## QUERY

UniRef90_H5V76
UniRef90-JOQE43
UniRef90- WIIVU2 UniRef90 ${ }^{-}$A0A024LTH6 UniRef90-Q6D919 UniRef90-Q6G5M1 UniRef90-UPIO004015B06 UniRef90_V5CGA8 UniRef90-JOWGB8 UniRef90-C4UIQ5 UniRef90_UPIOOO329764C UniRef90-G7LSF8 UniRef90 E9CKA6 UniRef90-UPI00037F8494 UniRef90-E1SAW5 UniRef90-A1UTE7 UniRef90_C4K6Q15 UniRef90-D2TWH5
UniRet90 $12 B D X 1$ UniRef90- UPIOO0360DF01 UniRef90_C7BNG4 UniRef90_Q7MZB5 UniRef90_UPI00038047CA UniRef90_10QNE2 UniRef90-E8XXH3 UniRef90-M115IE1
UniRef90 V 3 TPI4
UniRef90-V6M159
UniRef90-G9YB36 UniRet90_UPI0002E15037 UniRef90-UPIo00475366D UniRef90-EOWU17 UniRef90-10DT74 UniRef90_UP100047DCEDB UniRef90-D1P752
UniRef90-C6CE70 UniRef90-UPIO004663EE0 UniRef90-J2XWF4 UniRef90-UOFWAB UniRef90-A0A024HQ34 UniRef90_Q2BQL3 UniRef90_R9NMJ1 UniRef90-K8VYH7 UniRef90-UPI000465F9F4 UniRef90-UPIOOO474B38B UniRef90-WOHG35 UniRef90-U2Z8K4 UniRef90-F4AHB1 UniRef90-Q02E05 UniRef90-F2ZQL6 UniRef90-A0AO28VKS4 UniRef90-R9PPE4 UniRef90_U6ZUB5 UniRef90-Q3K4G4 UniRef90-K4KNM3 UniRef90 W0MY75 UniRef90-UPI00037BD319 UniRef90_UPIO004745BOF UniRef90-UPI0002D3B3B2 UniRef90-UP10003098981 UniRef90-UPIO0036C656A UniRef90_L8J5K7
UniRef90_E3BN93 UniRef90-U5VLX9 UniRef90- B8KEA4 UniRet90-F6AF63 UniRef90-F9S4Z9
UniRef90
WOHYA6 UniRef90-UPIOOO382E5FF UniRef90_F8GLP9 UniRef90-Q08A04 UniRef90-DOZ198 UniRef90 ${ }^{-A 0 A 023 W X 48 ~}$ UniRef90_UPIOOO255690F UniRef90_A6D7L4 UniRef90_C5B703 UniRef90-K6BTV9 UniRef90-UPIO003F7CA4F UniRef90_UPIO00347061D UniRef90_A0A034TLV5 UniRef90-A4BQS9 UniRef90_L1M798 UniRef90-D1KCP6 UniRef90-Q1N3Z5 SHPALTSLRALTFFDTLPELDSGLRDWLLLEDSMTKRFEQ

 SHDALRQLRALHWLPASSPLLSPPLLDWLEEDSMTRRFEQ SDEALAQLRSVEWC EPTDVPATVADWLIYNDSMTRRLER

NWLWPSLLMM
DALTLLHALCWTGSA SSKAFSMLNMUQWWAMEPNDP SHPD
$\square R P V_{T}^{W} \mathrm{~W}$ WLNEDDE SDEALAHLHSVEWCA N TNSHFPT QWWRRHLCEPCPEA SFSSPLPRWLAEDQLPA

PALLThRTLEWPASS AFPKLKWLPDQDH PPRWLTAAQLHPAPA
PSSASPAWL
NPADPAPVWL
PPRWLSAQLANVPGP SHSYALSGDDVAWFNQEQALIPNLESWLGNTGSLTQRLQG
TFP $\square \mathrm{T}$ S GQW
HAALAPPRWLTNVQLHP
WQLPQQVSMTALQLRDWLEYPGSLTARLRQ PPAPAPTWLQLSRLSPMPGALVADWWLFDEGSLTRRLTR

PYLASLVEVEWQNPNSFPSERTRHWLEEQGSLSRRLSQ
PVFISPVWLQREQMSDSPEPVILDWLFNQDSLTRRLDR AFPLTLAGQWQSPDDELSLLSARLTSWLGDEGSLTARLKS WLEQRHLPALPDELTLDWLFDQGSLTRRLTA
PYLSY LLEVEWQENFVFPSEFAKQWLLEQGSLSRRLGE HWLLEPDSLSRRFQR YLLALNSVHWQEEFSFPTVNTKHWLLEKGSLSHLLAC PQAAAAAWLPYSQLATGLGQP\|VDWLFDEGSLTRRLTH YLSALLRQVSWQEPANFPDAISKQWLDEQGSLSRLLSS YLSALRQVEWQQPFNFPSQIARDWLLEQGSLSRLLKT ALLDGL Q WLDDAPSSWPDDVRSWLTERGSMTRRLER HPLAWYSALTSVSYRQRNWLQDRGSLTRRI QD SFPYGESDHWFSPQK DSSPHSQLKEWLLATGSLTQRLKT ALVSPVWLEQGQLRALPDTHTFDWLFDEGSLTRRLTA LLDWLSADHLPSPLDPALHDWLYDKGSLTRRLTD A Lan $D$ QWQSP EQFRFTNDNVLQWLTEQGSLSHKLSA APAPVILDWLFNQDSLTRRLDR WQENSHPKNCTKQVLSWLDDEVSLTKKLEQ SLLEVEWQNPPEEFEFPNEFAKHWLEEOGSLSRRLK YPQVSVGRWAPYARDATTTPAATLDWLFDQGSLTRRLTR WQDLDQANNVPDNVMMWLDDKESLTAKLKQ UniRef90_UPI00034DFE91


UniRef90-H5V76
UniRef90 J0QE4 UniRef90-J0QE43 UniRef90_W1IVU2
UniRef90 A0A024LTH6 UniRef90_Q6D919 UniRef90_Q6G5M1 UniRef90_UPI0004015B06 UniRef90_V5CGA8 UniRef90_J0W6B8 UniRef90_B2VKA5 UniRef90 C4UIQ5 UniRef90_UPI000329764C UniRef90_G7LSF8 UniRef90_E9CKA6 UniRef90_UPI00037F8494 UniRef90_E1SAW5 UniRef90_A1UTE7 UniRef90_C4K6Q1 UniRef90_I2BDX1 UniRef90_UPI000360DF01 UniRef90_C7BNG4 UniRef90_Q7MZB5 UniRef90_UPI00038047CA UniRef90_I0QNE2 UniRef90_E8XXH3 UniRef90-M1SIE1 UniRef90_U3TM78 UniRef90_V3TPI4 UniRef90_V6MI59 UniRef90_G9YB36 UniRef90_UPI0002E15037 UniRef90_UPI000475366D UniRef90_E0WUI7 UniRef90_I0DT74 UniRef90-UPI00047DCEDB UniRef90_D1P752 UniRef90_C6CE70 UniRef90_UPI0004663EE0 UniRef90_J2XWF4 UniRef90-U0FWA8 UniRef90-A0A024HQ34 UniRef90_Q2BQL3 UniRef90_R9NMJ1 UniRef90_K8VYH7 UniRef90_UPI000465F9F4 UniRef90-UPIO00474B38B UniRef90_W0HG35 UniRef90_U2Z8K4 UniRef90_F4AHB1 UniRef90_Q02E05 UniRef90 F2ZQL6 UniRef90_A0A028VKS4 UniRef90_R9PPE4 UniRef90_U6ZUB5 UniRef90_Q3K4G4 UniRef90-K4KNM3 UniRef90_W0MY75 UniRef90_UPI00037BD319 UniRef90_UPI0004745B0F UniRef90_UPI0002D3B3B2 UniRef90_UPI0003098981 UniRef90_UPI00036C656A UniRef90_L8J5K7
UniRef90_E3BN93 UniRef90_U5VLX9
UniRef90_B8KEA4
UniRef90_F6AF63
UniRef90_F9S4Z9
UniRef90-WOHYA6 UniRef90_UPI000382E5FF UniRef90_F8GLP9 UniRef90-Q08A04
UniRef90 D0Z198 UniRef90_S6HP55 UniRef90_A0A023WX48 UniRef90_UPI000255690F UniRef90_A6D7L4 UniRef90_C5B703 UniRef90_UPIOOMF7CA4F UniRef90_UPI000347061D UniRef90_A0A034TLV5 UniRef90_A4BQS9 UniRef90_L1M798 UniRef90_D1KCP6
UniRef90_Q1N3Z5


S A D GEPWLLAGRTVVPVSTLS GPELALQK LGKTP LGRYLFT CGDGEPWLDGRTVVPESTLCGPELALQHLGETPLGRYLFT


 CGDGEPWLVGRTVVPESTLNGPEDALQKLGETPLGRYG F


## C

- 




## 

- 


## F

フ

## $-$

KLD Gl P WVVF A R SVVMP L Y G D
 $\begin{array}{ll}R G H G Q P W V & F A R S \\ K & G D G N A \\ H & A \\ H & A \\ H\end{array}$

$\stackrel{\rightharpoonup}{\mathrm{C}}$

 K GHGTPWVFARSVAARSALE GS GFDL RLLLGTRSSLGELL F
 LGAGQPWVFARSVAARRALEGSGFELGKLGSRSLGELL$F S$ HGDNQP WV FA R S I DP QALCE A G D F L N L G D K P L G H L I F N HGHDRPWVFARSVAARSALEGSGFDDALLGTRSLGELLFS $Y C D D V P Q V F A R S L D P D A S L T G E E Q D L A N L G E Q P L Q Q V L F N$ RGNGCNWVFARSVAARSALEDDGLQMDRLGTRSLGELLES

 RGHGQAWVFARSVASRSALQQDGLHMDELGSRSLGELLEC


 RGH G Q P WVVFA R S V A A R S S L E S G G L D L

 $R$ GH GEP WVV F AR S V SSRS ALLAR G GLDDL E S L G S R S L G E L L F C

 Y GHDKP WLLTARTVLPAATKA GPA QHVLDSLGBVVPL G QWL F R R GHD R P WV F A R S V A A R S A L E G S G F D L SLLL G S R S L G E L L F S

 CGHGRPWVVFARSVAARSQLTVDGLDDQRLGNRSLGELLES R GHGEP WVFARSVVSPRSALEGS GLAALAQLGTRS L GEL L F S S G D DVVP WV IG R T L M S LDD AMD R S QYD I S QQ G TVVP I GVVTVVF


 RGH G E P WVV F A R S V A A R Q A L R D D GLLD L E A L G S R S L G E L L F C LGNGEVMVFARSV $1 P$ LGNGEVMVFARSVIP VNDDTNDLLLI GSKPLGEMLFN

## QUERY

 UniRef90＿H5V762UniRef90＿J0QE43 UniRef90＿W1IVU2 UniRef90 A0A024LTH6 UniRef90＿Q6D919 UniRef90＿Q6G5M1 UniRef90 UPI0004015B06 UniRef90＿V5CGA8 UniRef90－J0W6B8 UniRef90＿B2VKA5 UniRef90－UPIO003 UniRef90＿UPIO00329764C UniRef90＿G7LSF8
UniRef90＿E9CKA6 UniRef90＿UPI00037F8494 UniRef90＿E1SAW5 UniRef90＿A1UTE7 UniRef90＿C4K6Q1 UniRef90－D2TWH5 UniRef90＿I2BDX1 UniRef90＿UPI000360DF01 UniRef90＿C7BNG4 UniRef90＿Q7MZB5 UniRef90＿UPI00038047CA UniRef90＿I0QNE2 UniRef90＿E8XXH3 UniRef90－M1SIE1 UniRef90＿U3TM78 UniRef90＿V3TPI4 UniRef90＿V6MI59
UniRef90 G9YB36 UniRef90＿UPI0002E15037 UniRef90＿UPI000475366D UniRef90＿E0WUI7 UniRef90－I0DT74 UniRef90＿UPI00047DCEDB UniRef90＿D1P752 UniRef90＿C6CE70 UniRef90＿UPI0004663EE0 UniRef90＿J2XWF4 UniRef90－U0FWA8 UniRef90－A0A024HQ34 UniRef90＿Q2BQL3 UniRef90＿R9NMJ1 UniRef90＿K8VYH7 UniRef90＿UPI000465F9F4 UniRef90－UPIO00474B38B UniRef90－W0HG35 UniRef90＿U2Z8K4 UniRef90＿F4AHB1 UniRef90＿Q02E05 UniRef90 F2ZQL6 UniRef90＿A0A028VKS4 UniRef90＿R9PPE4 UniRef90＿U6ZUB5 UniRef90＿Q3K4G4 UniRef90－K4KNM3 UniRef90＿U3AV40
UniRef90＿W0MY75 UniRef90＿UPIO0037BD319 UniRef90＿UPI0004745B0F UniRef90＿UPI0002D3B3B2 UniRef90＿UPI0003098981 UniRef90＿UPI00036C656A UniRef90＿L8J5K7
UniRef90＿E3BN93
UniRef90＿U5VLX9
UniRef90 B8KEA4
UniRef90＿F6AF63
UniRef90＿F9S4Z9
UniRef90－WOHYA6 UniRef90＿UPI000382E5FF UniRef90＿F8GLP9 UniRef90＿Q08A04
UniRef90 D0Z198 UniRef90＿S6HP55 UniRef90＿A0A023WX48 UniRef90＿UPI000255690F UniRef90＿A6D7L4 UniRef90＿C5B703 UniRef90＿UPI0003F7CA4F UniRef90＿UPI000347061D UniRef90＿A0A034TLV5 UniRef90＿A4BQS9 UniRef90＿L1M798 UniRef90＿D1KCP6 UniRef90＿Q1N3Z5


B

7KS4Q34




130

160
SSTLTRDF

## 140 <br> $\square R R D A G \square W$

 QS TLTR DYI EVGRSENLWGRRSRLRLSGKPLLLTEELELAA S K ELLTR D Y I H I GQ K D A L WARR S R L R L A D K P L L L T E L F L DA


S
S



## G

S



A

## 

ローロ

## D

## D

UniRef90＿UPI00034DFE91

| Y | SPL |
| :---: | :---: |
| UniRef90_H5V762 | S P |
| UniRef90-J0QE43 | SP |
| UniRef90-W1IVU2 | S |
| UniRef90-A0A024LTH6 | S P |
| UniRef90-Q6D919 | S P |
| UniRef90-Q6G5M1 | S |
| UniRef90-UPI0004015B06 | S P |
| UniRef90_V5CGA8 | S P |
| UniRef90-J0W6B8 | S P |
| UniRef90-B2VKA5 | S P |
| UniRef90-C4UIQ5 | S P |
| UniRef90_UPI000329764C | S |
| UniRef90_G7LSF8 | A P |
| UniRef90-E9CKA6 | S P |
| UniRef90_UPIO0037F849 | S |
| UniRef90-E1SAW5 | S |
| UniRef90-A1UTE7 | S |
| UniRef90_C4K6Q1 | S |
| UniRef90-D2TWH5 | S |
| UniRef90-I2BDX1 | A |
| UniRef90-UPI000360DFO |  |
| UniRef90-C7BNG4 | S |
| UniRef90-Q7MZB5 | S |
| UniRef90-UPI00038047CA |  |
| UniRef90-10QNE2 | S |
| UniRef90-E8XXH3 |  |
| UniRef90-M1SIE1 | SPA |
| UniRef90_U3TM78 | S |
| UniRef90-V3TPI4 |  |
| UniRef90-V6M159 |  |
| UniRef90_G9YB36 |  |
| UniRef90-UPI0002E15037 |  |
| UniRef90-UPI000475366D |  |
| UniRef90_E0WUI7 |  |
| UniRef90_I0DT74 |  |
| UniRef90_UPI00047DCEDB |  |
| UniRef90_D1P752 | SPAY |
| UniRef90-C6CE70 |  |
| UniRef90_UPI0004663EE0 | F |
| UniRef90-J2XWF4 |  |
| UniRef90_U0FWA8 | A P |
| UniRef90-A0A024HQ3 |  |
| UniRef90-Q2BQL3 |  |
| UniRef90-R9NMJ1 |  |
| UniRef90-K8VYH7 |  |
| UniRef90-E6YGP2 |  |
| UniRef90-UPI000465F9F4 |  |
| UniRef90-UPI000474B38B |  |
| UniRef90_W0HG35 | F |
| UniRef90-U2Z8K4 |  |
| UniRef90-F4AHB1 |  |
| UniRef90-Q02E05 |  |
| UniRef90-Q48AM0 |  |
| UniRef90-F2ZQL6 |  |
| UniRef90-A0A028VKS4 |  |
| UniRef90-R9PPE4 | C $\square$ |
| UniRef90_U6ZUB5 |  |
| UniRef90-Q3K4G4 |  |
| UniRef90-K4KNM3 |  |
| UniRef90-U3AV40 | S |
| UniRef90-W0MY75 |  |
| UniRef90_UPI00037BD319 | A F |
| UniRef90_UPI0004745B0F |  |
| UniRef90-UPI0002D3B3B2 |  |
| UniRef90_UPIO003098981 | S P I |
| UniRef90_UPI00036C656A |  |
| UniRef90_L8J5K7 |  |
| UniRef90-E3BN93 |  |
| UniRef90-U5VLX9 |  |
| UniRef90-B8KEA4 |  |
| UniRef90-F6AF63 |  |
| UniRef90-F9S4Z9 | A P V ${ }^{\text {P }}$ |
| UniRef90-W0HYA6 | CPLY |
| UniRef90-UPI000382E5FF |  |
| UniRef90-F8GLP9 |  |
| UniRef90_Q08A04 |  |
| UniRef90_D0Z198 |  |
| UniRef90_S6HP55 |  |
| UniRef90-A0A023WX48 |  |
| UniRef90-UPI000255690F |  |
| UniRef90-A6D7L4 | S |
| UniRef90_C5B703 |  |
| UniRef90_K6BTV9 |  |
| UniRef90_UPI0003F7CA4F | S G $\square$ |
| UniRef90-UPI000347061D |  |
| UniRef90-A0A034TLV5 | S PV |
| UniRef90-A4BQS9 |  |
| UniRef90-L1M798 |  |
| UniRef90-D1KCP6 |  |
| UniRef90_Q1N3Z5 |  |
| UniRef90_UPI00034DFE91 |  |


