ouery
UniRef90_W5UBX6
UniRef90-H2ZHPO
UniRef90 - M3ZIV8
UniRef90-H3BG05 UniRef90-H9JGL3 UniRef90-H3CVV1 UniRet90 UPI000333AC1 UniRef90-T2MFH5 UniRef90-V9KB58 UniRef90-UPI0003510CF1
UniRef90 Q70D14 UniRef90-A7SIY0
UniRef90-B4LYC8
UniRef90-B4JG44
UniRef90-Q8MQX4
UniRef90-W5JDF9
UniRef90 B4N988 UniRef90-Q293T5
UniRef90-H91YT9
UniRef90-G3PQC3
UniRef90 G6DSL3
UniRef90-J9KE76
UniRef90-F7A912
UniRef90 K1QPS9
UniRef90-V4AE39
UniRef90-D6X4C6
UniRef90-UPI0003F093BF UniRef90 UPI000359DFAB UniRef90-W4YTZ3 UniRef90-BoW699
UniRef90-Q7ZY76
UniRef90 EOVIA9
UniRef90-B4K8R5
UniRef90 B3MTCO
UniRef90-l1G126
UniRef90-U6NRY0
UniRef90-T1GFT3
UniRef90 $\mathrm{Q7Q115}$
UniRef90-G3RNN3
UniRef90-E4YFZ
UniRef90 A7RU83
UniRef90_A0A017S6Y6
UniRef90 W7HOU
UniRef90- A0AO23FK52
UniRef90-T1JFZ9
UniRef90-A0A016VOZ1
UniRef90 T1KAM5 UniRef90-E2ARF8 UniRef90-W4YF05 UniRef90_T115Z1 UniRef90-UPI0003C3600A UniRef90-F4P3W7 UniRef90-F1L4R3 UniRef90-H2Y551 UniRef90-U2Y551
UniRef90-UP10003C38393 UniRet90_C3YBH9 UniRef90 G3VLW6 UniRef90-UPI0002657D1F UniRef90-B0W7H5
UniRef90 H9G8LO UniRef90-T1KDA8 UniRef90-UgUCQ7 UniRef90-R7UEM3 UniRef90_B7Q2TO UniRef90-T1JEE9 UniRef90-J9BN36 UniRef90-JoxIV4 UniRef90-H3DD25 UniRef90-A0A026WRG1 UniRef90 HoZ113 UniRef90-W8BLD5 UniRef90-G9MPF5 UniRef90-U4U056 UniRef90_M4AM50 UniRefofo-D7UD95 UniRef90-W5KDA0 UniRet90-C3XZW8 UniReffo-O54Q40 UniRef90-E1BRS3 UniRet90 A1D7H6 UniRef90-S8ADG8 UniRef90-F1QW91 UniRef90-Е9Н3М7 UniRef90-H9K3H5 UniRef90_M4AM44

