef90 UPI000346FA0E

 UniRef90_UPI000407B061 UniRef90_Q5JGM9 UniRef90_B2GCL9UniRef90_UPI0002493459
UniRef90_B5ED03
UniRef90_Q28VR2
UniRef90_UPI000381AA0D
UniRef90_C4ZP89
UniRef90_UPI0004779C80
UniRef90_B8IQV0
UniRef90_UPI0004242FAA
UniRef90_Q1D4N6
UniRef90_B3TB73
UniRef90_A0A023X020
UniRef90_S9TLF6
UniRef90_Q4PNH5
UniRef90_UPI0002
UniRef90_UPIO002E0A28B
UniRef90_H2YMQ1
UniRef90_G7EAR6
UniRef90_R5AK78
UniRef90_UPI00036D3FED
UniRef90_K7YIR9
UniRef90_W5LAG4
UniRef90_S7PVZ4
UniRef90-D8FFG6
UniRef90_G8M751
UniRef90_V6S6M3
UniRef90_D0DBC7
UniRef90-L1IH81
UniRef90_H2FWH7
UniRef90_K1VBJ9
UniRef90_UPI00040013CC
UniRef90_UPI00047B67A8
UniRef90_A9WJE6
UniRef90_B9LPK6
UniRef90_B7QYN3
UniRef90_UPI00035CBC3C
UniRef90_F4WNK6
UniRef90_A8FPG0
UniRef90_UPI00034A435C
UniRef90_V2PWR9
UniRef90_C8W9A3
UniRef90_A3MS85
UniRef90_UPI000367667D
UniRef90_R7D9R8
UniRef90-A3Y5R7
UniRef90_K2KMS3
UniRef90_A0A023BP59
UniRef90_S2VZW5
UniRef90_S2IXV6
UniRef90_G3PEE7
UniRef90-C3X1C2
UniRef90_W8W049
UniRef90_B8C340
UniRef90_N8UHYO
UniRef90_V4GWR4
UniRef90_UPIO00040B74C2
UniRef90_I3BWNO
UniRef90_IOWGR1
UniRef90-W7B267
UniRef90_V2V1A6
UniRef90_D9Q2T3
UniRef90_UPI00036B3B9D
UniRef90_D4GNB0
UniRef90_UPI0003B5083E
UniRef90_A0A059INF7
UniRef90_J3KHJ7
UniRef90_Q2RHLO
UniRef90_R5RK70
UniRef90_A2BM72
UniRef90_B7VNU0
UniRef90-A7HD38
UniRef90_V8QNC1
UniRef90-A6GEL9
UniRef90_A4SQB4
UniRef90_UPIO0036FDDFF
UniRef90-J4KE42
UniRef90_F0QYM5
UniRef90_UPI00035E903A
UniRef90_Q9RY74
UniRef90_H2C8U8
UniRef90_Q5LX88
UniRef90_UPI000349BF5B
UniRef90_E7QRG4
UniRef90_M1WY95
UniRef90_UPI00044186A5
UniRef90_A6GZI7
UniRef90_Q0AY63
UniRef90_E4PK65
UniRef90_Q8GDS0
UniRef90_H2AP42

GCEVV $\square D|L| G|I K D D P A A| L|R A A F \quad Q Q A D A R A D V V I| S S G G|V| S$


 G G R V E R H L T V V P D D A E A I A S A L T E G I T L S E A R MIS D D HA V I AA RHVA E L S GA Y DHV F TS G G I G



 GF DVVT








 WA D $\mathrm{GA} \mathrm{G}^{\mathrm{G}}$






 GHAL A WA R Y G D D R E Q I TVVAL R E A F AS G A DVV F S C G G I G



## 

 GYKVASYQLHASDERSQUTS DILS F I I D D EARVV A S Y Q HA S D N D GMELKAIVVVGDETHDI DKSVRESLSSQYDIVETSGGUG


 QLAWMRMI GDDWDLLVQTLRETLPSK DAVITSGGVS

 GCEIVSSKIMGDEVYDVSEEI S

 FGGVLEDDLV FHEEKRVVFNDDDKKMTKGCLDAVNAGIDDVECTGGMS G CDD 1










## UniRef90 UPIo00346FA0E UniRef90-UPI000407B061

 UniRef90-Q5JGM9 UniRef90-B2GCL9 UniRef90_UPIO002493459 UniRef90 B5EDO3 UniRef90-Q28VR2 UniRef90-UPIO00381AAOD UniRef90-C4ZP89 UniRef90_UPI0004779C80 UniRef90-B8IQV0UniRef90-UPIO004242FAA
UniRef90-Q1D4N6
UniRef90-в3тв73
UniRef90-A0A023X020
UniRet90_S9TLF6
UniRef90-O4PNH5
UniRef90-UPIO002EOA28B
UniRef90-H2YMQ1
UniRef90-G7EAR6
UniRef90-R5AK78
UniRef90-UPI00036D3FED
UniRef90-K7YIR9
UniRef90-W5LAG4
UniRef90-S7PVZ4
UniRef90-D8FFG6
UniRef90-G8M751
UniRef90-V6S6M3
UniRef90-DODBC7
UniRef90- L1 1H81
UniRef90-H2FWH7
UniRef90-K1VBJ9
UniRef90-UPI00040013CC
UniRef90-UPIo0047B67A8
UniRef90-A9WJE6
UniRet90_B9LPK6
UniRef90-B7QYN3
UniRef90-UPIOOO35CBC3C
UniRef90-F4WNK6
UniRef90-A8FPG0
UniRef90-UPIOOO34A435C
UniRef90-V2PWR9
UniRef90-C8W9A3
UniRef90-A3MS85
UniRef90-UPIIOOO367667D
UniRef90-R7D9R8
UniRef90-A3Y5R7
UniRef90-K2KMS3
UniRef90-A0A023BP59
UniRef90-S2VZW5
UniRef90-S21XV6
UniRef90-G3PEE7
UniRef90-C3X1C2
UniRef90-W8W049
UniRef90-B8C340
UniRef90-N8UHYO
UniRef90-V4GWR4
UniRef90-UPI00040B74C2
UniRef90-l3BWNO
Uniferefo-IOWGR1 1
UniRef90-V2V1A6
UniRef90-D9Q2T3
UniRef90-UPI00036B3B9D
UniRef90-D4GNBO
UniRef90-UPIOO033B5083E
UniRef90_A0A059INF7
UniRef90_J3KHJ7
UniRef90-Q2RHLO
UniRef90-R5RK70
UniRef90-A2BM72
UniRef90-B7VNUO
UniRef90 A7HD38
UniRef90-V8QNC1
UniRef90-AGGEL9
UniRef90-A4SQB4
UniRef90-UP100036FDDFF
UniR Ref90-J4KE42
UniRef90-F0QYM5
UniRef90-UPIO0035E903A
UniRef90-Q9RY74
UniRet90-H2C8U8
UniRef90-Q5LX88
UniRef90-UPLO00349BF5B
UniRef90-E7QRG4
UniRef90-M1WY95
UniRef90-UPIO0044186A5
UniRef90-A6GZ17
UniRef90-Q0AY63
UniRef90-E4PK65
UniRef90-O8GDSO

100
110
110 K 120 VDPDDVTKEAI EDSGFEQDHYSSAVLPGAM
GGDRDLTSSVI EELGRVYDHG
 PTPDDLTAEAAARAAGTELEGLSSEALDHLEREAGRHPANR
 VGPRDKTPEATADVLDQDVPGVAQALRSSGQACGVDATTS
$V G E A D F T V E M M N M G E$
$V$

PTHDDITADCV
PTKDDUTKKTLCEYYGTELDSVLANTQNVVSTWTALNPLT VGERDYVKEVLARAFGRRTERAEGGVEQHFWRVALKPGK PTHDD TSAAI ARAFGRRMERNAQAVADMEAQYERNEARD PISDDLTNECLAELAGVRMVEYPEARRHIDEKFRKFGRKP PTHDDITSAAVAAAFGVELVRDPEAVRRLALRHRGDDLNA QGDEDHTQEVLTS PTHDDVTLPADAHACGEEDFPHPTLVQLCEKHFGVKALDS
 VDPDDRTPDAMANAGVKVVSYGAPVLP RFDMGAMFLLS
 PTHDDVTYASLAKSFNQGLVHHQETLRRMMEMSKNRPWDS ATPDDHTRQCAAKADGRPLEDHPEA
PTKDDITKKTFCDYFRDELVTDETVLAHVTNLIENYFKRP PTHDDITADCVAAAFGAHIDIREDAYHYERQGAEFNTARQ PTHDDVTVAQAFGCGLQTRTELLELLNQHLPNEETNEYHV VGDADHTK PTKDDTTKEDFGCGMHYDETVAAHVERMLTARGIDDFEGN PTKDDTTKKTIAHYFDDTLEENVSVRQNVEHLLWEHHVKKP
 PTHDDITADCVSKAFDVBLDVRDDARALLDAHYDKSGQRL P
 ATPDDHTRQCAALACGQPपQLHPEA AGDFDYMNLIADQLGIKK WHFNKDNQKPGQ VDPDDNTPGA\KRSGAHIVTYGAPVLPGAMMCLGYLDAAN PTPDDTTNLAFCKALGAEPVVNEEALKMVREKYPMTEERV
 VGEEDHVK

