QUERY
UniRef90_UPI000470DA09 UniRef90_UPI0003B55902 UniRef90_V6Q359 UniRef90-A9BHA9 UniRef90_UPI0003682446 UniRef90_UPI0003761185 UniRef90_P38526 UniRef90_B0TC52 UniRef90-R6W9V4 UniRef90_B8D0C0 UniRef90_C8X479
UniRef90_X0SWL1 UniRef90_V5T8C7 UniRef90_R7M7J2 UniRef90_G5JX49 UniRef90_R7NFZ6 UniRef90_B9KZZ1
UniRef90-D5BPX8 UniRef90_K1YTH4 UniRef90_D7CJM7 UniRef90_B9Y6B0 UniRef90_Q39Y10 UniRef90_UPI0003A5863B UniRef90_G4KVR2 UniRef90-Q1D778 UniRef90_UPIO003691ADC UniRef90_B8J3F6
1
V I UniRef90_C5C0J5 UniRef90_D1CFC2 UniRef90-Q2JUX6
UniRef90 C0QQL9 UniRef90_I3CIM7 UniRef90_W0FHF8 UniRef90_F8EX19 UniRef90-R7EKU2 UniRef90_Q2RQV6 UniRef90-I8IX61
UniRef90-B8I5N6 UniRef90_UPI00046EF7F8 UniRef90_UPIO003B5FAE6 UniRef90-S2XRS6 UniRef90_W8U3B2 UniRef90_Q98N60 UniRef90_K9Z1U1
UniRef90 J9Z2A2 UniRef90_I3TNY6 UniRef90-S7UQG6 UniRef90-A5FZW8 UniRef90-H3NM52
UniRef90_UPI0002D29DD6 UniRef90_I2F387 UniRef90_W0GPI9 UniRef90_UPIO0036D8D17 UniRef90_R4KBH5 UniRef90-R6G9Q3 UniRef90_V2QDT2 UniRef90_R7K5Q9
UniRef90 R5FLD8 UniRef90_R5A0Z6 UniRef90_A6Q6I5 UniRef90_R5Q878
UniRef90 U2DVJ0 UniRef90_UPIO00372F60B UniRef90_E4KMS9 UniRef90_E3DPX4
UniRef90 U4QVK3 UniRef90-H1XVH4 UniRef90_R6TLS2
UniRef90_D1PL84 UniRef90_R6ASV8 UniRef90_E3HZS0
UniRef90 F2I7R2 UniRef90_UPI00013AF35C UniRef90_R6SR26 UniRef90_R5XT87
UniRef90_D3DHL3 UniRef90_D3DHL3 UniRef90_Q3ZJ48 UniRef90-IOAI13 UniRef90-K8GIE1 UniRef90_E2SG95 UniRef90_A0L5W9 UniRef90_Q67JT9 UniRef90_D3NS36 UniRef90_E0TKU1
UniRef90 A0A024KIR7 UniRef90 ${ }^{-}$IOR261 UniRef90_UPIO002897294 UniRef90_Q21M90

LQPD V
VLVT A F $\quad$ NK 20
20
30
40

 V L P D P P F H S K DVV T RLI N R V MVVDGKR GTA S NIVVYSAF DII K
 I L P P D P V Y G S RLL A A R F V N R L M L D G K K S TAAE K I F Y K A L D V L A
 $V L P D P I \quad Y N S K V V T K L A N Q I M L D D G K K S T A E A B L Y G A D D V I \quad K$
 $V$ NPDPVYNDVII ARFINKIMMEGKKGLAERIMMYAMDLI K $V$ TPDP RF QS RLVAKFVNRLMRDGKKS LGERLLYQA DDDLG
 $V L P D P L Y N S K L V T R L I N R I M L D G K R G T A A S I V Y G A F E Q I A$
 $V$ LP D P K F K D T V V V L P D P K Y S S N R L V V A R F I
 I L PDPKFNDRVVAKLVNVIMVGGKKSTAERALYGALEVVS $V \operatorname{L} P$ D P K F G S E M L T T R F V

 $\vee L P$ | $D$ | $P$ | $V$ | $Y$ | $N$ |
| :--- | :--- | :--- | :--- | :--- |
| $D$ | $P$ | $I$ | $Y$ | $S$ |
| $D$ | $P$ | $V$ | $Y$ | $G$ | $\gg--$


 VLPDAKFGDLVLAKFINSVMMQGKKAVAEKIVYGAFERI Q $V \operatorname{L} P$ P D P I Y K





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



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

 V L P D P L Y N S K L V T T K L V N NVVMYD G K K G V A Q K IV Y D A F K V V E
 V V
V
V
V





 $V$ QPDPVYNSELVVTRVINKIMMLDGKKALA QRIFYEADDKAS $V L P D A K Y G D R V L T K F M N C L M L D G K K S A A E G \| V Y G A L G R I E$




## QUERY

 UniRef90_UPI000470DA09 UniRef90-UPI0003B55902 UniRef90_V6Q359 UniRef90-A9BHA9 UniRef90_UPI0003682446 UniRef90-UPI0003761185 UniRef90-P38526 UniRef90-B0TC52 UniRef90-R6W9V4UniRef90 B8D0c0 UniRef90 C8X479 UniRef90-XOSWL1 UniRef90_V5T8C7 UniRef90-R7M7J2 UniRef90-G5JX49 UniRef90-R7NFZ6 UniRef90-B9KZZ1
UniRef90-D5BPX8 UniRef90-K1YTH4 UniRef90-D7CJM7 UniRef90-B9Y6B0 UniRef90_Q39Y10 UniRef90_UPIO003A5863B UniRef90-G4KVR2 UniRef90_Q1D778 UniRef90_UPIO003691ADC UniRef90-B8J3F6 UniRef90-C5C0J5 UniRef90-D1CFC2
UniRef90 Q2JUX6 UniRef90_COQQL9 UniRef90-13CIM7 UniRef90-W0FHF8 UniRef90-F8EX19
UniRef9O R7EKU2 UniRef90-Q2RQV6 UniRef90-181X61
UniRef90-B815N6 UniRef90_B815N6
UniRef90_UPI00046EF7F8 UniRef90_UPI0003B5FAE6 UniRef90-S2XRS6 UniRef90-W8U3B2 UniRef90-Q98N60 UniRef90_K9Z1U1 UniRef90-J9Z2A2 UniRef90-_I3TNY6 UniRef90-S7UQG6
UniRef90-A5FZW8 UniRef90-H3NM52 UniRef90-UPI0002D29DD6 UniRef90-I2F387

## UniRef90-W0GPI9

 UniRef90_UP100036D8D17 UniRet90-R4KBH5UniRef90- X5MK68 UniRef90-R6G9Q3 UniRef90-V2QDT2 UniRef90-R7K5Q9
UniRef90-R5FLD8 UniRef90-R5AOZ6 UniRef90-A6Q615 UniRef90_R5Q878
UniRef90 U2DVJ0 UniRef90_UPIO00372F60B UniRef90-E4KMS9 UniRef90-E3DPX4 UniRef90-U4QVK3 UniRef90 H1XVH4 UniRef90-R6TLS2
UniRef90-D1PL84 UniRef90-R6ASV8 UniRef90-E3HZSO
UniRef90 F2I7R2 UniRef90-UPIO0013AF35C UniRef90_R6SR26 UniRef90-R5XT87
UniRef90 D3DHL3 UniRef90-D3DHL3
UniRef90 R6TDJ4 UniRef90-Q3ZJ48 UniRef90-I0AI13 UniRef90-K8GIE1 UniRef90_Q0ABH9
UniRef90_E2SG95 UniRef90-A0L5W9 UniRef90_Q67JT9 UniRef90_D3NS36 UniRef90-EOTKU1 UniRef90-A0A024KIR7 UniRef90_IOR261 UniRef90_UPI0002897294 UniRef90_Q21M90
 QKTGRDPMEVFEQALNNVMPVLEVRPRRVGGATYQVPVEV

 E A T K E N N P

EKTNKNPMEVLEAALKNVMPLLEVKARRVGGANYQVPVE
ERTGENPVELVKKALDNVMPVLEVKSRRVGGSNYQVPVEV ERTSEEPLKAFEQALENVKPQLEVKPRRVGGATYQVPMEV EKTKEDPLSLFQKAIENVKPVVEVRSRRVGGSTYQVPIEV
 KTTENDALEVFEAAMENIMPVLEVRARRVGGSNYQVPVEV EKTDKDPMEI FNQALENVEPALEVKSRRVGGSNYQVPVEV QRTGQHPLEVFQRAI HNASPLLEVKPRRVGGATYQVPVQV
 ERIUKEPPVDVFEKAITNVKPVIEVKSRRVGGSTYQVPTEV KKTGKPADEVFEEALKNLMPVLEVRPRRVGGANYQVPVEV QKTGEEAVKVLKKCLDNIKPTLEVKSRRVGGSTYQVPVEV AKGHEDPMEVLETALENVRPVVEVKSRRVGGATYQVPVEV EKTEKDPVEVFAQAMENIMPSLEVKARRVGGATYQVPLEV ERAKEDPLKKKALDNKPVLVKRRGGATYVPVV EKTGEEPMRAFEKALVNVKPHMEVKARRVGGATYQVPMEV DKTQGDPATVLKRALDNVRPSLEVKSRRVGGTTYQVPVDV QRTNRDPMEVFEQAIRNATPVLEVKPRRVGGSTYQVPVEI ERTGQDPLPVLENAVRNATPLVEVKARRVGGATYQVPVEV EKTGDDPLTALHKAIENTKPVLEVRPRRVGGSTYQVPMEV

 AKTEKEPLEVFTKALENVKPVVE
AKTGKNPLEVFTAALENVMPSLEVKARRVGGSTYQVPLEV
 ERTNTEPMEVFEQALKNIMPVLEVRARRVGGANYQVPVEV EKTGRDPLEVFEEAMANIMPVLEVKARRVGGATYQVPMEV KASSEDPLKAFEKALENAKPHVEVKSRRVGGATYQVPMEVV EKTGEEP I EVVFEKAMNNIMPVLEVKA SKTK QEPVTVVFHQALDNVAPHVEVRSRRVGGATYQVVVDV ERTGAEPMETFEKAIKNLTPLVEVKARRVGGATYQVPMEV QNQSEDPRDYFQKSINNVKPSVEVKSRRVGGATYQVPMEV EKTGDDPLKAFEKAVDNVKPFVEVKSRRVGGATYQVPVEV
 QKMKADPLEVFRQALDNVSPALEVRSRRVGGATYQVPVEV DRTKQPPMEAFKKALSNVKPLLEVRPRRVGGATYQIPFEV EKTNADPLETFNKALENITPHLELKVRRIGGANYQVPDEV ERTGNDPLETFEQA乌RNITPLVEVKARRVGGATYQVPMEV EKTGKDPSEVFEQAMKNVMPVLEVKARRVGGANYQVPVEV DKTSQDPVQMFHDALTNVMPAVEVRSRRVGGANYQVPVEV ERGSEEGVAVFKKALDNVKPSLEEVKRRVGGATYQVPVE AN MPV QKLNVDAMEAFTKALENIMPVLEVKARRVGGSTYQVPMEV SKTGEKGIEVFNKAMDNIKPVMEVKSRRVGGATYOVPDEV EKTGQSAI EVFNNATNNVRPLVEVKSRRVGGANYQVPVEV EKSNTNPIEVFESALENIMPVLEVKARRIGGANYQVPVEV SKVKQSPVAVFHQALENISPALEVRSRRVGGATYQVPVEV

## E A

GDSLKLFKLALDNVKPAMEVKSRRVGGASYQVPVEV EK S G K G A L E A F T A A L D N I M P V L E EVVKAR R V G G S T Y Q QV P M E V
 QKAKRDGDEMFHEALNNVKPAI EVRSRRVGGATYQVPVEV

 TKTGSDALEVFDKAMENITPEVEVKSRRVGGSNYQVPIEV
 R E A K M T P T E L L L H K V I E K T E Q D P I Q I LDE EA V R N TK P L V
 QRTGSDPIGVGEQAVKNATPLVEVKARRVGGATYQVPVEV SKGHETPMEVLETALENVQPKVEVKSRRVGGATYQVPVEV EK S G T D P V I T L K R A L D NVV P S L EVVK S R RVGGATYQV PI E V
 VKTKNDPVQVFHDALANVKPHLEVRSRRVGGATYQVVEV

 ERSEMMS S L E I F K A A I E N V M P S V E

## QUERY

 UniRef90_UPI000470DA09 UniRef90-UPI0003B55902 UniRef90_V6Q359 UniRef90_A9BHA9 UniRef90-UPIOOO3682446 UniRef90-UPI0003761185 UniRef90 P38526 UniRef90_B0TC52 UniRef90-R6W9V4 UniRef90-B8D0C0 UniRef90-C8X4L UniRef90-V5T8C7 UniRef90-R7M7J2 UniRef90_G5JX49 UniRef90_R7NFZ6 UniRef90-B9KZZ1 UniRef90_D5BPX8 UniRef90_K1YTH4UniRef90-D7CJM7 UniRef90-B9Y6B0 UniRef90 Q39Y10 UniRef90-UPI0003A5863B UniRef90-G4KVR2 UniRef90_Q1D778 UniRef90_UPI0003691ADC UniRef90-B8J3F6 UniRef90-C5C0J5 UniRef90_D1CFC2 UniRef90-Q2JUX6 UniRef90-C0QQL
UniRef90-13CIM7 UniRef90-W0FHF8 UniRef90-F8EX19 UniRef90_R7EKU2 UniRef90_Q2RQV6 UniRef90_181X61
UniRef90-B815N6 UniRef90_UPI00046EF7F8 UniRef90_UPI0003B5FAE6 UniRef90-S2XRS6 UniRef90-W8U3B2 UniRef90_Q98N60 UniRef90-K9Z1U1 UniRef90-J9Z2A2 UniRef90-S7UQG6 UniRef90-A5FZW8 UniRef90-H3NM52 UniRef90_UPI0002D29DD6 UniRef90_12F387 UniRef90-W0GPI9 UniRef90_UPIO0036D8D17 UniRef90-R4KBH5 UniRef90-X5MK68
UniRef90 R6G9Q3 UniRef90-V2QDT2 UniRef90-R7K5Q9 UniRef90-R5FLD8 8 UniRef90-A6Q615 UniRef90_R5Q878 UniRef90_U2DVJ0 UniRef90_UPIO00372F60B UniRet90-E4KMS9 UniRef90-U4QVK3 UniRef90_H1XVH4 UniRef90-R6TLS2
UniRef90-D1PL84 UniRef90-R6ASV8 UniRef90-E3HZSO UniRef90-F217R2 UniRef90-UPI00013AF35C UniRef90_R6SR26 UniRef90_R5XT87 UniRef90-D3DHL3 UniRef90_Q3ZJ48 UniRef90-IOAI13 UniRef90_K8GIE1 UniRef90_Q0ABH9 UniRef90_E2SG95
UniRef90_A0L5W9 UniRef90_Q67JT9 UniRef90_D3NS36 UniRef90-EOTKU1 UniRef90-A0A024KIR7 UniRef90_IOR261 UniRef90-UPI0002897294 UniRef90_Q21M90

90
100
110
120
SPRRQQS LALLRWLVQAANQRPERRAAVRTAHELMDAAEGK NPERRQALGLRWLVDYARERNERTMVERLAAEIIDAANNT SARRKQTLALRWI I NYARDRTEKTMDVKLA NE I IDASKGT PENRATSLAI RWIVTSAQSKKGRDMVSKLSQELIDAYNNT RPDRQVSLSI RWII TYARGRGEQGMVARLSGELLDAFNSR
 RPERRQTLGLRWLVKYSRERSGKTMDDKLAGEI MDAANNT RADRRQTLGLRWLTTYARSRGDKTMSERLAAEAIDAVNNA
 RYDRRTTLGIRWILDYAKQRGEKGMASKLAGELDDASKGR
 RPERRTTLGLRWLVTASRARGEHTMKERLAKEII DASNNT SETRKKTLAFRWIVNYAKTRNGKGMAMNLANELI DAANGV RSERAQALATRWLI DSSRKRGETTMVDRLCAELLDASNNR DPSRRDAAGI RWLI THARERSEKTMCEKLAAELI DAANNR
 RADRRVSLAMRWLVKYANDRSEKTVTDKLAGEILDVYNNR RPERRNTLAMRWI IDSARKRGETTMGHRLANELLEAADNR RPARRQTLGDRWLTAYARTRGERTMAERMASEMMDASNNT RQDRA GMRWM RPERQVSLGURWLINYARSRGEKGMTAKKLSAELLDAFNGR RGDRRLSLAMRWLI QSARARAGKTMDEKLAAEIIDASNNV
 RPVRRTALAMRWLADCARSRGEKSMGLRLAGEILDAFENK RPERRQTLADRWIVDFARKRGEKTMAERLAGELLDASNNT RESRREALGMRWII NAARARSGHDMSERLAAELMDAYNNT KADRRQTLGLRWMVGFARKRSERTMADRLAAEIDDATNNA RPG G WLI DFARKRSETTMVDRLTGEFLDAASNR
 RATRRTALAMRWLVDSARKRSEKSMGQRLAQEVVDAAEGR

RPERRQALLA I RWLI A A ARNRNETTMMDRLLSGELMDAANN R RPGRGTSLALRWLTQFARKRSGKSMSMKLANEIMDAANET
 RHERQLTLAI RWLI GYARSRGEKGMVSRLSGELLDAYNNR
 RSERRQALA A RWLI QAARSRNDRTMVDRLSAELI DAANNR PERRAVALA A RWIVTSARAKSGKPLKEKLALLELVDAYNGQ