TGVKELYLCTSLGELNKKAEDKDDKASTKHYVQSACKLFK PRDYYAKSKKLNKHANCDSDTGSVKSQLTFANKAFG TGAKELYLSTSLGDLNKKAETKPDKTSTRSYVQSACKLFK SVPKELYISTSLKELNRKAEVKPEKISTRSYVQSACKLFK KQLHLGKCIEDLDKLHNVPDGKTKRNLLCKTAQKLFE
SVPKELYLSSSLKDLNLKTEVKAEKMSTKNYVQSALKIFK SGAKSTYMYKSVKDLNKVAEVIKTNTQCAQYCKSVNEIFK SVPKELYLCTSLKDLNKKTEIKPEKTSTKRYVQSALKKIVKK PKQLYLGERFDDLEKLYMKLPPDDKDRDICRSARKLME KDLHLASSMSELVALADPNTENANPNLFCKSADKVFL KKLYMGDR EDLEKWTTPPDLNKSMKILLNTARKLYL KKLHMGDRLEDLQKWTII PNLKTSMKMLLNTARKLLL KKLHMSSNLDDLEKMSIIPDLRSKMKILLNTARKLYM PKPLHLGTHIDDLEKLYMKLPADIRDREI CRSAKKLDE KKLYLSKNMEDLEQLTUIDCCNKSMRILLNTAQKLYT KKLHMTNSLSSLEKLSDITKDNTNDKLLLSTARKLFM RPKHVDLASRVKQLANMVDVDPNVPPRRYYRSGLEMVR KTVDLASRVKQLANMVDVDPNVPPRRYYRSGLEMVR KDLHIARCLGDLNSMTEIPDKLKNLDVIKKAELLFE
PKDLYIAKSLKDLNKHTDSKCEKGSDKIYLNFANKAFA KDLYVAKSLKALNDLAALPKMTTNPKILINSAQKDHK SRKKDLYLGKSLSDLEKEAEVKELGPNVNVIIKSADKLYK GKKKLYVARSMEELNKMADHQLVKGWNKNYCSSASKVFS KDLYLGKCMDDLHKLSEVKPLGNNVNIIIRSAAKVEK A LKKTLYGGSSUEELNRKVDHNVTKGQTKIYARSANTVGS KPLHMGKNLTDLEEHFK IIPPRKYYRSGLEMVR ERLKNLSHCGEVDKNMPVTRYYRSGTEMLR KSLHVANSFEDLMKLVDGDGTTLKEKHFCTSTKKVLE PKPLHLA

 LAEHASHVDVNTPPKRYFRSGVELER ISLRNWLRTATTLVR DQVSLVSWLRNAATLLR KP $\square Y$ YSSSVQEDEKHCSTGDDDYSLFNYLSTSNNLYK KPLNMASSTEQLKLIAEVVDNNYSLNQLCKSAGNMEE DSLDSLNAASELPKEMTSSEKMFSSDEKMDQ PKD■YMAHS GELNQLANDKLTMVSPDLLLNGMKKVFN ES NDLAEKAKDNFNGKEPHNIYSRLDP ARQ
GQRVRSLAEHGSVVDGNDPDRRYRSGQEMIK MGNSVE
 MTVDMHLA ERMRTLDKMATPHNVN KVNEDD
PKTLYロANDFDSLHQLADVEKAGGWL LKHAETAKKLFA KPLR YSNFRDLQKKSNDVPGTARCKTYYTTAVEDR VPKD ERTRQLAALSNSVDGNDP\|KRYYRSGLELYDR SLKDLNKTEDKPEKTSTKSYVQSALKGFK KAGBGALIMFRSANTLLR DPTDP PK RYFRSGDE ML R