| UniRef90_W6LYH5 |  |
| :---: | :---: |
| iRef90 |  |
| UniRef90-K6ZUF1 |  |
| UniRef90 | B7VMA1 |
| UniRef90-A0A |  |
| UniRef90 | W9UR43 |
| UniRef90_B8 |  |
| UniRef90-N6XGG9 |  |
|  |  |
| UniRef90-UPI0002DB0170 |  |
| UniRef90_UPI0002F48343 |  |
|  |  |
| UniRef90_Q1YV46 |  |
| UniRef90-C1DK46 |  |
| UniRef90- | UPI00047 |
| UniRef90-UPI00035FFAD5 |  |
| UniRef90_F3KFL1 |  |
| UniRef90_S6IQ07 |  |
| UniRef90-W9A310 |  |
| UniRef90-A3QJG1 |  |
| UniRef90- | UPI000477 |
| UniRef90-UPI0003B6FC0C |  |
| UniRef90_Q87U40 |  |
| UniRef90_F7YPR8 |  |
| UniRef90- | B1KP44 |
| UniRef90-UPI0003755161 |  |
| UniRef90_A1T086 |  |
| UniRef90-C9Q2U8 |  |
| $\begin{aligned} & \text { UniRef90_Q5E206 } \\ & \text { UniRef90_UPI000395D479 } \end{aligned}$ |  |
|  |  |
| UniRef90-U2ZN3 |  |
| UniRef90-G2GWA4 |  |
| UniRef90_17AH73 |  |
| UniRef90-Q2PYL0 |  |
| UniRef90-A4BEZ5 |  |
| UniRef90_UPI0002559950 |  |
| UniRef90-F5Z5Y9 |  |
| $\begin{aligned} & \text { UniRef90-L9PGP4 } \\ & \text { UniRef90_UPIO00362E38D } \end{aligned}$ |  |
|  |  |
| UniRef90-UPI00046EA198 |  |
| UniRef90-UPI0004682F70 |  |
| UniRef90-Z5XRQ6 |  |
| UniRef90-D9SD51 |  |
| UniRef90-D4ZF66 |  |
| UniRef90_G2DE16 |  |
| UniRef90_U1JEK0 |  |
| UniRef90-S6IRX3 |  |
| UniRef90-UPI0004644D39 |  |
| UniRef90-UPI00037CD125 |  |
| UniRef90_UPI000361BF7E |  |
| UniRef90-14JPP5 |  |
| UniRef90-Q2BYD5 |  |
|  |  |
| Ref90_W7DZX |  |
| UniRef90-Q0HP10 |  |
| UniRef90 UPIOOO4 |  |
|  |  |
| UniRef90-UPI00047827AC |  |
| UniRef90-UPIO00471906A |  |
| UniRef90-B3PG97 |  |
| UniRef90-U4K359 |  |
| UniRef90_Q7MQ88 |  |
| UniRef90-A1U6P4 |  |
| UniRef90_UPI0003702382 |  |
|  |  |
| $\begin{aligned} & \text { UniRef90_DO1493 } \\ & \text { UniRefgo_SHTTD } \end{aligned}$ |  |
| UniRef90-UPI0002F38884 |  |
| UniRef90_UPIO00394437E |  |
|  |  |
| UniRef90-Q2Z0B6 |  |
| UniRef90-UPIO00255B493 |  |
| UniRef90-Q12T34 |  |
| UniRef90-Q31HW4 |  |
| UniRef90-Q82TP3 |  |
| UniRef90-V6JC22 |  |
| UnRef90-I2JF97 |  |
| UniRef90-A1AXI5 |  |
| UniRef90-WOV254 |  |
|  |  |
| $\begin{aligned} & \text { JniRef90-HOJB90 } \\ & \text { JniRef90-A3YDE7 } \end{aligned}$ |  |
| UniRef90-UPIO0035C901B |  |
| UniRef90-14N7D7 |  |
| UniRef90_UPI0002F4A72FUniRef90_Q2Y5S2 |  |
|  |  |
| UniRef90-UPI00036A6C7E |  |
| UniRef90-Q15ZU0 |  |
| UniRef90-F3BLG2 |  |
| UniRef90-UPI00041E6033 |  |
|  |  |
| UniRef90- J317Y3 |  |
| UniRef90-K6UHX1 |  |
|  |  |


PRPVPPRWHSYPRLDRDLPVTLTDWLLDSGSLTRRLRQ
 WQSTEKFNFPNETTKEWLMEQGSLSRKLGK AVDWQAP $\square$ T $\square P N A Q L K N W L L D T G S L T E R V Q S$
 YLT ALRQVTWQQPEATMPDEARTWLTDPASGTARIKA
YLSALLEVNWQDPFDFPSQQSRDWLLELGSLSRLLLER
 AAPAFQWLGADQLHPAPPAVLADWLFDSGSLTRRLTA WLAHPFSDPRSLRFWLSDHGSLTRRLKS $\square R Q L H W H H F Q R P Q H V L A L P W R D W V L D R G S L T K R L M D$ RWHHYQRP LVQUDPLWRSWLLDQGS L T KR L Q A SFPYGES DQW HSPDQ\|PQLPPPFREWLAD S EA DS T I MA QSWQKSDDLSLPAHLM SWLLDKGSLTKKLK A PAF STLTWISETKLPHCSRNIA SWLYDHNSLTKKLES PAFVTPDWLEREQLTDTPTPVFFGWLFNQQSLTRRLDR SFPYGESLQQWFSPEK DDQLPKSPLK DWLLSKGSLTQKLRS QTRWRTFRRPRLAAPQPWRNWLQDRGSLTKRL WSADUTPCSENLLDWLLDQNSLLTRKLQA
HTYLEALQQAREADTFECSNDLQRYWLLGLDSLSRRMLEQ $Y L T A L R Q V Q W Q D E F V F P S E L A R R W L S E Q G S L S R L L E T$

PEWLT ANQVPAPLDPLLHDWLFDKGSLTRRLTA SDPDTRHHRWQPLNPARTS I PPAYRHWVTMPGSLTKALKA TAHRWDPAASPRK VPHHWRPWLQDEGSLTQRLTR SFPVGLNVEWMQ ADSAPRNNPYLKNWLLDTGSLTKRVQS ASLRQTQWQPHVLALPPAYRQWLTADGSLTAKLKA


WHPAPSSISPQARGWLLNRGSLTQLI QQ TFPVSLAAHWQPASA YPYLTQQQQGWLLEAGSLTAKLKR


PNWS G WN RQLTQVPA GVLP WLRDEGSLTRRVVA WQHTSQVSGLTATERDWLFEPHSLTAKLKS
PGLQAPRWHPRQGRQGD LP TAA 1 PILPGQLKPWLIDHGSLTSSLRR WLS ADRLPTALDPALHDWLYDRGSLTRRLTE AVWYPASEWALERSVSSWLLEPDSLSRRLAA
 SFPYGESLQWFCADNAKNLPSSPLKEWLLAPGSLTQKLKG A WQDA QHVSVPEPYLRNWLLDDGSLTERLQQ $\square K K V Q W Q D A D T F A N E W Q Q Y W L L G L D S L S R R L E Q$ MRQALWHQHVNAVPAALRPWLTAGGSLTARLTA



WEEPEWQRLEASP S LLP WL E YS GS LTAALKK RWTTYRRPNSLAPRQWRQWLCDRGSLTEHL
PYLPLLNQUIDWQESFYFPTPKI RQWLQEQGSLS LLMKN
SLL R Q T E WQR H I N A VP P A L R H WLLV G G G S L T A K L R A
 WQCASLFSDLS SAEQEWLFEPG


RRAVSHLPAKDARWLLDDTGSSLTAHLRR QV S N I P N H V L I W W L N D H Q S L T A K L K Q A S D GAP R W WR QV QA WH S H I N AVVPS A L R R D WL S S P G S L T A K L K A A QSKN\P AF $\square W P W L A E Q G S L T A K V Q T$ WRG K ENGPE HVSRWLLDSQS LTHKLK E
ALLNDNW QSPSDFQFPDNNAKHWLLEEDSLSHRLS L WHPAPSSDSPRARGWLQNRGSLTQLIQR WS A Q Q KP LDHCP D K VLLA WL Y D H S S L T QK L E G

$T Y P \square F \square S A N W$ Q $\quad$ H T S Q V N D



UniRef90＿W6LYH5 UniRet90－S6GHA9 UniRef90－K6ZUF 1
UniRef90
B7VMMA1 UniRef90－A0AO10PKS8 UniRef90 W9UR43 UniRef 90 －B8CVII UniRef90－N6X5G9 UniRef90＿S7HWT0
UniRef90 UPIOOO2DB0170 UniRef90－UPIO002F48343 UniRef90－131E50 UniRef90－Q1YV46 UniRef90－C1DK46 UniRee90－UPI00047585EC UniRef90＿UPIo0035FFAD5 UniRef90－F3KFL1 UniRef90－S61007 UniRef90＿W9A310 UniRef90＿A3QJG1 UniRef90＿UPIOO04779789 UniRef90－UPIO003B6FC0C UniRef90＿Q87U40 UniRef90－F7YPR8

## UniRef90－B1KP44

UniRet90＿UP10003755161 UniRef90－A1T086
UniRef90 C9Q2U8 UniRef90－Q5E206 UniRef90－UPIO00395D479 UniRef90＿U2ZN39
UniRef90 G2GWA4 UniRef90－17AH73 UniRef90－Q2PYLO UniRef90－A4BEZ5 UniRef90＿UPIOO02559950 UniRet90＿－5z5YY UniRef90－LGPGP4
UniRef90－UPIOO UniRef90－UPIO00362E38D UniRef90－UPIO0046EA198 UniRef90－UPIIOOO4682F70 UniRef90－Z5XRQ6 UniRef90－D9SD51 UniRef90－D4ZF66 UniRef90－G2DE16 UniRef90－U1JEKO UniRef90－S6IRX3 UniRef90－UPIO004644D39 UniRef90OUPIOOO37CD125 UniRef90－UPIO003
UniRef90 14 PPP5 UniRef90－Q2BYD5 UniRef90－F3LGT0 UniRef90－W7DZX6 UniRet90＿QOHP10 UniRef90－UP100047C8C87 UniRef90－B6ENU3 UniRet90 UPIIO00047827AC UniRef90 UPIO00471906A UniRef90－B3PG97 UniRef90－U4K359 UniRef90＿O7MQ88 UniRef90－A1U6P4 UniRef90 UPIOOO3702382 UniRef90－Dol493 UniRef90－S6HTD4 UniRef90－UPI0002F38884 UniRef90－UPIO00394437E UniRet90－UPIIO0034DF53B UniRef90＿Q2ZOB6 UniRef90＿UPIOOO255B493 UniRef90－Q12T34 UniRef90－＿331HW4 UniRef90－Q82TP3 UniRef90－V6JC22 UniRef90＿I2JF97 UniRef90－A1AX15
UniRef90 WoV254 UniRef90－HoJB90 UniRef90－A3YDE7 UniRef90－UPIOOO35C901B UniRef90－I4N7D7 UniRef90－UPIIO002F4A72F UniRet90 Q2Y5S2 UniRef90－UP100036A6C7E UniRef90－Q15ZU0 UniRef90－F3BLG2 UniRef90－UPIO0041E6033 UniRef90＿UP100037E5C73 UniRef90－J317Y3 UniRef90－K6UHX1
，

ェロー
－

 AGNQFRVDLQHSDWQFPCRSEANMLGIKHRQVALIREVKL LTNKFEVKVLGQATDDADQSEQVALIDYHKHQWQI REVIL CCKHLSVELLHNQVVERSULQQDEERLLSSHDCLLRKVIL ASHQFSVKLLSQNLADPTKDEASALGLNPKQRVLI REVVEL

 $H C D D L S V D L L H N R I V K A E R L N Q Q E D D L L S L D P C L L R K V V L$
$L L A G A F S V T P L H E A W Q P L D A D E C A V L N L P A G S G W V R E V Y L$ LSQQFHLEVLRQYLALPSREEQQALAMPRPARALIREVIL ASGQFKVGVLSQSLLRPSLSERRALSVPDHRLALVREVIL LSGRFAVTPLAEGWQVLRDDECTALDVVPGSTGWVREVYL
 YCQHFTVAVLAQTIISNDNDSVMERQRVGDSDCLEREVIL

 QSGGFDVVPLSEGWQALRDDECAALGLPAASEGWVREVYL
 ASHHFSVRLLRLGYACPTRSEARADGLPPRRKALIREVGL LSADFKVKV RQQVTLSHSKDLLSPYFSEENKVLVREVLL HCNVLSVSVLDNTHVNPDKLTVEEEALLSGEVCLRRKVIL

L

## A

## A

$$
1
$$



## 

 ACGRFRVRLLRQAWGTPFYSEAQLLRMRRGEVALVREVEL
 F S QEFRVVRVLRQGLARPDVSERRCLGVGPGRWVLVREVIL
 $L T G A F S V V T$ L H QA WEP L RADE CA AL GVVAP GS Q G WV R E V Y L

 HCQVLDSV SVLLDNTHVDSSAMLADEIAALIGDGVCLVRKVVL HSAAFRVQRLHQRTALLCLADEARADGMARPGRVWEREVLL





## $\stackrel{R}{\mathrm{~L}}$



RCNDFKVQLVSQRQELATPANSKTFNVKVLS| $R$ | $Q$ | $L$ | $F$ | $S$ | $V$ | $K$ | $L$ | $S$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $H$ | $V$ | $F$ | $N$ | $L$ | $S$ | $Q$ |  |  |  |
| $H$ | $N$ | $E$ | $F$ | $F$ | $V$ | $R$ | $V$ |  |  |

UniRef90 W6LYH5 UniRef90-S6GHA9 UniRef90-K6ZUF 1
UniRef90 ${ }^{-17 V M M A 1}$ UniRef90-A0A010PKS8 UniRef90 W9UR43 UniRef 90 - B8CVII UniRef90-N6X5G9 UniRef90-S7HWTO UniRef90-UPIO002DB0170 UniRef90-UPIO002F48343 UniRef90-131E50 UniRef90-Q1YV46 UniRef90-C1DK46 UniRef90-UPI00047585EC UniRef90-UPIo0035FFAD5 UniRef90-F3KFL1 UniRef90-S61007 UniRef90_W9A310 UniRef90-A3QJG1 UniRef90_UPIOOO4779789 UniRef90-UPIOOO3B6FC0C UniRef90_Q87U40 UniRef90-F7YPR8
UniRet90

- 1 KP44 UniRef90-B1KP44 UniRef90-UPIO003755161 UniRet90-A1T086 UniRef90-C9Q2U8 UniRef90-Q5E206 UniRef90-UPIO00395D479 UniRef90-U2ZN39
UniRef90 G2GWA4 UniRef90-17AH73 UniRef90-Q2PYLO UniRef90-A4BEZ5 UniRef90-UPIOOO2559950 UniRef90_F5Z5Y9 UniRef90-L9PGP4 UniRef90_UPIO00362E38D UniRef90_UPIOO046EA198 UniRef90-UPIIOOO4682F70 UniRef90-Z5XRQ6 UniRef90-D9SD51 UniRef90-D4ZF66 UniRef90-G2DE16
UniRet90-U1JEKO
UniRef90-S6IRX3 UniRef90 UPIOOO4644D39 UniRef90-UPIOOO37CD125
UniRef90-UPIOOO361BF7E UniRef90-14JPP5 UniRef90-Q2BYD5 UniRef90-F3LGTO UniRef90_W7DZX6 UniRet90 Qo UniRef90-UPIO0047C8C87 UniRef90-B6ENU3 UniRef90-UPIO0047827AC UniRef90-UPIOOO471906A UniRef90-B3PG97 UniRef90-U4K359 UniRef90_O7MQ88 UniRef90-A1U6P4 UniRef90_UPIOOO3702382 UniRef90_DOI493 UniRef90_S6HTD4
UniRet90_UPIOOO2F38884 UniRef90-UPIO00394437E UniRet90_UPIO0034DF53B UniRef90-Q2ZOB6 UniRef90-UPIOOO255B493 UniRef90_Q12T34 UniRef90_-231HW4 UniRef90-Q82TP3 UniRef90-V6JC22 UniRef90-12JF97
UniRef90 A1AX15
UniRef90-Wov254
UniRef90-HoJB90 UniRef90-A3YDE7 UniRef90-UPIOOO35C901B UniRef90-14N7D7 UniRef90-UPIOOO2F4A72F UniRef90_Q2Y5S2 UniRef90-UP100036A6C7E UniRef90-Q15ZU0 UniRef90- F3BLG2 UniRef90-UPIO0041E6033 UniRef90-UPIO0037E5C73 UniRef90-J317Y3 UniRef90-K6UHX1


LCDDQPWVFARTLI PARTRRGRGCRLLTRLLGTRPLGEVLIFT KGNDQTYVFARTVIPASTLTGREKQLSMLGNRSLGTVLFS YGDGKPWVFARSVLPEHLCKTTW LTATGNPLGQRIFN KGDDEPWVLGRTLIPRDTLEDHQHDLSQQGDVPLGLTVFS CGNHQPWVFARSIIPQAFVDS ELSDLGREPLGKRLFN LGHQQPWVYARSVVPVATLKQCHQRLNRLGSRSLGTMLFT ILDGIDPWIFARTLIPGRLLEKKQQEFLGLGVRPLGELLYS LGDEVPWVLGSTASPRSSLQDQPHDFTQQGEDPLGATVFA CGHDQPWVFARSVAARAQLEESGLDLLERGENPLGLTVFS CGRNQPWVFARSVLPLYSLSGKLRHLRKQHNRPLGAFLFS 1 GRGVPWVFARSVIPLQTLTGRLRKLRRLDSRPLGALLFS LGAERPWVFARSVAAREALAGFSGVLAELGRRPLGELLFS LCNDVPVVFAHSVLPSAGLRGGWNGITRLGSRSLGEALFS I CHGKPWVYARSIVPHSTLTGSAKRLAHLGSKPLGAFLE
 RGHGEAWVFARSVAARTALENGGLNIDELGSRSLGELLFC CLDGITPWVFARTLVPGAMMDSAQDNFLSLGTSPLGERLFT