$\qquad$ PTHDDTTSACTAKAFGVNLN NVIDANGELFAWKDADKPGK PTK KDDTK KTU CEYFEKDVLEHVEKLIFAKYDATPGSDVNK

 PTHDDVTLESVAMAFQEDLYHHPELARVVEELFGVTDKNS STPDDHTRQCASDADGKPLEDHPEARDKIDERMV PTKDDITKTTICEYFDDHLVHNQEVLQHUREMFAKYVKDA
 GTHDDVTMRAVADAFDR VGDADLVRQVVGELGD ATPDDLTRQAAAAASGRQLLRHPQAVALIESRFGEYPNR\| PTKDDITKETLCDYFGDSLVMNQEV
VGDFDFMAE DAKHEAQ VGDYDFDRPATLNLGFKQ VFWKVKQKPGKPDFFA LGAYDVV VGKKDUMHEVIKKETNADRLFWRVRMKPGT RAGKRAGVELGREGNPUQPANNGKS PTHDDITADAVAAAFGLTAGDRDDARALLEDYFEATPARM PTHDDITYQSIAKAFNLNGKFHEEAFNRM DYYRHHKEGV VDPDDKTPLAIVKNTGADUISYGSPVLPGAMFLLSYYKKDD PTDDDKTMEAVAVAVNRPLTLNPDAYRMVREFYESQGYMA IGERDHVPAALAGLGA DVRVHGVPMKPGK
 PTHDDVTLEATARATRRALVRNAEMEA乌LRHYKGRSTEAA VDPDDVTPRAIRETGAE!LTHGMPAQ
VGEADFTKAV R VDPTDKTPAADRNLGAKVIAYGI PTHDDUTKELFQVQLQQQNEDVLSFVQEUFKKRKIPFSNSN
$M G R Y D F M R D L E L G E G E$ MGRYDFMRDLLLGEGERKLVYNQEALNEVTFWKVKMRPGG AGDEDHVSALLR ALGAMQQWRALLKPGR NGDYDYVEQLEESLGGKDHVRSVAMKPGKPFPTPHSPLLRTM VDPDDVTRQGLM

 UniRef90_O8GDSO
UniRef9__H2APP4

UniRef90 UPIo00346FA0E UniRef90_UPIO00407B061 UniRef90-Q5JGM9 UniRef90-B2GCL9 UniRef90- UPIOOO2493459 UniRef90-B5ED03
UniRef90-Q28VR2
UniRef90_UPI000381AAOD
UniRef90 C4ZP89
UniRef90-UPI0004779C80 UniRef90 B8IQV0
UniRef90 UPIO004242FAA
UniRef90-Q1D4N6
UniRef90-В3зтв73
UniRef90-A0A023X020
UniRet90_S9TLF6
UniRef90-Q4PNH5
UniRef90-UPIO002EOA28B
UniRef90_H2YMQ1
UniRef90-G7EAR6
UniRef90-R5AK78 UniRef90-UPI00036D3FED UniRef90_K7YIR9 UniRef90 W5LAG4
UniRef90-S7PVZ4
UniRef90-D8FFG6
UniRef90-G8M751
UniRef90-V6S6M3
URe90-11H81
UniRef90-H2FWH7
UniRef90-K1VBJ9
UniRef90-UPI00040013CC
UniRef90-UPI00047B67A8
UniRef90-A9WJE6
UniRet90-B9LPK6
UniRef90-UPI00035CBC3C
UniRef90-F4WNK6
UniRef90-A8FPG0
UniRef90-UPI00034A435C
UniRef90-V2PWR9
UniRef90 C8W9A3
UniRet90-A3MS85
UniRef90_UPI000367667D
UniRef90-R7D9R8
UniRef90-A3Y5R7
UniRef90-K2KMS3
UniRef90-A0А023BP59
UniRef90-S2VZW5
UniRef90_S21XV6
UniRef90-G3PEE7
UniRef90-C3X1C2
UniRef90 ${ }^{-}$W8W049
UniRef90-B8C340
UniRef90-N8UHYO
UniRef90-V4GWR4
UniRef90_UPIO0040B74C2
UniRef90-l3BWNO
UniRef90-10WGR1
UniRef90- V2V1A6
UniRef90-D9Q2T3
UniRef90-UPI00036B3B9D
UniRef90 D4GNBO
UniRef90-UPI0003B5083E
UniRef90-A0A059INF7
UniRef90-J3KHJ7
UniRef90_Q2RHLO UniRef90-R5RK70 UniRef90-A2BM72 UniRef90-A7HD38 UniRef90-V8QNC1 UniRef90-A6GEL9
UniRef90-UPIOB036FDDFF UniRef90-J4KE42 UniRef90-FOQYM5 UniRef90_UPI00035E903A UniRef90-Q9RY74 UniRef90 H2C8U8 UniRef90 Q5LX88 UniRef90-UPIO00349BF5B UniRef90-E7QRG4 UniRef90-M1WY95

FLLGYQGRTTHMGLPACGLYHRTTFDLI LPRV PTI GETNGKPIFGLPGYPTSCLTNFTLLVPLLRKLIG VTTAFVQDGTLVMALSGNPGACFTGF GATAGIENDQLCYLLPGSTNACTTGLEVILPDTNHLTKEП RQALLPKGCRLIPNPLGTALGVRIGQAFFMPGVPYEMERM RMARVPDGAALI DNPISAAPGFTLGNVHVMAGVPKDFEAM RGDSGISGSTVVVNLAASRAATRDGMAMLPALVHHLIDQL $P M A F G R \square G D A V L F G L P G N P V A V M V T F Q F V Q D A L L Q L M G$

HDQAFDRNDKVLVSMPGVPYEMKFNMEETIPRT
PLVVGRRGATLFFGLPGNPTSSLVTFEFVRPALRKLLGHA KMADMPEGAELVLNPVSGAPGFRVENVYVMAGVPGMMAM KQALLLPEGTEMI PNPLGTAPGALLAAEAVFATLPGVPSEM KMADIPAGASLIDNPISQAPGFRIGNVFVLAGVPSVLQAM
 PEM
EEQMQARKRMVLFVQPDWVPVRLGKLCLLPGVPRLFQQL YTDTGD
LK QAYDKDGKTI 1 S MPGVPIDEMKTMMETIIPYLK
RQKMAPVGAKLINNPVSVAPGFTVKNVHVMPGMPD\|LRAM STMTVPLSAKLNFGTDPRTGLVSIVRNVYUFPGDPSLIME
QQT
MTVIAR $\square G S \nabla R \nabla F G \nabla P A C A \square Y F K T T$
DQALVPSKCTVLFNPVGTAPGMWMENEFILPGVPFEMKHL RMARIPDGAVLIENPVSTAPGFADENVYVMAGVPSVFEAM KMASIPQGSQLIRNTEGPDPLIVKNNVYILPGVPQYCK PFAFGHDDRCAFFGDPGNPVSAAVTFHLLVPGLARLAGE RSQAVPDACTVLFNAHGTAPGMRDGHVVVLPGVPYEMEHD GTAPGMWNGTYWMSMPGVPHEMKDMKDFVLPKLPSLFTL LM QVNDDQALVMNKFGSAPGMKDKNVFILPGVPYEMKAL RQAYVPAGARIIPNPRGTAPAFLVGTVIVLPGVP ETTHLPADCRPLANEAGVAPGAVVESVYVLPGVP
RMARIPDGATLIDNPVSTAPGFTLRNVHVMAGVPSVFQAM
$R L A\|V P N A C K\| I I I D S E A F P \| N T K N V Y V L P G$ $P L A F G Q \square G D S L F F G \square P G N P V A V M V S M Q F V Q P A \square R$
HMAFGFMGHTPVFACPGNPVSAMFCN
SSTS Q KMAMMPPGAVPLPNPVGTAPGLLYE VVLLPGVPREMEA KMA WLPEGSTP KNTVSTAPGFSDGNVHVMAGVPSDFRAM SYYQNNDKIIP LGLPGCVMYARTVFDLILPRI PLVHGQVFNTPFIGLPGNPSSTLVTF
KMAEVPEGAA LVENPVSKAPGFH\|GNVYVFAGDPRDMQAM QQALVPSKSTVLMNLYGTAPGMKENTVFIMPGVPYEMKGL GVGHVESGTPIFCLPGDPVSAQVCYEYVRPAVR RMATFPHPATLLRELPNDP VVVHDNDYULPGIPSLFQLL RSSKLNYGTDPQTGQPHSYPLVSVRNVYUFPGVPSLME
 KSERPDQNPCYLLGLPGNPAAVYUAMQUYVSTL
PFAFGT唯S RMSELPDGCTLIPNPVNQDPGFK\ANHHFVPGFP
PTTAM $\square F E D T L L I A L S G N P G A C F T G F$
K LDKNEQNHCYLLGLPGNPAAVYVGM