VPEEL पSDPHARTQNDSETVDNKIPLKRYFRSGLEMMR
 KRTQQLLMLSSKIELNTSURKYYRSGREMMS
SMPPE

PKS L

## NDDVPPRR

 ERTRFLSNHGNMDDANMPVTRYYRSGTEMLR SIKELVAQAENFNVNDAMKHWURAADTLYQ
QUERY
OUR

QUERY
UniRef90_W5UBX6
UniRef90-H2ZHPO
UniRef90-M3ZIV8
UniRef90-H3BG05
UniRef90-H9JGL3
UniRef90-H3CVV1
UniRef90 UPI000333AC1-
UniRef90- T2MFH5
UniRef90_V9KB58
UniRef90-UPI0003510CF1
UniRef90 Q7QD14
UniRef90-A7SIYO
UniRef90_B4LYC8
UniRef90 W8B1V4
UniRef90-B4JG44
UniRef90-Q8MQX4
UniRef90-W5JDF9
UniRef90 B4N988
UniRef90-Q293T5
UniRef90-H9IYT9
UniRef90 G3PQC3
UniRef90-G6DSL3
UniRef90-J9KE76
UniRef90-F7A912
UniRef90-K1QPS9
UniRef90_V4AE39
UniRef90-D6X4C6
UniRef90 UPI0003F093BF
UniRef90-UPI000359DFAB
UniRef90-W4YTZ3
UniRef90-B0W699
UniRef90 Q7ZY76
UniRef90-EOVIA9
UniRef90-B4K8R5
UniRef90 B3MTC0
UniRef90_L7MLQ7
UniRef90-I1G126
UniRef90-U6NRY0
UniRef90_T1GFT3
UniRef90-Q7Q115
UniRef90-G3RNN3
UniRef90_E4YFZ1
UniRef90 A7RU83
UniRef90-A0A017S6Y6
UniRef90-W7HQU1
UniRef90 FOZNX3
UniRef90-A0A023FK52
UniRef90-T1JFZ9
UniRef90-A0A016V0Z1
UniRef90 T1KAM5 UniRef90-E2ARF8
UniRef90-W4YF05
UniRef90_T115Z1
UniRef90 UPI0003C3600A
UniRef90-F4P3W7
UniRef90-F1L4R3
UniRef90 F4WR70
UniRef90-H2Y551
UniRef90-UPI0003C38393
UniRef90 СЗYBH9
UniRef90-G3VLW6
UniRef90_UPI0002657D1F
UniRef90-B0W7H5
UniRef90 H9G8L0
UniRef90-T1KDA8
UniRef90-U9UCQ7
UniRef90 R7UEM3
UniRef90-B7Q2T0
UniRef90-T1JEE9
UniRef90-J9BN36
UniRef90- J0XIV4
UniRef90_-J9JNC7
UniRef90-H3DD25
UniRef90_A0A026WRG1
UniRef90 HOZ113
UniRef90-W8BLD5
UniRef90-G9MPF5
UniRef90_U4U056
UniRef90 ${ }^{-}$M4AM50
UniRef90-D8UD95
UniRef90_L7M2J1
UniRef90 W5KDA0
UniRef90-C3XZW8
UniRef90_-Q54Q40
UniRef90 E1BRS3
UniRef90-A1D7H6
UniRef90_S8ADG8
UniRef90_F1QW91
UniRef90 E9H3M7
UniRef90-H9K3H5
UniRef90_M4AM44

DRQEEAQR $\square Q Q K R Q$
TKPEENVKVKEN

ENEDFKQKDEENRK MRRKDSGLSSPKA

NQNGHNSNEDQ

SRADELERASNGRQ

A D AK $L$ A ER $\square \mathrm{Q}$
ARRKQAQRLQENRQ DNNKLNKRSSQNRK

ERRKELPKNS

D N
MLKK F QEEQEKNRK

EREGEARK
DRQGEAQWDQQKRQ S $\square K E E N E R K G R E A Q$

ARRQP
HDEQQAVLRQQ
ERQKELERDKQEK

T R N $\square \mathrm{E}$ N A P D Q A N R

RRAE
LD NERK
DRRK
K MQQEAMDKEREA

E
NN $\square$ SHNPQDQQRR

ARYRSMQK
EQ
TRKE
ERLKHQEEREQR
T TT DNAALIGKK
ALGEFKEKHEQK
ALAREQSRQ
RRRKSNQQLEEER
ERHKQQAASS
QEGEERRKAELKKK
D R P E P PAAASRNR