YCDNRP
 $\stackrel{R}{\mathrm{R}} \mathrm{C}$

## 

## $\stackrel{L}{L}$

4
CGNALPWVFARSVIPKRLVEA
D DTPVVFAHTVVPMSATATDWP
$\square G Y G Q P V V F A R S V I P K N T D T D$
NI LAA G G K KPLGEILAGN
YCGDVAVALAGGWRQLPNLGNRSLGSTLFA YCGDTPVVFAHSVVARKDLRGAWRGLSGLGSRSLGTVLFT
 CLDDVAWI FARTLIPANLLDKKETEFLTLGARPLGELLFS LCDEVPWVFARTLIPASTLRGAARRLTLLGDKPLGAVLFS $L C D D K P M V Y A Q S W L P D N K R Q N K S H N L L N M G N R P L G D V L F Q$
RGHDEKWVFARSVAARSALQEGGLNMDELGGRSLGELLE MGKGESWVFARSLLPLSSLKGLRQLRQLNTRPLGGFLFR LCHGQPWVFARSVIPASSLRGQLRRLRKFDNSSLGAMLFS LGGGQPVVFAHSVLPRSSLRGSWNGLGKLGNKPLGAALFA NGDGRPWVFARSVAARAALERSGMDLQSLGSRSLGELLFS YGNNTPWVYARTVVPGSTLQGPGRRLHYLGDKPLGEQLFT
 RGDAVDWIYGRTLIPQSSLQDQPHDLTKQGHVPLGGTVFS
RCDGAPVVFAHTVVPMSATAADWPLFNALGERSLGTTLFY YGDGHPWLAGRTILPEDTLSGPEKSLMSLGESPLGRYLFS QGRGEDWVFARSVLPLQSLTGRLRHLRHQGSKPLGAFLFS SGDQTPWVLGRTLIPETTLADQPYDLATLGDIPLGLTVFS
SGDNTPWVFARSVAARHALEQSGLDLPHLGSRSLGELLFS RCDNTPVVFGHTVVPMSATASDWPLFSALGERSLGTTLFG
 LCDNKPVVYAQSWLPASVNAANNKLHNMGERPLGDVIFQ RCNETPVVFAHSVVRKEHLRGAWRGLSRLGNQSLGTMLFT RGHGEPWVFARSVASRAALERGGLDLESLGSRSLGELLFC CCRNEPWVFARSVMPATSLVGRLARLRHLDNRPLGHLLFT LGDNQVVVFARSIJP ITNDTKNLLKIGSKPLGEALFN RCDNKPVVFAHTVVPMQATATDWPLFSALGERSLGTTLFG RGAGEAWVFARSVAAREALDAADFDLAALGERPLGHWLFQ KVDGQAIIYARSIIPARSLKGHWRYLPKLGNQPLGGYLYR LGSERPVVNARSLIP RGHGTPWVFARSVAGRQALEADGLALEALGSRSLGELLFT RGDRHDWVYGRTLIPQSSLQSHSHDFENQGEDPLGVTVFS YCGETPVVFAHSVVARKHLRGAWRSLDGLGNKSLGTVLFT YCDDTAVIFAQTEI PFSTLSEEQGKLAQUGEQSLGKFLFQ HGDNQPWVFARSGPQALCEA DFLELGDKPLGHLIFN LCDNKPVVYAQSWLPKNDSLNP KNGHNMGERPLGDVIFQ FGSGQPVVFARSVLPESSLSGENKVLLELGEKPLGEYIGQ AGFGRPWVYARSVINHCDPEDNDSALLQLGNVPLGSLLFG


## UniRef90 W6LYH5

 UniRef90－S6GHA9 UniRef90－K6ZUF 1UniRef90
B7VMMA1 UniRef90－A0A010PKS8 UniRef90－W9UR43 UniRef 90 －B8CVII UniRef90－N6X5G9 UniRef90－S7HWTO UniRef90－UPIO002DB0170 UniRef90－UPIO002F48343 UniRef90－131E50 UniRef90－Q1YV46 UniRef90－C1DK46 UniRee90－UPI00047585EC UniRef90－UPIo0035FFAD5 UniRef90－F3KFL1 UniRef90－S61007 UniRef90＿W9A310 UniRef90＿A3QJG1 UniRef90＿UPIOO04779789 UniRef90－UP10003B6FC0C UniRef90＿Q87U40 UniRef90－F7YPR8 8

## UniRef90－B1KP44

UniRef90_UP10003755161
UniRet90-A1T086
UniRef90-C9Q2U8
UniRef90-Q5E206
UniRef90-UPI000395D479
UniRef90_U2ZN39
UniRef90_G2GWA4
UniRef90-I7AH73
UniRef90-Q2PYLO
UniRef90-A4BEZ5
UniRef90-UPIOOO2559950
UniRef90-F5Z5Y9
UniRef90-L9PGP4
UniRef90-UPIO00362E38D
UniRef90-UPIO0046EA198
UniRef90_UPIO004682F70
UniRef90-Z5XRQ6
UniRef90-D9SD51
UniRef90-D4ZF66
UniRef90-G2DE16
UniRef90-U1JEKO
UniRef90-S6IRX3
UniRef9OOPIOOO4644D39
UniRef90OUPIOOO37CD125
UniRef9-UPIOOO361BF7E
UniRef90-UPIO003
UniRef90 14 PPP5
UniRef90_Q2BYD5
UniRef90-F3LGT0
UniRef90-W7DZX6
UniRef90-Q0HP10
UniRef90-UPI00047C8C87
UniRef90-B6ENU3
UniRef90-UPI00047827AC
UniRef90-UPIOOO471906A
UniRef90-B3PG97
UniRef90-U4K359
UniRef90-Q7MQ88
UniReffo-A1U6P4
UniRef90-UPIOOO3702382
UniRef90-DO1493
UniRef90-S6HTD4
UniRef90_UPI0002F38884
UniRef90-UPIO00394437E
UniRef90-UPI00034DF53B
UniRef90-Q2ZOB6
UniRef90_UPIOOO255B493
UniRef90_Q12T34
UniRef90-_231HW4
UniRef90-Q82TP3
UniRef90-V6JC22
UniRef90_12JF97
UniRef90-A1AX15
Uniinefon_WOV254
UniRef90-HOJB90
UniRef90 A3YDE7
UniRef90-UPIOOO35C901B
UniRef90-14N7D7
UniRef90_UPIOOO2F4A72F
UniRef90-Q2Y5S2
UniRef90-UP100036A6C7E
UniRef90-Q15ZU0
UniRef90-F3BLG2
UniRef90-UPIOOO41E6033
UniRef90_UPIOO037E5C73
UniRef90-J317Y3
UniRef90_K6UHX1
UniRef90_U1LI84



5C901B


DPGIVRRGP ${ }^{130}$
140
150
160
PI A R P D AII WGRRSMFWIAKRPLLVCEIIFLPD D P S M R R G K L Q I S R GE QVWARRS LIF Y L S GK P L L V C E V F MP

 DT R FTRRS E F Q L C D
 DPA $\square A R S P$ L T CARGHDLWGRRS LFFRLHGRALDVSEFFLPA






D QAFQRRADEVCQADALWGRRSRFDRGTLSVLVAE I I F L P DKNSRRDALEVAQQQPRWARRSRDWDNDKPMLVAELLFLS Q DPSMLLRGQDEVTEDHSLWARR







 H P NMVR GALEVVTCQQQHWARRSVVFYLDSKGILVVTEVGMP

## D <br> D



，

## 



 VARGELEFARDAVLYARRCLYRRHRGVLLVAEVFLPA RPDLSRFIVPGYSGSLRGRYSLLRLSGKPLILTEMFLPH AENVHRDGLELGWAGELMARRSTLWMNHKPMLVAELFLPD AEQVERDALQVAWQGRLLARRSRLWMNHKPMLVAELFLPD EPGIRRGDI QFNRLQRAWGRRSTFWLRDKPLLVAETFLSS QANARRDAIEVAEGQPLLARRSRLWVNEKPMLVSELFLPH DQSMRRGKFQISKGESVWARRSVFYLSGKPLLVCEVFLP
 DRKVRRGPLEFARERILYARRCLYQRRQGLLLVTEVFLP NPRURRQA AYRKLRPLWARRSVFCLAGHPLLVTEVFLPS

##  <br> －

## 

のロマロ


## noz

$\stackrel{\circ}{\circ}$

| UniRef90_W6LYH5 | LP V |
| :---: | :---: |
| UniRef90-S6GHA9 |  |
| UniRef90-K6ZUF1 | C P S Y |
| UniRef90-B7VMA1 | SPDY |
| UniRef90_A0A010PKS8 | S PA Y |
| UniRef90-W9UR43 |  |
| UniRef90-B8CVI0 | A |
| UniRef90-N6X5G9 |  |
| UniRef90-S7HWT0 | S P Tr |
| UniRef90_UPI0002DB0170 | S PVY |
| UniRef90-UPI0002F48343 |  |
| UniRef90-I3IE50 |  |
| UniRef90-Q1YV46 |  |
| UniRef90_C1DK46 |  |
| UniRef90-UPI00047585EC |  |
| UniRef90-UPI00035FFAD5 |  |
| UniRef90-F3KFL1 |  |
| UniRef90 S6IQ07 |  |
| UniRef90-W9A310 | S P V Y |
| UniRef90-A3QJG1 |  |
| UniRef90-UPI0004779789 | S FA Y |
| UniRef90-UPI0003B6FC0C | S G $\square \mathrm{Y}$ |
| UniRef90_Q87U40 |  |
| UniRef90-F7YPR8 | S P $\square \mathrm{Y}$ |
| UniRef90-B1KP44 |  |
| UniRef90-UPI0003755161 |  |
| UniRef90-A1T086 | S GTY |
| UniRef90-C9Q2U8 | S P |
| UniRef90-Q5E206 | API Y |
| UniRef90_UPI000395D479 | SPLY |
| UniRef90-U2ZN39 | CPI Y |
| UniRef90-G2GWA4 | SPVY |
| UniRef90-17AH73 |  |
| UniRef90_Q2PYL0 |  |
| UniRef90-A4BEZ5 | LVD Y |
| UniRef90-UPIOOO2559950 |  |
| UniRef90-F5Z5Y9 | A P V Y |
| UniRef90_L9PGP4 |  |
| UniRef90-UPI000362E38D | LY A |
| UniRef90-UPI00046EA198 |  |
| UniRef90-UPI0004682F70 |  |
| UniRef90-Z5XRQ6 | A Y $\square$ Y |
| UniRef90-D9SD51 |  |
| UniRef90-D4ZF66 |  |
| UniRef90-G2DE16 |  |
| UniRef90_U1JEK0 | A Y L Y |
| UniRef90-S6IRX3 |  |
| UniRef90-UPI0004644D39 | F |
| UniRef90-UPI00037CD125 | F |
| UniRef90-UPI000361BF7E |  |
| UniRef90-14JPP5 |  |
| UniRef90-Q2BYD5 | S P V Y |
| UniRef90-F3LGT0 |  |
| UniRef90-W7DZX6 | F |
| UniRef90-Q0HP10 |  |
| UniRef90-UPI00047C8C87 | A P A Y |
| UniRef90-B6ENU3 | A S $\square \mathrm{Y}$ |
| UniRef90-UPI00047827AC |  |
| UniRef90-UPI000471906A | S P P Y |
| UniRef90-B3PG97 |  |
| UniRef90-U4K359 | A P $\quad 1 \mathrm{Y}$ |
| UniRef90-Q7MQ88 | A P $\downarrow$ Y |
| UniRef90-A1U6P4 |  |
| UniRef90-UPI0003702382 |  |
| UniRef90-D01493 | A P V $\mathrm{Y}^{\text {r }}$ |
| UniRef90-S6HTD4 |  |
| UniRef90-UPI0002F38884 |  |
| UniRef90-UPI000394437E | A P V Y |
| UniRef90_UPI00034DF53B |  |
| UniRef90-Q2Z0B6 |  |
| UniRef90 UPI000255B493 | F |
| UniRef90-Q12T34 |  |
| UniRef90-Q3IHW4 | A Y L Y |
| UniRef90-Q82TP3 |  |
| UniRef90-V6JC22 |  |
| UniRef90-I2JF97 | F C P W |
| UniRef90-A1AXI5 |  |
| UniRef90-W0V254 |  |
| UniRef90-H0JB90 | F |
| UniRef90-A3YDE7 |  |
| UniRef90-UPI00035C901B | LY A |
| UniRef90-14N7D7 |  |
| UniRef90_UPI0002F4A72F | S PVY |
| UniRef90-Q2Y5S2 |  |
| UniRef90-UPI00036A6C7E | $S \mathrm{G} \square \mathrm{Y}$ |
| UniRef90-Q15ZU0 | A PAY |
| UniRef90-F3BLG2 | A Y L Y |
| UniRef90-UPI00041E6033 | A Y L Y |
| UniRef90-UPI00037E5C73 |  |
| UniRef90-J317Y3 |  |
| UniRef90-K6UHX1 |  |
| UniRef90_U1LI84 | $A Y \square Y$ |


UniRef90 D7DK92 UniRef90 UPIO003B5A95E UniRef90-W5YHR5 UniRef90-K2JDM9 UniRef90_W6MDMO UniRef90-W1 YV87
UniRef90 N2JE01 UniRef90-N2JEO1
UniRef90_LOW8X9 UniRef90-UPIO0037825AB UniRef90-UPIOOO47COD12 UniRef90-Q9FD32 UniRef90_UPIooo36A806A UniRef90-R7UAX6 UniRef90-N8WVK5 UniRef90-A1SBR9 UniRef90-UPIO002E8F7E8 UniRef90-K8VZZ4 UniRef90_UPIOOO37036D8 UniRef90-E4PRL9 UniRef90-A5CVT2 UniRef90-B8KLH7 UniRef90 ${ }^{-}$F2PBK1 UniRef90-UP100037B2B03 UniRef90-M5GXDO
UniRef90- U5T1N5 UniRef90-UST1N5 UniRef90_UPIO0046492E9 UniRef90-UP100035E4ADO UniRef90_S6A9M2 UniRef90-A0A052JET7 UniRef90-UPIOOO3B4FC52
UniRefgo-UniRef90-HOPWL7 UniRef90-R4VL95 UniRef90-K9DIG7 UniRef90-UP100047COE3A UniRef90-UP1000379E03D UniRef90_UPIO00469FA92 UniRef90_U7GAL6 UniRef90-K6XMN8 UniRef90_UTFWE2 UniRef90-V2TGB3 UniRef90-Q5QUP2 UniRef90-UPI0002E1F596 UniRef90-R8B4H5 UniRef90_Q3SLJ3 UniRef90-CON6Q0 UniRef90-UPI00035D828E UniRef90-UPI00035E70DD UniRef90-UPIOOO37BA4AC UniRef90-N9BSB3 UniRef90-F5RHM4 UniRef90-UPI00047C7E91 UniRef90-A4C7C2 UniRef90-C6WYX3 UniRef90-N6YVHO UniRef90-UPIO003B2F6D7 UniRef90 N9FQU5
UniRef90 F 4 HES UniRef90 F4HES1 UniRef90-M1FAT7 UniRef90-M7D2K6 UniRef90-A ${ }^{\text {¢ }}$ T2A8 UniRef90-UPIO00360BB8A UniRef90-V2UT45 UniRef90-G7FS46 UniRef90-WODGV2 UniRef90-Q46×B3 UniReffo-N9BBB3 UniRef90-O114M5 UniRef90-FNT2D
UniRet90-F5T2H8 UniRef90-UPIO00477D132 UniRef90-WOQDP5 UniRef90-N9PW51 UniRef90-S9ZUK8 UniRef90-M7NY09 UniRef90-R8ASR4 UniRef90-G8QJF2
UniRef90 A3WJ43 UniRef90-F2K0Z1 UniRef90-M4U1G3 UniRef90-UPIO00473DCC1 UniRef90-H5TCW1 UniRef90-UPIOOOOEOFF1F UniRef90-N9A634 UniRef90-M4XJV9 UniRef90-UP100046FEBAC UniRef90-N9DP15 UniRef90_-19BRP0 UniRef90-A0AO31LRX7 UniRef90_N8YNP2
UniRef90-A7BX56

50
60
70
80 HFSKFAVIKPISVKYaKLDQDEVALLHQPNYQTALTREVLL

 ACGTFRVRVLGQGWTRPSRDEAAALRLRGSVWAWTREVQL NAQTFSVKVLNEQTFTLSDAQQQLLGSNTNKGALNREVLL LGNRFAVDVITEGWQPLRADECKALDAPPETLGWVREVFLC
 LS DDLEVVPLREEVGVILPHEADVLGLQLGADGGVREVYL HCPTLQVLVLSEQTERPLLDETTALGLQPNDQAWVRCVLL HNNEFFVRVISHEWQEPSLQE KVFLNCEDQRASVREVLL LGGQFRVEPQQEHFQRQEFVDARWMQMPHQHTSWVRESYL HCSQFEVVVLGEAMLPGLPGEPQLPHT
$C C R T L V E V L G L D D V E G V L S D S E R D L L G D Q A C V R E V L L ~$
 QCNSFHVEVRREGFATPTQEEARRLRIPHRQHAWI REVSL
 HCRVFSVTVLEQK VNNGEDSLSERALLGMSDCLERTVML
 RAQVFSVKVLSEKFFDLTLEEKALLGCEASTALNREVLL HCMRLEVRVLREAWVTATQRGHERAQLPEGDGYWLREVQL FGGQLNVKVLRQVWERPRLSEARALKLKPGQMCLIREVVL
RCAAFSVRHVQQQHGVAMPSERHMVALKHHSRALL RDVFL LGQVRLRVVDEYAQGAAPDEAQAMR1PPGSAVWVREVLM
 LIG KVHLRVLREYAQGAPADEARGMGMAPASPVWVRELLM QYPDFSVKVLSQGWRKPNVDEQAVLRLPAATHAWVREVML CCNHFEVKLLGEAMLPSSTREWQG GLEHKALWI:REVVLL QCRLFNLTLIGQRQTEDT LEEEQRVCAPQQQEWQVREVLL YGGAFRVVPGFHAHAVPKADERQLLALPARQVALIVEVTV IGQQFSVKLLGQQLLAPNTEEKQRLK GKDQAVIREVLL ASATFRVKRLAQAPQRPFADEWQALGLDRPVPAITREVLL
 SCQHFSVALLESHWDRPLADEAILLRQPLTQLMFQREVHL

 RCRHFSVQPLRTGRAALAADEASLVGGGRARAVSREVLL NTNQFSVEVLSEKHMMLTESDALMCGLAV QNVLVREVLL TYVDFYVAPLTVADHKPNRDEAALLSGAADKVALVRNVLL ESGEFHVRLLRQYWGVPQLSERRLLGLGDRDWAMIREVLL旨AQQFHVEPGQEHFQRLSFANAKWMQMSHQHTSWVRESYL

 RCERFRIRRLVQQHALPLADEFEKVGLPDRRLVQEREVLL FYNSFSVQVLGERWLS
 KATSFSVKVLSEAFNLSHEEQQQLLGCKTSSALNREVLL
 HCQTFRLELVAEHWQRLPDY LQQQWQQAVGLKRDVIL VSQAVNVELLHYDWHTALPEESLFLQQPLRRLQLEREVLL AGGEFRVRLLRQGVAMPQPDEAQALGLALRHYAWLREVAL LGQQFHVERIKEHYQRMTLNDSQWMKMPLQHVAWVRETHL
RCSEFGVQLLGQKLGRALRDEAVLLGLRAGERVWVREVVL BSHHFSVQWLGSHWQKPLVEERRWLSLPAEQLAYQRQVRL RCDRFRVQCLRQCLAP GSEEAACLGLPAGTRVWMREVLL
 CAQTFEVRVKDQELTKPSIDDLSGYF GNEKKKLLIRNVFL
 LAHAFSVKPISERYRQMSRDDSQWMKMPAAHDAWVRESLL VATNFNVEVVQEKWDAKNSEKTTA CGAFSLEVTAEGWCRLRHDETQALRDPA ASGTFRVQLLSQQPMPPLADEWRRLGMRWQRPVVTRESVYL