 KPARANTLSLRWLTDFSRARREKTMAERLANEILLDASNGL RAARRQALSI KWI ITTASRSRKERTMVERLAGELMDAASNK R P D R R Q T L A I R WL VLY A R K R S EK Q M Y L R L A GEELMDAYNS Q
 RPARQQSLGIRWIVEAARKRNERTMMERLSNELMDAATEK $R P$ VR R L A L A M R WL RESAKGRSEKSMPQRLAGELLDAA ENR
 R P ERRQALAL RWLLASARARNEKTMVDRLSAELIDASNNR RPDRRVTVALRWLVNYSRLRGEKSMELRFAREVMDAANNT
 RADRRQALAI RWLI RYSRARSERTMAEKLANELMAAYKGE

 SETRRK Q T L A L R WL V NYAR L R P GK GMAN K L A A E I M D A A N G V
 RSDRKVALAMRWIIEASRKRGEKGMKLRLAGEVLDAVQNR SAARGQALALRWLTKYSRERGGKGMAENLANEIMDAANGT RPERRQTVGLRWLVTYARNRHEKTMSEKLAGEIMDAVAGN
 NPERGTVLALQWVLAAARNRSGRSA\|AKLTNELIDASKKT
 RSDRGTALALRWLIQFARQRSGKTMASKLANELMDASNQT

 RS D RA QA L $L$ A $A$
 RADRQQALAALRWLI ESARKRGEHTMRERLSGELMDALDNGR
 R P ARRTALAMRWLVEYSRNRGEKSMAQRLAGELIDAASSK

QUERY
UniRef90_UPI000470DAO9 UniRef90-UPI0003B55902 UniRef90_V6Q359 UniRef90 A9BHA9 UniRef90_UPIOO03682446 UniRef90_UPIO003761185
UniRef90-P38526
UniRef90-B0TC52 UniRef90-R6W9V4 UniRef90_B8D0C0 UniRef90-XOSWL1 UniRef90_V5T8C7 UniRef90-R7M7J2 UniRef90_G5JX49
UniRef90_R7NFZ6
UniRef90-B9KZZ1 UniRef90-D5BPX8 UniRef90-K1YTH4
UniRef90-D7CJM7 UniRef90_B9Y6B0 UniRef90 Q39Y10 UniRef90_UPI0003A5863B UniRef90-G4KVR2 UniRef90_Q1D778 UniRef90_UPI0003691ADC UniRef90-B8JJ3F6 UniRef90_C5C0J5 UniRef90_Q2JUX6 UniRef90_C0QQL9 UniRef90-I3CIM7 UniRef90-W0FHF8 UniRef90-F8EX19 UniRef90-Q2RQV6 UniRef90-I81X61 UniRef90-B8I5N6 UniRef90_UPI00046EF7F8 UniRef90_UPI0003B5FAE6 UniRef90-S2XRS6 UniRef90_W8U3B2 UniRef90_Q98N60 UniRef90-K9Z1U1
UniRef90 9 Z2A2 UniRef90-I3TNY6 UniRef90_S7UQG6 UniRef90-A5FZW8 UniRef90_H3NM52 UniRef90 UPI0002D29DD6 UniRef90-I2F387 UniRef90_WOGPI9 UniRef90_UPI00036D8D17 UniRef90_R4KBH5 UniRef90-X5MK68 UniRef90-R6G9Q3 UniRef90 V2QDT2 UniRef90-R7K5Q9 UniRef90-R5FLD88 UniRef90-A6Q615 UniRef90-R5Q878 UniRef90_U2DVJ0 UniRef90_UPIO00372F60B UniRef90-E4KMS9 UniRef90-E3DPX4
UniRef90 U4QVK3 UniRef90 H1XVH4 UniRef90-R6TLS2 UniRef90-D1PL84 UniRef90-E3HZS0
UniRef90-F217R2 UniRef90_UPIO0013AF35C
UniRef90_R6SR26
UniRef90-R5XT87
UniRef90_D3DHL3
UniRef90 Q3ZJ48
UniRef90_10AI13
UniRef90_K8GIE1
UniRef90_Q0ABH9 UniRef90_E2SG95 UniRef90-A0L5WO UniRe UniRef90_EOTKU1 UniRef90_A0A024KIR7 UniRef90_IOR261 UniRef90-UPI0002897294 UniRef90_Q21M90

GGAVKKKEDVERMAEAHYRW GGAVKKKEDTHRMAEAHYRW GGAVKKKEDTHRMAEAHYRW GASVKKREETHKMAEAHYRW GPSVKKKEDVHRMAEAHFRW GGAVKKKEDTHRMAEAHFRW GAAVKKREDTHKMAEAHYRW GTAI KKKEDTHRMAEAHYRW GGAVKKKEDTHKMAEAHYRW GGAVKKKEDTHKMAEAHYRW GGAVKKKEDVHRMAEAHYRW GGAVKKREDTHRMAEAHYRW GGAFKKKEDTHRMAEAHYRW GAAVKKREDTHRMADAHYRW GASVKKKDDTHKMAEAHYRW GASVKKREDTHRMAEAHFRW GGAVKRREDTHKMAEAHYRW GATIKKRDDTHRMAEAHYRW GNAVKKREDTHKMAEAHYRW GGAVKKREAVHKMAEAHYRF GGAIKKKEDTHKMAEAHYRW GASVKKKEDTHKMAEAHYRW GAAVKKREDTHRMAEAHYRW GAAVKKREDTHRMAEAHFRW GAAVKKREEVHKAAEAHFRY GNAVKKREDTHKMAEAHYRW GGAVKKREDTHKMAEAHYRW GGAVKKREDTHRMADAHYRW GAAVKRREDTHKMAEAHYRW GATVKKREDTHRMAEAHYRW GNAI RRREEVHRMAEAHYRY GAAVKKKEDTHRMAEAHYRW GSAI KKREDVHRMAEAHFRW GAAVKRKEEMHRMAEAHYRW GTAFKKKEDTHKMAEAHYRW GGAFKKKEETHRMAEAHYRY GGAVKKREDTHRMADAHYRW GASVKKREDMHKMAEAHYRW GGAYKKKEDTHKMAEAHYRW GAAVKKREDTHRMAEAHYRW GGAVKKREDVHKMAEAHYRW GASVKRREDTHKMAEAHYRW GAAVKKKEDTHKMAEAHYRW GTAVKKREDTHKMAEAHYRW GAAIKKREETHKMAEAHYRY GNSVKKKDEVHKMAEAHYRW GTA I KKREDTHRMADAHYRW GGAVKKKEDTHRMAEAHYRW GAAVKKREDTHRMAEAHYRW GSSVKKKEEMHKMAEAHFRY GSAVKKREDTHRMAEAHYRW GNAVKKREDVHKMAEAHFRW GGAVKKKDDTHKMAEAHYRW GGAI RKREETHRMAEAHYRY GASVKRKEDTHKMAEAHYRW GAAIKKREDTHRMAEAHYRW GASVKRREDTHKMAEAHYRW GASIKKREDTHKMAEAHFRW GGAFKKKEDVHKMAEAHYRW GGAVKKREDTHRMAEAHFRW GGAVVKKREDTHKMAEAHYRW GSAFKKKEDTYKMAEAHYRW GGAVKKRDEVHRMAEAHFRF GS SVKKREDTHRMAEAHYRW GSAVKKREDTHRMAEAHYRW GASVKQREDMHRMAEAHYRW GGAVRKKEEVHRMAEAHYRW GGAVKKREDTHRMAEAHYRW GASVKKREDTHKMAEAHFRW GGAVKKREETHRMAEANKAF GGSVKKREDTHKMAEAHYRY GGAVKKRDD DHKMAEAHYRW GTAVKKREDTHKMAEAHYRW GAAVRKREETHRMAEAHFRW GTAFKKKEDTHRMAEAHFRW GSADKKREDTHRMAEAHYKW GGAFKKKEDMHRMAEAHYKW GGA $\quad$ KKKEDTHRMAEAHFRW GGAVKKREDTHRMAEAHYQW GGAI KKRDDVHRMAEANFRF GSSVKKKEDTHKMAEAHFKW GSAI RKREETHRMAEAHYRY GAAVKKREDTHRMAEAHYRW GGAVKKREDTHKMAEAHYRW GATIKKRDDTHRMAEAHYRW GGAVKKKEEVHRMAEAHYRW GTAVKKREDTHRMAEAHYRW GGSIKKKEDTHKMAEAHYRW GQAVKKREDTHRMADAHYRW GAAVKRREDTHKMAEAHYRW GSAIKKKEDTHKMAEAHYRW

## UniRef90 P17292 UniRef90-UPIO0036A9F74 UniRef90_D8PCU8 UniRef90_UPIO002E843FE UniRef90_W7D3D4

 UniRef90-R6AGM9UniRef90- B3PMF0 UniRef90-EOTDB4 UniRef90-G9RRQ2 UniRef90-UPIO00372C223 UniRef90-UPIOOO4723586 UniRef90 U5DPE3 UniRef90-UPIIOOO381A8F5 UniRef90-F2118
UniRef90-C7R871 UniRef90-R6P5J8 UniRee90-UPIO0036D3EF9 UniRef90-K2GQV7 UniRef90 UPIOOO36644FD UniRef90_E8RDV3
UniRef90_SOFO77 UniRef90-C5ZW19 UniRef90-C4XLW9 UniRef90-F8C582
UniRef90 K1Z9x3 UniRef90_UPIO00363F6E9 UniRef90_UP10003B52AFF UniRef90-A1ZHCO
UniRef90 M1Y UniRef90-K2DYT6 UniRef90-Q04QJ2 UniRef90-A0A023CZ83 UniRef90-UPIO0046E7B4A UniRef90_K9EDR2 UniRef90-UPIO0036FC3A0 UniRef90-X0WML4 UniRet90 O5F5S2 UniRef90-E6WVH4
UniRef90 UPIooo37 UniRef90-Q31PV3 UniRef90 UniRef90_K0B2X2
UniRef90_UPI00037F4602 UniRef90-R7GF38 UniRef90_A8TZM1 UniRef90-F4GL85
UniRef90-D3RMZ6 UniRef90-UPIOOO2D2A515 UniRef90-H5SGG8
UniRef90-E8N3MO UniRef90-R5QWF2 UniRef90-A6Q1M6 UniRef90-UP100035DDD7A UniRef90-E8UBY5
UniRef90 F9ZXM0 UniRef90-BOVGB8 UniRef90-10.JH89 UniRef90-D5BVPO UniRef90 UP1000382EDCB UniRef90-R7MJZ4 UniRef90-E6MHN6 UniRef90-X1E833 UniRef90-P75545
UniRef90 D1VTX3 UniRef90-LODX92 UniRef90-O2VIL UniRef90-C1A6P2 UniRef90 L8NO27 UniRef90-D5EDX
UniRef90-B11114 UniRef90-E4RRVO UniRef90_O8DI44
UniRef90-P51288 UniRef90-UPIooo380BF66 UniRef90-R9XYN8 UniRef90 UPIIOOO47A212C UniRef90-A0A010YF53 UniRef90_Q19V71 UniRef90 AOAO23X5FO UniRef90-S5RPB6 UniRef90-UP100014D78C2 UniRef90-DOKXG8
UniRef9O-Q1NIE7 UniRef90-EORQ78 UniRef90-D1AWJ9 UniRef90-QOANP6
UniRef90 CoQVZ2 UniRef90-Q8EX20 UniRef90 UPIOOO3B3469F
UniRefgovI 1 PPDPKFRSVLVAKFINNLMKDGKKNIAEKI FYGALLEKLR


37360E0
 VLP DKEKSELVENNMVMEDGKKAMAKIVYALAGAA







P

UniRef90_B6BV82

## UniRef90 P17292 UniRef90_UPI00036A9F74 UniRef90_D8PCU8 UniRef90_UPI0002E843FE UniRef90_W7D3D4

 UniRef90_R6AGM9 UniRef90_B3PMF0 UniRef90_E0TDB4 UniRef90_G9RRQ2 UniRef90_UPI000372C223 UniRef90_UPI0004723586 UniRef90 U5DPE3 UniRef90_UPI000381A8F5 UniRef90_F21118UniRef90_C7R871 UniRef90_R6P5J8 UniRef90_UPI00036D3EF9 UniRef90_K2GQV7 UniRef90 UPI00036644FD UniRef90_E8RDV3 UniRef90_S0F077 UniRef90_C5ZW19 UniRef90_C4XLW9 UniRef90-F8C582
UniRef90-K1Z9X3 UniRef90-UPI000363F6E9 UniRef90_UPI0003B52AFF UniRef90_A1ZHC0 UniRef90_M1YX95 UniRef90_K2DYT6 UniRef90_Q04QJ UniRef90_A0A023CZ83 UniRef90_UPI00046E7B4A UniRef90-K9EDR2 UniRef90_UPI00036FC3A0 UniRef90_X0WML4 UniRef90_Q5F5S2 UniRef90-E6WVH4 UniRef90_UPI00037360E0 UniRef90_Q31PV3 UniRef90 K0B2X2 UniRef90_UPI00037F4602 UniRef90_R7GF38 UniRef90 A8TZM1 UniRef90_F4GL85 UniRef90_D3RMZ6 UniRef90_UPI0002D2A515 UniRef90-H5SGQ8 UniRef90-E8N3M0 UniRef90-R5QWF2 UniRef90_UPI00035DDD7A UniRef90_E8UBY5 UniRef90_B0VGB8 UniRef90_IOJH89 UniRef90_D5BVP0

70
80
EKKGSDP|LEVLEQAVINSTPLIV|V|KARR|IGGSTYQ|V|PME|V| EKTGET G E I F K A A MQNATPVVEVVKSRRVGGATYQVPMEV
 QESGKDPMEVFDEAIVNIMPVLEVKARRVGGANYQVPIEV







 KKSGK PALEAFEFGLGNIMPVLEVKARRVGGATYQVPME A K T N N D D P GRLKKSPVDVFHESLDNIKPSVEVRSRRVGGATYQVPVEV


E K T K E K GII E T F E K A L E K V K P L V E V R S R R V G G A T Y QVV $\operatorname{P}$ V E V
EKS GEDPLKAFEKAI GNVKPHMEVKPRRVGGATYQVPMEV
 T K R N D D A L K L F K Q A L E N I K P L L EVVR S R R V G G A N Y QV P V EV
 TKNNEDPLKIFNTALSNVKPNLECRSRRVGGATYOVPVEV

 KKTGNDPYTTFREALENAKPQVEVKSRRVGGVTYQVPIEV


 K K T GKAAI EVVFEAIANSKPIVEVKSRRVGGANYQVPVGV
 K K T E V D P L I Th L K R A L D N I S K P A V ERTGNDPLELDFEQAVRNATP LVEVRARRVGGATYQVPMEVV
DQS GEDPLEVF $\square R A M N N D M P V L E V K A R R V G G A T Y Q V P D E V$ EKTKKDPLQVFHQAMENVMPILEVVKSRRVGGASYQVPVVV E V T G Q D A L E V V F N T A M M N N I M M P V V RLFHDALGNVKPRLEVRSRRVGGATYQVPVEVV

 ERTKKDPLETFHKAITNVAPVVEVRSRRIGGANYQIPMEV



 SKGHNESLLELVAKALENVQPRVEVKSRRVGGATYQVPVVV AKTKEDPLVVFKSALDNVRPLVKVVSRRVGGATYQIPI EV ERSGNDAMEIFD QAMKNVMPVLEVRARRVGGSNYQVPVEV
 GENSSDPVETFNLA IRNVTPQLEVKPRRVGGATYQVPVEV
 EKTGKEALEAF QEALANITPVLEVKARRVGGATYQVPI EI $K$ QVSKEPVTVLE QAVRNATPRLEVKPRRVGGATYQVPVEV
Q R E Q T GEEAI EVVFKALNNVMPVLEVKGRRI GGATYQVPMEVV
T