CVRSYGSE $\square$ QQ
VRTSHQETTSSK
ERQRQAQKE LEEKQ
A VERELDSRQRE
AKKKQEE
K ERE
RLL LLEEEKQ



UniRef90 w2TCV9 UniRef90_V5IJB1
UniRef90_L5M3V7 UniRef90-S2J0A9 UniRef90_E0V900 UniRef90_W5MG26
UniRef90_UPI0001CBC201 UniRef90-UPI000332F59C UniRef90_Q6TH47 UniRef90-A0A044T8X7 UniRef90_U1M970 UniRef90-Q0CXI7 UniRef90-F6QBZ8 UniRef90-W4WDSO UniRef90-UPI000258E184 UniRef90-E2C7N6 UniRef90-G3Y253 UniRef90_UPI000359937C UniRef90-A0A026WW39 UniRef90-G3PN15 UniRef90-E2R3X2 UniRef90-H3A3R4 UniRef90_L8G1L9 UniRef90-T2M158
UniRef90-H2UP13 UniRef90-E9DR38 UniRef90-S8AYA4 UniRef90-D6W7J0 UniRef90_G3VGE9 UniRef90-Q176G0 UniRef90_I3KSI1
UniRef90_UPI0002A4C8F9 UniRef90-T1DRB7 UniRef90-B6QVL1 UniRef90-W9C8T2 UniRef90-W9X8Q0
UniRef90_M1W290 UniRef90-Q5B8X7 UniRef90-F7F4V9 UniRef90-Q63ZM7
UniRef90_M3Y568 UniRef90_UPIO003EC6510 UniRef90-U4LP16 UniRef90-W9YYG7 UniRef90-E1BUJ2
UniRef90 G1X6M8 UniRef90_Q6P841 UniRef90-K7J2B7 UniRef90_UPIO0045424C4 UniRef90-H9KF53 UniRef90-D3BEY3 UniRef90-S4RWZ4 UniRef90-H9G5L8 UniRef90_G7YIH5 UniRef90-F7CHD6 UniRef90_V9KSS3
UniRef90-U6PZL7 UniRef90-V9KWF6 UniRef90-I3K9D4 UniRef90-A0A024JI65 UniRef90-UPI00021A7626 UniRef90-N1J4W8 UniRef90_UPIO003C28B56 UniRef90-A0A026WN22 UniRef90-V5G5A7 UniRef90-B8MZZ2 UniRef90-K1XAJ3
UniRef90 E1FGP3 UniRef90-E2BU25 UniRef90_Q8UW16 UniRef90_G4TAN6 UniRef90_UPI0003446B09 UniRef90-A0A010RM94 UniRef90-J5JR14 UniRef90-U1HRX0 UniRef90_M2LZS2 UniRef90-E9C3Q7 UniRef90-A0A016UWZ4 UniRef90-C9SDP3 UniRef90_E7F3M4 UniRef90-W1QGZ6 UniRef90_UPI0004409E5C UniRef90-R7VTM2 UniRef90-UPIO004413341 UniRef90-K3XGS5 UniRef90-T5AQY9 UniRef90-M3CY50 UniRef90_AOA026WR77 UniRef90-S3DUQ3 UniRef90-R8BPM1 UniRef90_UPI000258D4B0 UniRef90_B3S4P0
 YST
KALIQAEKDVRQNLKKLEILKPRDNRRYER YSQLIKERQ KAL MEAEKEVSRNLEKLEILRPRINKRYTELMNDRQARS
 DKDTNRYT LRQVFSKAEELKKQL
DMKNKGKAELLKKLEQ EKLIEAEKKRDAQDRQQ QLETE VKKLKE DA FPKA
LTKPLFDRQNKEVFGLLEELKPQDDRDYKEW QSMSASK VKAL T Di VAA QRAVRKNLQKLELLKPRVQQAYER Y LQARRNAE RLAKLVTN AMTAAETLKDRLKARYEHEAQRAKQRE
 PEKQV DMKKLQEAFPRKDQLKRLLHEKYSKEMCGAQLQKM
 TMKKLKEVAFPRA
VHRHNLTLNGNDLLQKDSELRPTLSDRFEKHQAQAKQARE EKEFLKKQKLRSVLNELESLKKVVQQQF
AD DA QAQKTLQRNLITKLEWKPRINQDY QRYVKAM E DKAM
$M K A B A Q R T L L E V L D R L E V L K P R \square D M R Y R S W$ QKTLER A A LIKPLIQRFNRVLDELEELKPTUTASYNEWKKLSASEDK