## UniRef90 D7DK92

 UniRef90 D7DK92UniRef90- UPIOOO3B5A95E
UniRef90 W5YHR UniRef90-W5YHR5 UniRef90-W6MDM0 UniRef90-W1 YV87 UniRef90-N2JE01 UniRef90-LoW8X9 UniRef90 UPIOOO37825AB UniRef90-UPIOOO47COD12 UniRef90-Q9FD32 UniRef90-UPI00036A806A UniRef90-R7UAX6 UniRef90-N8WVK5 UniRef90-A1SBR9 UniRef90-UPIO002E8F7E8 UniRef90-K8VZZ4 UniRef90_UPIOOO37036D8 UniReffo-E4PRL9 UniRef90-A5CVT2 UniRef90-B8KLH7 UniRef90 ${ }^{-}$F2PBK1 UniRef90 UPIOOO37B2B03 UniRef90-M5GXDO
UniRef90- U5T1N5 UniRef90-U5T1N5 UniRef90-UPIIOOO46492E9 UniRef90-UP100035E4ADO UniRef90-S6A9M2 UniRef90-A0A052JET7 UniRef90-UPIOO03B4F4FC52 UniRef90-HOPWL7 UniRef90-R4VL95 UniRef90-K9DIG7 UniRef90-UP100047COE3A UniRef9O-UP1000379EO3D UniRef90_UPI000469FA92 UniRef90_U7GAL6 UniRef90-K6XMN8 UniRef90-UTFWE2 UniRef90-V2TGB3 UniRef90_O5QUP2
UniRet90 UPIO002E UniRef90 UPGOO2E1F596 UniRef90-R8B4H5
UniRef90-O3SLJ3 UniRef90-CON6Q0 UniRef90-UP100035D828E UniRef90-UPIO0035E70DD UniRef90-UPIOOO37BA4AC UniRef90-N9BSB3 UniRef90-F5RHM4 UniRef90-UPIO0047C7E91 UniRef90-A4C7C2 UniRef90-C6WYX3 UniRef90-N6YVHO UniRef90-UPIO003B2F6D7 UniRef90-N9FQU5
UniRef90 F4HES1 UniRef90-Q2L1H6 UniRef90-M1FAT7 UniRef90-M7D2K6 UniRef90-A6T2A8 UniRef90_UPIO00360BB8A UniRef90-V2UT45
UniRef90 G7FS46 UniRef90-WODGV2 UniRef90-Q46XB3 UniRefofo NogBl UniRef90-Q114M5
UniRef90-F7NZD7 UniRef90-F5T2H8 UniRef90-UPI000477D132 UniRef90-W0QDP5 UniRef90-N9PW51 UniRef90-S9ZUK8 UniRef90-M7NY09 UniRef90-R8ASR4
UniRef9-G8QJF2 UniRef90-A3WJ43 UniRef90-F2KOZ1 UniRef90_M4U1G3
UniRef90- UPIOOO473DCC1 UniRef90-H5TCW1 UniRef90O-UPIOOOOEOFF1F
UniRefgo-UPIOOO4714B41 UniRef90_N9A634 UniRef90-M4XJV9 UniRef90-UP100046FEBAC UniRef90_N9DP15 UniRef90_19BRPO UniRef90-A0A031LRX7 UniRef90_N8YNP2
UniRef90_A7BX56



90
100
110
MGDDQAVLIFAHSVIPRASपRGAWNRLLGRTGNKPLGATLIFA QCDGVAWVQARSVLPRASLVGSGRRLTRLGNRSLGALLFR CGDGQPWVLART1 PPGACLEGRGRRLRHLGNRPLGAYLFR CCDNQPWVFARSLPESTLGEEQLGLAQLGDNPLGEHLFR LCDNTPMVYAQSWLPSTQMQTTGGHNMGARPLGDVIFQ LGTQTRWVFARSVATREALEASGFELAQLGQRPLGALLFS YGDGAPWVEARSVLPETLITSAREANVGTQPLGVRLFN HADGEPLVLARTILPEPTIETAHRNLSHLGTRPLGEVIFAA QCANQNWVYARTVIPNLGPESPWSALQKLGNKPLGDLLFG FGSGQPIVFARSVLPESSTTGENEDLDELGEKPLGEYI FS YCEEQPWVKAKSUFPELSLQKRARDFQHIGSKP GWLLFQ SGDDVPWLCARTLVPMSTLTEQEQDVAELGAVPLGQRVFN HCHGQTWVYARTVI PDLRPGNPWYSLKQLGNQPLGEVLFN CGDNQPWVLARTVPLKCLEGEGRRLLHLGNRPLGAYLFT RLDDKAVVYARSVFPASTLDGPLLRLRRLHNKSLGAFLFS QGDQQSWVYARTLTPTSTLCGEESDLAELGTNPLGYRVFN LCDAKPMVYAQSWLPVSDAMQRQQ LLALGDRPLGDVIFQ LCDNDPMVYAQSWLPDNQLSNPKNPLHNMGDRPLGDVI FQ GRGDQPLVYARSVIPRSSLRGPLRRLRSLGRQPLGALLFG QGPSQPWVYARSVFPAVSLTGSDRHLRHLDNRPLGGYLFS YCGETPLVFAHSVLPATSLHGTWQGLGRLGSKPLGAALFA SDDGVDSVPARSLTPLLSASHGSWQGMRRLMTRPLADMLYH保 CGANQPLIYARSVIPATSLRGPDRRLRSLGRQPLGSLLFG ECDGAPVVFAHTVVPMDCDATDWPLFSALGERSLGTTLFY SVDGVDSVVARSLTPGAASHGTWQGMRRLSTRPLADMLYH CLDGTPWVFGRTLIPAKLLEQ QQRLGKLGTMPLGELLFG CGDGQPWVLARTVIPHQCFEGKGRQLRHLGNKPLGAFLFS WGDNQPWVFARSLIPQILCEN R DVNLNTKPLGKLIFN GCEDTPWVKAKSIFPULSLQKKARIFRHLGTKPIGFFLFQ YCNEKPWVFARSLFSPSAENANTLNLQQLGNQSLGESLFA ICDEVPAVFAHTIVDPGYARRDWPFLRGLGNRPLGGALFV
CGDGEPWVLARTVIPLATLAGSGRCLRHLGRKPLGAWLFS LDGQQPQIYARTVVPRNTYLAKSQRFDALGNQSLGEMLFN YGGQRPVVFAHSILPRKSLRGVWHGLGKLGNKPLGATLFA HADGKPLILARTI IPVRTLNAAKRSLSHLGNRPLGEVIFS
 RCDNTAAVFAHTVVPGSATASDWPLFGALGERSLGTTLFG MGNGQAQVYAQSWIPTDLLDND LSLAALGDRPLGEYLFQ CGGGAAVVFAHSVLPSNGLRGVWHGLGRLGNKPLGATLFA CCHQQPWVYARSILPLSSMTGHLRRLRGLDSRPLGHLLF YGSEQPWVKAKSUFP LSLDKKARDFQHIGTKP GWFLFA SGDGQEWLFARTFIPKRTFAFYSEEDFRLGEMSLGAWLFQ

## I


 Y G E E Q A WV K A K S I F P I L S L Q K K A R L F Q H I G N K P I G WF L F H

 T L D E R P F FV F A R S V F P I S A A A D R H N L L N L G E L G T Q S L G Q S L F N








UniRef90 D7DK92 UniRef90-UPIOOO3B5A95E
UniRef90-W5YHR5 UniRef90-W5YHR5
UniRef90 K2JDM9 UniRef90-W6MDMO UniRef90-W1 YV87 UniRef90-N2JE01 UniRef90-LoW8X9 UniRef90-UPIIOOO37825AB UniRef90-UPIOOO47COD12 UniRef90-Q9FD32 UniRef90_UPIO0036A806A UniRef90-R7UAX6 UniRef90-N8WVK5 UniRef90-A1SBR9
 UniRef90-UPI0002E8F7E8 UniRef90-K8VZZ4 UniRef90_UPIooo37036D8 UniRef90-E4PRL9 UniRef90-A5CVT2 UniRef90-B8KLH7 UniRef90 ${ }^{-}$F2PBK1 UniRef90-UPIOOO37B2B03 UniRef90-M5GXDO
UniRef90- U5T1N5 UniRef90-U5T1N5 UniRef90 UPIOOO46422E9 UniRef90 UPIOOO35E4ADO UniRef90-S6A9M2 UniRef90-A0A052JET7 UniRef90-UP10003B4FC52 UniRef90-HOPWL7
UniRef90-R4VL95
UniRef90-K9DIG7 UniRef90-UP100047COE3A UniRef90 UPIOOO379EO3D UniRef90_UPIO00469FA92 UniRef90_U7GAL6 UniRef90-K6XMN8 UniRef90-UTFWE2 UniRef90-V2TGB3 UniRef90-Q5QUP2 UniRef90_UP10002E1F596 UniRef90-R8B4H5 UniRef90_Q3SLJ3 UniRef90-CON6QO UniRef90-UP100035D828E UniRef90-UP100035E70DD UniRef90-UP100037BA4AC UniRef90_N9BSB3
UniRef90 F5RHM4 UniRef90-UPI00047C7E91 UniRef90-A4C7C2 UniRef90-C6WYX3 UniRef90-N6YVHO UniRef90-UP10003B2F6D7 UniRef90 N9FQU5
UniRef90 F 4 HES UniRef90-Q2L1H6 UniRef90-M1FAT7 UniRef90-M7D2K6
UniRef90 A6T2A8 UniRef90-UPI000360BB8A UniRef90-V2UT45 UniRef90-G7FS46 UniRef90-WODGV2 UniRef90 O46XB3 UniRefolo NobBl3 UniRef90-F7NZD7 UniRef90-F5T2H8 UniRef90-UPIO00477D132 UniRef90_WoQDP5 UniRef90-N9PW51 UniRef90-S9ZUK8 UniRef90-M7NY09 UniRef90-G8QJF2 UniRef90-A3WJ43 UniRef90-F2KOZ1 UniRef90_M4U1G3
UniRef90-UPI000473DCC1 UniRef90-H5TCW1 UniRef90-UPIOOOOEOFF1F
UniRefgo-UPIOOO4714B41 UniRer90- UPloo04714B41 UniRef90-M4XJV9 UniRef90-UP100046FEBAC UniRef90-N9DP15 UniRef90_19BRPO UniRef90-A0A031LRX7 UniRef90-N8YNP2
UniRef90 A7BX56
 NPRLQRGDIAIAHGGTVWARRSALHLHGHPVLVAEAFLPA NPRLQRGDAAAHGGTVWARRSALHLHGHPVLVAEAFLPA QPDWTRSDI EVGRHHALFGRRSMFSAAGQQCLVAEMFLSP HPELTRSNI EVGRTHPLLGRRSVFSLNDYHFLVCEVFLPG DNAFNRGPLEATRQEPLWARRSVFRRDGLGVLVAEVFLPA RPAALRDQVWARYEAPCWGRQSRFIKRGHPLLVAEYFLPA
DDRFIUSNFELCQQTMLWGRRSRFHMGNDYIVVAEDFLPD YPDLERRQRQFSRDEALWGRRTVYADHRQPLLVAEFFLPA
DGSFQRSEDEVCRYHPLWARRSVFKREKMHVLVQEMFLPA LDPSQRTPFEFTRQAKGYARRSIFTQKEAPLLLTEVFLP QPGLHRGPDEVVDTQACWARRSLFYLREKPGSVCEVFLPS
 qanarrdal EvahgovLlarrsrluwbidkpmlvselflph HDNLTRDYDHI GQQEQRWLRRSRLRLSNNPLLLTELFLPE
 DDNDKRGQLQTTHTHGTWGRRSIFTIGSTQVLVSEFFIKD RPDMRRSPFQVAQHNEAWARRSCFAVAAKPILVSEVFLED GSNARRDALEIAKERPIWARRSRLWINEKPLLVAELFLDG

 D




 GPDWSRGPLETGLCQPRLARRSLFHHGNNALVVVEYLLP



 E P SLLKRGPLQVARPQYLWARRSCFYVGNKNMLVNEVVGLPS N P R V K R T T L S Y T K P A S L WARR S VF S L N CA T I M V T E VV F D HRVVVRSPLAARRDRPLWARRSLGMRHGRPLLVVEEVFLPA
 D A RDARSPLAVVRRSGPLWARRSLFMRHGRPLLV TEVVFLPA D P L V R R S V L E FARE GHPLA QRARAALGGESLLV TEEV F L P S



 HR QWHR GP L ET G L G Q P R L A R R S L F H T R Q H S


 DPTMTRGEVVEVRRLTLWWGRSVFTLQRQPLLVSEFFLP
 HVSLERGVIEVAE QNELWARRSVFSVQQQPL LVQEVIL PG













UniRef90 D7DK92
UniRef90-UPI0003B5A95E
UniRef90-W5YHR5
UniRef90-K2JDM9 UniRef90_W6MDM0 UniRef90-W1YV87 UniRef90-N2JE01 UniRef90_LOW8X9 UniRef90 UPI00037825AB
UniRef90_UPIO0047COD12
UniRef90 Q9FD32
UniRef90 UPI00036A806A
UniRef90-R7UAX6
UniRef90-N8WVK5
UniRef90 A1SBR9
UniRef90-UPI0002E8F7E8
UniRef90_K8VZZ4
UniRef90-UPI00037036D8
UniRef90 E4PRL9
UniRef90-A5CVT2
UniRef90 B8KLH7
UniRef90-F2PBK
UniRef90 UPI00037B2B03
UniRef90-M5GXD0
UniRef90-U5T1N5
UniRef90_UPI00046492E9 UniRef90_UPI00035E4AD0
UniRef90-S6A9M2
UniRef90-A0A052JET7
UniRef90 UPI0003B4FC52
UniRef90-HOPWL7
UniRef90-R4VL95
UniRef90 K9DIG7
UniRef90-UPI00047C0E3A
UniRef90_UPI000379E03D
UniRef90-UPI000469FA92
UniRef90-U7GAL6
UniRef90-K6XMN8
UniRef90-U7FWE2
UniRef90 ${ }^{-}$V2TGB3
UniRef90 ${ }^{-}$Q5QUP2
UniRef90_UPIO002E1F596
UniRef90-R8B4H5
UniRef90 Q3SLJ3
UniRef90_CON6Q0
UniRef90_UPI00035D828E
UniRef90 UPI00035E70DD UniRef90-UPI00037BA4AC UniRef90_N9BSB3
UniRef90-F5RHM4
UniRef90 UPI00047C7E91
UniRef90-A4C7C2
UniRef90_C6WYX3
UniRef90-UPI0003B2F6D7
UniRef90-N9FQU5
UniRef90-F4HES1
UniRef90 Q2L1H6
UniRef90_M1FAT7
UniRef90-M7D2K6
UniRef90-A6T2A8
UniRef90_UPI000360BB8A
UniRef90_V2UT45
UniRef90-G7FS46
UniRef90-WODGV2
UniRef90_Q46XB3
UniRef90-N9BBI3
UniRef90_Q114M
UniRef90-F5T2H8
UniRef90-UPI000477D132
UniRef90 W0QDP5
UniRef90-N9PW51
UniRef90-S9ZUK8
UniRef90-M7NY09
UniRef90 R8ASR4
UniRef90_G8QJF2
UniRef90-A3WJ43
UniRef90_F2KOZ1
UniRef90-M4U1G3
UniRef90-UPIO00473DCC1
UniRef90-H5TCW1
UniRef90 UPIO000E0FF1F UniRef90_UPIO004714B41
UniRef90_N9A634
UniRef90-M4XJV9
UniRef90-UPI00046FEBAC
UniRef90_N9DP15
UniRef90-19BRP0
UniRef90 A0A031LRX7
UniRef90-N8YNP2
UniRef90_A7BX56


A P A Y

FEHF
AMDY
A P I Y
APAY

S
F P R W
$S P V Y$
A Y L Y
A Y L Y
A P $\square \mathrm{Y}$
F
F

F
C
SPAY
F
$S P L Y$
F
F

A
F

S V L Y

F Q P W
$\stackrel{F}{\mathrm{~F}}$
$\stackrel{F}{\mathrm{~F}}$
$S P L Y$
F Y $\square Y$
F E Q F

F P
F E Q F

A P V Y
$\mathrm{V} P \square \mathrm{Y}$
$S G \square Y$
SPCY
APAY
F
F EA Y
F P
F E QY
$\stackrel{F}{F}$ E QF

UniRef90_GoAl35
UniRef90-U1L8S7 UniRef90-S3NAY8 UniRef90_N8ZNR6 UniRef90_B0UUX4 UniRef90_Q142T1 UniRef90_N6YBE1 UniRef90 Q31DN1 UniRef90_Q1GXB4 UniRef90_A6W3L4 UniRef90-N8UIN9 UniRef90-B7S254 UniRef90_UPI0002B9659E UniRef90-UPI0003657D85 UniRef90- J2IHN6 UniRef90_I9DRX0 UniRef90-F7S0G2 UniRef90-Q609A0 UniRef90-W7PZA1 UniRef90-WOTRZ3 UniRef90-Q5P5L9 UniRef90-B2JE81 UniRef90_UPI00047CFD98 UniRef90-UPIO0046524A6 UniRef90_UPI000381E09B UniRef90-11XN40 UniRef90-HOFOS7 UniRef90-S6EQP2 UniRef90 UPI0004757B06 UniRef90-J3IJY9 UniRef90-K2AW49 UniRef90_UPIO00368588E UniRef90-A0A011MK58 UniRef90-X7EA49 UniRef90-Q0A5V8 UniRef90 K2HJT7 UniRef90-K1BTH3 UniRef90-U7NT67 UniRef90_UPI00045E70D5 UniRef90_Q7WJH0 UniRef90_L9UDR1 UniRef90 C6APL5 UniRef90_A6F403 UniRef90-J3D215 UniRef90_G3IR36 UniRef90_X2JWI5 UniRef90-I1YHS9 UniRef90-D8IX48 UniRef90 UPI0003B65EE1 UniRef90-A4G8N6 UniRef90_UPI00034A49AA UniRef90-G8M6M8 UniRef90_UPI0002E778E3 UniRef90_D5W599 UniRef90_W2UHZ4 UniRef90 UPI000474CFBC UniRef90-A0A031MDW4 UniRef90-UPI00036DE6C7 UniRef90-G0A0Q7 UniRef90_M4R8F6 UniRef90-F6CV75 UniRef90-I1DSX9 UniRef90_UPI000470EE54 UniRef90 A0A024PW18 UniRef90_UPI00036032E7 UniRef90_Q83F94 UniRef90_UPI00047C1883 UniRef90-W1N609 UniRef90-G4SVX7 UniRef90 K0CJL6 UniRef90-A0A011MUQ9 UniRef90_V5BJG8 UniRef90_Q47AZ9 UniRef90 C8PVP9 UniRef90_I3CNC2 UniRef90-B0BT15 UniRef90-UPIO00379340E UniRef90_YOKDE6 UniRef90-F1WJQ9 UniRef90_Q3JUM4 UniRef90-UPIO0036697B8 UniRef90_UPI0004767EAA UniRef90_UPI00037505D4 UniRef90 ${ }^{-}$UPI000366EAAE UniRef90-S9RX96 UniRef90-Q1QSG3 UniRef90-F4GRG1 UniRef90-A0A011QQB4 UniRef90_UPI00035D5EBB