$P F A F G R L A N S W F C G L P G N P V S A V A T F Q L V Q P E L$

R TAVGQVGMT ПMVALPGPHQEARLGCDRLLAGLEQGLA
RI I
$L L P A G A K K G T H L F V L P G V P R E M E A M F K Y V L E K L K P L L P Q L$ PLAYGKTEDKPFFGLPGNPVAVMVSFNFVEPALRKLQGQL PFLFALLGATPVLGLPGSPSACLAAFEV
PVALASVNNTPVICLPGNPVSAYTVLAVLVPGIR
PLAFGKLGTTPFFGLPGNPVAAMVCLQFVEPA DARL
$P F A F G Q L G K T W F F G D P G N P V S A L V T F Q L V Q P A L$

YAQAEVPENCEVFNKMGTAPGMEECFLAVMPGVPYEMKYL PALCGRWGGLPVFGLPGNPVSSLVVFQVIVPVL
KMALFPEGATPIPNEAGDAPGV
$P$ PALGLWQGKPVFGLPGNPVAALVC
PHSLLPTPHSLIFGLPGNPAAVLVTWRFVQPADK
EAATLPAGGRSLFTDVGWAPGCAVEGVYVFPGUPREMKAM
NQNAEQRKRMALFPSRGEPLYVAEGKLC TFPGMPS LFTRL $\square T Q V N K D Q A L V F N Q V G T A P G M K E N T V F I L P G V P Y E M K Y L$ QFMLAYQGHVPICGVPGGALYSKTTLDLLLPRI PVAFGADGGTPVLGLPGNPGSVLVTF GLMVGVPYD
UniRef90 B8IQV0
UniRef90 UPI0004242FAA
UniRef90_Q1D4N6
UniRef90-B3TB73
UniRef90 A0A023X020 K
UniRef90 S9TLF6
UniRef90_Q4PNH5
UniRef90-UPI0002E0A28B
UniRef90 H2YMQ1
UniRef90 G7EAR6
UniRef90_R5AK78
UniRef90 UPI00036D3FED
UniRef90-K7YIR9
UniRef90-W5LAG4
UniRef90-S7PVZ4
UniRef90 D8FFG6
UniRef90-G8M751
UniRef90_V6S6M3
UniRef90 D0DBC7
UniRef90 L1IH8
UniRef90-H2FWH7
UniRef90-K1VBJ9
UniRef90 UPIOOO40013CO
UniRef90-UPI00047B67A8
UniRef90-A9WJE6
UniRef90 B9LPK6
UniRef90 B7QYN3
UniRef90-UPI00035CBC3C
UniRef90-F4WNK6
UniRef90_A8FPG0
UniRef90 UPI00034A435C
UniRef90-V2PWR9
UniRef90 C8W9A3
UniRef90 A3MS85
UniRef90_UPI000367667D
UniRef90_R7D9R8
UniRef90 A3Y5R7
UniRef90-K2KMS3
UniRef90-A0A023BP59
UniRef90-S2VZW5
UniRef90 S2IXV6
UniRef90-G3PEE7
UniRef90_C3X1C2
UniRef90 W8W049
UniRef90-B8C340
H
UniRef90-N8UHYO
UniRef90 V4GWR4
UniRef90 UPI00040B74C2
UniRef90-I3BWNO
UniRef90-IOWGR1
UniRef90 W7B267
UniRef90 V2V1A6
UniRef90_D9Q2T3
UniRef90-UPI00036B3B9D
UniRef90 D4GNB0
UniRef90_UPI0003B5083E
UniRef90_A0A059INF7
UniRef90 J3KHJ7
UniRef90 Q2RHLO
UniRef90_R5RK70
UniRef90-A2BM72
UniRef90 B7VNU0
UniRef90-A7HD38
UniRef90_V8QNC1
UniRef90-A6GEL9
UniRef90 A4SQB4
UniRef90_UPIO0036FDDFF
UniRef90-J4KE42
UniRef90 F0QYM5
UniRef90 UPI00035E903A
UniRef90_Q9RY74
UniRef90 H 2 C 8 U 8
UniRef90 Q5LX88
UniRef90-UPI000349BF5B
UniRef90-E7QRG4
UniRef90- M1WY95
UniRef90 UPI00044186A5
UniRef90-A6GZI7
UniRef90-Q0AY63
UniRef90 E4PK65
UniRef90-Q8GDS0
UniRef90_H2AP42

| uploon |  |  |  |
| :---: | :---: | :---: | :---: |
|  | GP |  |  |
| Unifeielo - |  |  |  |
|  | * |  |  |
| 90-FAAB | - KA |  | NSA |
| - 014 TO |  |  |  |
|  |  |  |  |
| ${ }^{\text {coidiobl }}$ |  |  |  |
| - |  |  |  |
| 7bec |  |  |  |
| Unieag -acku |  |  |  |
|  |  |  |  |
| 退 |  |  |  |
|  |  | ${ }^{\text {G }}$ |  |
|  |  |  |  |
|  |  |  | GP |
| H81646 |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  | Abat | SLA |
| M49 |  | Gave | A A |
| 100 |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  | - ${ }^{51}$ | Stalis |
|  |  |  |  |
|  |  |  |  |
|  |  |  | V |
| WUSP4 |  |  | RFAVACMLENF |
|  |  |  |  |
|  |  |  |  |
|  |  |  | A |
|  |  |  |  |
| UPiooo376FAAD |  |  |  |
|  |  |  |  |
| Mineigoujuiz |  |  |  |
|  | OKKAAL |  |  |
| cien |  |  | A |
| N8P ${ }^{\text {+99 }}$ |  |  |  |
|  |  |  |  |
| OOOAFI OiO 10 |  |  |  |
| บploon644596 |  |  | GVR |
|  |  |  |  |

UniRef90 UPIo003608A01
UniRef90_B2GII9 UniRef90-S2XQYo UniRef90_X1SSY6
UniRef90-13REF7 UniRef90_G0J571 UniRef90-A1VH88 UniRef90_F7Z488 UniRef90_F4AYB7 UniRef90_R4YUV7 UniRef90_Q1AT03
UniRef90-K9ASY2 UniRef90_UPIO0046957FC UniRef90_D2Z8P0 UniRef90-C1D6U1 UniRef90-UPI0004723503 UniRef90-Q3ADY2 UniRef90_UPI00021A7BCC UniRef90-A0A044RAM8 UniRef90-R6K5U2 UniRef90-F4CVH9 UniRef90-JOAZT4 UniRef90_W4UKG2 UniRef90-F9L532 UniRef90-UPI00035DF9AA UniRef90-D5ASR8 UniRef90-I6ZUIO UniRef90_C6Q2K3 UniRef90-R5B115 UniRef90-UPI0003F49D7A UniRef90-K2S805
UniRef90-F2JUP7
UniRef90-H81646 UniRef90-UPI000317AB13 UniRef90_UPI000344D74F UniRef90-KONL75 UniRef90_Q8EQR8 UniRef90-S3J7G8
UniRef90 COW419 UniRef90-W0JRR1 UniRef90-B5EIK3
UniRef90-E2BNB9
UniRef90-E2BNB9
UniRef90_A8MI49
UniRef90_UPI0002E6875E UniRef90-UPIO0036C3434 UniRef90-H3ZN42
UniRef90-L8TLP8 UniRef90_UPIO003B691AE UniRef90-D4H5V3 UniRef90-H8G4M3 UniRef90-Q39Z82 UniRef90-H4F0E8 UniRef90_G8TI58 UniRef90-F4HEJ3
UniRef90-I3UES9 UniRef90_E1V326 UniRef90-G7WCI4 UniRef90_G7FSY6 UniRef90-W7KZD5 UniRef90_Q1Q609 UniRef90_G7LUL7
UniRef90_W2USP4 UniRef90-S7TYN4 UniRef90_UPIO00255562E UniRef90-D5VQB5 UniRef90_UPIO0045606A9 UniRef90_D2TYA4 UniRef90_10YTQ1 UniRef90_N6Y1N8
UniRef90-W0TRM2 UniRef90-UPI000463BC8D UniRef90_UPI000336FAAD UniRef90-A3JXU5 UniRef90-F0S4J2 UniRef90_M5J7T1 UniRef90_UPI00037FD8B2 UniRef90-UPI0003717523 UniRef90-K1M8Y2 UniRef90_UPI00046F5BE4 UniRef90-E6X8F5 UniRef90-W4GWX3 UniRef90_B3R1H5 UniRef90_N8P1H9
UniRef90-R5EY44 UniRef90_UPI000367E80A UniRef90-Q0FA51 UniRef90_Q1QIT1 UniRef90_UPI0004644596 UniRef90-UPI000375AF01 UniRef90_K0C4N7