ERTGNPPLEVFDRAIRNATPLVEVKARRVGGATYQVPMEV E R L N A E P F E V F Q K A M E N V K P L V







 EKS S K D P V DV F K K A LIN N A A P H V E V K S K R I G G A T Y QV P I EV A K GK G H P V E L V E R A L E N V A P A V

 KETNESGYEIFKRAMENVKPRVEVRSRRRIGGATYRVRVEV
 E K T G K D G L E A F N E A I E N I K F P R



UniRef90_P17292 UniRef90_UPIO0036A9F74 UniRef90-D8PCU8 UniRef90_UPIO002E843FE UniRef90-W7D3D4 UniRef90-R6AGM9 UniRef90-В ВЗРМFО UniRef90-EOTDB4 UniRef90-G9RRQ2 UniRef90_UPIOOO372C223 UniRef90-UPIOO04723586 UniRef90 U5DPE3 UniRef90-UPIO00381A8F5 UniRef90-F21118
UniRef90-C7R871 UniRef90-R6P5J8 UniRef90-UPIO0036D3EF9 UniRef90-K2GQV7 UniRef90_UPIo0036644FD UniRef90 E8RDV3 UniRef90-S0F077 UniRef90_C5ZW19 UniRef90-C4XLW9 UniRef90-F8C582 UniRef90-K1Z9X3 UniRef90-UPI000363F6E9 UniRef90_UPIO003B52AFF UniRef90-A1ZHC0 UniRef90-M1YX95 UniRef90-K2DYT6 UniRef90-Q04QJ2 UniRef90-A0A023Cz83 UniRef90_UPI00046E7B4A UniRef90-K9EDR2 UniRef90-UPI00036FC3A0 UniRef90-X0WML4 UniRef90 O5F5S2 UniRef90-E6WVH4 UniRef90-UPIOOO37360E0 UniRef90-Q31PV3 UniRef90-K0B2X2 UniRef90-UPIOOO37F4602 UniRef90-R7GF38 UniRef90_A8TZM1 UniRef90-F4GL85 UniRef90-D3RMZ6 UniRef90-UPIO002D2A515 UniRef90 H5SGGQ8 UniRef90-E8N3MO UniRef90-R5QWF2 UniRef90-UPIO0035DDD7A UniRef90-E8UBY5 UniRef90-BOVGB8 UniRef90-10JH89 UniRef90-D5BVPO UniRef90_-RGGFM4
UniRef90 R7MJZ4 UniRef90 E6MHN6 UniRef90-X1E833 UniRef90-P75545
UniRef90 D1VTX3 UniRef90-LODX92 UniRef90-O2VIL UniRef90-C1A6P2 UniRef90_L8NO27 UniRef90-D5EDX
UniRef90-E4RRVO UniRef90-Q8DI44 UniRef90-P51288 UniRet90-UPIOOO380BF66 UniRef90-R9XYN8 UniRef90_UPI00047A212C UniRef90-A0A010YF53 UniRef90_Q19V71 UniRef90 A0AO23X5FO UniRef90-S5RPB6 UniRef90_C7RG94 UniRef90-UPIO0014D78C2 UniRef90-DOKXG8
UniRef90
Q1NIE7 UniRef90-EORQ78 UniRef90-D1AWJ9 UniRef90-QOANP6
UniRef90 CoQVZ2 UniRef90-Q8EX20 UniRef90-UPIO003B3469F
UniRef90_B6BV82
 RQERGTALGMRWLDRSARSRNDKSMSLRLSRELI DASNND
 RPERGQALAI RWI IS A ARKRAEHTMAARLSAELMDAAANR RPDRRSTLGLRWLVNYSRLRGEKTMVERLAHEILDASNNA R A E R R Q T L G L R WI V L Y A RAR S E RTMMQERLA GE I L D A CN Q Q SAKRKQTLALLRWLI QYARLRNEKTMEEKLA GEIIDDASNKM RPDRK $\square A L A M R W L I A A A R A R N E A T M V E R L S G E L M D A S Q N R$ RPERRETLGLRWLTTYARARSERTMRERLAGEIMDAVVGN APSRRTAMAI RWLITYARQRNEKTMRERLAGEFMDAAAGR R A D R A Q A L A I R WL I NS A R GR S E M T M M ER L S GE L L D A S N D R
 R S D R G Q A L A l R WL I E S S K K R G D K TM Q E R L S K E FL D A S T N K RPARQTALLAMRWLTEAARKRSEKSMRERLAGEVLDALEGR K P ERRLLTLGLRWLTLYSRKRGEKTMDARLANELLDAINNA
 RPERRQALA A RWLASAASSRNENTMRERLAGELLDASQGR RPERRNALLAI RWI I NFSKNRSGQTMSEKLAAELLLDAFNNR
 R P A RQQSSL S I RWL L DSARKRNERTMIDERLANELI DAANER

 RPERREALAI RWLISAARGRGETTMDDKLSNELLDAVANR KAKRAQALALRWLMDATRKRKNKTMAEKLYAELMDASQNK R P E R K V S L G I K WMIDS F A R K R G E K T M H E R L A A E I I A G A K N E

 R P E R RTTLG GLRWLVNYARDRGEHTMPERLAKEII DASNNT PGSRRMTLAMRWVI DASKGRTGKSFAEKLSAELLDAYNNQ HATRATALGLRWLVEYARQRREHTMQDRLLNEILDASNGL RASRRTTLAMRWVI A A ASARGEQGMENRLAGELIDAAEHR ASDRRVSLAVVRWLLQSARNRPGRSMAEKLANELMDAA QGT RPSRRLALAMRWVRDAARKRGEKSMDLRLAGELIDASEGR RQSRRLALAMRWLIDSARKRGENTMARKLAGELLDASENR



 RETRREALAMRWLI TAARARNGKTMGEKLGAELFDAFNSS RPARRNSLAMRWLI DSARKRSEKSMAQRLAGELMDAADSR RAERRQSLGLRWLI QYA QKRSEKTMEEKLAKEIVEAAS GT REDRR】ALAMRWI KQYARERRDKSMADKLAAELIAAAANGE PARRRMTLAMRWI DQAAKARTGKSFS EKGLAAELLDANNNQ
RADRRQALADRWI I DAAKKRSETTMTERLANELLDAVANK


 NEKNGKALAFRWII ANARARSEKTMTEKLAAELIAAHKKE R P ERRRQALGLRFIVNYARLRGEKTMEERLANEELDA GNNT R P E R R S T L A M R WL V E A A R K R G E K S M G L R L A G E L M D A Y E G K
 KADRGFALLSSSWLI ESAKKRGGKSFI DKLTNELDDASNGQ RADRKQALLALRWLVAFARERSERTMVERLAGEIMDACNNA RPERGLSLALRWLVSSTRARAGKSMAEKLAAELGDASQGQ
 RAV V R D AL AMRWLVEAARKRGERSMPDLKLAGELMDAA DSK NSRRATTLADRWLVGFSRTRKEKSMSERLANEIVDASNGV $R P$ VR R L A L A M R WL REAAKKRGEKSNMDLR L A GEELI DAS E G R RQDRRTALAMRWLISYSRDRNEKSMKEKLAAEVLAASRGE RTDRGVALALRWLVQYSRSRAGRSMVTKLANELMDAANET PAERAQVLAIRWI I SYARSKKGMP IAERLARELADAYKGE RADRRQTLGVRWUTSFARQRPGKSMKEKLAAEIMDAANGV RAERKQSLGMKWMIGYARKRGEKTMTERLAGEI DAASKGE RPDRG $\square$ SLALLRWLVQFSRKRAGRSMSAKLANELMDAANET

 R P A R R M T L A M R WL ID A A RKRSEKGMVMRLAAEVLDANENR
 P Q R R A N T L A L R WMI R F A R E R R E K T M G A R L A G E I L D A K D N I
 PNRRQFYLAAHWII DSAKKKSGSPMSSRLAGELLSASNNA RAVRRSSSLAMRWLI DAARKRGEKTMAAKLA GELLMDAA ESR R DERRNALADRWLVNYARQRPGKTMSEKLAA ELLADA F QN R RETRREALAMRWI I DAARGREGKPMEYRLADELLDDAYNST RKERQQTLADRWLVKYTRDRKEYGMILLKLKKELIAAANNE RAERKKALA I RWLTGAARGRNENTMRERLAAEMMDASANR R P D R Q N S L A FT WL DDASRKRGGRSMDVRLVNEVVDA DDGK


| GNTIIKKREEMHRMAEAHYRY 140 |  |
| :---: | :---: |
|  |  |
| UniRef90 UPIIOOO36A9F74 |  |
| D8 |  |
| iRee90-UPIO002E843FE | Gs AVK |
| UniRef90-W7D3D4 ${ }^{\text {GASVKKREDTHKMADAHYRW }}$ |  |
|  | GSAFKKKEDVHKMAEAHFRF |
|  |  |
|  |  |
| UnRef90 G9RRQ2 ${ }^{\text {GNACKKREDTHKMAEAHYRY }}$ |  |
| UniRef90-UPIO00372C223 |  |
|  |  |
|  |  |
| UniRe90-F21118818 GNA KKKEDVHKMAEAHFRW |  |
|  |  |
| UniRefolo-66P5J8 G G GAVKKKDETHKMAEAHYKW |  |
|  |  |
|  |  |
|  |  |
|  |  |
| UniRef90-S0F077 GASVRREEVHRMADAHYR |  |
|  |  |
|  |  |
|  |  |
|  |  |
| UniRef90-K1Z9X3 G G A M K R E P HRMAEA Y R W |  |
| iRet90_UPIO00 |  |
|  |  |
|  |  |
| UniRef90-K2DYT6 G ${ }^{\text {a }}$ ( AVKKREDTHKMAEAHYRY |  |
|  |  |
|  |  |
| UniRef90-A0A023Cz83 G A SVK K R E D Th K M |  |
| P100 |  |
| UniRef90-K9EDR2 ${ }^{\text {a }}$ |  |
| UniRef90 UPIOOO36 |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| UniRef90-UP100037F4602 G S SVK K K D THK M EA H Y |  |
|  |  |
| UniRef90-A8TZM1 GTAVKKREDTHRMADAHYRW |  |
|  |  |
| UniRef90-D3RMZ6 G A A VK K E D T HRMAEA Y Y W |  |
|  |  |
|  |  |
|  |  |
| , |  |
|  |  |
| Ref90-E8UBY5 GGATKKKDDVERMAEAHYRW |  |
|  |  |
|  |  |
| GASTKKREDTHKMAEAHLR |  |
|  |  |
|  |  |
|  |  |
| G |  |
| UniRet90-E6MHN6 |  |
|  |  |
| --D1VT33 |  |
| iRef90-LODX92 |  |
|  |  |
| UniRef90-LODX92UniRef90 U2VII7 |  |
| UniRef90-Q2L2H3 |  |
| C1A6 |  |
|  |  |
|  |  |
|  |  |
| UniRefofo-E4RRVO |  |
| UniRefo-p51288 GNS R R EETHRMAEAHYRY |  |
|  |  |
| UP1000380BF66 GASVKRREDTHKMAEAHYRW |  |
|  |  |
| UniRef90-UP100047A212C GA AVKKREDTHRMAEAHYRW |  |
|  |  |
|  |  |
| GAS RRKEETHRMAEAHYRW |  |
| $\begin{array}{ll}\text { UniRef90-S5RPB6 } & \text { GSA } \\ \text { UniRef90_CRG94 }\end{array}$ |  |
|  |  |
| GN |  |
| GSAVKKRED |  |
|  |  |
|  |  |
| UniRef90 D1AWJ9 |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |



## UniRef90_W6LR19 UniRef90_C7RJE5 UniRef90-B7J463 UniRef90-R7BRF7 UniRef90-K2A678 UniRef90-UPI0003809D05 UniRef90_A0A031M3G8 UniRef90_U2EEQ7

 UniRef90_HOULA8 UniRef90_E1RCK6 UniRef90_UPI0003B68034 UniRef90-W0DTZ4 UniRef90_UPI00035EECBB UniRef90_B5Y991 UniRef90_UPI0002E63D3A UniRef90_A0ART5 UniRef90_UPI0003B668CF UniRef90_UPI0003B333D7 UniRef90_B0U0Z2 UniRef90_K0C5G7 UniRef90_A0A023HBZ1 UniRef90_UPI000400A767 UniRef90_-I1XL61UniRef90_C7MP56 UniRef90_UPI000364C2E3 UniRef90_UPI00036D1041 UniRef90_-T0T641 UniRef90-A5WGL1 UniRef90_B1GZ79 UniRef90_U3U268
UniRef90 G8XPD6 UniRef90_B1VAM3 UniRef90_W8FBY4 UniRef90_UPIO00377C18B UniRef90_A9WH61 UniRef90_Q6AP75 UniRef90_E0RZ27
UniRef90 B3E011 UniRef90_B3E0I1
UniRef90_A6DPN0 UniRef90-D8K1C3 UniRef90-X0XTM7
UniRef90- U1FLC4 UniRef90_U1FLC4
UniRef90_C6KIM8 UniRef90_Q1ISC6 UniRef90_UPI0003735789 UniRef90_V5WJT3 UniRef90_H8ZXG2
UniRef90_B1ZNF1 UniRef90-Q1Q142 UniRef90_Q83HC8
UniRef90_UPI00016C0D83 UniRef90_Q057A0 UniRef90_IOGKI4 UniRef90_D3FEU1 UniRef90_UPIO00375744A UniRef90_A6FH04
UniRef90_Q6YXS0 UniRef90_Q0AIJ9 UniRef90-UPIO0035FB0B3 UniRef90_Q7VRN8 UniRef90_LOK4J8 UniRef90_Q85AI6
UniRef90 F4KWU0 UniRef90_H2CAM2 UniRef90_F2IIS9 UniRef90_R5W627 UniRef90_S8D140 UniRef90_A0A023HHN1 UniRef90_L7T0Y3 UniRef90_E3T2X1 UniRef90_G7V8T6 UniRef90_K2CFZ4 UniRef90_K2F6F1 UniRef90_O83272 UniRef90-Q9TLV7 UniRef90_M4ZXX8 UniRef90_COJWT8 UniRef90_UPIO003B5BE8B UniRef90_H6LOP6 UniRef90_J7KBV9 UniRef90_H6T9L1

 K K A GDE GVVVFK Q ALENAKPGI EVVRSRRVGGSNYQVPCEV E R L G K K N G L E V W W K K A L N N I M P G V E V K K S R R V G G A T F Q V P T E V


 R R K G G D H A A L L R D A L D NVGP L V EVVK S R R V G GA T Y QV P V V V



 K D A S A N E VVEVF E K A L D S V S P M V EVVK S R R V G GA T Y Q V P V V V


I


UniRef90_W6LR19 UniRef90_C7RJE5 UniRef90-B7J463 UniRef90-K2A678 UniRef90_UPI0003809D05 UniRef90_A0A031M3G8 UniRef90_U2EEQ7 UniRef90_HOULA8 UniRef90_E1RCK6 UniRef90_C8PSU7
UniRef90_UPI0003B68034 UniRef90_W0DTZ4 UniRef90_UPI00035EECBB UniRef90_B5Y991 UniRef90_UPI0002E63D3A UniRef90_A0ART5 UniRef90_UPI0003B668CF UniRef90_UPI0003B333D7 UniRef90_B0U0Z2 UniRef90_K0C5G7 UniRef90_A0A023HBZ1 UniRef90_UPI000400A767 UniRef90_-I1XL61 UniRef90_C7MP56 UniRef90_UPI000364C2E3 UniRef90_UPI00036D1041 UniRef90_T0T641 UniRef90_A5WGL1 UniRef90_B1GZ79 UniRef90_U3U268 UniRef90_G8XPD6 UniRef90-B1VAM3 UniRef90_W8FBY4 UniRef90_UPIO00377C18B UniRef90_A9WH61 UniRef90_Q6AP75 UniRef90_E0RZ27 UniRef90-B3E011 UniRef90_A6DPN0 UniRef90_D8K1C3 UniRef90-X0XTM7 UniRef90_U1FLC4 UniRef90_Q1ISC6 UniRef90_UPI0003735789 UniRef90_V5WJT3 UniRef90_H8ZXG2 UniRef90_B1ZNF1
UniRef90_Q1Q142 UniRef90-Q83HC8 UniRef90_UPIO0016C0D83 UniRef90_Q057A0 UniRef90_IOGKI4 UniRef90_D3FEU1 UniRef90_UPIO00375744A UniRef90_A6FH04 UniRef90_Q6YXS0 UniRef90_Q0AIJ9 UniRef90_UPIO0035FB0B3 UniRef90_Q7VRN8 UniRef90_LOK4J8 UniRef90_Q85AI6 UniRef90-F4KWU0 UniRef90_H2CAM2 UniRef90_R5W627 UniRef90_S8D140 UniRef90_Q1ACP2
UniRef90-A0A023HHN UniRef90-L7T0Y3 UniRef90_E3T2X1 UniRef90_G7V8T6 UniRef90_K2CFZ4 UniRef90_K2F6F1 UniRef90_A9QC45 UniRef90_O83272 UniRef90-Q9TLV7 UniRef90-M4ZXX8 UniRef90_COJWT8
UniRef90_G8N101 UniRef90_UPIO003B5BE8B UniRef90_H6LOP6 UniRef90_J7KBV9
UniRef90_H6T9L1 UniRef90-K1YAL0
UniRef90_A1TJ03
UniRef90-M4Q9Q0
UniRef90_V5RVY7
UniRef90_A0A024B494
UniRet90_AOAO24E
UniRef90_P59060
$R S V R R T A|L| A M R W|D D A S R K R G E K S M A R R| L \mid A G E L L D A A D S R$ RPSRRMALAMRWLRESARKRSEKSMGQRLAAEMLEASESR
 RPERRRQTLAD ARWLVDFARKRGEKTMMDAR LA GELLMDAFN MT RAERRVSLAMRWLI GAARGRNEKNDAERLA GEFFDAFRNN RPERKVVSLGDKWMI NFSLKKRNEKTMKKERLA GE I I A A SKGE
 APARA Q A L A A R WI I SYAR GK S GMPMAE R L A AREEFVDA Y N N E

 RPERKMALSMRWIVEAARKRNEKGMMLDRLAGELADALENR EPNTRTSSIAFRWI RSSYARNRGEKTME ERRLAA ELLMDC YNK Q PERRALALALRWIVNGARDRGAGEMEKKLAAELVDAYKGQ RSERSVALAALRWLTQFARQRPGKSMA DRLANELMDAANET