MRNLRPNRTREQQ

WRP LAAAAQPFMSPDWWAWVASRDSLTNRLDA HSRQASLVPANVYAWLRDPASLTRRITN WRVAPLPGFSPDQKDWLTRGGSLTAHLRT
RRFNPSLSHDPAEDRPWLVANGSLTRQLTQ





WS SRPLAQLS GAEQHWLFLPGALTPRLKA
WQKYRESLNVPAYLHPWILHEGSFMKHLKQ WHWGQLPPASPVLQSWLHEPGSLTRRLRQ WQTNTEALSPSQQQWLLHRGSLTQKLCE NPSATQQFDYSWVPAHRKVPKNLWPWLTSDASMTAKLQG YPSP【LPAQCHWQP LRQPLPPVIGDWIADSGSLTRRLRQ

HPS APPRWRPLAAAYPAMSPAWRRWVGARDSLTLRLTE STQSLLLTTREPTWRENRPTLPESVASWTYES GSLTRRLRGG $\square P L A R G W L P A A P S T L D P D R K Y W L F R P G A L T A G L R Q$ R WRP I D A A R P AMS A SWWQ WV A S T D S L T A RL MV $P R W D D W T R L R P G L R P E V A A W L R D P G S L T R A V V Q$
F P RLQ WHE E QLQT T Q I P LTVVQS WL F EK G S LTARL K Q A T P AT D WYRSFS A A ALLNPTI H GPL S H WL T LE G S L T R A L Q L

RWF DHPN AVVA L L R Q WL S D P G S M T F K L R E
D S $\square$ F A Q L H W L E D A P Q A K Q L P R S V H C W L F D K Q S L TV K K K
A EPAWFP $\quad$ R RAVS QA QWFSHVNGVSPS QRHWLTDTMSLTKKLDA WRVAPMP GFTSHQRDWWTRGGSSLTAHLRT $W R V V P L P T L S A A Q K D W L T R G G S L L A H L R T$ WRVAP LPT T F S A A Q K D WLL T R G G S L T A K L K S FWSNRP LP LLSACEAHWDMHPGSLTQRLVD
 TYRSLPPVSALGWRPAPPSLPVGHKTWWLRRPGAMTAGLRA
 A LIS L LD QP WQ D A R S L T L $W L S D P G S L T E Q L L Q$ A A H L R RGA WHA HLDPA DGANDRR WV C GEGSL TARRLVA

K QLGWAPQNEIPSANERSWLTHPGSLTQRLRK RAPDWFHPSSRRSRDPDGLHSWLFETGSLTRRVRD


 A A HKQQ IP P KL DP WLT STGSLTAAKFEA A VRKARWMAHPQALAGGLAATWSWLADPGSMT LK LRK $\square A Q N H W C S E Q E P L S K A Q Q E W L L H Q G S L T Q K L Q Q$
M N Q R Q R W L H K P F A CRRD HA W L L P P K L L A D F V F T Q G S L T A R L E A WRETPRPGASSAQKDWLTRGGSLTAHLAR F Q S L LF S REPGWRENRPGLPENVASWIYEAGSLTRRLRS LAAARGAWRATPRPSFTFDQKDWLTRGGSLTAHLRM WRPA A A WRPAMS PAWWR WV A ST DS L T A R L VD THLA QNSWRSEVPS FSEVEKY WLTRPGALTSGLRQ PRS LLWRSALLPPAVVDRHWALWAVVGANSLTARLRA
 $P T P R S T W T P F P R A G L G R V Q K H W L F R P G A L T A G L R Q$



UniRef90_K1BTH3
UniRef90_U7NT67
UniRef90_UPI00045E70D5 UniRef90_Q7WJH0 UniRef90-L9UDR1
UniRef90- S6CEN5 UniRef90_C6APL5 UniRef90_A6F403
UniRef90-J3D215
UniRef90_G3IR36
UniRef90_X2JWI5
UniRef90 11 YHS
UniRef90_D8IX48
UniRef90_UPI0003B65EE1 UniRef90_A4G8N6
UniRef90_UPI00034A49AA UniRef90_G8M6M8 UniRef90_UPI0002E778E3 UniRef90-D5W599 UniRef90-W2UHZ4 UniRef90_UPI000474CFBC UniRef90_A0A031MDW4 UniRef90_UPI00036DE6C7 UniRef90_G0A0Q7 UniRef90_M4R8F6 UniRef90_F6CV75 UniRef90_I1DSX9 UniRef90_UPI000470EE54 UniRef90-A0A024PW18 UniRef90_UPIO0036032E7 UniRef90_Q83F94 UniRef90_UPIO0047C1883
UniRef90-W1N609 UniRef90_W1N609
UniRef90_G4SVX7 UniRef90_K0CJL6 UniRef90-A0A011MUQ9 UniRef90_V5BJG8 UniRef90_Q47AZ9 UniRef90_C8PVP9 UniRef90-I3CNC2
UniRef90 UniRef90_UPIO00379340E UniRef90_YOKDE6 UniRef90_Q3JUM4 UniRef90-H8GMR8 UniRef90_UPI00036697B8 UniRef90_UPI0004767EAA UniRef90_UPI000366EAAE UniRef90-S9RX96 UniRef90_Q1QSG3 UniRef90_F4GRG1 UniRef90-A0A011QQB4
 TFSQRSVVRVLSEKHDTLSSAQQANVLGVEEQQTALCREVIL




 LG



 ACGDFNVRVI RQGFAHPFPDEALLLKLRSGRRALVREVVL A GGEF R V R L L D Q R Q GRPRPDEA RAL G L P D R R L A WL R E V A L




 A GRQFSVRLQRQGVGYPFADEARALGLHPGRYVWQREVQL
 $H C Q Q F H V K V L A D G V L R P L M P A Q A E L L Q A$ E Q G Y CRREVLL

 L P
 Y Y G A VK V K I L Y H R WL T P F L S E R K L L N Q A E HR Y C L T R E V M L

 VCQQF DVIVVQSEKWDEKIFENETALI PNKPYWCREV L RCRHFHVVD LLQE GFARPTVE EAHTL GIPDRQNAWDREVVC

 RTA HFTVVRL LRQRPGP DLADE HAAL GVPARSRVVER DV IL T T G S $\square R V R R L Y E G W G R P F L T E A R G L K M P W G R L V W V R E V C L$




 L G K M E L R V L A E Y A S G A P A D E A H GMMR A A P G T P V WV R E I A M
 1 CHCFQVEV QQEGWQ HI AQRGLCWVREVVL
 $L N Q S L V V Q L V R Q G A L P A S D G E R A R L Q L S S H Q R V L I D R E V L$ AS QPF GV RLLA Q G I SRPR HTEARAL GLDPRARUWRREVML





 RTEES F S S V R L L R Q R P GR R L A D E H E A L C I S P R S R V V E R D V I L VT QYFNVE I TQQK WDA KV S EK M TA
CGDAFRVVQ DGQHWQRPWRDERDTVGDREHRDVAVREVVIL $R Y V Q F S V Q T Q S M R L A R A M Q D E D Q L L G L K P H Q L A T V R E V R L$




 ASSTFRVQLLGQKRAMPLRDEWRCLGMAGPAETLAREVLL

UniRef90_UPI00035D5EBB

## UniRef90 GoAl35 UniRef90-U1L8S7 UniRef90 S3NAY8 UniRet90-N8ZNR6 UniRef90_BOUUX4 UniRef90-O142T1 UniRef90 U6YBE1 UniRef90- A1K2P0 UniRef90-Q31DN1 UniReffo-O1GXB4 UniRef90-A6W3L4 UniRef90 B7S254

 UniRef90-UPIOOO2B9659E UniRef90-UPI0003657D85 UniRef90-J21HN6 UniRef90_19DRX0 UniRef90-F7S0G2 UniRef90_Q609A0 UniRet90 W7PZA1 UniRet90 WOTRZ3 UniRef90- 22 JE 81 UniRef90-UPIO0047CFD98 UniRef90-UPIO0046524A6 UniRef90_UPI000381E09B UniRef90-I1XN40 UniRef90-HOFOS7 UniRef90-S6EOP2 UniRef90- UPIO004757B06 UniRef90-J3IJY9 UniRef90-K2AW49 UniRef90_UPIO00368588E UniRef90-A0A011MK58 UniRet90-X7EA49 UniRef90_Q0A5V8 UniRef90_K2HJT7 UniRef90-K1BTH3UniRef90_UTNT67 UniRef90-UPI00045E70D5 UniRef90-Q7WJH0 UniRef90-L9UDR1 1 UniRef90-C6APL5 UniRef90-A6F403 UniRef90-J3D215 UniRef90- - 2 JWIL 5 UniRef90-11YHS9 UniRef90-D81X48 UniRe990_UPI0003B65EE1 UniRet90-A4G8N6 UniRef90-UPI00034A49AA UniRef90 G8M6M8 UniRef90 UPIOOO2E778E3 UniRef90-D5W599 UniRef90-W2UHZ4 UniRet90_UPIO00474CFBC UniRe990_AOA031MDW4 UniRef90-UP100036DE6C7 UniRet90-GOAOQ7 UniRef90-M4R8F6 UniRef90-F6CV75
UniRef90 I1DSX9 UniRef90-UPIO00470EE54 UniRef90-AOAO24PW18 UniRef90-UPIO0036032E7 UniRef90- Q83F94 UniRef90 UPIOOO47C1883 UniRef90-W1N609
UniRef90-G4SVX7 UniRef90-K0CJL6 UniRef90-AOAO1 1MUQ9 UniRef90-V5BJG8 UniRet90-Q47AZ9 UniRef90-C8PVP9 UniRef90-13CNC2 UniRef90-BOBT15 UniRef90-UPIO00379340E UniRef90-YOKDE6 UniRef90 F1WJQ9 UniRef90-H8GMR8 UniRet90-UPIOOO36697B8 UniRef90 UPIOOO4767EAA UniRef90-UPIOOO37505D4
UniRet90-UPIo00366EAA UniRef90-S9RX96 UniRef90_Q1QSG3 UniRef90-F4GRG1 UniRef90-AOAO11 QQB4

RCDDRPMV $\square_{G}^{90}$
100
110
120
TVVALDATTTEWPFFSTLGERSLGTTLFG YGDEKPRVYAQSWIPLEQLT DNSLFLNLGERPLGEFIFQ YCEQQAWVQAKS FPPMSLQGRARLFQH:GDQPAGYLFD KGDEQAWIFAQTRLPQSTIENVAPDIINVGSTPI GLWLFP AVEGVPFVAAHSVAPLAASAGVWQAMRRLRTRPLAELLYS LADGRPVVFARTLLPRGHVRGAWNLFHGFGARPLGAALFA MCNGQPIVYARTVIPYWKTGNPWYALKHLGNRPLGEVLFQ RCDGEAVVFAHSLLPQQAMRGTWRGLGRLGSHSLGSALFA KVDDKAVIYARSIIPARSLKGHWRHVKNLKERPLGGYLFQ YCEEQAWVKAKSIFPILSLQKKARLFQHIGNKPI GWFLFQ QQGDNAVVFARSVLPISSLTGSLAHLRRLQNRPLGAILFK CADGEPWLAGRTVVPVSTLSGPELALQKLGKTPLGRYLFT WCDQQAAVYAQSWIPQSSQQRLQQLAALGEQPLGELLFQ SCNQQPAVYAQSWLPESSRRQLHQQLTALGEQPLGEFLFQ RSRNKPMVGARSVLPAQTLKGAGRELANLGANPLGERLFN CLDERPWVVARSVAPLAQLRG QRLDRLGERSLGSWLFR LCDEQPQVFARTLMPVSSLRGPARQLAQLRNKPLGKVLFA SVGGRPYVAAHSIVPLAASTGVWQAMRRLRTRPLAELLYS YCEAQPWVKARSHIPVVQSKGQGLRMRYLKNRSLGSLLFA
 $R D G D Q A R V A R T V P R V S Y Q Q A H L H L H H L G N R S L G E L L F T$
$S V N G V S V P A R S L P R T A S H G A W Q G M R R L T R P L A D M L Y H$ KGDGQAWLFAQTELPQHTVENAAQYVLQLGNEP|GLWLFK KLDGEACVTARSLTSMPALHSDWSELNNYGGRPLAETLYT LSEDQKWMVARTI VPRQTLTGKQRQLAGLKNRALGSVLFK CCDNDP WVYATSLYSPAT QAALPALSGLGSKALGELMFE
 GSRDQAWIYARTIMPPEALAGDGRRLARLGRTPLGGALFR CGDNQPWLLGRTVIPEGTLSGPDRALVDLGTLPLGRYLFG CLGEAPWVAARSVAPLEGLGPDHELERLGERSLGAWLFR STDGVDSVVARSLTPLARASGVWQGMRRLGTRPLGDMLYH CLDGTPWVVARSVAPLSQVKG QRLECLGERSLGSWLFR YGDNSQWVAARTLISYELLKSH QNLLQLGTKPIGEWLFT NGDNTPWVLARTIPRATLSGRGRRLRNLGRRPLGAYLFS

 HCDGQPVVFGHTVLSTASVKSDWPFFSKLGNTPLGANLFF EGPGGPLLMARSVASAATLTGPGDGVARLGNRPLGAFLFT RCDEKAVVYAHTVVPLSATASDWPFFGRLGERSLGTTLFG AVDGVPFVAAHSVAPLAASUGVWQAMRRLRTRPLAELLYS NCAGAAWVYAHTRIPESSLSAQNQFLTQLENKPLGEAIFQ SVDGVPFVAAHSVTPRAASVGIDWATRRLRTRPLAELLYS MGRGAPWVFARSVDPRTLTGRLRRLRRLDSRPLGALLFS RLDDRPCVTARSVAPVDALDHAWPSLAGYGGLPLGKILYD HTAGAPRVFARTVADLQAFNAAGVHLENLGSRSLGELLFN A DGRDAVVARSLTPLPASHGVWQNMRRLRTRPLADMLYH HVGDKPLVLARTVLPEHTMRIAHRNLSHLGTRPLGEVIFA KCGTTEWIFAQTILPQATI DNVAQPVLTLGEKAIGLWLFP $K L D G Q T V I Y A R S L I P A R S L D G H W R Q V P H L K N K P L G G Y L F Q$
$W C D D K P C V Y A Q S W L P Q Q T I N R L Q P L A D M G E R P L G D Y I F Q ~$ VCHHRPWVFARTVIPWASLTGHNRKLDHLGSQSLGSTLFS MLGDTPWVAARSVAPLASLHGA RLQSLGTRSLGSWLFR VCDGTPAIFAHTVVVAAHARRDWPFLRGLGERPLGGALFV RYFESLWVAGRVVI PKKTLEREGSPLNHIGERSLGDILA QCGEEPLVVARSIIPASIRRGAQHHLASLGNRPLGEVLFS CVDDQPWVVARSVAPLVPRRSARRFAGLGETSLGSWLFR
 SCDGRTVVFAHTVLPCQPRGPLTRWLARLGERSLGALLFA HTDGKPLLDARTLIPEETDKVAHRNLSHLGTRPLGEVIFS FGNQDAWVAARSVFPFASLIGNARKDANLGTTPIGYLLFR LGDGQPLVFGHTILSTGSVKSDWPFFSKLGTTPLGANLFF KEKDQPWIFAQTVAPRETVEHVAQDRPKLGDQPAGLWLFP CDGQQAVVFAHSVIPRKALGGQWHRLARLGNQPLGALLFA YGDADAWVLAKS:|FPDSSLTGSLARLKALGATPMGYVLFK HANGMPLILARTIMPKQTILRAHRNLSRLGSRPLGEVIFS LVQGVPFVAAHSI APLAASRGVWQSMRRLSSRPLAELLYD CAGGHPWVMARSVAPLDALHGAGRMRQLGERSLGSWLFR STNAQQAlVYARSLTSDEASKTDWKGIRALNTRPLADILYN ICDDTPVVYAHTIVHPRSVALDWPFLKALGTQPLGHSLFA RLGNASWVAARSVAPLEGLSGA RLCTLGERSLGSWLFR SIDGVDSVFARSFTPLMASHGLWQGMRRLRSRPLADMLYH

## UniRef90 GoAl35 UniRef90_U1L8S7 UniRef90_S3NAY8 UniRet90_N8ZNR6 UniRef90_BOUUX4 UniRef90-O142T1 UniRef90 U6YBE1 UniRef90- A1K2P0 UniRef90-Q31DN1 UniReffo-O1GXB4 UniRef90_AGW3L4 UniRef90 - 77 S254

 UniRef90_UPIooo2B9659E UniRef90-UPI0003657D85UniRef90-J21HN6 UniRef90-I9DRXO UniRef90-F7SOG2 UniRef90_Q609A0 UniRet90-W7PZA1 UniR Refo Wotrz3 UniRef90_Q5P5L9 UniRef90 B2JE81 UniRef90-UPIO0047CFD98 UniRef90-UPIO0046524A6 UniRef90-UPI000381E09B UniRef90-|1XN40 UniRef90-H0FOS7 UniRet90_S6EQP2 UniRef90 UPIO004757B06 UniRef90-J3IJY9 UniRef90-K2AW49 UniRef90_UPIO00368588E UniRef90-A0A011 MK58 UniRef90-X7EA49 UniRef90-Q0A5V8 UniRef90_K2HJT7 UniRef90-K1BTH3 UniRef90-U7NT67 UniRef90_UPI00045E70D5 UniRef90-Q7WJHO UniRef90-L9UDR1 1
UniRef90 S6CEN5 UniRef90-C6APL5 UniRef90-A6F403
UniRef90-J3D215
UniRef90-G3IR36
UniRef90-X2WH5
UniRef90-I1YHS9
UniRef90-D8IX48
UniRef90_UPI0003B65EE1 UniRef90-A4G8N6 UniRef90_UPIO0034A49AA UniRef90- G8M6M8 UniRef90 UPIO0002E778E3 UniRef90-D5W599 UniRef90_W2UHZ4
UniRef90_UPIO00474CFBC UniRe990_A0A031MDW4
UniRef90-UP100036DE6C7 UniRef90-G0A0Q7 UniRef90-M4R8F6 UniRef90_F6CV75
UniRef90-I1DSX9
UniRef90-UPI000470EE54 UniRef90-A0A024PW18 UniRef90-UPIO0036032E7 UniRef90- Q83F94
UniRef90 UPIOOO47C1883 UniRef90-W1N609
UniRef90 G4SVX7 UniRef90-K0CJL6 UniRef9-AOAO1 1MUQ9 UniRef90-V5BJG8 UniRet90-Q47AZ9 UniRet90_C8PVP9 UniRef90-13CNC2
UniRef90 BOBT15 UniRef90-UPIO00379340E UniRef90-YOKDE6 UniRef90 F1WJQ9 UniRef90-H8GMR8 UniRet90-UPIOOO36697B8 UniRef90 UPIOOO4767EAA UniRef90-UPIOOO37505D4
UniRef90-UPIo00366EAAE UniRef90-S9RX96 UniRef90-Q1QSG3 UniRef90-F4GRG1
UniRef90-AOAO11 QQB4