Y TVTDGG50 60
70
DAlI I TTGGAS


 GVRVTRKTTVGDDPQAMNRAYEA ASREVDIVLMTGGLG


 GVNVYRHTAVGDNRERIVAALGEAAA RSDLVVTTGGLG GHDVLQHIVVGDNPKRLERVMSEALKYH DAVI LTGGLG GHAPVDLGRVQDDRSALRDVL DQAVPQADVILTSGGAS GGTDIEQTVVPDEKEVIVQA INHMVDIGAEAIICTGGMS GVE GIKVVRKTTVGDDESEIMGAFAF AEPRVDIV ITGGG
 GI LVKKDSIVSDNIDDI SA YEVK QF S EQYDVVFSSGGIGG GUEVLRIVSIRDREEEIMEAD, DNAMERVNIVLVTGGLG


$\stackrel{G}{\mathrm{G}}$ $\mathrm{Q} |$| R |
| :--- |
| G |
| D |
| V |
| V | GVDVTGSSVLSDDHPTVVAAVRELSGTH

 GIELKRIEVIADDEDEIVEAARRMTKN YDFVVTSGGIGG
 GTVVKRIEVIPDDV AA ASSTVKSSRADKVLDTGGGLG
 $S V K Y A$ NHTVVGDNLERVEQAFQLAQSRS

 GVKVKKlSVISDSVEEDSKEDRDASSKFTY VVITSGGIGG
 WA E GYEVIEHLSVADTRKGURNGLDR ALAVAADVVLMTGGLLG GGEAYFLGIARDNEESLKEKI LE







 $G H V I D V V F L P D D D A L I A E A A L L$
L L P V A A
GHSYK ILG GAKDDLEEDKEK\KE

 $G C D V T D L G I \quad A R D D P A E V E A K F G E A \square A Q$ | $G$ | $H$ | $A$ | $L$ | $A$ | $W$ | $V$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $G$ | $L$ | $E$ | $P$ | $D$ | $D$ | $D$ | $V$ |
| $R$ | $R$ | $V$ | $G$ | $D$ |  |  |  |



 GADVIHRTAVGDNEHRLVAALEQAQANS DLVIITGGGLGG WAE YLAA DEPDRRVASFKRSFNSS DDIVFSF GGII G

 $G \vee D V \vee R \square S V I P D$ WA $\square$ F H V A D T E GWEVT E $\square$ T TVRDRSRE GHRLSAAHYLPDDRDVLTEAFQRTLADEAH GYTVLDFGIVGDNEDLI ETVLNKAAK GCEI TTDLGIV RDDLT SLA G GLLKKVA G V EV L D L GLI P D QPD QI RAAFER A GAE




VVEQTRVPDDPERLRELLVRSW S









UniRef90 UPI0003608A01 UniRef90-B2GIII UniRef90-S2XQY0 UniRef90-I3REF7 UniRef90-GOJ571 UniRef90-A1VH88 UniRef90_F7Z488 UniRef90-F4AYB7 UniRef90-R4YUV7 UniRef90_Q1ATO3 UniRe90-K9ASY UniRef90-D2Z8P0 UniRef90 C1D6U1 UniRef90-UPI0004723503 UniRef90-Q3ADY2 UniRef90-UPI00021A7BCC UniRef90 A0A044RAM8 UniRef90-R6K5U2 UniRef90-F4CVH9 UniRet90_JOAZT4 UniRef90-W4UKG2 UniRef90-F9L532 UniRef90-UPI00035DF9AA UniRef90-D5ASR8 UniRef90-16ZUIO UniRef90-C6Q2K3 UniRef90 R5B115 UniRet90_UP10003F49D7A UniRef90_K2S805
UniRef90-F2JUP7
UniRef90-H81646 UniRef90-UPI000317AB13 UniRef90-UPIO00344D74F UniRef90-KONL75 UniRet90_Q8EQR8 UniRef90_S3J7G8
UniRef90 Cow419 UniRef90-W0JRR1 UniRef90-B5EIK3 UniRef90-E2BNB9 UniRef90-UPI0002E6875E UniRef90-UPIOOO36C3434 UniRef90-H3ZN42 UniRef90- L8TLP8 UniRef90-UPI0003B691AE UniRef90-D4H5V3 UniRef90-K8RHU7
UniRef90
H8G43 UniRef90-Q39Z82 UniRef90-H4FOE8 UniRef90- G8T158 UniRef90-F4HEJ3 UniRef90 ${ }^{-13 U E S S}$ UniRef90-G7WCI4 UniRef90-G7FSY6 UniRef90-W7KZD5 UniRef90-Q10609 UniRef90-G7LUL7 UniRef90-S7TYN4 UniRef90-UPIO00255562E UniRef90-D5VQB5 UniRef90-UPIO0045606A9 UniRet90_D2TYA4 UniRef90_10YTQ1 UniRet90-N6Y1N8 UniRef90-wotrm2 UniRef90_UPIO00463BC8D UniRef90-UPIO00376FAAD UniRef90-A3JXU5 UniRef90-FOS4J2 UniRef90-UPIo0037FD8B2 UniRef90-UPIO003717523 UniRef90-K1M8Y2 UniRef90_UPIOOO46F5BE4 UniRef90-E6X8F5 UniRef90-W4GWX3 UniRe90 B3R1H5 UniRef90 N8P1H9 UniRef90-UPI000367E80A UniRef90_QOFA51 UniRef90-Q101T1 UniRef90-UPIO004644596 UniRef90-UPIO00375AF01 UniRef90_K0C4N7
UniRef90_J6IT43

VGEADYTRE ${ }^{90} \mathrm{~L}$ Q
100
AGAFEVVRQGLEREG
VGQKDVVEETV PTEDDI TYQT A RADNGKLTKY GGMRDLTASVIEELGEIKIHGIATQPGK PTKDDLTKHVLADFFNASUKLFPEALEDGRNFFESRGKEL VDPDDMTRKGLASHGGKKVTDDAGLDEMLHGVPVLPGT PTKDDITKHTI CKYFNDELVFNQGVLDHVAHGFKEY臬KKP PTEDDLTAEALAQVIGQPLEENSEALDHLEAWCKKRGFQLD PTKDDLTKQTVASSLFNTTLEMDQEAMTYIENYFTMTPNNK AGDEDHVSALLQEAGA VDADDVTSSAl ETTTDETDFKGD ATPDDYTRQCVAEAAGVPLATHPEGQYPHRDNMVNLPAGS PTNDDLTKPCLARYFNCELAIHEEALAEVTEFFRSRGRNR MGVKDMVVDAI NSLGTPGVLFHGLLAIKPGKPTDG
PTHDDVTYEALALLAFNDSLIHYHPTLVK IIKDCF
PTHDDRTYEHFMRSMNKIMPDGGLQRMCTIPKSARLLWGK PTKDD TKQTLCKYFHTELVFNEEVFENVKRVK $\square \mathrm{PMNALN}$ PTADDLTAEVV
ATPDDQTRQAAAKA $\square G \nabla E \square T \square H P E A$
MGAYEVVRQGLPE
VGDFYRTVFHVAQQPGG ATPDDHTRQCRRLIRERTSEMYAEAGKPPELNTPAQRPGS PTHDDDTADAVAEAFGRSMGDRDDARADLAAHYEFTEARL

PTKDDITKGVMCRYFG
PTHDDI TYPSLAKAFDLPDEYDSETKRRMW
PTHDDUTYQERMKRDSKPHPSQPNFSWDVPSPKKRMVEDP
VGEEDYVKDAMAVAFGRKDARNDERNGTINGWKVAMKPGK SGPVDHLRATLRALGATTLVGGVTVRPGHPMLLAELPAD
 VDPDDVTRTGLQQAGATEMYYGSAACGLFHRDTVLDLILP PTADDLTREGFQQMTGDPLVEDKESMEKDEGFFTMTPNNR ATHDDVTREAFNWCCDRNSWKKVNEMTSGFGGENDPYESH VGQGDTVKEVLAPLGERDVVVPAVREQVRFDAVAMSPGR AGDRDLVREVL AKAFDDTGHYAELGAQEQFWKVAMKPGG PTHDDVTFEGLAKAFDDTLHYHPKLVD【IKDHFGAKDPGS PTKDDMTKETAASFFGKKLIPHEE
ATPDDHTRQCAAAAGGVPLALHPEAKEKDQERDADM PTKDDTTKKVLAEYVGTEMAFHEESWERLQKDY