 RPNRRMGLSMRWMI DASRKRSERSMSARLA GEVI DALDSR GAFRATNLLALRWLLTYARQRGGRSMSDKLANEII DTANED

 K S K R S Q T L A L R WLL EATRKRKNKSMSDKLISSELMDAS QNK

 RPSRRTAALAMRWL A DAASKRSEKSMAHRLA GELGDASEGK PVIR S T TLA A $\square$ NWLI G $\square$ AR S K T GKPMREKLAQEI DDASKKE

 $R P D R R \square A V G S K W L I Q Y A R R R G E K T M K D K L A G E I I A A A A K G E$ K E GRREAALAMRWLI NAARSRSGKSMGLLRLGQELVDAYNGT KSDRRYSLAMRWLLMSARARTGKPMVERLAAELIDAYNNT RQARRNALADRWII SYAKSRSGKCMSEKLASEVMDAFNNR RPDRRQALALR WLVNFSRARGEKTMVDRLASEIMMDAYNNT
 R P DRAFSLLALRWLAKYSRARTGKSMSEKLAAELSDAAKGL
 R DVRKEALAMRWI I TAARNRNGHGMAETLAAELLDAYNS T TSFRGSNLALRWIVKASRKRTGKTDALKLAAELMDASKSS NADRRTSSLA R WLI SYSRGRGEKGMDDKLAN ELLDDAANGR RPEERTARA R WLI RFARERSERTMAERLANELMAASKGE RESRREALLAMRWI I AAARGRNGKSMAQKLSSELMDAYNNT



 EKERGQKM A IVKWI I QAARSVKGKRMEEKMADEEI I NASN ET

 K S A Q G K A L A DC WL L R A S K K R L G R NMA F K L S Y E LI DA A R D S

 D N R R R L T L GLRWMI QAARDRSERKMVDRVANEI IAAYNEE
 RPKRKVVI GMK WL I RFARTRSGKGMA EK L A A E I I I A A S K N E

 K P E K G H S L A All R WL L T A S R K R T G K N MVV F K L A N ELL L D A A K D T

 QPERA QALLATRWI I QYARAKKGMPMVERLAREMMDAYKGE

 RETRREAL GMRWII GAARRRSGRGMSERLAAEELLDA YHST


 A D N R S NS L A I RWL L RYARERAGKS VVEKFAAEIMDAA DNR SPGERGTS LAMKWM KYARARSGKGMANKLSQEILAAA KGE RSKQ GKVLAA I R WLL GAAARKRPGENMMANLLSSELMDAAK G S RPERRNALAA RWLI SYSLLKRSGKSMAEKLAGENGDAFNNR
 R P V R R LAA L S M R WL K E A A RKR GE K S M A QR L A N ELL L A A E GR




| UniRef90_W6LR19 | G S A VK K R E DVV H R M A E A H Y R W |
| :---: | :---: |
| UniRef90_C7RJE5 | G G AVKKRDEVHRMAEAHFRF |
| UniRef90-B7J463 | G NAVRKREETHRMAEAHFRW |
| UniRef90-R7BRF7 | G GAVKRKDEMHRAAEAHYRW |
| UniRef90-K2A678 | GTAIIKKREDVHKMAEAHFKW |
| UniRef90_UPI0003809D05 | G A AVKKKDDTHRMAEAHFR |
| UniRef90 ${ }^{-}$A0A031M3G8 | GSAVKKREDVHRMAEAHYR |
| UniRef90-U2EEQ7 | GAAVKKREDMHKMAEAHYRY |
| UniRef90-H0ULA8 | GNAVKKRDETHRMAEAHYRW |
| UniRef90-E1RCK6 | GTAFKKKEDTHRMAEAHYRW |
| UniRef90-C8PSU7 | GTAFKKKEDTHRMAEAHYRW |
| UniRef90-UPI0003B68034 | G A AVK K R E DVHRMAEAN |
| UniRef90-W0DTZ4 | GSAI K K K E T HRMAEAHFRW |
| UniRef90_UPI00035EECBB | GNTIKKREDTHRMAEAHFRY |
| UniRef90_B5Y991 | GYAAKRREE $\mathrm{CH}^{\text {H M M E A H L R W }}$ |
| UniRef90_UPI0002E63D3A | G GAVRKREETHRMAEAHYRY |
| UniRef90-A0ART5 | G GAl RKKEETHRMAEANKAF |
| UniRef90-UPI0003B668CF | GASIIKKREDTHKMAEAHYRW |
| UniRef90_UPI0003B333D7 | GGAI RRKQDQHRMAEAHYRW |
| UniRef90-B0U0Z2 | GAAVKKREDTHKMAEAHFRW |
| UniRef90-K0C5G7 | GSAFKKREDTHRMAEAHFRW |
| UniRef90_A0A023HBZ1 | GNTIKKKEETHRMAEAHFRY |
| UniRef90_UPI000400A767 | GAAVRKREDMHRMAEAHFRW |
| UniRef90-I1 XL61 | GTAVKKKEDTHRMAEAHFRF |
| UniRef90-C7MP56 | GASVKRREDLYY M A E S H Y R F |
| UniRef90_UPI000364C2E3 | GAAI KKREDTHKMAEAHYRW |
| UniRef90-UPI00036D1041 | GRAI K K K D Thematankar |
| UniRef90-T0T641 | G A SVKKREDVYKMAEANKAF |
| UniRef90-A5WGL1 | GSAVKKRDEVHRMADAHYRF |
| UniRef90-B1GZ79 | GAAVKKREDTHKMAEAHYRW |
| UniRef90_U3U268 | G NAVKKREDVHRMADAHYR W |
| UniRef90_G8XPD6 | G NAI R K R D EVHRMAEANYR $V$ ¢ |
| UniRef90-B1VAM3 | GVVVKKREETHRMAEAHYRW |
| UniRef90-W8FBY4 | GAAVKKKDDTHRMAEAHFRF |
| UniRef90_UPI000377C18B | GTAFKKKEDTHRMAEAHYRW |
| UniRef90_A9WH61 | GTTIKRKEDVHRMAEAN |
| UniRef90-Q6AP75 | GAAVKKRDDTHRMAEAHYRW |
| UniRef90_E0RZ27 | GAAVKRKEDMHKMAEAHYRF |
| UniRef90-B3E011 | GS SIKKRDEVHKMAQAN |
| UniRef90-A6DPN0 | GSAVKKKDEVHRMAAAHYRW |
| UniRef90-D8K1C3 | GSAVKKREETHKMAEAHYRW |
| UniRef90-X0XTM7 | GVTVKRRDDTHRMAEAHYRW |
| UniRef90-U1FLC4 | GTAFKKKEDTHKMAEAHYRW |
| UniRef90-C6KIM8 |  |
| UniRef90_Q1ISC6 | GAAIKKKEDVHRMAEAHYRW |
| UniRef90_UPI0003735789 | G GAVRMREDVHRMAEAHYRF |
| UniRef90-V5WJT3 | GSAFKKKEDTHRMADAHYRW |
| UniRef90-H8ZXG2 | GSSIRKREEMHKMAEANFRF |
| UniRef90_B1ZNF1 | GNVVKKKEDTHKMAQAHLRW |
| UniRef90-Q1Q142 | G IS S T K RENTHKMAEAHFAW |
| UniRef90-Q83HC8 | GATVKCKEDTHRMAEAHYRW |
| UniRef90_UPI00016C0D83 | GGAVKKKEDTHKMAEAHYRW |
| UniRef90_Q057A0 | GAAVRKREEVVKMADAHYR W |
| UniRef90_10GKI4 | GAAYKKK $\mathrm{C}^{\text {P }}$ L L HKMAEAH L R W |
| UniRef90-D3FEU1 | G GAYKRKDDI Y R M A Q A H YR W |
| UniRef90-UPI000375744A | GNA I K K REDVHRMAEAHYRW |
| UniRef90-A6FH04 | GS AVKKREDVHRMADAHYR W |
| UniRef90_Q6YXS0 | GEAI RKKEETHRMAEAN |
| UniRef90-Q0AIJ9 | GTAIKKREEVHRMAESHFRF |
| UniRef90_UPI00035FB0B3 | G GAVKKREDTHKMAEAHYK W |
| UniRef90_Q7VRN8 | GNAVKKREEVHRLAEAHYRW |
| UniRef90_L0K4J8 | G GAVRKKEEVHRMAEAHYRW |
| UniRef90_Q85AI6 | GSAI RKKEETHKVAEANKAF |
| UniRef90-F4KWU0 | G N AVKKKEDTHRMAEAN |
| UniRef90-H2CAM2 | GGSVKKREDTRKMAEAHYRW |
| UniRef90-F2IIS9 | GAAFKKKEDTLRMAEAHFRF |
| UniRef90_R5W627 | GAAFKRKEEMHRMAEAHFRF |
| UniRef90_S8D140 | G NSVKKKEE】HKMAEANKAF |
| UniRef90-Q1ACP2 | GGAI RKKEETHRMAEAHFRY |
| UniRef90_A0A023HHN1 |  |
| UniRef90_L7T0Y3 | GSAVRKREETHKMAESN |
| UniRef90-E3T2X1 | G NAVRKKEETHRMAEANKAF |
| UniRef90_G7V8T6 | GSSVKKREDTHKMAEAHYR W |
| UniRef90_K2CFZ4 | G $\square$ A I K K K E DVQKAA A A HFRW |
| UniRef90-K2F6F1 | GAAVKKRTDMERVAEAHFRW |
| UniRef90_A9QC45 | GGAllRKREETHRMAEAN |
| UniRef90-O83272 | GTAFKRKEDTHRMAEAHYRW |
| UniRef90-Q9TLV7 | GNS $\square$ R K K E D THKMAEAHYRY |
| UniRef90-M4ZXX8 |  |
| UniRef90-C0JWT8 | GKAVQKRQETHKMAEAHFR |
| UniRef90_G8N101 | GAAVKKREDTHKMAEAHYRW |
| UniRef90_UPI0003B5BE8B | GGSIKKKEDTHKMAKAHYRW |
| UniRef90_H6L0P6 | GQAVKKKEDTHRMAESN |
| UniRef90-J7KBV9 | GAAI RRKEE $\square \mathrm{NKMAEANKAF}$ |
| UniRef90-H6T9L1 | G G AIR K K E T THR】AEAN |
| UniRef90-K1YAL0 | GAAVKKREDTHRMADAHYRW |
| UniRef90-UPI0004785C44 | GFAllKKKEDTHRMAEAHFRW |
| UniRef90-A1TJ03 | GGAMKRRDEVHRMAEAHFRF |
| UniRef90-M4Q9Q0 | GAAVEKKETVHKMAEANYRW |
| UniRef90-V5RVY7 | GAAFKKKEDTHKMAEAN |
| UniRef90-A0A024B494 | GHADKKRDETHRMAEANKAF |
| UniRef90_P59060 |  |

## UniRef90 F8KXC5 UniRef90-Q6EM79 UniRef90-K9ZV58

 UniRef90_UPI0003706E82 UniRef90-F4DKV9UniRef90-B4S5N1 UniRef90_14B8B9 UniRef90-Q0EW32 UniRef90-D3WCQ0 UniRef90-A8PNQ8 UniRef90-K1Z0C2 UniRef90-F8L675
UniRef90-W7YJU7 UniRef90_W7YJU7 UniRef90_Q06FM0 UniRef90-K2F125 UniRef90-D5MAV5 UniRef90-Q68XN6 UniRef90_W8CYD1 UniRef90_K4JUD5
UniRef90_A9B7455 UniRef90-M1K019 UniRef90-A4GKM6 UniRef90-B7T2V2
UniRef90 F4MMD5 UniRef90_UPI0003B73435 UniRef90-Q3Z984 UniRef90-E7BKWW4 UniRef90-K4IG17 UniRef90_K0P002 UniRef90-C9RQN2 UniRef90-K2EPY2 UniRef90_B6J5C8
UniRef90_Q89A66 UniRef90-Q6KGW1 UniRef90_A6CGZ0 UniRef90-Q14EV9
UniRef90-K1XGR5 UniRef90-D4TNT2 UniRef90-Q9G879 UniRef90-F3ZQ23 UniRef90-W0B7X6
UniRef90 E8R5M2 UniRef90-K1YRJ0 UniRef90-K2DW12 UniRef90-H3A182 UniRef90_D3PN46
UniRef90 UPI0001 UniRef90-Q0P3M8 UniRef90-D0EVQ1 UniRef90-D3HPJ9
UniRef90-D7JCZ4 UniRef90-X1KBE3 UniRef90- P49495 UniRef90_UPI00042BFB5C UniRef90-H6Q4A9 UniRef90-M4QA48 UniRet90_G1KFD7
UniRef90-K4GBV5 UniRef90_UPIO003C16529 UniRef90_Q0SNC1 UniRef90-B7T427
UniRef90-M4Q9J7 UniRef90-M4Q9J7
UniRef90_B2KEM8 UniRef90-K2B8X8 UniRef90_U6A2L4 UniRef90-A9ULR3 UniRef90_H2F684 UniRef90_LOD6S4

UniRef90 UPIO003 UniRef90_UPIO003C29ECF UniRef90-X7YJS8 UniRef90-K4KDD1 UniRef90_Q85FT8 UniRef90-B7PUX5 | UniRef90-F7FCF7 |
| :--- |
| UniRef90 | UniRef90-F3LE49

UniRef90-T1M344
UniRef90-G8LRQ6
UniRef90-G1PRU8
UniRef90-Q5GSU0
UniRef90-Q67IF2
UniRef90_M4Q977
UniRef90-V6DG02
UniRef90-X5HMA7
UniRef90_A0A024B3G3
UniRef90-A9QBX1
UniRef90_V6AQF4
UniRef90_Q3YSU44

EPDPLYGSVLLAKFI NKVIMEQGKKSCARR\|VYGALDEFK


 I NGDGVHNSELAQRFI NSMMLDGKKSTASQLFYDAMERVQQ



 VKRDPFYRNRVVNMLI NRILKHGKKSLAYKI LYRAMKKID VKPDSKFGNLLVGKFVGYI MKEGKRTTSERIMYDAFDII H
 K S DPICRNRLVNMLVNRI MKHGKKSLAYRII YRAMKRIQ


 VNPDPLYKNRFTTLFIVRGLKDGKKTLAYQUVYRAMKTIA $1 V P D P R F N D V L V A K F I N N M M D Q G K K E T A R K I F Y D A D D I V A$
 VAPDSRYNSLMLSNFINKLMMHGQKATAQRIVYOADDDMG
 ILLPDPPK F H D Q L V T T R F V V N M M M W D G K K S

 $\square L \operatorname{L}$


 D P L F K D P II S KL I NVLMMK G N K S K I E K I V Y K S L E L I K I L P P D P R F N D Q Kl
 LP D D P R L F G S K
 LEPDHLYGDVVVTALINRMMRGGKKNLAARIFKRACEDI $V$ S K D S R Y D S E L V A H L I S K $\quad$ DMVGG G K K S V A P D P V Y Q S R L V S L L V S H L L K K G K K S I I A D P I Y D S S L L I Q M F T N R L L K K G K K Q L A Y R I V L E S L A L I A
 ISSPDAKY GND S V T S F I NK I MLDR GQKA TA ER I TYNAMMQ A S D S TYNS YLV S L LI T RI LKK G GK N LAA Q NIVNAAFEI DK乌L L S V F S D P TI S K F T NMMMK G G N K V L A
$\qquad$
S

| S |
| :--- |
| $P$ |
| $P$ |
| $S$ |
| $S$ | DTRFGNIV K S DP $\quad \square Y$ R N R L V

 D Y K Y D SVLVARFVNKINFEGKKATAEKIVADSMVI I A



 EGKKSLAER』VYGALEHAR VEVDPDYGSRLIAKLINRSMYDGKKSVSQREI YNGLKLIE

 SVFY DPVLHKFINMLVMRGGQKALATRNVESALIFNVK K T S S L F E D P M I S K F T N M M M K G G N K I L A R S L M T E T L E I L K
 M N L L M $\square$ S G K K A V A E R I V Y G A L


PDPQFNDPLVSRFINHLMKNGKKNLAYKI FYDAMKEIE SVFEDPVI SKFI NMMMKGGNKVLARSLMTQALDEEQ


S D SLLWQNEVI R KLLTNRLDMYS GKK S VVA E K LVV R QAMS QUQ DPRYGSETVVQKLINVI MWRGKKNAARKIVVESLDDVI S | $\square P A$ | $R$ |
| ---: | :--- |
| $\square$ | $K$ |
| $V$ | $N$ |




## UniRef90 F8KXC5 UniRef90_Q6EM79 UniRef90_K9ZV58 UniRef90_UPI0003706E82 UniRef90_F4DKV9 UniRef90_B4S5N1 UniRef90_I4B8B9 UniRef90_Q0EW32 UniRef90_D3WCQ0 UniRef90-A8PNQ8 UniRef90-K1Z0C2 UniRef90-F8L675 UniRef90 W7YJU7 UniRef90_UPI000374FA68 UniRef90_Q06FM0 UniRef90_K2F125