130


160 HPNLVREDLMIAQLHSLLARRSVFHLADLKLMVCEAFLPG
 Q QPKRKTLEWDTATGLYARRSVLLLNQYPIEIKELFLQD DSSVARSAGESDPPHALVARRSVFERHGAPLMVTECMLPA
 DPNLKRTPFQTTQTHATFARKSTFGQGKYPLLLTEAFIES HKGLLSRSRIEVT QPSALWARRSVFHQFGPGILVNEAF RTNPACERRVI HDEEGWTRQSCYTWHGCKFIVQETFLPA
NAAMRRSPFEVARQDDAWARRSRFS पQDANLMVSEVFLKD SSTLTR
DPLVRRGRLEFARETПYFARRCVYRRRQGLLLVTEFDPA YPDLQRSPI E TARAGEYWARRSVFSVAGAPLLVAEVFLP FPDLCRGP EVARAGEYWARRSVFSVADAPLLVAEVFLPA
 QPGGERSPDEVACQAGPWGRRSVFHHGRFAVLVQEFFGDA
 DSSVARHPLEDAQPHALFARRSVFERYGEPLMVTEVMLPA RTAPQC IIRQDALLPEGWTRRSLYMWHQRPLIVQETFLPG NSSIVRRSLETAHEEKLWGRRSLFSQGRRSLLVSEIVFLPA DPA KRGPLEVAESSIMWARRSCFYFADNSLLVCELFLP

 APDLTRTPFELAAHAGLWARRSALSTGQASVLVTELLFLPD QNPLRKTLEWTQAENGLFARRGVYEDNGFSLEVKELFLES GRTVARGPLSIARLGPCWARRSRLWYGNAGLLVTEVFLP PPQATRRAVWVGLHGPVWGRESLFEKRGQPC]LVAEFFLPA GNNATRDYI QVGRQDELWARRSLLRLSGKPLLLTEVFLPA

0

UniRef90 G0Al35
UniRef90-U1L8S7
UniRef90_-S3NAY8
UniRef90 N8ZNR6
UniRef90 B0UUX4
UniRef90_Q142T1
UniRef90-N6YBE
UniRef90 A1K2P0
UniRef90 Q31DN1
UniRef90_Q1GXB4
UniRef90-A6W3L4
UniRef90 N8UIN9
UniRef90-B7S254
UniRef90_UPI0002B9659E
UniRef90-UPI0003657D85
UniRef90- J2IHN6
UniRef90_I9DRX0
UniRef90-F7S0G2
UniRef90 Q609A0
UniRef90-W7PZA1
UniRef90-WOTRZ3
UniRef90_Q5P5L9
UniRef90-B2JE81
UniRef90_UPI00047CFD98 F Q H Y
UniRef90_UPI00046524A6
UniRef90 UPI000381E09B
UniRef90-I1XN40
UniRef90-HOFOS7
UniRef90 S6EQP2
UniRef90 UPI0004757B06
UniRef90-J3IJY9
UniRef90-K2AW49
UniRef90-UPI000368588E
UniRef90-A0A011MK58 F P
UniRef90_X7EA49
UniRef90 Q0A5V8
UniRef90_K2HJT7
UniRef90-K1BTH3
UniRef90-U7NT67
UniRef90-UPI00045E70D5
UniRef90-Q7WJH0
UniRef90_L9UDR1
UniRef90_S6CEN5
UniRef90 C6APL5
UniRef90-A6F403
UniRef90-J3D215
UniRef90_G3IR36
UniRef90- X2JWI5
UniRef90-I1YHS
UniRef90-D8IX48
UniRef90 UPI0003B65EE
UniRef90-A4G8N6
UniRef90_UPI00034A49AA
UniRef90 G8M6M8
UniRef90_UPI0002E778E3 S P L Y
UniRef90-D5W599
UniRef90-W2UHZ4
UniRef90 UPI000474CFBC
UniRef90-A0A031MDW4
UniRef90_UPI00036DE6C7
UniRef90 G0A0Q7
UniRef90-M4R8F6
UniRef90-F6CV75
UniRef90-I1DSX9
UniRef90 UPIO00470EE54
UniRef90-A0A024PW18
UniRef90_UPI00036032E7
UniRef90 Q83F94
UniRef90-UPI00047C1883
UniRef90-W1N609
UniRef90-G4SVX7
UniRef90_K0CJL6
UniRef90-A0A011MUQ9
UniRef90_V5BJG8
UniRef90- Q47AZ9
UniRef90 C8PVP9
UniRef90-I3CNC2
UniRef90-B0BT15
$\underset{F}{\underset{F}{\mathrm{~L}} \underset{\mathrm{P}}{\mathrm{F}} \mathrm{V}}$
FS
WP PF

C

S

F E Q F
FSPW

APCY

S

F
F
F
SAPY F
$S P L Y$
$\stackrel{A}{\mathrm{~A}}$

$\stackrel{\rightharpoonup}{S}$
S

F P

$\underset{F}{\text { F }}$ E D Y
$\stackrel{\mathrm{F}}{\mathrm{F}}$

UniRef90_UPIO00379340E
UniRef90- YOKDE6
UniRef90-F1WJQ9
UniRef90_Q3JUM4
UniRef90 H8GMR8
UniRef90-UPI00036697B8
UniRef90_UPI0004767EAA
UniRef90_UPI00037505D4
UniRef90 ${ }^{-}$UPIO00366EAAE
UniRef90_S9RX96
UniRef90-Q1QSG3
UniRef90_F4GRG1
F
A

UniRef90-A0A011QQB4
UniRef90_UPIO0035D5EBB

HELY WLT L E G S LT R A LQL R P L A N WL T A N G S L TA K I E Q
E QYRTLLATSAWQTAETGLP P S QV A E WLL LH THS LTE KL Q Q
A $T K E L P$ F HVVA E WL A E F G S L T T E K L
 MR R CA WS GHLLPALGANLRRWI TGEGS LTARDIT S L S $\square Y$ S S $\square W R P$ QPPA S L S N L Q R Y C L K R P G IL T K G L R Q
 $P$ Q QR QHWL R QPMGSGA YRSWLVETAS LTARLQ S
P P H WY P A D Q HPQPPES GLIDWWLCDQGSLTLRLTDD WQHYRPSVNLD S YLV P WVMHAGS FMERLRQ
 RWQAVPAPALSRHHKDWLTRGGALLTRHLCA

 WQSAKKFDCPSTEVVAALLLFDQGSLTSSLLKA


 $T \quad L Q P Q Q Q A W L L D R A C S L T A K L Q A$ LP P HWRPVAAARPAMSAAWWQWVASTDSLTARLMA P A P AVVR L L T ERGSLTARLER SPPAA A S S WLL NVE G S L T A ML E A
P N A R L A Q R L Y E A VDD $\quad$ S R LT Q NL L A W W F D RA S L T E K L Q A A A MS S PR SPWRGAL P PMA QHWARWAVGVNS LTARLRA

D S $\square F A R$ R L WQENS PE K K H
WQQVQS F R F S DAFD P
PPALPAARR
$\begin{array}{ll}\text { Q W W } \\ \text { D } & \text { E } \\ \text { S }\end{array}$
DSLIGMAWHPFHTDDP PTP P WLRSWLTRS GS L T Q RLRRR

WYEHVHPSATPAQKYWLHRPGALTGGLRR WHS GRVLANA QDWA WL GSAGSLTWRLK Q
ES F $\square P$ L E QLDWQ D P H T A S LLP

 RWAATPPSLPPALLDCLTEPGSLTERLMS
 K R WVGATGSLSARLAA A EPA $\square$ S LIA A D WQ $\square$ A S A VT L P P M L Q A WLL L E P A S L T A R L K N TALLP R P WR SVIP A P GMLD R T R R A WLL R R P GA MT R R L R Q WQTPADCEPPEA LPWLDEADSMTRRLRR $\begin{array}{llll} & L D P E F W N T \\ S\end{array}$ MT ALLA LAA QS THVNA L S P Q QR A WL T A S G S L T A R L DA

| $E$ | $E$ | $G$ | $S$ | $L$ | $T$ | $A$ | $R$ | $L$ | $K$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

$S L P$ P T E L L P W W $L$ Y N E P G G S
Q A N WLS P E D M NVP LVHE NWLSLS T S LT A QLR S
LP D T A WA ATPPSLLPPALSSSCLTEP GSLTERLMH
HWRELPRAAACAPRSLLPFLLEHGSLSRLLRAA A Q LRRRSGWHAHLPA IS ANLRRWVIGD GSLTARLVA WR A A P P ALLP D S L Q D C L T T E P A S L S L R L Q A FTAFK T D R K WQP WL S D TGS L T QKI E R

83 niRef90_UPI00046A99E1 UniRef90_J5KRN4 UniRef90_K2D0Z7 UniRef90_TOYA31 UniRef90_K2JQ94 UniRef90-F3H043 UniRef90 F5STN6 UniRef90_A0Y913 UniRef90_UPI00037C94D5 UniRef90_UPI000289E2D8 UniRef90_S2KZB2 UniRef90_U1KAE4 UniRef90_U4TDY7 UniRef90-Q3JJ81 UniRef90_E5ATA0

UniRef90_A4A999

UniRef90 F0E7L1 UniRef90-V8QST2 UniRef90-L7YOK5 UniRef90 UPI00036A1930 UniRef90-N6WX39 UniRef90-UPI00035E4A32 UniRef90_B8F7R9 UniRef90-A4SWL2 UniRef90_UPIO003802BBE UniRef90-W7QB06 UniRef90 X3XQW9 UniRef90-V2GAB6 UniRef90-V8GBK5 UniRef90-C7R6P8 UniRef90-F2LF03 UniRef90-C6X835 UniRef90-C4ZLIO
UniRef90-UPI00039EBAD7
UniRef90-K2CCP1
UniRef90-K0G7T2
UniRef90- X2JW82
UniRef90-A0A011PQ85
UniRef90-R1HD15
UniRef90_JOJN23
UniRef90-U1LSN9
UniRef90-U1JA61
UniRef90-F3L5F8
UniRef90-XORLH3
UniRef90-K6GFX9
UniRef90-V4H6A6
UniRef90-WODSY7
UniRef90-UPI000474F413
UniRef90-A1WVN0
UniRef90_UPIO003F7D5D4
UniRef90-F6DB77
UniRef90-Q8XVQ0
UniRef90-J2VLL5
UniRef90_UPIO00375693C
UniRef90-R4YSU3
UniRef90-E6KWC3
UniRef90_UPI00031E4F88
UniRef90_D5WYU8
UniRef90_UPI00036B9CF8
UniRef90_UPIO0031C0A1C
UniRef90 UPI0003726E0C
UniRef90 M5J2W3
UniRef90-UPIO00360835A
UniRef90-K0C845
UniRef90-N9U310
UniRef90_UPIO00287C584
UniRef90-G9ZDU6
UniRef90_A0A011R1X7
UniRef90-H0J1F2
UniRef90-UPIO0045E9A31
UniRef90-C1DBC2
UniRef90-E1SKX9
UniRef90_Q21U27
UniRef90-UPIO003758151
UniRef90-F4DH19
UniRef90-W8X3J8
UniRef90-A0KEP8
UniRef90_UPIO00476CA12
UniRef90-Q9CMB5
UniRef90-F1W0Q1
UniRef90-L8CZQ8
UniRef90 H2FY95
UniRef90-W1GZ49
UniRef90-C9PN14
UniRef90_G2IY67
UniRef90_UPI0003741B09
UniRef90_H1SE50
UniRef90-UOZRK5
UniRef90-M1T234
UniRef90-A5WH83
UniRef90_UPIO0046A99E1
UniRef90-J5KRN4
UniRef90-K2D0Z7
UniRef90-TOYA31
UniRef90_K2JQ94
UniRef90_F3H043
UniRef90-F5STN6
UniRef90-AOY913
UniRef90_UPI00037C94D5
UniRef90-UPIO00289E2D8
UniRef90_S2KZB2
UniRef90_U1KAE4
UniRef90_U4TDY7
UniRef90_Q3JJ81
UniRef90-E5ATA0
UniRef90_A4A999
UniRef90_F0E7L1
UniRef90_V8QST2
UniRef90_L7Y0K5
UniRef90_C7RK55
UniRef90_UPI00036A1930
UniRef90_N6WX39
UniRef90_UPI00035E4A32
UniRef90_B8F7R9
UniRef90_A4SWL2
UniRef90_UPI0003802BBE
UniRef90_W7QB06
UniRef90_X3XQW9
UniRef90_V2GAB6
UniRef90_V8GBK5
UniRef90_C7R6P8
UniRef90_F2LF03
UniRef90_C6X835
UniRef90_C4ZLI0
UniRef90_UPI00039EBAD7
UniRef90_K2CCP1
UniRef90_K0G7T2
UniRef90_X2JW82
UniRef90_A0A011PQ85
UniRef90_R1HD15
UniRef90_J0JN23
UniRef90_U1LSN9
UniRef90_U1JA61
UniRef90_F3L5F8
UniRef90_X0RLH3
UniRef90_K6GFX9
UniRef90_V4H6A6
UniRef90_W0DSY7
UniRef90_UPI000474F413
UniRef90_A1WVN0
UniRe90_UP10003

RGHGQPWIVIF A
100
110
120
SVASRSALARGGLLDER SID GTPAVVARSITPLCAARSVWQAVRRLRTRPLADILYH



 $N C Q G Q A W V Y A H T H I P Q S S L V G D N A F L S H L E N K P L G E A I F B$ CAD GEPWLAGRTVVPESTLVGPEQVLQHLGKTPLGRYLF

 SVDGEPCVAAHSLTPLGASRGVWQAI RRLRTRPLAELLYS
 HT GGAPRVFARSVAPLAAIVASNDDLQSLGSNSLGLLLDS



 YCDDVPVVYGQSWIPDSA NALGLDNI GNTPLGERLED Y C D D I A T V Y Y A Q S WI T E A A Y Q S $\quad$ E
 Y GDDMPWVQAQSI FP LNNSLKGQSRRLQHLKNTP I GYVL F K YGDLVP LVVARSIIPNLTASKGYPGLGSIGSKPLGDLLEQ

 niRef90 A1WVN0 UniRef90_UPI0003F7D5D4 UniRef90_F6DB77 UniRef90_Q8XVQ0 UniRef90_J2VLL5 UniRef90_UPI000375693C UniRef90_R4YSU3 UniRef90 E6KWC3 UniRef90_UPI00031E4F88 UniRef90_D5WYU8 UniRef90 UPI00036B9CF8 UniRef90_UPI00031C0A1C UniRef90_UPI0003726E0C UniRef90-M5J2W3 UniRef90_UPI000360835A UniRef90_K0C845 UniRef90_N9U310 UniRef90_UPI000287C584 UniRef90_G9ZDU6 UniRef90_A0A011R1X7 UniRef90_H0J1F2 UniRef90_UPI00045E9A31 UniRef90_C1DBC2 UniRef90_E1SKX9 UniRef90_Q21U27 UniRef90_UPIO003758151 UniRef90_F4DH19 UniRef90_W8X3J8 UniRef90_AOKEP8 UniRef90_UPI000476CA12 UniRef90-Q9CMB5 UniRef90_F1W0Q1 UniRef90_L8CZQ8 UniRef90_H2FY95 UniRef90_W1GZ49 UniRef90_C9PN14
UniRef90_G2IY67 UniRef90_UPI0003741B09 UniRef90_H1SE50 UniRef90_U0ZRK5 UniRef90_M1T234 UniRef90_UPI00046A99E1 UniRef90-J5KRN4 UniRef90_K2D0Z7 UniRef90_TOYA31
UniRef90_K2JQ94 UniRef90_F3H043 UniRef90_F5STN6 UniRef90_AOY913
UniRef90_UPI00037C94D5 UniRef90_UPI000289E2D8 UniRef90_S2KZB2 UniRef90_U1KAE4
UniRef90 U4TDY7 UniRef90_Q3JJ81 UniRef90_E5ATA0
UniRef90_A4A999

 HCD GR P VVVF GHTVIAT T S VVKT DWP F F S R L G N T P L G A N L F F
 K VQ G K P RVV Y R T CMP K S T L T GNECQLLKHWGSK S I G T Y L F T

 CDGD TP LVVFASSVVLPEAALVDHYAELARELGARPDGHWI FA



 Y G DEQP WVEAQSIFPLSSLQGSARRLQQLKSTPIGYVLFK

 TLDDTPVVVARSVTRLGGCPAWHPI LQRGSRSLGFTLFG RLA ERRVVWARSV

L L D GVP WVV Y A LTT E VP L A | $S$ | $A$ | $S$ | $E$ | $R$ | $W$ | $D$ | $V$ | $L$ | $R$ | $G$ | $G$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $L$ | $L$ | $G$ | $L$ | $T$ | $L$ | $F$ | $G$ |  |  |  |  |



 $H G D H G P A V L G W T L F A E A A L Q E S G \quad L R E L G E Q P L G E R I F G$

 ECDGRPVVFAHTSVPLTATATDWPLFGSLGERSLGSTLFG

 CADGEPWLAGRTVVPVSTLSGPELALQKLGKTPLGRYLFT NSDTQPLI FARTLIPBNTLLAA HSELQQQLGNRALGEWLIT

 CANGVPLVMAHS D DPTSSSS GSNHEILDRLGKKPLGAVLGA FGNSQPWVAAQSI FPLPSLKGEAKRLQHLQGTPIGYVLFK CHGNTP WV DA R S L A A L D LAA H G HR L S T L G ER S L G H WL F R

 RGNGNHWVFARSVAARSALQDGGLNMDELGTRSLGELLFS YGNEKPWVAAQSI FPLTTSLKGEAKRLQHLQGTPI GYVLFK
 L C N D L P V V FA Q T I IP T E T D E N GF S E L G N L G T K P L G D L L F E
 CGDDTPWVYASVVF SSAHPPEILLTTLGSRPLGETLFP RLDAQPCVTARSI ASAHALETQWKPLTGYGSDPLGHILYD


## UniRef90 F0E7L1 UniRef90_V8QST2 UniRef90-L7YOK5 UniRef90 UPI00036A1930 UniRef90_N6WX39 UniRef90_UPI00035E4A32 UniRef90_B8F7R9 UniRef90 ${ }^{-}$A4SWL2 UniRef90_UPI0003802BBE UniRef90_W7QB06