ADQPVEFLHVAMQPGG
 PTFDDLTAETLGEAAGVGTEMNEEARRHMVEW
VGDADFTRALMNSLGDVAFWKDAMRPGR PLAFGRDWSGE AGAYEVVKDSLTDAG VTFGKVAMQPGG PTDDDVTARAAARATGRRLVLNEEAMGHLREFFVMHPANG VGDHDLVQSTL AEYFGGKLVMNEAGMTLDFWKUAMRPGK VGEADFTK ATPDDKTRTAVAQALGVPLALHPEA
VGEEDHVKTALESLGRLDLD WK WAMPGKPLALG AEDKDKTVESVLRVDPQAATPY VVKFQQGTGRHVKDGV
VGEADFTKEVLNDIGD PTYDDRTAEGLANAVGDPLVYNEEAEKYDKLNLDLTEERK PTENDLLTREIVSDLFNMPLIPSGESYTNKPQCADTLHEGT VGEADYTKQMLEELGD $\square H F W K L A \bigsqcup K P G K$ PTKDDITKYTLCEYF
VDPDDRTRFALAQAGAVDMVYGSAVLPGAMFMITYVPVLG VGDRD MRDVFTLLGAEQL FWRMTFKPGS
 PTPDDIYESI AKAFGAG■TYHDE
VGEADYTKQILDEDGGALTY S VGDRDF KPLL VGEADFIREMMARMGEVPGVRHGRAAQLVSFWKLADKPGR AGPVDHVHPTLRRLGAELLVDGVAVRPGHPM
ATPDDRTRACLAEALGRPLQRHPEFVDLLERRFGDYPHRD AGDEDHVSALLRDTGASEKMVVHEPTDKVAEWRGALKPGR PTADDITKQVVARFVNQPLVGDQAAANKI AHYF ATPDDFTRQAAADALNVPI ERHKAAVEEIEAQFGEGAYPK ATPDDRTRQSAALALGLPIERHSQAVAELEAQFGEDYPQR PTKDDKTKKAYQHFF

PTHDDITYDSIIAKAFDVPLEVHE
ATPDDHTRQCAAAALGVPLVLHPEA
VGDYDFDRPVTLNL GFEQ $\quad$ FWKVKQKPGKP $\square F F A$
PTKDDDTKQTLCDYFG AGDEDHTSKLLVQKA VALELNEAGGLLATWRGALKPGR AGGEDHVKAAVGKA ERDGTLVMWRMAGKPGR
 ATPDDRTRQCAAAALGDEDADHPEAEA LLREKFGAEDTPH


UniRef90_UPIO003608A01
UniRef90-B2GIII UniRef90-S2XQY0 UniRef90-X1SSY6 UniRef90-13REF7 UniRef90-A1VH88 UniRef90- F7Z488 UniRef90-F4AYB7 UniRef90-R4YUV7 UniRef90_Q1ATO3 UniRef90 K9ASY2 UniRef90-UPI00046957FC
UniRef90-D2Z8P0
UniRef90 ${ }^{-}$C1D6U1
UniRef90-UPI0004723503 UniRef90-Q3ADY2 UniRef90-UPI00021A7BCC UniRef90 A0A044RAM8 UniRef90-R6K5U2 UniRef90-F4CVHO UniRef90_JoAZT4 UniRef90_W4UKG2 UniRef90-F9L532 UniRef90-UPI00035DF9AA UniRef90 D5ASR8 UniRef90-16ZUIO UniRef90-C6Q2K3 UniRef90 R5B115 UniRef90 UPI0003F49D7A UniRef90-K2S805 UniRef90-F2JUP7 UniRef90-H81646 UniRef90-UPI000317AB13 UniRef90-UPI000344D74F UniRef90-KONL75 UniRef90 Q8EQR8 UniRef90-S3J7G8 UniRef90_CoW419 UniRef90 WoJRR1 UniRef90- B5EIK3 UniRef90-E2BNB9 UniRef90-A8M149 UniRef90 UPI0002E6875E UniRef90_UPI00036C3434 UniRef90-H3ZN42 UniRef90 L8TLP8 UniRef90 UPI0003B691AE UniRef90-D4H5V3 UniRef90-K8RHU7 UniRet90 H8G4M3 UniRef90-Q39Z82
UniRef90-H4FOE8 UniRef90 G8T158 UniRef90 ${ }^{-}$F4HEJ3 UniRef90-13UES9 UniRef90-E1V326 UniRef90 G7WCl4 UniRef90 G7FSY6 UniRef90-W7KZD5 UniRef90-Q10609 UniRef90_G7LUL7 UniRef90-W2USP4 UniRef90-S7TYN4 UniRef90-UPIO00255562E UniRef90-D5VOB5 UniRef90-UPIOO045606A9 UniRet90_D2TYA4 UniRef90_-10YTQ1 UniRet90-N6Y1N8 UniRef90-wotrm2 UniRef90_UPIO00463BC8D UniRef90-UPIO00376FAAD UniRef90-A3JXU5 UniRef90-FOS4J2
UniRef90-UPIO0037FD8B2 UniRef90-UPIO003717523 UniRef90-K1M8Y2


RTVFPLVQMRNVYAFPGTPEFCTEAL
KSQAMVPKDCMVINNPVGSASVRDGKVLVMPGVPQ

VTTVAFSNGQYLFGLSGNPSACFTGFEYVKPAVNKLIG
KMAEFPQGAALIPNPYNKDPGFSVGSHYFVPGFP
RMARIPEGASLI DNPVSGAPGFSUGNCHVMAGVPNDFQAM EQALVPKDAVP RNSRGTAPGDKENKDFIMPGVPYEMHGM PVMYSLYKNKP DS LSGNPFAALTNFELLVPVL

TDKNKDLGEQVIFDDSVPDSVVNGNDH【LPGVPRLFEK■ PIVIAKVFNTPLIGLPGNPSS
RMAE $\square P E G A A V I S N P V G A A P G \| \square D G R V Y V F P G V P$
GGTPVVGLPGNPLAAVAGLLTLAAPLLHAL
DRMAGVPDTPVLCFPGNPVSSFLSAELFLAPILRAFAGL RVMAGEHDDKKELAF GGHGGLCMNCKKCTFPHCP
K QARVFEGSTVLNNKAGMAPGMQSCHWFFLPGVPREMKHT KQTLIPADSKRLTENGTAPGFYLHQDNLLPGVPSEMKEI QLGVGTVDGTPPGCLPGDPVSAQLAFEFVRPVLRQD PTAFALQDGRPVFSLPGNPVSTMTFELLVK

PALLKMM

PT TIGVDDGKP DFGDPGYPTSCDTNFTLLVPLIRKLLG $P Q G L G T F E G T P F L G F P G N P V S C L V S F E F L R P A L S Q L L G$ $P Q G F G A G D G R L L F G L P G N P V S V A V S F E F V R P A L$
RPGAGE SALFFGLPGNPVAVMATFYF\|VRE $P Q G C G R W H G V P V V T L P G N P V S V L V S F E F V R P A L R A A L G$ RQCLLPAKAELI PNPTGTASGFYLCLLMFLPGVPSEMAVM $P L M V G S L G S T H V L G D P G N P V S S M V C L E P L L A K L G H$ $M Q A E V P D V C T V L P N A R G T A P G M K A G K V F V L P G V P H E M K G L$ PFAF GK LIENAWFCGLPGNPVSAFVTFQLVQPA
$R L P D G N G G E T R F V G L P G N P S S F V A A W L F L R P L M G A L L D$
 $P$ FAFGKLPNSYFFGLPGNPVSAAVTLELVKPAL $K M A D M P K G S M P V E N D K G D A P G \square Y L Q Y Q G I T P G V P R E M E$ KK I K S IPSGALI DNDHGTATGFAINYNVCLPGVPGEMRQM PFAFGRLRHAWFCGLPGNPVSAALTFQLVQPLLARL
【PACGTFAKTTVF
A LLCGVYRKKLLICLSGNPFAAMANLELLVPVL
$P T \| I G K \square G E K L V I G L P G Y P T S C L T V F D A L F$
PFAFGK $\square$ KSAWFCGLPGNTVSA\|VTFQLVQP\|INHLCA GAAGSSGRGLVVFGLPGNPVSSIVTFNVVLPALR
PMAFGR 1 GKATLFGLPGNPVAVLVTF
$R M A D L P R G S T L I P N P V N N V P G F S L R E H Y F L P G F P$
$L L A R I K E G R Y L V G L P G N P L A A V S G L V T L A P L L R$
RMAELPEGASLIPNPVNGVPGF
$P$ LA GMWQGVPVFGLPGNPVAAFVC
$P C M L F Q K G N K V F \square S M P G V P F E M M L L M N K V L P E L$
RMADFPAGVDLIPNPVNRVAGFAAGL
$\square$ HMAEYPK GAVI $\square$ NFYNRVPGFS $\square$ Q NHHFMPGFP
KQAMFPSGARPDYNPTGTAWGFREGDIAVDPGVPSEVKRM P LIF F GKMGSVS IF G LP GNPAAA LS CFIYVYPLLK
$T \square Q R A D H S A C Y L L G \square P G N P A A V Y M G M Q \square$
RMAEFPLGAHLIPNPVNQVAGCSFRHHHLLPGFP
$P L A L A L W S N T P I L G L P G N P V A A M V C$
$P \vee A M G 11 / G G T P L I G L P G N P V A S F V T F V H V V$
$P$ FAFGHLGKAVFFGLPGNPVSSMVTGHQLLPDLR
$P$ PLVGTDGEAAFF GLPGNPVSVMVTFQDVLPALHKDMG