 UniRef90_D5MAV5 UniRef90_Q68XN6 UniRef90-W8CYD1 UniRef90-K4JUD5UniRef90-A9B745 UniRef90_M1K019 UniRef90_A4GKM6 UniRef90_B7T2V2 UniRef90_F4MMD5 UniRef90_UPI0003B73435 UniRef90_Q3Z984 UniRef90-E7BKW4 UniRef90_C6X208 UniRef90_K4IG17
UniRef90_K0P002 UniRef90-C9RQN2 UniRef90_K2EPY2 UniRef90_B6J5C8
UniRef90_Q89A66 UniRef90_Q6KGW1 UniRef90_A6CGZ0 UniRef90-Q14EV9
UniRef90-K1XGR5 UniRef90_D4TNT2 UniRef90-Q9G879
UniRef90-F3ZQ23 UniRef90_F3ZQ23
UniRef90_W0B7X6 UniRef90_E8R5M2 UniRef90_K1YRJ0 UniRef90-K2DW12 UniRef90_H3A182 UniRef90_D3PN46
UniRef90 UPI0001 UniRef90_Q0P3M8 UniRef90-D0EVQ1 UniRef90_D3HPJ9
UniRef90_D7JCZ4 UniRef90_X1KBE3 UniRef90-P49495 UniRef90_UPI00042BFB5C UniRef90-H6Q4A9 UniRef90-M4QA48 UniRef90_G1KFD7
UniRef90_K4GBV5 UniRef90_UPIO003C16529 UniRef90_Q0SNC1 UniRef90_B7T427
UniRef90-M4Q9J7 UniRef90-M4Q9J7
UniRef90_B2KEM8 UniRef90_K2B8X8 UniRef90_U6A2L4 UniRef90_A9ULR3 UniRef90_H2F684 UniRef90_LOD6S4
UniRef90_UPI0003C29ECF UniRef90-X7YJS8 UniRef90_K2E426
UniRef90_K4KDD1 UniRef90_Q85FT8 UniRef90_B7PUX5 UniRef90_F7FCF7
UniRef90-B6YQ88 UniRef90_F3LE49 UniRef90-UPIO00361C48B UniRef90_T1M344 UniRef90_G8LRQ6 UniRef90_G1PRU8 UniRef90-Q5GSU0 UniRef90_M4Q977 UniRef90-V6DG02 UniRef90- X5HMA7 UniRef90_A0A024B3G3 UniRef90-A9QBX1 UniRef90_V6AQF4
UniRef90_Q3YSU4



 K V E D D A D A L E V F R R K A L G N V A P L V E V
 Q K T E R N P L S V L R Q A $\quad$ R $G$ V
 KVNAD DPDIAFEQAMENAMPTLEVKSRRIGGATYQQPD
 E K LIE K P A L E I W K Q A L E N I T P Q V E VVIK S R R V G G A T F Q V P T E I QKKKRNPL S I L R Q A I R R V T P K I A V K R R R V S G S A Y Q V P I E I
 K K H S VDP YQTFNNAMHNVKP HL EVVTSVRVVGGANYQVPTHV

 -
 K DEE E A GI ETWKK AL N NVMPSVVMVKSRRVGGATFQIPMEV




V
44E76 KRVONDPLATFESALEENVTPRMEVRP

 QKTDKNPLDVLRGAI LKLTPKLKVKSRRRSGSTYQVPDQU


 K RVVA Q E P PEVVFTKAVENVKPFMEVRSKRVGGATYQVPMPV
 $K G G K N P M T V L D S A M A N I S P K M E V R P R R V G G A S Y Q V P V E V$ K K Q E C N P Y T I FH QALENCKPVI GLLTS DQRGGKYYQQVPTPL EKS GQEPDKVFKAALDNVRPRVEVRSRRVGGANYQVPVEV


## N Q




 R A K T K Q S P L $T$ V $V$ F E Q A L K LE D S DKMAVFCKALDNI K P LVVEVRSRRVGGATYQVPVEV
 DKTKEDAMTVVFNRCIETVRPLLEELKARRVGGATYQVPVEVV K D

RTQECNPYTI FHQALHNCQPII GLTSVLRRGGKSYQVPTP

 E K T K E E N P

 RKQFCNPYTI FHQALDNCQPVLGLVSILKGGHFYQVPAPM A K LIS D E QK E I W W H A L N N I T P L V V E V QKSDCK A L E T F N E A L E K I A P P L V



 K K V K N K S L E F F L K A L D Q I I P T I E V



UniRef90_F8KXC5 UniRef90-Q6EM79 UniRef90-K9ZV58 UniRef90-UPI0003706E82 UniRef90_F4DKV9 UniRef90-B4S5N1
UniRef90- 14 B 8 Ba UniRef90-Q0EW32 UniRef90_D3WCQ0 UniRef90-A8PNQ8 UniRef90-K1Z0C2 UniRef90-F8L675 UniRef90-W7YJU7 UniRef90_UPI000374FA68 UniRef90-Q06FM0 UniRef90-K2F125 UniRef90-D5MAV5 UniRef90-Q68XN6 UniRef90-W8CYD1 UniRef90-K4JUD5 UniRef90-A9B7745 UniRef90-M1K019 UniRef90_A4GKM6 UniRef90-B7T2V2
UniRef90 F4MMD5 UniRef90_UPI0003B73435 UniRef90-Q3Z984 UniRef90-E7BKW4 UniRef90_C6X208 UniRef90-K4IG17 UniRef90-K0P002 UniRef90-C9RQN2 UniRef90-K2EPY2 UniRef90_B6J5C8 UniRef90_Q89A66 UniRef90_Q6KGW1
UniRef90_A6CGZ0 UniRef90_Q14EV9 UniRef90-K1XGR5 UniRef90-D4TNT2 UniRef90-Q9G879 UniRef90-F3ZQ23 UniRef90-W0B7X6
UniRef90 E8R5M2 UniRef90-K1YRJ0 UniRef90-K2DW12 UniRef90-H3A182 UniRef90-D3PN46 UniRef90_UPIO001744E76 UniRef90-Q0P3M8 UniRef90-D0EVQ1 UniRef90-D3HPJ9
UniRef90-D7JCZ4 UniRef90-X1KBE3 UniRef90-P49495 UniRef90_UPI00042BFB5C UniRef90-H6Q4A9 UniRef90-M4QA48 UniRef90-G1KFD7 UniRef90-K4GBV5 UniRef90_UPI0003C16529 UniRef90_Q0SNC1 UniRef90-B7T427
UniRef90 UniRef90-B2KEM8 UniRef90-K2B8X8 UniRef90_U6A2L4 UniRef90-A9ULR3 UniRef90_H2F684 UniRef90_LOD6S4 UniRef90_UPIO003C29ECF UniRef90_X7YJS8 UniRef90-K4KDD1 UniRef90-Q85FT8 UniRef90-B7PUX5 UniRef90-F7FCF7 UniRef90-B6YQ88 UniRef90-F3LE49 UniRef90-UPIO00361C48B UniRef90-T1M344 UniRef90-G8LRQ6 UniRef90-G1PRU8 UniRet90_Q5GSU0 UniRef90-M4Q977 UniRef90-V6DG02
UniRef90-X5HMA7 UniRef90-A0A024B3G3 UniRef90-A9QBX1 UniRef90_V6AQF4
UniRef90_Q3YSU4

90
100
LPHRRTSMAMGWI TDNARKKPGRSMKDALVAELTDCFNKQ

 APERRNCLAMQWIIKHARVKPGKSMEVGLAAELVDCFNKQ

 GSTQGKALAGRWLLEASRKRPGRNTAFKLSSELVDAAKGS $R P S R R T A L A M R W L K L A A N Q R S E K T M A Q R L S A E I L D A Y D N K$
$R G D R R F N L A T W I I G A A R S R K G K P M A E K L A M E T D A A A E Q$ APDRRQSMAMKWII SNARSKVGRNMDDGLAMELSDCFNNQ RPSRKVSVAMKNL:LFARKRSGKSMAEKLSAEVVAAYNNE NPTRKRALSVKNMI LFSRKRSGRNMAEKLAAEIMAAYKEE KAPQGKVLA IIRWLLEAARKRPGRNMAFKLSSELMDATKGK
 KKPQGRALAD A WLVAASRKRPGRNMAFKFSSELVDAVKGR
DERRGYALASRWI I NAASKRSEKMMDDKLAEELFEAANNR GSTRGKAALADRWLL GASRKRPGRNMAFKKLASSELEEAANNR GSTQGKALAI RWLL GASRKRSGRSMADKL SYELVDAAKDN
 QPRQAKVLAI RWLLEASRKRPGQNMADKLSAELVDAAKGK

 RPDRAQTMAMRWI I KAARKRTGKSMAERLAAEMLDEASREQ
 RPDRKI S DAMKWLI GYSRKRNEKTMAAKLAGESMAAAKEE RPDRRVFLGMKWLI AYARSRGEKTMKEKLTNEIIAAAKEE APDRAKALA LRWL L DAARNRNEANMAERLAAELVAAKNSE RGPRRQS A A I SWLV TSARNRSSKEMVVKLATEGLEAAQGT
 KPKQGTILADRWLLESSRKRSGQTMHDKLSHEIMDAARNK NPKRQQTLAI RWILAADRGKKGRPMEVRLADEIMSAHKKE KETEGKILAGRWLLESSRKRSGRNMQFKLSQEIMDAAREK RAERKFFLGCKWMIDAARAKKGKAMSERRLAEELDAAYKGE
RADRGTALALRWLVQFSRSRPGRTMASRLANELMDASNET SLKRQQNLADRWLVESVNNRSEKELTNNRYYEDLDAYQQK
 KKDRQQTLA $\square R W I L E A A R S K K G R P M H V K L A D E L I A A Y N R E$ KSDRGDALAMRWLVGAANSRGEKGMDMRLSNEVDVLEGK RGERRESLGDRWLI RSRSNKEFHSFSAKFAAELVAAAEGQ SPRRQQTLAMRWIVNAFNSRSEREAHQRLAAELLEAAEGK APARSEAMALLRWLVNFARSRKGTPMHRALANELRDASTNQ KADRGTAMLALRWLLDAARNRSGRNMVSKLSAEIDDASNNT TSVRATNLABRWLLMAAKQRSGKSMSQKLSDEI FDAFKNM

 S GFRATNLLSLRWI I QYSRRRVGRTMS DK LANEII DTAN D

 T DSRRREGLAMKWMI TECRENKHRRMPEKLSNELLEAENNQ K DNRRRFLAMKWLITHCQESKSLQTHMQL S QEELLAAAFNNE
 ESKKGKVLADRWLLEAARKRSGGNMADLKLSSELVVDATKGK
 R GER R M S L A A M R W WL L D A A R S R K G R P M A E K L A E E I I I L L G S K K E
 K E NRRRFL A MKWLI TECREHKHRRMYEKLLSQAILDAYEGQ GSRRGKTFAMRWLLGASRKRLGKNMAFKLSSELVDATKGK

 R GERKESLA I R WLV A A A RAKEFHTYGEKG A QELMMDAS KGE
 TPNRARFLSMKWMLDAANDKDQRPFEDQLAKEIMDAFNNQ S D K R R R F L A M K WM I Q E CREKK PRRRMLDMK L S HELLLEAF HN Q
 A P D R S E S



 RSNRGRALAMMWLI SAASSRSDKTMGDRLANELI EAHDGR




| GSTIIKKKDDTHRMAEAHYKW ${ }^{130}$ |  |
| :---: | :---: |
|  |  |
| Ref90-Q6EM79 | N A |
| Ref90_K9ZV58 |  |
| UniRef90_UPIO003706E82 |  |
| UniRef90-F4DKV9 GATVKKREDTHRMAEAHYK |  |
| UniRef90-B4S5N1 | GAsVKK |
| K |  |
| Q0 |  |
| D3W |  |
| A8P |  |
|  |  |
|  |  |
|  |  |
| Reigo UP1000374FA68 G A A |  |
|  |  |
| D5 |  |
|  |  |
| 90 W8CY |  |
|  |  |
| A9 |  |
|  |  |
| UniRef90-M4GKM6 |  |
|  |  |
| RRef90-B7T |  |
| iRet90--4MMD5 |  |
| UniRe990-Q3Z984 ${ }^{\text {G }}$ GAAVKKREETHKMAEAHYRW |  |
|  |  |
| TB |  |
| K41G17 GAAVKKR |  |
|  |  |
| 俍俍90_K09002 | RK |
| Ref90_C9RO |  |
| UniRef90 K2EPY2 |  |
|  |  |
| UnRef90_089A66 G G AVKKRED |  |
| UniRe990-Q6KGW1 |  |
| ef90-ACCGZ |  |
| 90-014 |  |
| Ret90_K1 |  |
| DTN |  |
| F3Z02 |  |
|  |  |
| WOB |  |
| iRe90-E8R5M2 |  |
| RRef90_K1YR |  |
| UniRef90 K2DW12 |  |
|  |  |
| -- |  |
|  |  |
|  |  |
|  |  |
| UniRei90-D3HPJ9 |  |
| D7 |  |
|  |  |
| UniRef90-P49495 GNTIKKKEETHKM |  |
| UniRef90-H6Q4A9 Gbiche G A V K |  |
|  |  |
| UniRef90_G1KFD7 |  |
|  |  |
|  |  |
| UniRef90- 00 SNC1 |  |
|  |  |
| UniRef90_OOSNC1UniRef90-B7T427 |  |
| UniRef90-M4Q9J7 |  |
| UniRef90_B2KEM8UniRef90-K2B8KX |  |
|  |  |
| niRef90-U6A2L4 |  |
| UniRef90-A9ULR3UniRef90 H2F684 |  |
|  |  |
|  |  |
|  |  |
| UniRef90 ${ }^{-}$XYJJS8 |  |
| UniRef90-K2E426 |  |
| UniRef90-K4KDD1 |  |
| UniRef90-Q85FT8 UniRef90-B7PUX5 |  |
|  |  |
| UniRef90 B6Y ${ }^{\text {B688}}$ |  |
|  |  |
|  | AVR |
| niRef90-T1M344 |  |
| Q6 |  |
| UnRef90-G1PRU8 |  |
| UniRef90-Q5GSU0 |  |
|  |  |
| $\begin{aligned} & \text { niRef90_Q67IF2 } \\ & \text { JniRef90-M4Q977 } \end{aligned}$ |  |
| niRef90-V6DG02 |  |
| Ref90-X5HMA7 |  |
|  |  |
|  |  |
| UniRef90-A9QBX1UniRef90 V6AQF4 |  |
| $\begin{aligned} & \text { UniRef90-V6AQF4 } \\ & \text { UniRef90_Q3YSU4 } \end{aligned}$ |  |





UniRef90_UPI0003DEAAFC UniRef90_-T2M306 UniRef90_W5FZN0 UniRef90_S5R7V1 UniRef90_G0VIN1 UniRef90_UPI00034FADBC UniRef90_C3YWP8 UniRef90_UPI0003593D72 UniRef90_KOKLR9 UniRef90_X1GXU5 UniRef90_F4B7V0 UniRef90_C5KT40 UniRef90_C4WVL9 UniRef90-A2DFZ5 UniRef90_A0A034WJU4 UniRef90_R7TS92 UniRef90_F2UCV6 UniRef90_UPIO00472ED2D UniRef90_S9VJG9 UniRef90_S7W4M9
UniRef90_I2K272 UniRef90_Q6CPD4 UniRef90_17CFQ4 UniRef90-X1G7V8 UniRef90_B6JVU7 UniRef90_J6EF11 UniRef90_E1QQC2
UniRef90_A3LQM6 UniRef90_H8PFX4 UniRef90_UPI0002744B70
UniRef90_G8BY13 UniRef90_P35026 UniRef90-M9MC16
UniRef90-K1QWE2 UniRef90_K1QWE2
UniRef90_X1HNS3 UniRef90_Q54MA6 UniRef90_K1T882 UniRef90_J9G5D1
UniRef90 H8X8W8 UniRef90_Q75D76 UniRef90_IOA0S7

N A K R QF A $\mid$ L $|\stackrel{90}{V}|$ R
100
110
120
GKTKGKVLAI RWLLASARAKKGGDFSNFLAQELI EASQET TENRRRFLAMKWMIN ECRENRHRRTAMMKLSQELLAAAFANE K PSRQLML SFRWVMEAAKAKKGAKMADKLAQELMDAAN T RADRRDTLAMRWI IDAARKRSEKSMSRRMTAELLDAAESR KDNRKRFLAMKWLI TECRENKNRRMPEKLSQELLQQAFNNE
 N NERGVTLADRWLIFQASKNKAGYS II KRLLSSEIVNASNGM KTNRRIMLS SRRWI LGAARKGKGAPMSVKLARELME GAEGT
 SKKRA Q S L A FRWWI DAVR SEKGRPTAQKLARELDDAS HRE
 R A N R K Q S L A llK WI I DA A R A R S E Y R M E ERRLA QE I I A A S H S E

 SRERAYA I A ITRWI LAA CRKRSGKNTDT KLVGS DSEAAAKG RGDRRVSLSIGRWLI EAARKREFRTFADKLAAEFKDASNNA TEKRSYFLAMKWLLEAVREKERTHFPEKMAWEILDAAANQ
 KEERSRFI AF GWLLSEARKRKGMCSRDRI ALLELLEAHS GH
 K LPQ G LLLADRWLL GASRKRSGTNMAS QL SSEELIDAARKR




 TTKRSYFLAMKWLLEAAREKRKVSLPEKLAWEILDAA HGQ





 RAERR $\square T L G L R W L V N Y S R L R G E K T M E Q R L$
S R S K Q FI F GM K WL I Q Y CRKNHS T S L S N IL NQE I L LA Y Q N K
 $R G P R R E S L G V R W L I T S A R L R D Y H T Y A E K L A A E I M E A A N G E$ K AKRQLALAARWILASAHGKSGGEFHRFLATELVEASQET

 GSXXXXXXXXXXLLEASQKRPGRNMAFKLSSELVDAAKGS NLKRSLMFSMKWI I L L S SKKRNENGFKNKFVGELI DSYYNN











## ,

SPMRRVNEAl YMMCQQAAFRNLKTWPECLADEVVNAAEGS

 TPERRETLALDRWLI KYSRKRPELTIVEAALAAEIIEAS QNT RS DRKV AL A MRWII EASRKRGEKGMKLLRL
NERQRRRFA IVWMLDASNSYKSKS DSERLAAEVIAVHNGT

 NQRQRNRFAI TWI LD GCKKKK S P DLAAVRLAEEII A A YEGK PASKGRLLAI RWLLEASRKRSGTSMVSQLRAELI DAAKKR P Y Q Y H H FLLA $\ddagger$ K WMI T K WN Q GMLLM Q P EK L S H GLL EAF C $\square Q$