 UniRef90-X3XQW9 UniRef90_V2GAB6 UniRef90_V8GBK5 UniRef90-C7R6P8 UniRef90_F2LF03 UniRef90_C6X835 UniRef90_C4ZLIODQAFDRHPDVVCSYPALWARRSRFERDGDDVLV|AEVV|L|PA DPAVVRSVFESCAPARLPTRRSVFWKNGQPLQVTECBLPA D S TVVI R S P F A C R R R A N R R V WA R R S V V F WR Q G Q P L L L V A E C C F HAGFT RGPMAF
 QR RWHR GPFQQAA GQPT IGRRSRFFRGKDALEVGEYFLP



 D A RVVSRSALVSSRRPHAFAARRSVVFRRHGAP LMV SECMLPA



 HPGFRRGKI SFKRLD GL WARRSHFRFGAQSVLVTEVVGP






 A A DVQRGPLA VARPAGGWARRSTLSVAGRRLLVTEVVFFP


 HPHMRRGKMSAYR DPNSWARRSVVY LQQKPILVTEAF LS A QRVGT QWA QDNGLY A R R S L F LV QEMPL
 EPVLKRALMYYAETPQLWGRQT LFTGALHPLVVSEFFDPA

 D A Q Q R S S A F L S C R A Q Q L L R R C S V F WR H GQP L L V A E S F M P A
 HPQAQRSRLQLARAAELWGRRS LLFLQGVPLLVHEDLVBG
 HAGFSRRGPMTF K RDDR L WARRSQF GFDNQSVVVVSEVFSP QPDLVRGPLYATKHAGVWGRRSVFQHSGLSLLVQEYFL
 Q

 D E PARR D HLLQWCP A GTVVWGRR S RLLF L G Q WP L L L V
 SPIWLR GDLQQLAKVNDTYARRSEFSRGEHS LVVEVVGL
 S S T L TR DF IE I GRDA GLWGRRSRLRLSGKPLL LTEELFLPA

 DPRVRREPFAFARLLPHHPLRRRLELPAAP
 RQKTLDN RRLI EPTKAGWRRSTVYDWHGRSLII SETFLDP
QPDLERSA DDVSRSGSVVWMRRSMFSHGRFRVLVQE GFTPE K N I FKK K E HTQYA SKN T FWGRKARYTVVKNYPF SVVMEVVG

 D PAFVRGTLEVCHYPGLWARRSRFDRGALSVLVAEVVFPA RQTTLPHQRTI DWTEQGWRRNT LIYNWYHRPLLI SETTELAE
 K D I F V V D K I VF AP S N $\quad$ VY WGRKA K Y S V K G Y R F S V M E I F QPDLERGPI DITRRHGPWGRRSVFRHGRFTVLVQEFFL
DSNWQRGTLEFLLRPERRGARRSWFKNGKAKILVVCEVVI SE



| UniRef90_F0E7L1 |  |
| :---: | :---: |
| UniRef90 ${ }^{-}$V8QST2 | F |
| UniRef90-L7Y0K5 | F |
| UniRef90_C7RK55 |  |
| UniRef90_UPI00036A1930 | S P VY |
| UniRef90_N6WX39 |  |
| UniRef90-UPI00035E4A32 | F |
| UniRef90_B8F7R9 | F |
| UniRef90_A4SWL2 | L L S Y |
| UniRef90-UPI0003802BBE | A PLY |
| UniRef90-W7QB06 | S PLLY |
| UniRef90-X3XQW9 |  |
| UniRef90-V2GAB6 |  |
| UniRef90_V8GBK5 | F |
| UniRef90-C7R6P8 | A P L Y |
| UniRef90_F2LF03 |  |
| UniRef90-C6X835 |  |
| UniRef90-C4ZLI0 |  |
| UniRef90_UPI00039EBAD7 | W P |
| UniRef90-K2CCP1 |  |
| UniRef90-K0G7T2 | F |
| UniRef90-X2JW82 | F |
| UniRef90-A0A011PQ85 |  |
| UniRef90_R1HD15 |  |
| UniRef90-J0JN23 | F |
| UniRef90-U1LSN9 |  |
| UniRef90-U1JA61 |  |
| UniRef90-F3L5F8 | F |
| UniRef90-X0RLH3 | F |
| UniRef90-K6GFX9 |  |
| UniRef90 ${ }^{-}$V4H6A6 |  |
| UniRef90-W0DSY7 | F |
| UniRef90_UPI000474F413 |  |
| UniRef90-A1WVN0 |  |
| UniRef90-UPI0003F7D5D4 | F |
| UniRef90-F6DB77 |  |
| UniRef90-Q8XVQ0 | L A VF |
| UniRef90-J2VLL5 |  |
| UniRef90-UPI000375693C |  |
| UniRef90_R4YSU3 |  |
| UniRef90-E6KWC3 |  |
| UniRef90_UPI00031E4F88 | S P $\square \mathrm{Y}$ |
| UniRef90-D5WYU8 |  |
| UniRef90_UPI00036B9CF8 | $\square \mathrm{I}$ N Y |
| UniRef90_UPI00031C0A1C |  |
| UniRef90_UPI0003726E0C |  |
| UniRef90-M5J2W3 | F |
| UniRef90_UPI000360835A |  |
| UniRef90_K0C845 |  |
| UniRef90_N9U310 |  |
| UniRef90-UPI000287C584 | F |
| UniRef90-G9ZDU6 | F P |
| UniRef90-A0A011R1X7 |  |
| UniRef90-H0J1F2 |  |
| UniRef90-UPI00045E9A31 |  |
| UniRef90_C1DBC2 | C E I |
| UniRef90_E1SKX9 |  |
| UniRef90_Q21U27 |  |
| UniRef90-UPI0003758151 |  |
| UniRef90-F4DH19 |  |
| UniRef90-W8X3J8 | F |
| UniRef90_A0KEP8 |  |
| UniRef90_UPI000476CA12 | F |
| UniRef90-Q9CMB5 |  |
| UniRef90-F1W0Q1 |  |
| UniRef90-L8CZQ8 |  |
| UniRef90_H2FY95 | S A P Y |
| UniRef90-Q1QE02 |  |
| UniRef90-W1GZ49 | $S P$ L Y |
| UniRef90-C9PN14 |  |
| UniRef90-G2IY67 |  |
| UniRef90-UPI0003741B09 | A |
| UniRef90-H1SE50 |  |
| UniRef90-U0ZRK5 |  |
| UniRef90_M1T234 | L L N Y |
| UniRef90-A5WH83 |  |
| UniRef90-UPI00046A99E1 | F |
| UniRef90-J5KRN4 |  |
| UniRef90-K2D0Z7 | F |
| UniRef90-T0YA31 | S P |
| UniRef90-K2JQ94 | $\mathrm{P} \square \mathrm{Y}$ |
| UniRef90-F3H043 |  |
| UniRef90_F5STN6 | F |
| UniRef90-A0Y913 |  |
| UniRef90-UPI00037C94D5 | L E H Y |
| UniRef90-UPI000289E2D8 |  |
| UniRef90- S2KZB2 |  |
| UniRef90_U1KAE4 | S |
| UniRef90_U4TDY7 | LP D Y |
| UniRef90_Q3JJ81 |  |
| UniRef90 E5ATA0 |  |
| UniRef90_A4A999 | F P R W |

# 20 <br>  

P P P L R H A P R L L WP WL T L P A S L T A A L Q R
NA QWRVLPRPLFSAAQKNWLTRGGSLTQRLQT S K Q $\square A Y$ Y L T S N G SLLTALLE Q

QEKTLNPELLKTWLYAS GSLTQQLTE
EALTTLTPTEARWLFSSGSLTVQLKA HPSAARPPLDWRPQFSDVAPALAEELMRQQSLTAAALMA $T \quad L \quad L H A T D W H S E N L P P P P A Q R D W L L H R G S L T A R L R Q$ DPVARGKRRRWRVSPAASVPRDQRDWLTAGGALTSHLAR

QTLNWQE QLPE GLSE K LQQWLMQQPSLTAALRS
$\square$ I WQ NNCPAPS P $\quad$ L R N W A Q A D S L T Q T L R A



WS S A S A LMMLEKK Q TD WL LDD P G S L T A R L Q Q
MTRRLRQ
PS S Y A L L L P Wi Th H Q S S L $\square S \square A$ WR P L A A GRPAMSPA WWA WVA T R D S L T A R L T E DAGSLTARIRA
 WARRCPPSWPA WARNWACTS GSLTQRLVR P ER Y A D WLLF DP T S L T A K L C Q
LP P L I WQPEPPTVSAALRR LIQATSLTLVLQA P R GL W W WL ALP A S L T A AL R R A WLP ERQWSASNHGVNREMANVL TVVAGSLTRFLER QIPP L L WQP D $\square P$ E SVA L Q MA AL L Q S P S LTA A L R G S L T A AL R T Q A GWRETPRPGCT $\square D Q R D W L T R G G S L T A H L A R$ LP P RWYPVALYRGALPASLIDR SRDSLTARLES


HAEASS LSS DAEHLLTVSSLTAALRA WKPKEAGVSRDCAAVLTTAGSLTRFLER SEPLTEWLNHPNSLTDKLYQ WQTRLPATPSEKLAGLLQSPSLTAALRA

LS KVERYWLNDAKNLVTSLSK
MSELDA WLPR EALTSLLTPTEARWI FSSGSGVTVQLKG WES AEHISAPPPSS $\square Y$ WLLTEVKKLGNALSN

P Q Q WP P Q H R DPG $\square$ WT WLT DPES LTRK LR Q
PENLKKWLNHQASLTEMLQK NAPLLPWLRDCGSLTARLQS

UniRef90_Q70C33 UniRef90-X0QYFO UniRef90-GOJNB9 UniRef90-UP100035СЗСЕ3 UniRef90-UPI00047A8549 UniRef90-UP1000477CFCB UniRef90-K6X4C6 UniRef90-M81A03 UniRef90-TYYUL5 UniRef90-G4CJ34 UniRef90-C8NA56 UniRef90-UPI0004639C81 UniRef90-G4CQK0 UniRef90-F7SNF8 UniRef90-K2B3H5 UniRef90-K6YSA4 UniRef90-UPIO0037B59BC UniRef90-UPI00026253FC UniRef90-N9AJJ4 UniRef90-UP100034ACFA5 UniRef90-K2BV01 UniRef90-A0Q4X4 UniRef90-A9M389 UniRef90-V9H935 UniRef90-UP10003B6A49D UniRef90-F3G2W9 UniRef90-T1YT24
UniRef90
TOPTG7 UniRef90-TOP7G7
UniRef90-15CHE5 UniRef90-UP100047CFFA2 UniRef90-C4L7X5 UniRef90-12NE39 UniRef90-UPIO00479BE40 UniRef90-G2DRL7 UniRef90-WOBF80 UniRef90-UPIO002895D75 UniRef90-N6XCS9 UniRef90-F2BEF1 UniRef90-A0A017HU44 UniRef90_J4UXL8 UniRef90-A6GR91 UniRef90_UPIOOO46329F5 UniRef90-UPIO0036F90E7
UniRef90_V7IFH1
UniRef90-F9ZSC5
UniRef90-UP100036A57DF
UniRef90-D7MZC8
UniRef90-L1P109
UniRef90_F0G4Z5
UniRef90-UPI00036D72D7
UniRef90-UPI0003631B03
UniRet90-AOP4T6
UniRef90-D3A5D1
UniRef90-UPI00036A3EAE
UniRef90-UP100026C7BD2
UniRef90-D4DPZ1
UniRef90-BOU041
UniRef90-T1YSBO
UniRef90-UPIOOO3829E4D
UniRef90-J6CSX3
UniRef90-T1A8V0
UniRef90-U5A333
UniRef90-D3HTC4
UniRef90-AOAO11QKO2
UniRef90-J8V4K9
UniRef90-V4R679
UniRef90-UP10003829CCD
UniRef90-G9ENK5
UniRef90-C4GH44
UniRef90-A5IBS1
UniRef90-UPI00037A35B9
UniRef90-W1GVP4
UniRef90-UPI000382BFD9
UniRef90-A0L473
UniRef90-UPI0003803A68
UniRef90_B1XVG6
UniRef90_L8XX53
Uninefofo-A5UL51
UniRef90-D3EOI9
UniRef90-D9PUC8
UniRef90-B6BVL3
UniRef90 E1RF20
UniRef90-A8TZ22
UniRef90-B8GJ95
UniRef90-R9SIO6
UniRef90-U0EU61
UniRef90-F6D5J2
UniRef90_J1AR96
UniRef90_A1FAF1
UniRef90-A4S891
UniRef90-F4BYG
 AGQPLRVERSFEGYRSLSLAQKRQLGLNRPMLAWVREAQL AGYMVQALLLGSGRANPTPTERYLLRLHRGEQLFWREVVL $\square G R$ VEVQVVREAVDFAWAGEAACLKARARQRVWAREVLL AGQRLKVERAFEGYRPLTLAQKKQLGLTRPMMAWVREVLLI HDSFWQVREVIL
LGGKFSVKPFKEHFQRLTFADSQWMNMPHTHTSWVRETYL LSAAFTVRVIAEGWQKLSADEDAALRWPAGTRGWAREVHCL HG DIRVHIEHEGWSD SACQVTVQVLKERRENPWADEAPLLGTPARGMAWVREVVL LDTSFSVRLLHLGLSESRGWFSDRGHFPAQVFSREVLL MGKDFY $\square \mathrm{KLHSQLPGKIEEEAKLLNLEKDKEQVRRDVEL}$ NGN FK HTHRVTALVIGSGRRKPTYSEQQLLHDKRGERDFWREVLL
ARAPLTVQVLGQAREPARAEDARPGGLRPGAAVLGRTVIL TDNEITLRLLENDWEN EKQTQWIRKIEW
FYGELTLDKISQQFTNDNPLEQSLLA TQTALVRQVTL LA DFSVKLGKSFGKTSDFPYFADF RDPETMFGRSVIL THYPFSVRLIGGNHRPPTHDEAAMLGQGVEQEVCRQVCL LSAAFTVRVLAEGWRPLAADERAALERPAAADAWVREVQL HNRHFSVQLLGNHSVTLCADEQQ LVAAEQPMGLCREVGL
 LGGSFTVKVLYMGEDDGQGNSFGENHAETAAPQFVRDVLL SGYGFSVSVLH LGGRLGADSLLADGWPEWQQQWFRDVCL
 RCTRFEVRVLCQRLAHVRRDEAWLLGLRVGELAWLREVAL
 LNQGFKVEPVVQAKVLIKHGPGARGQSVTGQMMRQRLVRL

LHADFSVQVLHMGVDDVWHDEQDCIG

YGMELNVELHEQFLDTATVAEAALLLSNADAPVLRRRVSL
LPYAFSVRLLHENSASPLLDKGAAQQTALPAPMCRDVFL
AGATIRVRIHAQGVARGRPDELAALGAAAGRLVWRREVTLL
TA DLRTDLITSTNKNFLLSEKYHFKSFRPESLYLREVLI
SGKEFSVEPVYLGLTK
HFGRLEVRLHDQFVDHTRTDEALLLGSQTADSALRRQVSL
LPCEFSVRLLHLGSADGSLLEASLDGGPGKSYFCRDVELL

AGDRLSLLLFEERRTALTPEELLFESPGEKWGLRREVGF
TKGEAQLELISQNWVNTDWWDQNVLQTQEESTFKRDITM

VCDTVHTQLLHQRQAA पWPLEKKALSRQRHQQGGVRTVLQ $V K G E V Q L E L I G Q Q W I N T D L W S Q S L L D T Q Q A T L F Q R E I L M$ RGDFAVRL S DALGETQGGEGIFRLPQPQFARRVTL MGGNAELERLSQNWSAPNWWDKYVLCIQDKSVILQREVVM LLKGSSQLEVLFQNWIKPNWWDTYFLQI NDEEVYQREVIVM HYARVDVR HDQFVDRASAGEAALLACDVGSLALRRRVSL YGHPVDVTVRQQVTAPLAKAPLSALLALLQAHTLLIRDAWV AGMSLTLNVHEQVLDRCHPAEAKLLDCRAGDRCLRRRVSL TSHKLEVQVLRDCPQSLNGNKSHYFQFKLR RCRVREVLL LKDDFSVNLLE KGFDTADRETSELIHVGEKGDAFSRQVVL LYGKDTLSTLEQHFDTADREDSELVVVDEGAQDNYREVIM LRGTVTVRT KQEFIDPSPEDADKLRUSPGEMVNHRVVV
$\stackrel{\square}{\square}$