## UniRef90 TOBN19 <br> UniRef90_C5E2A3 UniRef90_UP100047C8B8E UniRef90-C9NXF7 <br> UniRef90_D6DUU5 UniRef90-M1WLW2 UniRef90- W4CHP4 UniRef90-V6MIC7 UniRef90-M1RTN8 UniRef90 Q1IWZ6 UniRef90_UPI0004181FB5 UniRef90-UPI0004706694 UniRef90-UPIO0035F1926 UniRef90-Q9GRD7 UniRef90-F2LW81

 UniRef90-UPI0002487E71 UniRef90-UPI0003792114 UniRef90-Q12CK1UniRef90_UPI00047B6BEF UniRef90-UPI000375C74F UniRef90_UPI00042A7F70 UniRef90-B1M9B8 UniRef90_UPI00037FC9C1 UniRef90-W6RCP6
UniRef90_UPI000479CF5D
UniRef90-UPI0004708C72 UniRef90-B5YIP9
UniRef90_V9FZ05
UniRef90_UPI000370D9E8 UniRef90-UPI000465E441 UniRef90-R6KR60
UniRef90-G4SZD5
UniRef90-F4GQC5
UniRef90-A0A031JC70
UniRef90_LOKZC1
UniRef90-W2EBL9
UniRef90_Q062B9
UniRef90-C6W6E4
UniRef90 A4SRY2
UniRef90-E3GZQ2 UniRef90_UPIO002E6617E
UniRef90-D7CKW6
UniRef90-Q1GUX1 UniRef90-F3FU23 UniRef90-A1WMM9 UniRef90_UPI0004175E65 UniRef90-UPI000468D2A3 UniRef90-X1QAG9 UniRef90-HOFDW9 UniRef90-F4HNL0 UniRef90-UPI00036BDFD3 UniRef90-V9ZT744 UniRef90_C6E929 UniRef90_D3L5Q7
UniRef90_U2SCB9 UniRef90-C7N3D7 UniRef90-W6TT00 UniRef90-B5JMX7 UniRef90-A1HS20 UniRef90_UPI0003A38A87 UniRef90_Q8KT68 UniRef90_Q1DCC8
UniRef90 J3E3E0 UniRef90-IOGL46 UniRef90-R5AMM5 UniRef90-Q1K2L6
UniRef90 A1SUX9 UniRef90_UPIOOO463E464 UniRef90_U2SHZ1 UniRef90-D8FXI4 UniRef90-E319C8 UniRef90-S7X7M7 UniRef90_E2B886 UniRef90_B6IRY1
UniRef90_A1AP00 UniRef90-X1CEM4 UniRef90-A7HC38 UniRef90_L7EKQ9
UniRef90-B1Y4D3 UniRef90_B1Y4D3
UniRef90_UPI00046EAAB8 UniRef90_UPI00046B093E UniRef90_G2R657 UniRef90_UPIO0028838A4 UniRef90_D3E678 UniRef90_B9L5Q0 UniRef90-W4BW37 UniRef90-B4SHC8 UniRef90-A0A059FCP8 UniRef90_D2RHD7
UniRef90_UPI000315D7D6


## $\square$ Y D T A A

GATVIDGGlVK



## 

GHVRT



$W V Q$
$G G E P V R D G I V S D D Q A R L A E V F$
$G$ HSALDRDSDVVFSCGGIG GVNVYYHTAVGDNPNRLTDAIKQAEK RADLLIDFGGLG GAEVLDLGGVPDD DAA G DDLKEVRFVSDDQDA: DEAVNQLRERNTY GAIPLKMGII K DDYNE K K K A V T K A Y E L S A DVVLTTMGGVS GVDLKRVVVIPDEEDAD DK TVVKELSDVVGPSYVETTGGGDG GCLVREIEFIPDEEREII EALRRWAG
 GANAVHVLHALDTEASLQSALST LLQ


H H Y V VA

GAAVADSIVV
GAEPC DSVVNDDVDDFRTALGERIRAVDP
CEVVQPRGI R DDRATLAKLLKELARSH DVVIVVVGGAS G G L AYANYVGDHPERITACLQRAFASD

 HVLH
KV V EV
V
GGEGI F LGVVAKDEKKSLSELIKKGRLA $\begin{array}{ll}G W Q V R R R L T V G D N L A D \\ G G D P I V L G I A A D & T\end{array}$
 G $\square D V H R Q T T V G D N R D R L D Q T L S T A F C E N$ VADTVIDTGGDG GGEPVLWDDVPDDRERVTAADCE A CTKADDVVVNAGSS

 G $\square E I I K Y K M M V R D V I S E I K N A F S$ FAKKNVDLIITTGGGLG






 $G U S V Y Q D T S I Q Q D K M H I L K A L K E A E A G N A A D I A I D T G G G L G$ GCDVTDLGGIVPDSAPADREAKKTAAARSQEYPVVFTSGGVG GGIPLQRGII PDDFDALLSAARSALEEADCLVV SAGSS

 WA Q GADVIAVATAEDDVAQFGSVLER DAFASGDAVFSCGGDGG G $\square E V L R I V S D R D R K E E D T E A I$ DSAMKRANVVLVTGGLG
 GGEPVMYGLIPDSLEKTVEYIKTLKN EYDVIITTSGGIGS





UniRef90 C5E2A UniRef90-C5E2A3
UniRef90_UPI00047C8B8E UniRef90-C9NXF7 UniRef90_D6DUU5 UniRef90-M1WLW2
UniRef90- W4CHP4 UniRef90-V6MIC7 UniRef90-M1RTN8 UniRef90-Q1IWZ6 UniRef90_UPI0004181FB5 UniRef90-UPI0004706694 UniRef90_UPI00035F1926 UniRef90_Q9GRD7 UniRef90-F2LW81 UniRef90_UPIO002487E71 UniRef90_UPIO003792114 UniRef90-Q12CK1
UniRef90-UPI00047B6BEF UniRef90_UPI000375C74F UniRef90_UPI00042A7F70 UniRef90-B1M9B8
UniRef90_UPI00037FC9C1
UniRef90-W6RCP6
UniRef90_UPIO00479CF5D
UniRef90-UPI0004708C72
UniRef90-B5YIP9
UniRef90-V9FZ05
UniRef90_UPI000370D9E8
UniRef90-UPI000465E441
UniRef90_R6KR60
UniRef90-G4SZD5
UniRef90-F4GQC5
UniRef90-A0A031JC70
UniRef90_LOKZC1
UniRef90-W2EBL9
UniRef90-Q062B9
UniRef90_C6W6E4
UniRef90-A4SRY2
UniRef90-E3GZQ2
UniRef90_UPI0002E6617E
UniRef90-D7CKW6
UniRef90_Q1GUX1
UniRef90_F3FU23
UniRef90-A1WMM9
UniRef90_UPI0004175E65
UniRef90_UPI000468D2A3
UniRef90-X1QAG9
UniRef90-HOFDW9
UniRef9- OGCFT3
UniRef90-F4HNLO
UniRef90-UPI00036BDFD3
UniRef90_V9ZT74
UniRef90_C6E929
UniRef90_D3L5Q7
UniRef90_U2SCB9
UniRef90_C7N3D7
UniRef90-W6TT00
UniRef90-B5JMX7
UniRef90-A1HS20
UniRef90_UPI0003A38A87
UniRef90_Q8KT68
UniRef90_Q1DCC8
UniRef90-J3E3E0
UniRef90_I0GL46
UniRef90-R5AMM5
UniRef90_Q1K2L6
UniRef90_A1SUX
UniRef90_UPI000463E464
UniRef90_U2SHZ1
UniRef90-D8FXI4
UniRef90_G7MAR9
UniRef90_E319C8
UniRef90_S7X7M
UniRef90-E2B886
UniRef90-B6IRY1
UniRef90-A1AP00
UniRef90-X1CEM4
UniRef90-L7EKQ9
UniRef90_LBEKQ9
UniRef90_UPI00046EAAB8
UniRef90-UPI00046B093E
UniRef90_-G2R657
UniRef90_UPIO0028838A4
UniRef90_D3E678
UniRef90-B9L5Q0
UniRef90-W4BW37
UniRef90-B4SHC8
UniRef90_A0A059FCP8
UniRef90_D2RHD7
UniRef90_UPI000315D7D6
 PTHDD T YESVYECQDRMRK $\square$ SHPEKRHDPETLKDFYRMA