 K GERRRLTLAMRWI I QAAKTSKGKAMREKL
S PMRRVNHAVY LLTTQGTRFRNDRTVAECLADELINASKGS R P E R K I S I S MK NLVLYS RKRAGKTMADKLAAEIIDAYN QQ SAERKLTLGLRWLVNY
NERQRNRYAITWWLEASKNRKSNDFAVRLAEELI NAYEGK NQRQRQRLAMWRWIVEGSEKRSSSDFAVRLGEELVAVLSGR UniRef90_Q8TXJ3

| UniRef90_K1YAF1 |  |
| :---: | :---: |
| UniRef9 | H6TGA2 |
| UniRef90-H2TSG6 |  |
| UniRef90_K2AE77 |  |
| UniRef9 | 8XUK4 |
| UniRef90_UPI0003991073 |  |
| UniRef90-M4QA38 |  |
| UniRef9 | Q06J33 |
| UniRef90 K2D6M3 |  |
| UniRef90_UPI00021A791B |  |
| UniRef9 | C9N1U1 |
| UniRef90-101HS8 |  |
| UniRef90-T1H7V3 |  |
| UniRef90_X1DZV6 |  |
| UniRef90_C3VXQ4 |  |
| UniRef90-F4YZC3 |  |
| UniRef90_W4Y2Z2 |  |
| UniRef90-B3V4Q1 |  |
| UniRef90_K2C1T7 |  |
| UniRef90-W5JC13 |  |
| UniRef90-H9KEV4 |  |
| UniRef90 U6A2F8 |  |
| UniRef90-Q2GD81 |  |
| UniRef90-F7H5P6 |  |
| UniRef90-H8PFY2 |  |
| UniRef90-K7J4T6 |  |
| UniRef90_M2VXU3 |  |
| UniRef90_U9UPZ2 |  |
| UniRef90_UPI0001CBA622 |  |
| UniRef90-M5RNF6 |  |
| UniRef90_E9FUU9 |  |
| UniRef90 - UPI0002B99BE6 |  |
| UniRef90-B3MJG4 |  |
| UniRef90-D8M9T5 |  |
| UniRef90-A0ARR5 |  |
| UniRef90-L1JUF8 |  |
| UniRef90_C7LKG7 |  |
| UniRef90_UPI0003C3A9D7 |  |
| UniRef90_B0EEN2 |  |
| UniRef90_J7GSD3 |  |
| UniRef90- F2L2Q3 |  |
| UniRef90-J3JXP0 |  |
| UniRef90-S6E4S4 |  |
| UniRef90_F3A817 |  |
| UniRef90-D2Z255 |  |
| UniRef90-B4JP36 |  |
| UniRef90-K2BLD1 |  |
| UniRef90-K2FZ70 |  |
| UniRef90_UPI0003DEAAFC |  |
| UniRef90_T2M306 |  |
| UniRef90_W5FZN0 |  |
| UniRef90_S5R7V1 |  |
| UniRef90_G0VIN1 |  |
| UniRef90_C4Y9U6 |  |
| UniRef90-UPI00034FADBC |  |
| UniRef90_C3YWP8 |  |
| UniRef90-UPI0003593D72 |  |
| UniRef90-K0KLR9 |  |
| UniRef90_X1GXU5 |  |
| UniRef90_F4B7V0 |  |
| UniRef90-D2Z210 |  |
| UniRef90_C5KT40 |  |
| UniRef90-C4WVL9 |  |
| UniRef90_A2DFZ5 |  |
| UniRef90-A0A034WJU4 |  |
| UniRef90-R7TS92 |  |
| UniRef90_F2UCV6 |  |
| UniRef90_UPI000472ED2D |  |
| UniRef90_S9VJG9 |  |
| UniRef90_S7W4M9 |  |
| UniRef90-I2K272 |  |
| UniRef90_Q6CPD4 |  |
| UniRef90_17CFQ4 |  |
| UniRef90-X1G7V8 |  |
| UniRef90-B6JVU7 |  |
| UniRef90_J6EF11 |  |
| UniRef90-E1QQC2 |  |
| UniRef90-A3LQM6 |  |
| UniRef90_H8PFX4 |  |
| UniRef90_UPI0002744B70 |  |
| UniRef90_G8BY13 |  |
| niRef90-P35026 |  |
| UniRef90-M9MC16 |  |
| niRef90-K1QWE2 |  |
| niRef90-X1HNS3 |  |
| niRef90-Q54MA6 |  |
| niRef90-K1T882 |  |
| niRef90-J9G5D1 |  |
| niRef90-H8X8W8 |  |
| UniRef90-Q75D76 |  |
| UniRef90 IOA0S7 <br> UniRef90 - Q8TXJ3 |  |

G N A VK K K LLE VY K M A EANKA ${ }^{140}$
GGAI RKKEETHKKAEAN
GNVI KKKYEMHKMAEAHYRW GSAIKKKEDAHKMAQANKAF GAAVKKREDTHRMAEAHFRW GPVI KKKHVLHKMAEAHFRW GKCVD K K QRLLHKMAEANFRW GEAllKKRDEMHRMAEAN
GYAMKKKEDTHKMAESNKAF GRVIKKKHDLHKQCEAHYRW G G S
GRAMSKRDQTHRMADAHFAW GKVIKRKQDLHKQCEAHYRW GAAI KKREEVHRMAEAHFRW GNAI RKKEETHRMAEAN
GNATRRKEETRRDAEAN
GNVVKRKHDLHRQCEAHFRW
GMAFRKKEELHK DALTN
GEAVKKRDTVQRMADANKAF GKVVKRKHELHRQCEAHYRW GRVI K K K QELLHKLCEAHYRW $G N A D R K K E A T H R M A E A N$ GGAFRKFEENVKVAESHFRF GPVIKRKHDMHKMAEAHYHW GKAl RKKEETHRMAEAHFR GRVI RKKQE LYRQCEAHFRW SNAIKKK K EVVERVAKAN
SAA A K K K E QL H KL LA LAA N
GDVI KKKYELHKQADAHFRW GVAYTKRENTHRMADAHFAW GKVVKRK Q DL LHKQCEAHYRW GASVKKREDTHKMAEAHFRW GRVVKRKDDLHRQCEAHYRW SNAIKKK DEDERVAKAN
GNAI RKKEQTHKMAEAHFR SNALKKKDELERDAKAN GTAFKKRETIHKIAEAHFRF GRVIKKKNDLHRQAEAHYRW S F A K K K K E DMMERVA K S N S N TII K K K D E $\square$ H K L S E $\square$ N
 GRVI RRK Q DLHRQCEAHYRW STGFDKRDQMHKTA $\square$ A H

GELIKK K NEVYK $\square$ AR A H Y R W GRVI KKK D DLLHRQCEAHYRW GAA
WA A FKKK L E VYKMAEANKAF GRVIKKKQELHKLCEAHYRW GSAVQKK■EFHKQAEAHYRW GGAI RKKEATQRMAEAN $S L S I K Q K E S \square L K \square A E Q N$

GPVI KRKQDMHKMAEANH
GKVV R K K Y D L H K L A D A H F R F GKA A R R K QE I HR $\quad$ CESN S S GYDKRLQIHKTA
GSAYERRENTHKMAEAN SYA I RKKEETER\A
GDLI K K R N DLHKLAKANYRW SNAIKKKDEI ERIAKAN GKVVNKK LDDLHKQCEAHYRW SYACRKK DELER】AKSN GRVVKKKNDLHRQCEAHYRW G GAA RKK QELHRQLCEAHYRW SNA I K K K D ELERVAKGN

S N A ITK K K D E I E R VA K A N
S F A S K K K K E E I
$\begin{array}{lllllllllllllllll}S & F & A & V & K & K & K & E & E & I & E & R & I & A & K & S & N \\ S & F & A & I & K & K & K & D & E & L & E & R & V & A & K & S & N \\ S & S & G & F & E & K & R & D & S & 1 & H & K & T & A & \square & A & H\end{array}$

S K C $\square K$ QKEQLHRLC
S S A FDKRDQQHK TA $\square$ A H
SYA $\square R K K D E M E R \square A A S$
S S GYDRKA QMHKL A
GKAlRKKELTHKMAEAHFR
GPVIGRKH DMHKMVEAHYCW S S GFEKRDQLHKTA』VH S F A I K R K E E I E R DA
S S A I A K K E EQHRMATVN
GNAVGKKHQLHKECEAHYRW
S Y S $\square K$ QK D A LER T A K S H
GAAFKRKEEMHRMAEAHFRF
S S GYDKKAQMHKQA
GS G L S K R D A M H K TA $\square$ A H



$L P L P S H K D E V L E L C V N L I M K N G K K D Q A R K F V N R A L Y L I V$ $D S T V$ Q HLLV NLI MR D G K K A K A E K I V A T A L S I I K S D P $\square Y$ Y R N R LV V M M L V N R VVERLINKLMQTGKK QLA 1 R IVEEAFDRVH

$\square M N \square P S Q E D P L L H Y L A S R \square M Q N G N R A R A S R T V S R T L L H \square H$ FYDPFLRRFVNVVHRSGRKAEYEDMIREVMYLIM $M V N Y$ T K N G E GF L S R K L M A Q TL L E M I K $V L A D P \square Y N S K L V T R L V N S D M L D G K K G V A Q K I V Y E A F E T V K$ I V E R L I N K MM Q T G K K E L I V E RLVNRLMQTGHKQKTMKIVRDAFDIVA P TVVE RLIN K L M R T G K K Y G A Y R I L R D A F E I I E | $I$ | $V$ | $E$ | $R$ | $L$ | $I$ | $N$ | $R$ | $L$ | $M$ | $Q$ | $T$ | $G$ | $K$ | $K$ | $Q$ | $Q$ | $A$ | $T$ | $K$ | $I$ | $V$ | $R$ | $E$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $V$ | $D$ | $I$ | $V$ | $A$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $V$ | $R$ | $L$ | $I$ | $N$ | $N$ | $L$ | $M$ | $R$ | $T$ | $G$ | $K$ | $K$ | $Q$ | $S$ | $A$ | $Y$ | $R$ | $T$ | $V$ | $K$ | $V$ | $A$ | $F$ | $E$ |
| $I$ | $I$ | $E$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | D PLL H L F T S LVMMKDGRRHEALRATSQMLLHL H


 PVVERLVNSLMMHGKKMKA $\quad$ RRIVKDSFALI S PPSEDPLLHYLASHIMRHGERQKASRTVTKMLAEIH

 P I I E RLA G RLMMT GKKYNAYK I I IDR T F E I I E

VLAD PVYNSKWVTKLINHLMVDGKRAKASS\|LYDAFNVVQ $V L P D P Q F N S R L A S M M I S R L M K H G K R S T A Q R \| L S D A F S L I S$

 $V \vee E R L A N R D M K T G K K Q Q A L Q I V R D A F D I V H$
P P LE D PLL GF MTN LI MK DGKK TVAARSTV D LMMLSTI R D RLI E K LI NL FMTSSGKKAKSRAIL YKVLLNL I VERLI NRLMQTGKKQLT TRI TREAFDII H V V ERLINRLMQTGHKQKTMNIVEDAFDTIIH


 K K S X X X X X X X X X $\quad$ K NI X IVER LINRLMQTGKK QQATK IVREAFREI N


UniRef90_A5DB48
UniRef90_UPIO0044173AA UniRef90-D8QSP0 UniRef90-V4BCC7 UniRef90_D5U3G0 UniRef90-E2C3D8
UniRef90 C4XXG6 UniRef90-C4V7H7 UniRef90_UPIO0035F4C90 UniRef90-W2T2G4
UniRef90 A8MBL5 UniRef90-D2VE33 UniRef90_UPIO002B41017 UniRef90_A7SUIO UniRef90-R4XGH1 UniRef90-K4KS83 UniRef90-FOUXA9 UniRef90-J3PLV7 UniRef90-A0A011R9L1 UniRef90-M4YNKO UniRef90-E1RHZ3 UniRef90-A8BZD3 UniRef90-S9W438 UniRef90_D8R5U5
UniRef90_UPI0004 UniRef90-E3GYR3 UniRef90_E2LWH7
UniRef90_H2ZOK8 UniRef90-B9S1A9 UniRef90-W5CAB9 UniRef90-L2GSF1 UniRef90_A0A026WNC3 UniRef90-A1RWU8 UniRef90_UPIO004415740 UniRef90-D2RIB9 UniRef90_C3VYJ7 UniRef90-P26867 UniRef90_Q9HLY1
UniRef90 H3E9K9 UniRef90-J8XPM4 UniRef90-O27130 UniRef90-H2KTF9 UniRef90-F2KNE9 UniRef90_A9V5C1
UniRef90_J419H9 UniRef90-K4AUS1 UniRef90-GOYEC1 UniRef90-I2JX56
UniRef90-O13744 UniRef90_O13744
UniRef90_GOYE54 UniRef90-JORXU8 UniRef90-W1F3B5
UniRef90 G1QIY7 UniRef90_V2XK27 UniRef90-T1JWU9 UniRef90-B4NQF8
UniRef90 K1U1A2 UniRef90-A3CXM9 UniRef90-M0GXE2 UniRef90-X2KVE5 UniRef90-TOLYQ5 UniRef90-Q3IUM7 UniRef90-TOMWI9
UniRef90 R 7 S 9 N 2 UniRef90-G3AST5 UniRef90-U1NYDO UniRef90-FOT6H0 UniRef90-A0A023B2D6 UniRef90_G4TCV6 UniRef90-I1C3V2
UniRef90 G0QXF2 UniRef90_G0QXF2
UniRef90_V6LU91 UniRef90-Q74MR5 UniRef90-X1QF65 UniRef90-E3R676 UniRef90-UPIO00474148E UniRef90-T1BPF1 UniRef90_U5YDX5 UniRef90-I1TIB6 UniRef90-W0JZY5 UniRef90-G7E6J3 UniRef90-U5YE23
UniRef90 U1PEH1 UniRef90-Q18EYO UniRef90-A8PAM8 UniRef90-F4C0G9 UniRef90-B8P2EO UniRef90-L2GPW2
UniRef90-E6N9G6 UniRef90-E6N9G6 UniRef90_C3VY75
UniRef90_R4W5V2
UniRef90_G3BAB6



UniRef90-K1U1A2
UniRef90_A3CXM9 UniRef90_MOGXE2 UniRef90- X2KVE5 UniRef90_TOLYQ5 UniRef90_Q3IUM7 UniRef90_T0MWI9
UniRef90 R7S9N2 UniRef90_G3AST5 UniRef90_U1NYD0 UniRef90_F0T6H0 UniRef90_A0A023B2D6 UniRef90_G4TCV6 UniRef90-I1C3V2
UniRef90 G0QXF2 UniRef90_V6LU91 UniRef90_Q74MR5
UniRef90- X1QF65 UniRef90-E3R676 UniRef90_UPI000474148E UniRef90_T1BPF1 UniRef90_U5YDX5 UniRef90-11TIB6 UniRef90_W0JZY5 UniRef90_G7E6J3 UniRef90_U1PEH1 UniRef90_Q18EY0 UniRef90-A8PAM8 UniRef90_F4C0G9 UniRef90_B8P2E0
UniRef90_L2GPW2 UniRef90_E6N9G6 UniRef90_C3VY75 UniRef90_R4W5V2
UniRef90_G3BAB6

APQRRVDTALRFIVLQASHKKKKSVSEALADELIGAANGR APQRRVDQALKFIAQGTSYKSKTSAAEALVQQLIGAADYQ X X X X X X N Q A 1 WL L C TG A X F R N X K T DIA E C V A D E L I A A A K G S A P S R R V D E A L R N I A T D A S Y K N K K S I E A C L A D E I I LAA S KN N APQRRVDLALKFIAEGTYFKTTTPVEEALAHQLI GAANYQ

 A P QRR I DEALLKFI AQGTHYKSPTDASEALAHQLI GAADYE
 NDRRQRTFFA V K WL L AVVSKNRSEK K I E E R L A K E V V V R I I E G E RERQRRRRRAIVVWMI EAASKR GEKTFE ERFAA EVVBDVVNEGT