UniRef90 ${ }^{-}$V5IJB1
UniRef90-L5M3V7
UniRef90 S2JOAs
UniRef90 E0V900 UniRef90-W5MG26 UniRef90-UPI0001CBC20 UniRef90 UPI000332F59C
UniRef90 Q6TH47
UniRef90-A0A044T8X7
UniRef90-U1M970
UniRef90 Q0CXI7 UniRef90-F6QBZ8
UniRef90-W4WDS0
UniRef90 UPI000258E184
UniRef90 E2C7N6
UniRef90_G3Y253
UniRef90-UPI000359937C
UniRef90 A0A026WW39
UniRef90_G3PN15
UniRef90-E2R3X2
UniRef90_H3A3R4
UniRef90 L8G1L9
UniRef90-T2M158
UniRef90-H2UP13
UniRef90 E9DR38
UniRef90-S8AYA4
UniRef90-D6W7J0
UniRef90_G3VGE9
UniRef90 Q176G0
UniRef90-l3KSI1
UniRef90-UPI0002A4C8Fs
UniRef90 T1DRB7
UniRef90-B6QVL1
UniRef90_W9C8T2
UniRef90-W9X8Q0
UniRef90_M1W290
UniRef90-Q5B8X7
UniRef90-F7F4V9
UniRef90 Q63ZM7
UniRef90 ${ }^{-}$M3Y568
UniRef90_UPIO003EC6510
UniRef90-U4LP16
UniRef90 W9YYG7
UniRef90-E1BUJ2
UniRef90-G1X6M8
UniRef90-Q6P841
UniRef90 ${ }^{-}$K7J2B7
UniRef90-UPIO0045424C4
UniRef90 H9KF53
UniRef90 D3BEY3
UniRef90-S4RWZ4
UniRef90-H9G5L8
UniRef90_G7YIH5
UniRef90- F7CHD6
UniRef90-V9KSS3
UniRef90-U6PZL7
UniRef90 V9KWF6
UniRef90-13K9D4
UniRef90-A0A024JI65
UniRef90 UPI00021A7626
UniRef90 N1J4W8
UniRef90_UPI0003C28B56
UniRef90-A0A026WN22
UniRef90 V5G5A7
UniRef90-B8MZZ2
UniRef90-K1XAJ3
UniRef90_E1FGP3
UniRef90_E2BU25
UniRef90-Q8UW16
UniRef90_G4TAN6
UniRef90 UPI0003446B09
UniRef90-A0A010RM94
UniRef90-J5JR14
UniRef90_U1HRX0
UniRef90 M2LZS2
UniRef90-E9C3Q7
UniRef90-A0A016UWZ4
UniRef90-C9SDP3
UniRef90 E7F3M4
UniRef90-W1QGZ6
UniRef90 UPI0004409E5C
UniRef90 R7VTM2
UniRef90-UPIO004413341
UniRef90-K3XGS5
UniRef90_T5AQY9
UniRef90- M3CY50
UniRef90-A0A026WR77
UniRef90_S3DUQ3
UniRef90 R8BPM1
UniRef90-UPIO00258D4B0
UniRef90 B3S4P0

E HKKEK
A LIEEEKQRVAQLRK

D M Q
A R

D $\square$ I EHME
A R

AEQEQARELSKRR
KNEEECQKDEQQR
DKQDEVKSVSQK
ERVAEMQRRQRE
S R R
NKYK
DRRRFL LLEEERQ
QRVAALRRMQ
A R K
RRKEFPAAREN ARR
T
ERQREKKR】AQMRQ
A QREHQSLIEAERK ERQQSKQRA