 $\begin{array}{llll}V & G D Y D Y L P E V Y K R L G A \\ V G T R D Y T E Q V M Q A L G E P G V L V H G\end{array}$ V SDKDFTKEAVK
MGRYDFMRDLLLERGQ
MGRYDFMRDLLLERGQ VGTYDIVRSTLEAHG VLFNVVMRPGS PTHADA AAAFGDGDDKHPDVMAMDQDDLNFWK DAMRPGR
 MGDKDFLK PTFDD T T E SVATALGKGLYLDSEALKF I HDFYTKLYQEG $\begin{array}{ll}H G R F E V V R Q V L G D A S G & T G G T G G T A W F G H V A Q Q P G G \\ V G E E D H V K V A V Q Q L G A\end{array}$ $\begin{array}{ll}V G E E D H V K V A V Q Q L G A \\ A T P D D H T R Q C A A K A L G V A L A D H P E A K R D I & D\end{array}$
 VGDHDLVRPVAAALGVR KGTGDVSHRVLSRLGEPGILLHGVALKPGKPLCV PTKDDLTKEIIADHLQREMETDHEAWERIQNYFKMTANNE
 PTHDDITADAIAAAFGLPCDYDILAEHYKNRGDEFTQSRK AGTKDLTAKUINE GGDPGVLFHGASDKPGKP I G
 A GAYEVVRQVCEPLPTFDFVHLAA MQPGG PTHDDKTRQALASYLG VPLEVNHQAYNK VGRYSGS VGKKD $\ M H E V V R \square L G A Q R \square \quad$ FWRLEMKPGMPT LIFS

 $V G D H D L V R \quad P A F A K A G G S L D F W K I R M R P G K$ $A G V G D V M Y K \square D D K G K T L L H G \square S \square K P G K P V I I$ $V G D Y D V L Y D M V A N W D G K \quad$ VLFNKLRMRPGS AGDSDWI R P P WVA L GAVEFWK LFLKPGRP VGDYDFVGKA LEA $\square$ GAET PTADDLTAQAAAEAFGQPLTLFPEW HGKYEVVRNATAMAPSLGLPDPDSWFGHVSQQPGGPQGV A GRFEVVQQSLADSADLDGYTPHVGFGSIAMQPGGPQGAG AGREDFTAEVVQEAG $V G E A D F L G H A L R E E G E$
$A T P D D H T R Q C A A R A L D C E L V L H P E A$
$A G D C D F V P E A L R Q L G A$ $A G D C D F V P E A L R Q L G A$ $A G D E D H V S A A L L D K A G A$
$V G D Y D F V K E L I D G G A E$ VGDYDFVKEILIGGGAE MALDWRADKPGR

 GGMRDLTASVI EELGE $\square \mathrm{K} V \mathrm{~V}$ G $\square \mathrm{A} \square \mathrm{Q}$ Q GK


 PTDDD ${ }^{\text {PTKECAAEYFNRDFYFHEYSW }}$
KGSDDWN DEMLDEVG PTKDDITKAHI TEI FKRHNRPMDESNDKQCTVIKNENGTA KGKYDY!PETLAKLGVS IRFQWVSQRPGKPMWYGQF S VGARDYTVKA EALGGPGVLLHGDAVKPGKPTD PTDDD DTKEA I A D FLKK PHPDDKTREA I AKAVGSPDEDWVE DEQQLEK $\square$ GVYCDPSN PTADDFTVECAAEAAGVPLEEDAQVLDWLYQRYSPNPSAD

 VGEADFIKD $\quad$ LFEGGSINFWKLALKPGK
 VGDKDFVKRVLTTLGARFFVDGVALKPGKP
VGDYDYVEEVI
PTKDDLTKETIAR RLLQRELVVDKEALHS DEAYFTMTENNK PTKDDITKHTICEYF
PTHDDVTYEAVAKAFR LK $\square E S H Q E L L D T Y \square R M N P N Q P E \square K$ EGEEDHLC $V S T R D L T A D V I N R L G A P G V L V H G \square A L R P G K P A D$
A GSKDFTSSEIVVK S I GE PTHDDVTVPAVARALGRPLVRSGPLCESI RAMHRRHHDGA $K G D Y D F V E D \| L$
$A T P D D H R Q C A A A D D R P \square A D H V Q L G A D D I K F D S V A \square K P G K$
$A$
AGAYEVVKDAF G GRDGDQGVEF VKVAMQPGM PTKDDITKQTLCEYFHVFNEDVYENDKRVLAGKIPMNALN K GRFDY P T E D D I $\quad$ T K K E A


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



UniRef90 TOBN19 UniRef90-C5E2A3 UniRef90-UPIo0047C8B8E UniRef90_C9NXF7 UniRet90 D6DUU5 UniRef90-M1WLW2 UniRef90-W4CHP4 UniRef90-V6MIC7 UniRef90-M1RTN8 UniRef90-Q1IWZ6 UniRef90-UPI0004181FB5 UniRef90-UPIOOO4706694 UniRef90-UPI00035F1926 UniRef90-Q9GRD7 UniRef90-F2LW81 UniRef90-UPIO002487E71 UniRef90_UPIOOO3792114 UniRef90-Q12CK1 UniRef90 UPIO0047B6BEF UniRef90-UPIO00375C74F UniRef90_UPIO0042A7F70 UniRef90 B1M9B8 UniRef90 UPI00037FC9C1 UniRef90-W6RCP6 UniRef90-UPI000479CF5D UniRef90_UPI0004708C72 UniRef90-B5YIP9 UniRef90-V9FZ05 UniRef90-UPIO00370D9E8 UniRef90- UPIO00465E441 UniRef90-R6KR60 UniRef90-G4SZD5 UniRef90-A0A031JC70 UniRef90-LOKZC1 UniRef90 W2EBL9 UniRef90 Q062B9 UniRef90-C6W6E4 UniRef90-A4SRY2 UniRef90 E3GZQ2 UniRef90 UPI0002E6617E UniRef90_D7CKW6 UniRet90-Q1GUX1 UniRef90 F3FU23 UniRef90-A1WMM9 UniRef90_UPIO004175E65 UniRef90 UPI000468D2A3 UniRef90-X1QAG9 UniRef90-HOFDW9 UniRef90-Q6CFT3 UniRef90 F4HNLO UniRef90-UPI00036BDFD3 UniRef90_V9ZT74 UniRef90 C6E929 UniRef90- D3L507 UniRef90-U2SCB9 UniRet90-C7N3D7 UniRef90 W6TT00 UniRef90_B5JMX7 UniRef90-A1HS20 UniRee90-UPI0003A38A87 UniRef90_Q8KT68 UniRef90-Q1DCC8 UniRef90-J3E3E0 UniRef90-10GL46 UniRef90-R5AMM5 UniReffo-O1K2L6 UniRef90 UPIOO0463E464 UniRef90-U2SHZ1 UniRef90-D8FXI4 UniRef90-G7MAR9 UniRef90-E319C8
UniRef90-S7X7M7 UniRef90- E 2 B 886 UniRef90 B6IRY1 UniRef90-A1AP00 UniRef90-X1CEM4 UniRef90- L7EKQ9 UniRef90-B1Y4D3 UniRef90_UPI00046EAAB8 UniRef90 UPI00046B093E UniRef90-G2R657 UniRef90-UPI00028838A4 UniRef90_D3E678 UniRef90 B9L500 UniRef90_W4BW37 UniRef90-B4SHC8 UniRef90 A0A059FCP8 UniRef90-D2RHD7 UniRef90_UPIOOO315D7D6

RTGVGKVGTSY\| VTFPGPHD 140 RTDML 160 TLPAGPEVHSYYVLKEFWVP VVSUQKVYILPGUPQLFEK
P पAYGQVNDKPFFGLPGNPVAVMVSFNFTEPALR PFAFGKLPHSWFCGLPGNPVSAALTFQLVTPLL