## RQERGTAMA

SPA R R L N V VA I R N I S Q Q A S R K S T K S DD T C L A NE I I LAA K G D

 APQRRVDQALKFIADGAHFKTPTEAAEAGANQLI GAADYQ









| UniRef90 A5DB48 | $\begin{gathered} 130 \\ \text { S S G Y D R K A QM H S S } \\ \hline 140 H \end{gathered}$ |
| :---: | :---: |
| UniRef90-UPI00044173AA | S T A L A K K Liell HKTAMT N |
| UniRef90-D8QSP0 | GAARKKRDDLHRLAEAHYRW |
| UniRef90-V4BCC7 |  |
| UniRef90-D5U3G0 | S Y A I Q K K E I ERI A |
| UniRef90-E2C3D8 | G GAVRRKHELYKKCQAHFRW |
| UniRef90-C4XXG6 | S S GYDKK T QLHKNA ${ }^{\text {L }}$ A H |
| UniRef90_C4V7H7 | S Y AVK K R E E I E R I A K S N |
| UniRef90_UPI00035F4C90 | S Y A I K K K N EQERI A L A |
| UniRef90-W2T2G4 | GLTI QAK Q ELDH TCEAHYR |
| UniRef90-A8MBL5 | S Y AL R R R D EMERVA |
| UniRef90-D2VE33 | S Y Al K K K Dever V S K A N |
| UniRef90-UPI0002B41017 | SNAI K K K DEI ERVAKAN |
| UniRef90_A7SUIO | GTAldRKKQDLHKRAEAHYRW |
| UniRef90-R4XGH1 | S S A Y Q K D AVHRLALA N |
| UniRef90-K4KS83 | VD A IR Q K K E T R I A ETHFR |
| UniRef90_F0UXA9 | GNAIRKKEETHRMAEAN |
| UniRef90_J3PLV7 | S N A I K K R |
| UniRef90_A0A011R9L1 |  |
| UniRef90-M4YNK0 | S F SVAKK E E T E R V A Q S |
| UniRef90-E1RHZ3 | S F AV S K K ERER V A K S |
| UniRef90_A8BZD3 | S Y A IS Q R N S VERIA V N |
| UniRef90-S9W438 | S S CFKKRDHLHKMC |
| UniRef90-D8R5U5 | S NAVRRKDEI ERVAK |
| UniRef90_UPI0004403A7F | S Y T I K K K D E L E HVAK F N |
| UniRef90-E3GYR3 | SFAVQKKEEKERI ARS |
| UniRef90 E2LWH7 | SNAI K K K De Le RVAK S N |
| UniRef90_H2Z0K8 | G S TI K R K Q AL HKNAEAN |
| UniRef90-B9S1A9 | G D AI R K K E E H R M VEAHFR |
| UniRef90_W5CAB9 | G GAI CRKEATHRMAEAN |
| UniRef90_L2GSF1 | S Y AVK K R D Elle R VA K S N |
| UniRef90_A0A026WNC3 | GRAVGQKKELHKKCQAHFRW |
| UniRef90-A1RWU8 | S Y AL R K K E EVERVA L A |
| UniRef90_UPI0004415740 | SEVLKKKAEVHKLAVLH |
| UniRef90_D2RIB9 | S Y AVA K K E EVERIA K S |
| UniRef90_C3VYJ7 | GNA 1 R K K E ETHRMAEAN |
| UniRef90-P26867 | $\mathrm{G} \square \mathrm{D}$ R K K R D D L H K L A E A H Y R W |
| UniRef90-Q9HLY1 | S F A I S K K E I ERVAQS |
| UniRef90_H3E9K9 |  |
| UniRef90- J8XPM4 |  |
| UniRef90-O27130 | SFA $\square$ Q K K E EKER $\square$ A R A |
| UniRef90_H2KTF9 | GKA YRKKEQLHKQCEANYR |
| UniRef90-F2KNE9 | S Y AVVAKKEE\ERVAK S |
| UniRef90-A9V5C1 |  |
| UniRef90_J4I9H9 | SAAFLKK K E V H K Y A M M N |
| UniRef90-K4AUS1 | CDA $\square$ RKKEQTHKMAEANFR |
| UniRef90-G0YEC1 | GDAXRKKEETHRMAEAHFR |
| UniRef90_I2JX56 |  |
| UniRef90_O13744 | S N CF K K K D HL H R M C |
| UniRef90_G0YE54 |  |
| UniRef90-J0RXU8 | C F SVSKKEERERVAK A |
| UniRef90-W1F3B5 | GTAVKKREDVHRMAEAHYRW |
| UniRef90_G1QIY7 | GPVIKRKHDLHKMAEAHYRW |
| UniRef90- V2XK27 | SKALEKK T A F HKLAMGN |
| UniRef90-T1JWU9 | GKAIK K K Y DLH KLA E A H Y R W |
| UniRef90-B4NQF8 | GRVIKKKEELSRQCEAHYRW |
| UniRef90-K1U1A2 |  |
| UniRef90-A3CXM9 | S Y A V S K K E R E R TA K A |
| UniRef90-M0GXE2 | A Y Al S QKEEKERVAEA |
| UniRef90-X2KVE5 | S NAI K K K D ELER |
| UniRef90_T0LYQ5 | S H AVA K K E EVER\IA A S |
| UniRef90_Q3IUM7 | A Y PVS QKEEQERVAA A |
| UniRef90_T0MWI9 | CYSIIKEKDDKERQAAS |
| UniRef90_R7S9N2 |  |
| UniRef90-G3AST5 | S S GYDKRA L M H K Q A |
| UniRef90-U1NYD0 | S Y A IT QKEERERVA A A |
| UniRef90-F0T6H0 | SFAl GKKEEKERI ARA H |
| UniRef90-A0A023B2D6 | S Y A I K K K D E DE RVA K F N |
| UniRef90-G4TCV6 | SEVLRKKTEMHKLAVAN |
| UniRef90-I1C3V2 | S SVLQKK L Q V H K Q A L A N |
| UniRef90-G0QXF2 | S WSIIRKKDEI E K V A K G N |
| UniRef90-V6LU91 | S Y AVVKR NEI ERVAVS N |
| UniRef90-Q74MR5 | S Y AI K R K L E I E K TAES |
| UniRef90-X1QF65 | GPTILKKRDDIHRMAEAHYRW |
| UniRef90-E3R676 |  |
| UniRef90_UPI000474148E |  |
| UniRef90-T1BPF1 | S F AVVARKEEVERVA Q S |
| UniRef90-U5YDX5 | GYAKQKRDELHKIAEAHYKW |
| UniRef90-I1TIB6 | $\mathrm{G} \square \mathrm{D}$ RKKRGNLHRLASAHFRW |
| UniRef90-W0JZY5 | TYAVGQKEEKERVAAA |
| UniRef90-G7E6J3 | S SALLNKRQEAHRSAVLN |
| UniRef90-U5YE23 | GHARKKREDLHRKAELLHYRW |
| UniRef90_U1PEH1 | TYSVEQKEEKERVAA A |
| UniRef90-Q18EY0 | S Y AVGQKEEESERVAEA |
| UniRef90_A8PAM8 | S A ALLKKKEQVHKAA |
| UniRef90-F4C0G9 | S Y Al N HK D S V ERVAK C |
| UniRef90-B8P2E0 | GAAYKKKEEV HKYAMMN |
| UniRef90_L2GPW2 | S Y AVKKK K E I E RVAK S N |
| UniRef90-E6N9G6 | S F AVK R R DELLERVA L A |
| UniRef90-C3VY75 | GNAI RKKEETHRMAEAN |
| UniRef90_R4W5V2 | TYAVNQKEETERVAAA |
| UniRef90 G3BAB6 | S S GYEKKA SMHKV S $\square$ A |

UniRef90 M5E5z5 UniRef90-V6ARE4 UniRef90-W5J4A1 UniRef90-D7DU69 UniRef90-B8GJK9 UniRef90-B3EZK7 UniRef90 E1ZUF2 UniRef90_G7JLC2 UniRef90-U5U5N4 4 UniRef90-17ADV8 UniRef90-E2EKF2 UniRef90-S8DWR2 UniRef90_UPIO00180CC38 UniRef90-I4YEE2 UniRef90-UPIO003767364 UniRef90-P54063 UniRef90-A0DJ26 UniRef90-K01LJo UniRef90-F1BNU1 UniRef90 UPI0004407637 UniRef90 M6KLD7 UniRef90-B7XHG2 UniRef90-Q8TRC2 UniRef90 LoIA32 UniRef90-UPIO003631D04 UniRef90_Q3LVW8 UniRef90-GOYEK7 UniRef90-H8ZER6 UniRef90-Q0CRA1 UniRef90-G4VTF4 UniRef90-V5FLN5 UniRef90_W9W738 UniRef90-H6C2X6 UniRef90- XoU2C3 UniRef90-L5K5L6 UniRef90-B8D6G4 UniRef90 C5FJ59 UniRef90-UPI0003EE19F6 UniRef90-G2WSM9 UniRef90_-F8PC29 UniRef90_J3Q2L6 UniRef90 E9J7L4 UniRef90-WgYHD6 UniRef90 BOBLH1 UniRef90_E6ZER1 UniRef90-K2FLC4 UniRef90-M7WMX0 UniRef90 G3RPT2 UniRef90-G7YBD3 UniRef90-M8B4A0 UniRef90 UPI0004411BD7 UniRef90 C7DI39 UniRef90-A0A022RG41 UniRef90_Q8LX06 UniRef90 C5GSU6 UniRef90-K2S8U0 UniRef90-B2XX44 UniRef90-T1BUN2 UniRef90_D3PH16 UniRef90-X1H7Z3
UniRef90 U6GHI7 UniRef90-H3F506 UniRef90-C4JVH3 UniRef90-U5YGQ0 UniRet90_Q2FS70 UniRef90 Q2TUK5 UniRef90-IVVWK7
UniRef90 U3FBB3 UniRef90- MozD23 UniRef90_W2S598 UniRef90-X1BW49 UniRet90_Q0P3G3 UniRef90 UPI00027406FF UniRef90-S7ZBH0 UniRef90-U4KWDO UniRef90-D4KEE1 UniRef90-D4DTE1 1 UniRef90-K4MCN3 UniRef90- Q6RH25 UniRet90-C5A203 UniRef90-A1D4J8 UniRef90-R7YYQ3 UniRef90-F1DPLS UniRef90-Q9G4B5 UniRef90-E2EK37 UniRef90_G2QF16
UniRef90 s5TCZ8

1

$D \square F W K K F T N L L M K N G K K \square K A S K \square F F D M L V I L K$ NMPI I ERLI GRLMTPGHYGGKHKFLIGTHEIIIE PI A ERFVCSLMRHGKKRLADNIEEDAC FI I H PIVEXLMMHRRNNGKKLMAVRIVKHAFEIIH




 IVERLANKLMMGGKKARMLNIVETAFEII H
HCPI
P PEQDPLI R
K S N T S IVERFDTHLMRNGKKRDA IKKLMKACE\|IE IV E R L A N N L M R T G K K QVVTL R AV E E A F DIV I V ERFIDNRLMQT GKKQQTLSLVRDAFELVH K P F K K T Y C P I L L E R L V C S L L M L K G K K I K T I A I V K S D P $\square$ Y R N R L V N MLV NRI L K H G K K S L A Y Q I L Y R A VK KI Q PLTMRLAHGL MRHGRNTSVLGAVRDSFVII E

Y D P L V E Q F T K L LMED GK L S L A Q K NMEF I L N H L K R Y D P V VE QVT R SLLMK DGKL S RA QKNME LI L DAL R K R Y D E E V L
 M K T N S M F E D P L I LP P D GR $\square$ N E P L V E Q F T K LI M M H GKK L S L A Q K HMA K L L E HL R

Y H P V LE QLTNVMMRHGKKSVAQRNMAMILNYLR
D P L L Q Y LT S ALLLHHGHRAKAARMTS LTLLHI H $P L L D Y M T G L L M R Q G K R T I A Q K H V I N L L A Q L R$
 K R Y D E V V D QV TAR SLMRAK G K L S L A Q K N M D E I L D NL R $\square K$ S D PLI TKMM NLLMRHGKRSKAEKI LFKALQVLD K A D S RY GN IL V GRF I G NVMM H G K R S VA E K VI Y D C F DVI H P D P A K H D PL L GY LA R LVMRD GK L QRAYNHI N L M L N EI Q PIVEPPTNSMMMHGKKLMTVRIVKYAFEIIH PLI ERVCCSLMMHGKKLKALNILKHTFEI I H P I I E R L T N S L M M H G K K I M A V R I I K H T M E I I H
 $1 \vee E R L E N A M M R G G K K \square K V M H V I E S A F D S V A H$
$\square K$ S D P L VK K M $\square$ N L L M H D G K R S K A E NV L N K V L Q S L D Y D PL L D QF TK ML M RHGK LSSAA QKQME TI L HNL R


S VF R D Y Q M D K F S R L F M K A G R REK S $\square E \square L N D \square C K K \square K$ VQPDPRYNSTMVAKFINSLMWAGKKTVAQKI FYEALE IME
 $\square V K H L A C S L M M D G K K L M T V R I V K H S F E I I H$ RYED IVEQFTKMLMKDGK LGLAQKNMNS LIHHLR
 $\square K$ S DPLVKKMINLLMRDGKRSKA E QVLNKVFQVLD MKEGKRTRDVRAILYKTFHRPP $P \square V E R \square T$ N S MMMMHGKK L M T V R Y D P V ID QF T K M $\square$ MRDGKLARAQKNMDHDLSTLR
 $K T \square S V S E D P V V R E F M N R V L V R S D R T Q S L D A G R X A P C G E Q$


IVERLVNNMMREGKKQNAMAVVSEALDI DH YDPLLDQFTKMLMRHGK LSAAQKQQMDAILHPS STYNDTLIEHFDRFLDKGWKKKKA DNLLS LSLNY S A IVVERLI N KVVMRS GK K M K A Y EVVVK E A FMII E
 YDPAVEQVTNLMMRHGKLSVAQRNMSLILTHLR

UniRef90-VGARE4 UniRef90-W5J4A1 UniRef90_Q94Z12 UniRef90-B8GJK9 UniRef90-B3EZK7 UniRef90_E1ZUF2 UniRef90-G7JLC2
UniRef90 U5U5N4 UniRef90_U5U5N4
UniRef90_R1G8N9 UniRef90-17ADV8 UniRef90-E2EKF2
UniRef90 S8DWR2 UniRef90_UPIO00180CC38 UniRef90-I4YEE2 UniRef90_UPI0003767364 UniRef90-P54063 UniRef90_AODJ26 UniRef90-KOILJO UniRef90-F1BNU1 UniRef90-UPIO004407637 UniRef90-M6KLD7 UniRef90-B7XHG2 UniRef90_Q8TRC2 UniRef90-LOIA32
UniRef90_UPI0003631D04
UniRef90_Q3LVW8
UniRef90-GOYEK7
UniRef90-H8ZER6
UniRef90-Q0CRA1
UniRef90_G4VTF4
UniRef90-V5FLN5
UniRef90-W9W738
UniRef90-H6C2X6
UniRef90-E3P7G7
UniRef90-XOU2C3
UniRef90-L5K5L6
UniRef90
UniRef90 C5FJ59
UniRef90_UPIO003EE19F6
UniRef90_G2WSM9
UniRef90-F8PC29
UniRef90-J3Q2L6
UniRef90_E9J7L4
UniRef90_W9YHD6
UniRef90-BOBLH1
UniRef90_E6ZER1
UniRef90-K2FLC4
UniRef90-G3RPT2
UniRef90-G7YBD3
UniRef90-M8B4A0
UniRef90_UPI0004411BD7
UniRef90-C7DI39
UniRef90-A0A022RG41
UniRef90_Q8LX06
UniRef90-C5GSU6
UniRef90-K2S8U0
UniRef90-B2XX44
UniRef90 T1BUN2
UniRef90-D3PH16
UniRef90-X1H7Z3
UniRef90_U6GHI7
UniRef90-H3F506
UniRef90_C4JVH3
UniRef90-U5YGQ0
UniRef90-Q2TUK5
UniRef90_-11VWK7
UniRef90-U3FBB3
UniRef90-MOZD23
UniRef90-W2S598
UniRef90- X1BW49
UniRef90_QOP3G3
UniRef90_UPI00027406FF
UniRef90_S7ZBH0
UniRef90_U4KWD0
UniRef90-D4KEE1
UniRef90-D4DTE1
UniRef90_K4MCN3
UniRef9O-A6RAP7
UniRef90_Q6RH25
UniRef90_C5A203
UniRef90 A1D4J8
UniRef90-M2NFM4
UniRef90-R7YYQ3
UniRef90-F1DPL5
UniRef90 Q9G4B5
UniRef90-Q9G4B5
UniRef90_E2EKK16
UniRef90_G2QF16
UniRef90_S5TCZ8 7406FF

K LT NS DP|L|P|LVEA|V|ELAKP|IDRMQSRKQGGKTMQVPTP|L LKTGKNPVEVLVRAIEHSSPNEDTTRVVYGGTAYHVSVDV
 KRTKENPVQVLVDALENAGPREETTRISYGGDAFLQSVDV
 LLTNENPLQVLVNAIDNSGPREDSTRI GRAGTVRRQAVDV








## S


 $R K Q F R N P Y T I$ FHQAL K N CEPMDGLVPI PK G GHFYSVVPVLL


 RLQQLER YHKT TSSEAK S NI ELLNPF


 LATNAPPVPALKKALETVSPMVRLVARRKGLKQVMTPQAL
 $L L S G E N P I Q V L V N A I L N S G A R E D S T R I G R G G T V R R Q A V D V$





E T Q H K D P $\square T \square \square H K A \square D N C S P$ L MVTK S VP VGS VN Y T V P T A RKMKEDAYTVFERAFKNVRPVLEVRPRRVGG


 E K Y P G R S L HI FY F S V F E A K R D IGGIR R R K I N S F N T Y V P Y T I ARTE R DVI K L MVVDA V D N DK P I C E V E K V R I A G T L Y DV P WIV

 ATAECSPDTIFHRAPETCGPVSGLVPVHF E S L P S D P


PQLPR L NP
LTINNK D P I L S T L LT L V V
T Q
T HLLP L

$\square K$ K K $\square$ NP $\square K \square$ F E Q A
$H H L P L D P V L Y$ L $L$ S $A$


SLNQVMWPLCAGAREAVFRNDKT DAECDADELINAAKGS $K$ QRQRRRAAI K WILDASEKRKNSQFAVRVANELVAVAEGR KPDRQESGAI RWI L EGVRKR SAPDSNSLDSEVKDALS LMM APMRRVNTAVGLIVYSASHKKKKPVANALAEELIAAANGK


 R DKQRRRTAI KWI DEGSEKRTDVSLKERVAREIMAVASGS

 NLRQRRRAADKWDLDASEKRRDAQLAHRVANELTAVAEGR ALRQRRRRAIMWMIDAADKKKRMNLAERFADE DAVVEGR RQDRRMTLGI RWIVNYARLRGEKTMNERLSGELMDAANNT