QLIEEKKR LAQ QRQ

## N

## SKEGF LDNVEQN <br> QAKLEARRAQ

ERDAEMQRRQRE
EREA $\square R K R Y Q Q$
CKAEYLKR LD HEK
SRKSTPTALSD
ERRREA
DLSVLQSEETRKDK
Q F Q

QRE
MRPEKRQR
EARR\A
TQRVHAER
REHQLQLQSQEA
S YQVEQQES
A D I E Q
SMEEERQRVAQLRK
EQLQRLSLLEEERQ
HAEKQAQREAAKRQ

KRQSERQRVQHE
RKEAAAA DEGER
$R$ RQAEAQRQSR

UniRef90 U6HYW3
UniRef90-L2G6E4 UniRef90-UP1000443D838 UniRef90_J3NMJ4 UniRef90_CoNAV4 UniRef90-E7FDE6
UniRef90 A8HQ18 UniRef90-D5GDW0 UniRef90 E4YQX0 UniRef90-UPI00038BB7C9 UniRef90-GORUD9 UniRet90 M7AJP9 UniRef90-A9Sc60 UniRef90_S2 J 1 D 8 UniRef90_A0A059LLU4 UniRef90 L5LRT3 UniRef90_M5WD10 UniRet90-S2JEX9 UniRef90 R1EUP4 UniRet90 A8X076 UniRef90-G3P6E3 UniRef90 ${ }^{-}$A0A026W7V7 UniRef90 W2SD11 UniRef90-F9XM48 UniRef90_Q4RUZ9 UniRef90-G5EBW2 UniRef90-UPI00021A5736 UniRef90_G7KNO1 UniRef90-GONOL9 UniRef90-s9PZSO UniRet90-G2QJLI UniRef90 M7TDH4 UniRef90-Q5PNU3 UniRef90-W1PAF8 UniRet90_C5PB75 UniRef90_A0A022UJG2 UniRef90-Q2GQ72 UniRef90-F4PTM7 UniRef90_B6K089 UniRef90-M2UTB8 UniRef90-F2U819 UniRef90-H1A1M99 UniRet90 G3HQY1 UniRef90-V7CU04
UniRef90 H 2 S 305 UniRef90-V2WZ15 UniRef90 - H2VR54 UniRef90-B9RZL9 UniRef90_11F351 UniRef90-N1PCV0 UniRef90-M3ALG1 UniRef90-R7YTC8 UniRef90 A0A022RU16 UniRef90 E5A3S9 UniRef90_UPIOOO2B4511A UniRef90-G4N2G6 UniRef90 D7KD54 UniRef90-A0A016PTH5 UniRef90_UPIO00454332F UniRef90 A0A044UFE0 UniRef90_B9HWW9 UniRef90-C7ZOG6 UniRef90_W3WI74 UniRef90 UPIO002B41076 UniRef90-UPIO002C31118 UniRef90-Q8VYB5 UniRef90_UPI0002C2FBF6 UniRef90_Q9P371 UniRef90-F7W8P5 UniRef90-B2AFE3 UniRef90 D7SJ09 UniRef90-A0A059D0Z7 UniRef90-K4AWD1 UniRet90_S9W3D8 UniRef90_D2VQF6 UniRet90_K4BM82 UniRef90 S3CFYO UniRef90 UPI00042B5947 UniRef90_W4JVG4 UniRef90_A0A022PZ68 UniRef90_C4JZN7 UniRef90-I1 HF61 UniRef90-F8PSQ9 UniRef90_UPIO0032AB7E0 UniRef90-B9EX28 UniRef90-J3KZ15 UniRef90-E3MF83 UniRef90-A0A059B4W2 UniRef90-D2V4NO
UniRef90 W7TM83
 TCVNDLVKQARVNCVGKKPRSMYQRLSTMR KSVEQUTKAAQTYDAADPMRYWLRTAAALVK
 D N R $\square$ S L R FYY R $\square$ A D N I L R S $\square F T$ S $\square \mathrm{KKM} \mathrm{M} \mathrm{N}$

DLS MGSRAKELTD KAKNFDWNPRIKYWARAAETIYH
$D \square N K V A E \square E V D N T P L R N Y Y R D A D N L L R$
 WLRTAASLK
K HWARAAET I H H
 $N D P$ LR N WL RTGTTGLK CESFEQLRDKAEKLFDDKGVANGLRTANTMQK ERVRALSKLGSNVNEDITPRRYFRSGVEMER E R V R A L S KL $\operatorname{L} \square S$ I NE DI TPRRRYFRSGVVEMER $S$ LT A A E R VR A L G K M G N S IN N D D V A P R R Y F R S GVVEME R S S I A E L A VKA RVLKKENQP DKYY LKK A E SNRR


NTGRS LQQWLRSAKMLLT RSVEEVVKEAQDFNTNRSLQQWLRASKMLLT SVEEVVKQAGSFEYNDPLRYWLRSADTIRK NAMARKDDVDNRIRNYYR DADNLDK

I P L S N WLLRTASTMQK VVDNRFPLRYYYRVADNVLK
$N \square N \square H$ K H WVGAAETLYR
 VKELVAQAENFSFNMNIKHWMRAAETLYQ KVPCEMY DKMRNDLIK $N V D K M T R K V E V D N R \prod P D R N Y Y R \square A D N L D R$ VKELVA QAENFNANIPVKHWTRAAETLYK E Q WLDRTAKTLDR DNR $\square P$ LRNYFR IA DNLLK