## L

ASEDFQI QPL R
LKGHVHI ETLVQEFREADSDVAELLSIDKGDNVNYR VIG
LGCRVEVATLLQRDVPADEKVAADLDLPAGEEVNHRIVTL

|  |  |
| :---: | :---: |
| UniRef90_Q70C33 |  |
| UniRef90-X0Q | GDEQPWVEAQSIFPLPSLKGRARRLQQL |
| UniRef90-GOJNB9 | HGGDVMALWARTTIPLRGLRRGLLPLTR ${ }^{\text {P }}$ |
| UniRef90-UPI00035C3CE3 | MGEGRPQVFAHSVISRKDLRGAWHGLRSMGRVPLGASLIA |
| UniRef90-UPIO00477C | YGNSQPWVVARSLFPLPSLQGEAKRLQSLQNTPIGYVLFK |
| UniRef90-K6X4 |  |
| UniRet90-M81AO3 | YGSDEPWVKAKS FPDQSLQKKARIFQH |
| UniRef90-TTYUL5 | CGGGTCWIAARTVVPQTPPEGAAAAL |
| UniRef90_G4CJ34 | LLDGEPVVWARSVCADDA AGWKQVDDCGTQPLGAQL |
| UniRef90-C8NA56 | ADRNNRWI YAETRIPSATLARV RPLQTLGAAPIGPWL |
| UniRef90-UPIOOO46390 |  |
| UniRef90-G4C | CLSGQPVVWARSVC EADDAVWHEVLD |
| UniRef90-F7SN | CLDDMPWVVARSVAPLSQLQGKG LEGLGERSL |
| UniRef90 K2B3H5 | GKKSQALII ARSILPSYLFEGDAHCFNALGETPL |
|  | HGNNQPWVLARSVIPQALCENGKFLD GNKPLGH |
| UniRef90 UPIO0026253FC | HaAdrpal WAMT TiPLCGLRHGLLPLARHGSRPIGN |
| UniRef90-N9AJJ4 | YCDEOPWVKAKS |
| Un | DGRPMVL |
| UniRef90-K2B | RFQNERWVTGUVAl PAR |
| UniRef90-A004X4 | KLDGIPVVAARSECRDGS AFWQNILDCGT |
| UniRef90-V9H935 | CLNDVPVVHAQSVCAMNSM WREILDCG |
| UniRef90-UPIO003B6A49D | RLDGEAVIYAASVC DSSD |
| UniRet90_F3G22 |  |
| Uni | CGGGTPWVAARTVA $\square$ ATA |
| UniRef90-TOP7G7 | HGDRGPAVLGWTLFAEAALQESGMLGEL |
| UniRef90-15CHE5 |  |
| UniRef90-C4L7X5 | SDGERPWI WGLTQVDACQLQ KESELLNWSTQPLGQ |
| UniRef90-I2NE39 | HDDGVPVVQARSACSPQS QAWRGVLDCGTQPLGERLF |
| UniRef90-UP1000479 | HGDLGPAlV |
|  | PV |
|  | SARNAPCWYGRTI LPKQTYESDVA |
| UniRef90-UP10002895D75 | CLL GRPWVVARSVAPLLALR R GRLERLGERSL |
|  |  |
| 2BEF1 | DGVPA WARSQCPPD AFWRD LINCGS |
| UniRef90 A0A0171 | NGRPLLVARTVLTSRRLQAHPT RNLGT |
|  | HVNNAPVVLAQSLVEMDGPVNDWHFWRGLGTRSL |
|  |  |
| UniRef90'UPI00036F90E7 | SLQNHAVVWARSVC AHDAHPWHEIVQCGTQPLGMRL |
| Uni | NDTPVVWARSVCP LAGAWPSULCGTQPL |
|  |  |
| UniRet90_UP100036A5 | MHREQLMF |
|  | LDGEPVVWARS ACEPHSQWRGV |
|  | CLDGSPVV |
| UniRet90-FOG4Z5 | SVDGTPYVAAHSTAPLAASKGVWQAMRRL |
| UniRef90_UP100036D72D7 | 俍 |
|  |  |
| UniRef90 ${ }^{\text {d }}$ | KLDGETVIDARSACRPDS RLWTELLDCGTQPLGERLFD |
| UniRef90-UPI00036A3EAE | M ${ }^{\text {RGSVMFDAESVLP }}$ |
| C7 | Y A |
| UniRef90_D4DPZ1 | CLNGEPVVARSQCLPSSYGYWRQMLDCGSRP |
|  |  |
| UniRef90-HYSB0 | CGNY |
| UniRef90- J6CSX3 | KSQDIPLIFARTLIPASLLTQHKRELQQLGNRAL |
| UniRef90-T1A8V0 | FSSSDLWVFSSTLVPDETLR ${ }^{\text {S }}$ SPWLAELGETPL |
|  |  |
| UniRef90-D3HTC | KSRGVSYWFARSII PKKCYALEPSFFDRLKNESIKNLIFG |
| A0A0119K02 | $\checkmark$ |
|  | FARSVASRSALERGGLDLETLGS |
| UniRef90-V46679 | MVFARSAAARALEGSGFDALLGR |
|  |  |
| UniRef90-G9ENK5 |  |
| UniRef90 C4GH44 | KNQGUVYWYARSVIPQSCYATKPEFFNRLENESIRNMLI S |
| UniRef90-UPIOCO37A35B9 | RHKDTEYWYARTIIPETCYEVAPTFFDRLNSESUKNLIFG |
| Whi |  |
| UniRet90_UPIooo382BFD9 | SVMFDAESV |
| UniRef90 A0L473 | NHAGPMLVYAHSQI DWDHLDQAERVAIRNGQUPLG |
|  | CSKGIPMTMAHSVIPLTSSSGSNHADLQLGKKP |
| UniR | QLSGGIAVI WAESLCDQTA HFWCDYLNCGTQS |
| UniRef90 A5ULL51 |  |
| 90-D3E019 | HKDEQPLIYAKSY:PLKRLSKE\KEDLVRAD |
| UniRet90 Dgpucz |  |
| UniRet90_B6BVL3 | NEGKKEKVYAASDSPLSRLEPSFKDDLMLA |
| UniRef90-Q8 | DGRPA |
|  |  |
|  | VGSERTYVHADSHTPLDRLGPEFRDDLMAAD |
| UniRef90 ${ }^{\text {- }}$ R9 | HKDDKPLIFAKSYTPLSRINKETKDSLMTED |
|  | CDGALPLVWAKSTLFSKHEKTVA AYCGLEGQSL |
| UniRetg |  |
|  |  |
|  |  |
| UniRef90_F4BYG6 |  |

UniRef90 Q70C33 UniRef90-X0QYFO
UniRet90-GOJNB9 UniRef90-GOJNB9 UniRef90-UPI00047A8549 UniRef90-UPI000477CFCB UniRef90-K6X4C6 UniRef90-M81A03 UniRef90-TYYUL5 UniRef90-G4CJ34 UniRef90-C8NA56 UniRef90-UPI0004639C81 UniRef90-G4CQK0 UniRet90-F7SNF8 UniRef90-К2в3н5 UniRef90-K6YSA4 UniRef90-UP100037B59BC UniRef90-UP100026253FC UniRef90 N9AJJ4 UniRef90-UP100034ACFA5 UniRef90-K2BV01 UniRef90-A0Q4X4 UniRet90-A9M389 UniReffo-V9H935 UniRef90-UP10003B6A49D UniRef90 F3G2W9 UniRef90-TTYT24 UniRefefo-TOPTG7 UniRef90-15CHE5 UniRef90-UP100047CFFA2 UniRef90-C4L7X5 UniRef90-I2NE39

DRSVLRSALASRRTQALLARRSVFTRQGAPLLITECMLIPA 160 RSRTLPNQRFIDQHTGAGWQRQTRYDWYGRTLLISETFLAS HRRLWRSPDQAESQPRFWQRRSVLRRGGASVLVEEHFLPD DAKVSRGRLHYARPQMLWARRSLFSDRHYRLLVTEVFLPA QRCFERAALRRDLTPPLVARRSIFMHAGQPLLVTECMLAA


DSPFARGPDSVAQTTECWTRRSDFRTHDVSVLVAELF GGRASRSPFAFARDGSVWARRSLFAAGGEVLGLTECFDPA Q NPQRLSLHWRHDPGLYARHSTLLVHGGPLHIAELFLAA DPMVRRSMLVVPLAGGMRARRSVFERHGAPLIITECFLPA GAPLVRTPFEYCSCGHVVARRSVFSLNGNRLGLVEYFLDD
 DNRFSREPFQLLCMQPLWGRRSVFRFQQHAMMVAELFLPQ KD RTNPYCERRVIYLEDG WTRQSCYTWHGCKFIVQETFLPA

 DLEGARSAFEFAVSGEFAARRSRFSRHGEEMLLTEYFL
GSGGIVNNEMARQPENLLARRSWFEWQGERLYLVECFL QAPFNRSPLSFRRPDHLWARRAAFSRHGGQLLVQEVFLI

DSPFVRGP A VTRDGAHWTRRS LFRARGLSVLVAELFTPA DEPARRDHLQWCPAATVWGRRSRLFLGQWPLLVHELFLPS DPADSRSKFVYGQCGRAWARDSEFRRGRSPLVLTEVFLP




D
GPGLSRSPLQYARPRPLLARRSFFTHQGQThGLECFDP DGPPAWTARQVALAGGYWARRTLYRLFGEPLLVTEVLLP KDTFNKDDVIYSEDNDFWGRKTKYLVKDLPFSVMEIIFL DPKVKRGKLYFARSGRVWARCARFSRKRTPGWVMEVFLPQ AAEEQNSCREFTETHPLWGRRSTVCFRSCQLSLTEVFLPQ GRAAERSPLAFAQEQAARARRSAFDLNGEKMVLTEGFMP HRRLRRGPLHMHCQNRRWWRHSLLWRGNTRWLVIEHFLPD $Y G S L S R G D L G L C R D Q G C W A R R S V L R Q S D D E A L V V E V F Y P A$
$G S P L V S A F E F C R T E N G L A R R S W G M R G E L W L V E C F P A$ GSPGVRSAFEFCRTENGLARRSWFGMRGERLWLVECFLPA


DQAF $\square$ RHP $\$ EVCSHTALWGRRSRFERGGLDLLVAEVFLPA DSAFERGAI EVCRDEGLWGRRSRFARGALGVLVAEVFLPA

 ES QVRCSCLEFYWAGTLWCRDAEYQFQHKSFYLIELLLP
gLLLarsdLcVaryagrwarrsvLrss gtralvvevf GAQVNRAHLQISREAPLWCRRSLFTVDGRPABILELFVP GLSLSRSDLSI AHSDCRWARRSVLRAPDGPALI IUCFHP KTRKHRDDARLDKSSELWKKCS
 YQIESRRE
YH: ESRRETNT
RSNYGRSRKVNVEDEKLLVLRQSFFTNRKEKILLFEGFDEN HHIESRRELDVFRHEPLLSRRYRIITGGKPLIIRETF LRLETRRE
Y HMETRRE TRD DRESVLFSRRYC VVHEQQPLI IEE $\square$ FSPA YKLETRREI
YQSVKRSPI EYSKQCGLIGR $\square$ SRFTWQEHS ULVVEVF
HSIESRREI
HRIEARRELK $\square$ YRHEPLLSRKYQ I DNRGKPLI I NETF

## UniRef90 Q70C33

UniRef90-X0QYF0
UniRef90-G0JNB9
UniRef90_UPI00035C3CE3
UniRef90-UPI00047A8549 UniRef90_UPI000477CFCB UniRef90-K6X4C6 UniRef90_M8IA03
UniRef90 ${ }^{\text {T1 YUL }} 5$
UniRef90-G4CJ34
UniRef90 C8NA56
UniRef90- UPI0004639C81
UniRef90-G4CQK0
UniRef90-F7SNF8
UniRef90_K2B3H5
UniRef90 ${ }^{-}$K6YSA4
UniRef90_UPI00037B59BC
UniRef90-UPI00026253FC
UniRef90 N9AJJ4
UniRef90_UPI00034ACFA5
UniRef90_K2BV01
UniRef90_A0Q4X4
UniRef90 A9M389
UniRef90-V9H935
UniRef90-UPI0003B6A49D
UniRef90-F3G2W9
UniRef90-T1YT24
UniRef90 TOP7G7
UniRef90-15CHE5
UniRef90-UPI00047CFFA2
UniRef90_C4L7X5
UniRef90-I2NE39
UniRef90-UPI000479BE40
UniRef90 G2DRL7
UniRef90-WOBF80
UniRef90-UPI0002895D75
UniRef90 N6XCS9
UniRef90-F2BEF1
UniRef90-A0A017HU44
UniRef90_J4UXL8
UniRef90-A6GR91
UniRef90_UPI00046329F5
UniRef90-UPI00036F90E7
UniRef90 V7IFH1
UniRef90-F9ZSC5
UniRef90-UPIO0036A57DF
UniRef90_D7MZC8
UniRef90-L1P109
UniRef90_F0G4Z5
UniRef90_UPI00036D72D7
UniRef90 UPIO003631B03
UniRef90-A0P4T6
UniRef90-D3A5D1
UniRef90 UPI00036A3EAE
UniRef90 UPI00026C7BD2
UniRef90-D4DPZ1
UniRef90-B0U041
UniRef90 T1YSB0
UniRef90_UPI0003829E4D
UniRef90-J6CSX3
UniRef90-T1A8V0
UniRef90 U5A333
UniRef90-D3HTC4
UniRef90-A0A011QK02
UniRef90 J8V4K9
UniRef90 ${ }^{-}$V4R679
UniRef90_UPI0003829CCD
UniRef90 G9ENK5
UniRef90 C4GH44
UniRef90-A5IBS1
UniRef90-UPI00037A35B9
UniRef90 W1GVP4
UniRef90_UPI000382BFD9
UniRef90-A0L473
UniRef90-UPI0003803A68
UniRef90 B1XVG6
UniRef90_L8XX53
UniRef90-A5UL5
UniRef90_D3E019
UniRef90-D9PUC8
UniRef90-B6BVL3
T K M Y
UniRef90_E1RF2
UniRef90 Q8TZ22
UniRef90-A3NNP5
UniRef90-B8GJ95
UniRef90_R9SI06
UniRef90 U0EU61
UniRef90-F6D5J2
UniRef90-J1AR96
UniRef90 A1FAF1
UniRef90-A4S891
UniRef90_F4BYG6

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



PHS QLS PA WQMMLLGDGSPTRHLQL
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm

|  |  |
| :---: | :---: |
| $\begin{aligned} & \text { UniRef90_D1J } \\ & \text { UniRefan- } \end{aligned}$ | MTDDDPLLYARSYTPLLSRLKPGFKTD |
| UniRet90-K8GHZ |  |
| UniRet90-E3GVZ7 | DESKDPLTYAVSYMPTKRLNKNFKFKRDVANIPIGKI |
| UniRef90-FOTBU6 | ETNEPLIYAVSLIPPIDRLEKDFKED |
| UniRef90-F7XPH7 | MAGDVEYVHATSMSPLSRMPGMQQDLMR ADIP |
| UniRef90-UPI | RCGTQTLA WAESWWNQSEAERHLQERNQPQWRS |
| UniRef90 F2KS79 UniRef90 ${ }^{\text {K9R6U3 }}$ | $\frac{1}{R A}$ |
| UniRef90-A3CTD4 | KDGGEVLDYAVSCTP |
| UniRef90-D4TG75 | KSSGQRLGYATSWWEASHVD |
| UniRef90-Q87IG3 UniRef90- 1 MPG | YAGDTVLVHARSLSPDERMPQTMRDQLM |
|  | RAGGQRLAYATSWWDANHVDDYWESLSR |
| UniRef90-C1EIB5 | HIGDVPMVYA A SWWSEDN |
| UniRef90 G7V | K |
| UniRef90-UP10003 | R |
|  |  |
|  | RSNGERLGYATSWLNEKDVGTVFKN G Q |
| ${ }^{\text {A AOB }}$ | K |
| iRef90-L8LVE4 | RASGQRLAYAASWWDASLVDPDWESLSRLHTELYRDVQUY |
| iRef90-UP100034A | RASGQRLAYAASWWEASHIDDYWENLSRIHARDIRGLYYG |
|  | RQS |
| UniRef90 NOBBV2 |  |
| UniRef90-Q00UD1 |  |
|  |  |
|  | RASGQRLAYATSWWTQQRVDAY |
| UniRef90-U9VVX1 | RASGQRL |
| UniRef90 LokZ81 | 㑑 |
| UniRef90-M5DT | SGSGDVYAYATSVLNINHLEEDVRNQLIAGTIGIGELLLRD |
|  | GER |
| UniF | RTSGQRL |
| UniRef90-H0P3 | R |
|  | A |
| UniRef90-UPI00030E | A |
| UniRef90-D7E7E4 | VAGNKP |
|  |  |
| Q7 | TCGGLPLA WAESWWAEADLIHLLQDRNLLTQGRSELFREVDG |
| UniRef90- UPI000366F54C |  |
| UniRef90-O2 | YNNDRLLIRAISYAPLKHL PPGAMTR |
|  | RASGQRLAYATSWWDANLVDPI WDNLSRLHTELYGVYLGH |
|  |  |
|  |  |
| Q44 | SAGGTTFVHARSLSPLLERMPDTMKEQLMRADIPI GRILRS |
|  | G |
| Ref90-A5GW | G |
|  | FAGDIPFVRALSLSPDERMPGNDRQDMMRADITP GK LRN |
| UniRef90_E0 | QGSRRNWIYAESVIVPARLDEIYRERLLKSQEPI GRLWLE |
|  | H |
| UP100020013B0 |  |
| UniRet90-B8HQE8 | RASGQRLA |
| UniRef90-A4S2R3 | CAHGDPLCYAASWWNTNTSTDADNAYGAL DRPV |
| UniRef90_UPIO004763D9A | KGEGKV |
| $Q 7$ | RNQNKNLAWAESW WNSQQVSQNLKS KE |
|  | KNNNKNLAWAESWWNAEQVEPLWKNLTQ DRSLFREVDR |
|  | T CGD |
| UniRef90 Q2S966 | MP |
| 14 F | RASGQRLAYAASWWSANQVDP IWESLSRLHTELYRDVLYY |
| UniRet90-A1UYX4 | D |
| M107N8 |  |
|  |  |

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm



[^0]```
UniRef90_D1JCI5
UniRef90-U6ECD4
UniRef90-K8GHZ6
UniRef90-E3GVZ7
UniRef90-FOTBU6
UniRef90-F7XPH7
UniRef90_UPIO0020010CD LDE R W
UniRef90-F2KS79
UniRef90 K9R6U3
UniRef90-A3CTD4
UniRef90-D4TG75
UniRef90 Q8TIG3
UniRef90-B1XPG8
UniRef90_M1WNN8
UniRef90-C1EIB5
UniRef90 G7WPP0
UniRef90_UPI00034DA391
UniRef90-LOHBN1
UniRef90-K3WF82 L E K Y
UniRef90-A0B7P9
UniRef90-A0BVM9
UniRef90-L8LVE4
UniRef90-UPI00034AB08A LDQ R Y
UniRef90-K9TVU4
UniRef90_UPIO002E5E7B6
UniRef90-NOBBV2
UniRef90-Q00UD1
UniRef90-K9YQV6
UniRef90_Q31S46 TTA T Y
UniRef90_U9VVX1 L_M R Y
UniRef90-LOKZ81
UniRef90_W9DPK8
UniRef90-M5DTS5
UniRef90-G4YRI2 LDE K Y
UniRef90_UPIO00361A1E2 LS LS R Y
UniRef90-HOP3H9
UniRef90-IOYRN5
                            LE E Y
UniRef90_1OYRN5 
UniRef90-UPIO0030
```



```
UniRef90_Q7U3P6
    L L E T W W
UniRef90-C1N5Y8
UniRef90-Q2FP20
UniRef90_U5DA32
UniRef90-A0A024TNI6 LC K Y
UniRef90 K9YAW7
UniRef90_Q46G79
UniRef90_B4WQC1
UniRef90-A3Z3JO
UniRef90_A5GWP5 LE R W
UniRef90-Q12WJ3
UniRef90-EOUFS5
UniRef90 E1ZHY7
UniRef90_UPIO0020013B0 LN Q Y
UniRef90-B8HQE8
UniRef90 A4S2R3
LE T Y
UniRef90_UPI0004763D9A
UniRef90-Q7UZI9
UniRef90 A3PFG4
UniRef90-A2C5E2
UniRef90_Q2S966
UniRef90-D5E7C2
UniRef90_14F709
UniRef90-A1UYX4
UniRef90-M1Q7N8
UniRef9O_UPI00036EF46D LE R Y
```

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
SOIO
jhmm
jpssm


[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm
    
    $\square$347886221111111$\begin{array}{lllllllllllll}8 & 6 & 2 & 2 & 1 & 1 & 1 & 1 & 1 & 1 & 6 & 8 \\ B & B & B & B & B & B & B & B & & B & & & \\ B & B & B & B & & B & B & & & & & \end{array}$
    