 SANRRRQK L A I R W L I N S A K L K K T E P F C I A L L S N S V I DA A S Q K UniRef90_S5TCZ8

|  | 130140 |
| :---: | :---: |
| UniRef90_M5E5Z5 |  |
| UniRef90_V6ARE4 | P T AlVK K K N ELER LIA Q A |
| UniRef90-W5J4A1 | T S A |
| UniRef90_Q94Z12 | G GVVEK K Y K V H G L A L A N K R |
| UniRef90-D7DU69 | S F AVKKKEEKERVA Q S |
| UniRef90-B8GJK9 | A Y SVAKKEERERIAK S |
| UniRef90-B3EZK7 | SNAIKKKDQL |
| UniRef90_E1ZUF2 | GQARQKRDELHRLDA Q M Y Y W |
| UniRef90_G7JLC2 | D D A $\square$ HKKEETRRMAEAN |
| UniRef90-U5U5N4 | GQARQKRDELHRLA QMNYRW |
| UniRef90-R1G8N9 | SFAlQKKDELER |
| UniRef90-17ADV8 | S Y AVNKKKEI ERLA Q S N |
| UniRef90-E2EKF2 | SNA IKK N D ELER |
| UniRef90-S8DWR2 | GKAYRMKEEVHKVADMN |
| UniRef90_UPI000180CC38 | GTTVKRKQALHKSAEAN |
| UniRef90-14YEE2 | S DVLKRKEEI H |
| UniRef90-UPI0003767364 | SFAIRKKEEIERT |
| UniRef90-P54063 | S Y AVRKKEETERVAQS |
| UniRef90-A0DJ26 | S Y T I K K R D E L E K V A K T N |
| UniRef90-K0ILJ0 | SHAVKKKNEQERIAMMA |
| UniRef90-F1BNU1 | S NALK K K DEXER |
| UniRef90-UPI0004407637 | S T AL R Q K E T L H Q $\quad$ A TVN |
| UniRef90-M6KLD7 | GSAI K K K E Di RKMAEAHYR W |
| UniRef90-B7XHG2 |  |
| UniRef90-Q8TRC2 | SFSINRKDAKERVAKA |
| UniRef90-LOIA32 | TYAVGQKEEKERVAA A |
| UniRef90-UPI0003631D04 | SNAI SKKFELERQADS |
| UniRef90_Q3LVW8 | SYAILKKK口DLEKN |
| UniRef90-GOYEK7 | XXXXXKKEETHRMAEAHFR |
| UniRef90-H8ZER6 | S Y AVKKRDElE R V ${ }^{\text {a }}$ |
| UniRef90-Q0CRA1 | S GVWD R R EQV HKLGVA |
| UniRef90-G4VTF4 | GKAVKYKVELHKQCEANFR |
| UniRef90-V5FLN5 | S GVWDKREQVHK\GI |
| UniRef90-W9W738 | S S S WEKRARVHKMAI |
| UniRef90-H6C2X6 | GS A WERRQRVHKMA IS |
| UniRef90-E3P7G7 | S N S Y |
| UniRef90-XOU2C3 | SNA $\square$ A K K M E $\square$ ERQA D S |
| UniRef90-L5K5L6 |  |
| UniRef90-B8D6G4 | S Y A VQK K E E T E R |
| UniRef90-C5FJ59 | S STWLKRAAIHKQAAAN |
| UniRef90-UPI0003EE19F6 | GPVIKKKHDMHKMAKAH YRW |
| UniRef90_G2WSM9 | S GVWEKR@AVHKL |
| UniRef90_F8PC29 | S RALEEERETIHRFAMVN |
| UniRef90-J3Q2L6 |  |
| UniRef90_E9J7L4 | GHAVKTKLELHKKCQAHFRW |
| UniRef90_W9YHD6 | GSAWERRQRVHKMAMS |
| UniRef90-B0BLH1 | G I A RKKRDDPHEPASAHLR W |
| UniRef90_E6ZER1 | GKVVAKRYKVNKLLA $\dagger$ S N K R |
| UniRef90_K2FLC4 |  |
| UniRef90-M7WMX0 | S EATK N Y T S THQQAVVN |
| UniRef90-G3RPT2 | S Y Al K K K E ELQ HVAKPNH |
| UniRef90_G7YBD3 | Y A MKAKG |
| UniRef90-M8B4A0 |  |
| UniRef90_UPI0004411BD7 | S QALT WKEGEH |
| UniRef90-C7DI39 | S Y A I KRKNEDERMARS |
| UniRef90-A0A022RG41 | G DPI HKK |
| UniRef90_Q8LX06 | GEVVGKRYSLNK L A V S N K R |
| UniRef90-C5GSU6 | S S AWEKRAMVHKQARAN |
| UniRef90-K2S8U0 | S SVWQKRDGV H K VAVA |
| UniRef90-B2XX44 | GAIMKEKWELYKQ |
| UniRef90-T1BUN2 | GASVKRRDDMAKMAEAHYRW |
| UniRef90-D3PH16 | GRVVSKKEELHRTC |
| UniRef90-X1H7Z3 |  |
| UniRef90_U6GHI7 |  |
| UniRef90-H3F506 | S NADKKK |
| UniRef90-C4JVH3 | S SVWERRSQl H K T A R A N $\square \mathrm{R}$ Y |
| UniRef90-U5YGQ0 | GYARKKRDLLHKKVEA |
| UniRef90_Q2FS70 | CYSVAKREERERVAKS |
| UniRef90-Q2TUK5 | GEVVAKRYSLNKLADSNK |
| UniRef90_11VWK7 | G $\\|$ A RKKRENLHGLASAHFRW |
| UniRef90_U3FBB3 |  |
| UniRef90-M0ZD23 | S N |
| UniRef90-W2S598 | S GVWEKRAGVHR\A |
| UniRef90-X1BW49 | S RAI K R K DEIERRI A |
| UniRef90-Q0P3G3 | S DLRNKKLEMHKLAETNKRW |
| UniRef90-UPI00027406FF |  |
| UniRef90-S7ZBH0 | S GVWDRRDQQHKI |
| UniRef90-U4KWD0 | S S A WEKRQAVHKTAVA |
| UniRef90-D4KEE1 | G A A |
| UniRef90_D4DTE1 | G GA LK |
| UniRef90-K4MCN3 | C F Sin RK DAKERVAKA |
| UniRef90_A6RAP7 | S S VWDKRGVVHKQGTA |
| UniRef90_Q6RH25 | GK AVVK Y K E Q M K K L A Q L ${ }^{\text {H }}$ |
| UniRef90-C5A203 | SFAYSKKEElEERIAQS |
| UniRef90-A1D4J8 | S GVWDRREAVHKLG口A |
| UniRef90-M2NFM4 | S GVWERRAAVHRL |
| UniRef90-R7YYQ3 | S SVWEKRGGVHKMARANLK F |
| UniRef90-F1DPL5 | GEPRQRRDSLHKAAESNYRW |
| UniRef90-Q9G4B5 | GKAFNQKDSLYK Q |
| UniRef90-E2EK37 | SNADKKKDELER |
| UniRef90-G2QF16 | S SVWDKRTQVHKLGTAN |
| UniRef90_S5TCZ8 | S Y All $\times$ K K D EL X R |

UniRef90_D8QJW6 UniRef90-U7PWM5 UniRef90 E9P6E4 UniRef90_J3NH10 UniRef90-99XML3 UniRef90 J3QKW2 UniRef90-L74U1 UniRef90-GOSAl3 UniRef90_J9V5J2 UniRef90 A0FD3 UniRef90-TOZDX0 UniRef90-W7HZ18 UniRef90 Q9TC95 UniRef90 A9J5H6 UniRef90-X1RIB1 UniRef90-R8BWM0 UniRef90 G3HHT8 UniRef90-B2XX92 UniRef90-Q23887 UniRefo-H203H8 UniRef90-A0A010RBC4 UniRef90-H3EPW4 UniRef90-R7SBU5 UniRef90 M7PDI5 UniRef90- D91XD4 UniRef90-Q2GSX5 UniRef90 A0A024S5XS UniRef90 S5TRQ0 UniRef90- J9V646 UniRef90-B0D2J8 UniRef90 J4KN94 UniRef90-I6N5NO UniRef90-GOYCU8 UniRef90-S3BWN1 UniRef90 H3FEU1 UniRe990-A0A022QMU4 UniRef90-16N5R5 UniRef90_H3FQW3

MIA A VVNNLCKKGKKQLLE LYGLKMFNYI N
YHPVLEQபTNLLMKDGKKSKAQRDMAMVLNFLR

40

KTSSVFEDPVISKFTNMMMDGGNKVLARSDMDQTLEAVK YNPVLDQCTNLLMRDGKKGKAQRDMSMILNFLR YDDVLQLVTRLMMKDGKLAKAQRDVAMVLNYLR VLPGPLFCSELXAKFTNALVMPGRNLMXIITDKXXFDVGM
$\square M P \square P A \square H S P L L Q Q L T P H F M K S G Q R A T A Q A T V Q R\|L Q\| L R$ NPALDRLLNKMTKGGKKSKASNTLSSVIRNLK PII ERLVCSLMFHGKKLTAMRIDRHSFETI H YEPVVARFTKRLLAPDGKKKKLLSSLEDAFTLIE


DPALELMTNLLMRDGKKSQAQRRMSRMLESTQ DKLFNHTVGIIMKNGKKTKAQKQLQNALIYYK YDSVISQVVRRL QRRGCNSLARKDWSKTLLKVE KRYHPVLEQITRLLMRHGELSVAQRNMATVMNYLR NNQIRNSFIKMLLKKGKKSIAENLYNNILIELR PTVERLINSLMMHGRNNRTKLMVKHAFLILH PPAHDPLLHLLTTSIMKNGLYSKAAKITSDTLLYM| H
 $Y D P V H Q V^{T} R L M M R D G K L A K A Q R D M A T V L N F L R$

P【IERLACSDMMHGKKLMTVRYVKHSFETIN $\square K T K \square V N V L M T S G K K N T G E K!L L K F A K K D Q$

UniRef90_D8QJW6
UniRef90-U7PWM5 UniRef90 E9P6E4 UniRef90-J3NH10 UniRef90_Q9XML3 UniRef90_J3QKW2 UniRef90_L714U1 UniRef90_GOSAI3 UniRef90_J9V5J2 UniRef90 A0FD31 UniRef90-TOZDX0 UniRef90-W7HZ18 UniRef90-A9J5H6 UniRef90-X1RIB1 UniRef90-R8BWM0 UniRef90_G3HHT8 UniRef90_B2XX92 UniRef90-Q23887 UniRef90_H2D3H8 UniRef90_A0A010RBC4 UniRef90-H3EPW4 UniRef90-R7SBU5 UniRef90_M7PDI5 UniRef90-D9IXD4 UniRef90_Q2GSX5 UniRef90_A0A024S5X9 UniRef90 S5TRQ0 UniRef90-J9V646 UniRef90-B0D2J8 UniRef90_J4KN94 UniRef90_I6N5N0 UniRef90-GOYCU8 UniRef90_S3BWN1 UniRef90 H3FEU1 UniRef90-A0A022QMU4 UniRef90-I6N5R5 UniRef90_H3FQW3

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

[^0]

UniRef90_D8QJW6
UniRef90_U7PWM5 UniRef90-E9P6E4 UniRef90_J3NH10 UniRef90-Q9XML3 UniRef90_J3QKW2 UniRef90_L714U1 UniRef90-GOSAI3 UniRef90-J9V5J2 UniRef90 A0FD31 UniRef90-TOZDX0 UniRef90-W7HZ18 UniRef90_Q9TC95 UniRef90_A9J5H6 UniRef90-X1RIB1 UniRef90_R8BWM0 UniRef90 G3HHT8 UniRef90_B2XX92 UniRef90-Q23887 UniRef90-H2D3H8 UniRef90 A0A010RBC4 UniRef90-H3EPW4 UniRef90-R7SBU5 UniRef90 M7PDI5 UniRef90-D91XD4 UniRef90_Q2GSX5 UniRef90_A0A024S5X9 UniRef90 S5TRQ0 UniRef90-J9V646 UniRef90-B0D2J8 UniRef90_J4KN94 UniRef90 I6N5N0 UniRef90-GOYCU8 UniRef90-S3BWN1 UniRef90 H3FEU1 UniRef90-A0A022QMU4 UniRef90-I6N5R5 UniRef90_H3FQW3


#### Abstract

\section*{90}

110 120 NERQRTKQAIIKWI VEDSKTVPGRHFDQR|L|AKA|ITKVINGGD NERQRRRAAFTWILENASKRPSNTFAHRVAEEI I AVAEGR   ARDRQRTLA PVRARRR\|AFQWILESVNKKPSKGSSHR\|AEE\|VADIEGR KARQRRRTAINWILEVARKKPNRTWPHRVAEEIVAVVEGR SPLRLVNHAUWLLCREAAFRNDKTDADCVSDELINXAQGS RAVRRQALAMRWLSKC SPSRRVDVALRNIATKASYKKKKPVESCLADELIQASKNT HVKARRRKAMGWMLQASEGKKRKTLDERFAEEVEAVVLGT AHNRQEGDA $\square R W L I G V S R N Q K H N R I D L V L S K E I Q D A S T S K$ SPSKK SPQRRVDLA $\mathcal{V}$ KY VQA $\square G V R S H S N E R Q N L A Q E L I$ GVRQRRRMAWMWIMETVNKKPSKMLAAHRIGEELVADIEGR AFQNIK TIAECLADELISAAKGS TVKQAEKYALNWLLKVVEKKKVTSFSSKIVYELINAYNKT EPEMGEKGAGKWLKKTVAKFKGELLIDENVEEFVKASKDQ


AVRQRRRAAFQWDLDVVNKKPSKQFAHRVADELI AVTEGR APFRRVNQAMWLLGTGAHFRNDKT DAECLADELI NAAKES DERQRIGQA I RWI YRERGRKA GVPRETRIARE ILSA NEHQRHRKAI DWI LEASNKQH
PYYRAVPMA IVWI L EAARKKRGVKFVNADVTEFVDLYNFT RERQRRRTAFGWILDAVRKKKSKMFPHRVAEEIVAVVEGR AVRQRRRMAFQWILDVINKKPSNQFAHRI AEEII AVVEGR NKEKQ IKDA I NWLLFYSRKRKANFDKNIDNEILGTFNHK SLLXPVNQAIWLSATEAAFTT DNT■AK』VDDELIXAAKGX NERQRTKKGIDWLLAEVKGKMSRR
TVRQRRRRAFTWILEAVEKKPSKQFAHRLAEEIIAVVEGR SFVATDQYRTMLSLKLMKNKGSNEFYESLSNEILMASSFK
 A LRQRRRTAFMWLLDSVKNKQSRQFATRVGEEIVADAEGR DAAFRNDKTDAECLADELI NAAKGS KTLDDHWLLAAFRKRSGRNMAFKLRSDLVVTTKGS



UniRef90_D8QJW6 UniRef90_U7PWM5 UniRef90 E9P6E4 UniRef90-J3NH10 UniRef90_Q9XML3 UniRef90 ${ }^{-}$J3QKW2 UniRef90-L7I4U1 UniRef90_GOSAI3 UniRef90-J9V5J2 UniRef90 A0FD31 UniRef90-TOZDX0 UniRef90-W7HZ18 UniRef90_Q9TC95 UniRef90 A9J5H6 UniRef90-X1RIB1 UniRef90-R8BWM0 UniRef90 G3HHT8 UniRef90-B2XX92
UniRef90-Q23887
UniRef90 H2D3H8 UniRef90 A0A010RBC4 UniRef90_H3EPW4 UniRef90_R7SBU5 UniRef90 M7PDI5 UniRef90-D91XD4
UniRef90_Q2GSX5 UniRef90-A0A024S5X9 UniRef90 S5TRQ0 UniRef90-J9V646 UniRef90-B0D2J8 UniRef90-J4KN94 UniRef90-16N5N0 UniRef90-GOYCU8 UniRef90-S3BWN1 UniRef90 H3FEU1 UniRef90-A0A022QMU4 UniRef90-I6N5R5 UniRef90-H3FQW3

[^1]130
140
S SALLEKKRLQHEAAMNN S SVWEKRRMVHKQARAN S EILLK DKDKHYKNAESHYKW SSLWDRRDMVHRLARAN G $\square$ ARKKRDNLHGLASAHF $\square \mathrm{W}$

S S LWEKRMLLHKMARAN SPVWDKRTAI HKVGTAN SNALTNKDELDR

SFSVNKKEEMERDAAS SSCWEKR $\square$ A V HKKLAVTN GSVITRRNELYKLADDN

STVWDKRQQLHKLGTA
SNSYAKKDELEHVAKSN GAVMQEKWKLY
GEVVKEKWALYK
S SVWEKRDALHKDGTA
PNADKKKDEPERVAQFN

GAASSQR
$S S V W D K R \square Q V H K$


SNALLKKDELE
S SVWDKRKLVHKQARAN
GQS $\square \mathrm{NDKTDLQKQ} \mathrm{\| LANKRY}$ XXXXXXKEETHRMAEAHFR SSLWEKRQLVHKL
SNAIKKKDELERAAKFN
GDAI HKNVETRKMAAAN GPSVDKKTE $\square Q K R \| L A N K R Y$ PNAIKKKD

```
B 1
```




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

[^1]:    lupas 21
    lupas_14
    lupas_28
    jnet conf sol25
    sol5
    sol0
    jhmm
    jpssm