GRVGSKPVLGLPGQVTSALVVMHVILPLIRHL VTTVAVAGDQFLFGLSGNPSACFTGFEFVRPAL

$P \square M F G Q L G H T P V I G L P G N P V A A L V C L V F \prod A P A L R K L L G Q$ QRMARDPDGSLIENPVSGAPGFQTGNVFTLAGVPSIVQGM PMTFASRNDKYFFGLPGNPVSAFVTFHFALPAIRFA KПETGGПNKKHLFCLPGDPKEMKPMFEKVLPVLR PQGCAVFAGVPVVCLPGNPVSTAVSFRFVAPALGEA PLAYGNVSGTPFLGLPGNPSAVFVTFA\|I

VRDDGDARR LILGLPGNPGAVLIGL
RRLLGPLGSE! PNPFNR $\square P G F M V K E H Y F V P G F P Q$
AVAQGRPI VLPGFPTSAMFTFDFVVPFVR
KQAHTIKGAKVLPNEHGMAPGVKEGQHFLLPGPPH
PLMVGSLGDTHVIGLPGNPVSSLVCLLFLEPLIR
RMARMPEGAHHI DNPISKAPGFVVGNVHVMAGVPHVVHSL
R $\square A A N G R \quad S A L L F G L P G N P V A A M V A F$
GVCNGKPVFGLPGHPVAVYICFEFVKPVINYVFGD
RMATLPVGCKLLPS GWTPIAVVHNVYILPGIPSMVKNM
PQGLGRYGSTPVVCLPGTPVGAFVAFHVLVPALDH
ERDAVERGTSPIHNSKGSALGISFRTDFSFPGVP
VY

$P L M A G H L G D A V F L G L P G N P S A F V T A Y L F L L P L V R H$
PTVVDDVPLIGLPGNPTSALSIFEFUAPMUYDSLETD
FAFGTLGDGVPFFGLPGNPAAAVTALQLLWPAL
PLLFGKKGDKLIFALPGNPASSLVCYEYVLPALR
NVLDFNGHRDPMTSFPGNP VSTLISYVLMDRPYロ
$V L R C D E G N C V P I V G F P G N P$
$P A S L G L I V G K P J I G V P G Y P V A L V E E L L A R P L I Y ~$
PALLGLIEGKPVIGVPGYPVSAALVFELLARPLIY
PLTFGHFRGVPVIGLPGNPASTLVTFALL
PFVAATLGDTVVFGLSGNPAACTVQFETLVRA
$P L A L G M W Q G V P V F G L P G N P V A A L V C L V F A R P A L$
$P L V F L K Y K D G F I F G L P G N P V S V M V C F E$

PTIIGEINGKPVLGLPGYPTSCLTNFTLVVPVLGRALG
PLAFGRVEDKPFVGLPGNPVSAWVTFQLVRPALK
NSKQAW
PLAFASपQGKPTFA $\square P G N P V A A M V S F E L I L K A M G H$
MLMVGMKGEKVI $\square G A P A C V$ VHDEWT SLDLVLPRTFAGL
HSSAAVVDGTPVVGDSGPPRGAGFTADFYDPVIKRYDRQ
PCMWFEHNGNTIVSMPGVPFEMMY LMEQTLPRLKGAFKG
RDGS RMVGRVFARGNPVSCFTCLRYVIPAL FGMVGAVPVFGLPGHPVSA

RFQAMFPSEAKVINVTGTAPGFSLNVDVVLPGPPSQMRLM RMARVPQGSEPVKNPEGSAP LVVMKLGFFLPGVPREFKAL PLTFGHVGGVPLLGDPGNPGSALVTFLLLARMPYLLARM YIDGGLLGSMPIENPTGVAAGUKUGNTYILPGVPREFEAM
$N \square T \square G R A G N D P V C A D P A A A F F K T A \square D \square F \square P R \square$
$P$ FAFGKLPS SVFFGLPGNPVSAMVTL
PFLFASRGGTLVLGLPGNPGALALLFWLFVPLL
VAVARLGDTTVVVLPGNPGAATVAFDQLARLLKH
KQALVLQGSTVFRNEHGMAPGMAMTVGA $\square$
RLA VPNPCK TYYLPGSPKYFEAAVDT\|VPQLK
$P V A L G R D G E T P V V G L P G S P V A A M T A F L K L V R P L V H$
 ERMADVPEGTRLLGDPSFPTLAVENVVMLPGVPQFFR P $\square$ SFAT $\square K$ KKLIVS $\square P G N P$ AA
PQGVGRVAGTTTVTपPGNPVSALVSFEF पRPALRTAMGL KSQAMVPKDCTVINNPIGSASV
SKAA FFGLPGNPGAAAACFRLL
RQALATEGGTP\PNETGLAVGNAVSYE\|VLPG
PTMAGI MGETFVFAMPGNP
VTTAAUYKDKLLFALSGNPGACFVGFGFVRPTIR
LYFGSSSEGKAVFSLPGNPVSALVCFEYCIPAI
RRMAIPHGATLVANPVSGAPGFQMENVFTLAGVPQVARAM
PTGLGVIDGKPVLMLSGFPVACLIGFELIFP HVLAKL

UniRef90 TOBN19
UniRef90 C5E2A3
UniRef90_UPI00047C8B8E
UniRef90 C9NXF7
UniRef90 D6DUU5
UniRef90-M1WLW2
UniRef90-W4CHP4
UniRef90_V6MIC7
UniRef90-M1RTN8
UniRef90_Q1IWZ6
UniRef90-UPI0004181FB5
UniRef90 UPI0004706694 UniRef90_UPI00035F1926 UniRef90-Q9GRD7
UniRef90 F2LW81
UniRef90-UPI0002487E71
UniRef90-UPI0003792114
UniRef90_Q12CK1
UniRef90 UPIO0047B6BEF UniRef90-UPI000375C74F UniRef90-UPI00042A7F70
UniRef90 B1M9B8
UniRef90-UPI00037FC9C
UniRef90-W6RCP6
UniRef90_UPI000479CF5D
UniRef90 UPI0004708C72
UniRef90-B5YIP9
UniRef90_V9FZ05
UniRef90 UPI000370D9E8
UniRef90-UPI000465E441
UniRef90_R6KR60
UniRef90_G4SZD5
UniRef90_F4GQC5
UniRef90-A0A031JC70
UniRef90-LOKZC1
UniRef90-W2EBL9
UniRef90_Q062B9
UniRef90-C6W6E4
UniRef90-A4SRY2
UniRef90_E3GZQ2
UniRef90 UPI0002E6617E
UniRef90_D7CKW6
UniRef90-Q1GUX1
UniRef90 F3FU23
UniRef90 A1 WMM
UniRef90-UPI0004175E65
UniRef90_UPI000468D2A3
UniRef90- X1QAG9
UniRef90-HOFDW9
UniRef90_Q6CFT3
UniRef90 F4HNLO
UniRef90-UPI00036BDFD3
UniRef90-V9ZT74
UniRef90_C6E929
UniRef90 D3L5Q7
UniRef90_U2SCB9
UniRef90-C7N3D7
UniRef90 W6TT00
UniRef90-B5JMX7
UniRef90-A1HS20
UniRef90 UPI0003A38A87
UniRef90 Q8KT68
UniRef90_Q1DCC8
UniRef90_J3E3E0
UniRef90 10GL46
UniRef90-R5AMM5
UniRef90_Q1K2L6
UniRef90-A1SUXs
UniRef90 UPI000463E464
UniRef90-U2SHZ1
UniRef90-D8FXI4
UniRef90 G7MAR9
UniRef90 E319C8
UniRef90_S7X7M
UniRef90 E2B886
UniRef90 B6IRY1
UniRef90-A1AP00
UniRef90-X1CEM4
UniRef90-A7HC38
UniRef90-L7EKQ9
UniRef90-B1Y4D3
UniRef90-UPI00046EAAB
UniRef90 UPI00046B093E
UniRef90-G2R657
UniRef90_UPI00028838A4
UniRef90_D3E678
UniRef90 B9L5Q0
UniRef90-W4BW37
UniRef90_B4SHC8
UniRef90 A0A059FCP8
UniRef90-D2RHD7
UniRef90_UPI000315D7D6

UniRef90_H2G677

lupas 21
lupas_14
lupas_28
jnet
conf
conf
sol25
sol2
sol5
sol0
sol
jhmm
jpssm

UniRef90_H2G677


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




UniRef90_H2G677
 RMAHLPQGSQII PNPLNRVPGFSLHSHHFLPGFP QQAMVPKVCEVI LNEQGTAPAMKEKKLEIMPGVPYEMKG RQAMMPEGAQIIENTCGTAPGVTTGKVIILPGPPHELAAM $R Y$ GTVPAVLLPGNPGAVFTTFALLVPGIRRL

lupas_21
lupas_14
lupas_28
jnet
conf sol25
sol5
sol0
jhmm
jpssm


[^0]:    lupas 21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