 N I P L K N WLLRTS T T I SK NVKEDSEKAKQYDWNPRIKFWARAANTI HH T DLGLQYDFLP QLPL NRWYRAAEVVYR DNRISLRYYYR\ADNILK DNRIA L RYYFRI ADNVLK N $\square$ DAMARKVDVDNRI PALRNYYRUANNLLAR
 $K K L D V D N R D A L R I Y Y R \square A D N V L K$ S VQEDARSAEMFEPQUPLKKHDGSLDAMYR SIA ELLADKAEHGWDDGRDKHYLRMAEKYRK S $\square T$ ELAEKASVWDPDKPGKHWLRTAE GARA

D PAVKLHYWDRTATSL


$\square S \| A$ Y Y F R EQKSDDTVFMSMKKMQT NVNS\ARRVEVD NRDPLHYYYR\ADNLLK


|  |  |
| :---: | :---: |
|  |  |
| UP1000443D838 MA SV Y M E GNLENA |  |
| J3NM | Q |
| AV4 |  |
| UniRef90－E7FE6 | MANIYADEGNVEHAFVLYNKYDTLIEKLPKHREYKTAKSW |
| A8 |  |
|  |  |
| 8BB7C9 LAEDYEKEGLIQEAFITHHKFLTLVEKLRKGPEYNNILSR |  |
| Go |  |
|  |  |
|  |  |
|  | QGDLALLNNDLESAY SYMRCSTMVETKFHSCYHQVQDP |
| UniRef90－AAA |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| W2SD11 EAEVYQSEGDDETTYFLLFRHAHLVLLALAQHPGVRDERFR |  |
| UniRef90－9XM488 | （VCEDEGNIAQAYLYIYRHAELVAKLPQHPDYRNPQFK |
|  |  |
| UniRef90－UPIO0021A5 |  |
| UniRef90－G7KN011UniRef90 Gonole |  |
|  |  |
| 900G2QJL9 EGQVYLREGNVPKAYLVLFRFSTLVEYLVKHPEAKEPESK |  |
|  |  |
| UniRef90－Q5PNU3 QASIYREEKNVVDLYI MLLRYSSLIETIPFHRDY QAS | EGDIYLREGNFAKAYLLYFRYSVLLERLRNHPEFKTAEGR |
|  |  |
| UniRef90－C5PB75 EADVYEREGNDQQAYLLLFRHAQLVLVNLIMMPQAQDPSC |  |
|  |  |
| UniRef90－Q2GQ72 QAQVY的 EGNFPQSYLVLFRYSVLVDYLVKHPEAKEPEAK |  |
|  |  |
|  |  |
|  |  |
| 吅 |  |
|  |  |
|  |  |
|  |  |
| TKFIILVEKLPHHRDYQQCSVP |  |
|  |  |
|  |  |
|  |  |
| UniRef90－N1PCV0 EASDCEEEDNLQTAYLYTYRHCELVQRLPEHPDYRDPPR |  |
|  |  |
| UniRef90－R7YTC8 EAQL Y R R G NDQQTYLLLERHALLVEKLSKHPEARNPEHR |  |
| 2RU16 |  |
| UniRef90－E5A3S9 3 EAQVYEAEGNDQQVYLLL YRHADLVQKLQTHPD K SRPEN |  |
| UniRef90 UPIO002B451 |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| EAASSLQDGNFHKAFMLYLRLSDLLTYLPKHPQAK TMEA |  |
| Ler |  |
|  |  |
| iRet90 Q8VYB5 QANIFRAEKNVIDLYVMLLRFSSLLETIPSHRDYKSNKEY |  |
| P10002C2 | QADIFRQERNIIDLYVMLLRFSSLAETIPFHRDYRASVQU |
|  |  |
|  |  |
| EATHYLRDGNTPQAFMMFQRYCDLVMKLRTHPDIVNESRPQ |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| 价 |  |
|  |  |
| Ref90－UP10004285947 QASITYRDEKNI |  |
| －A0A022PZ68 KADTFREENNITDLYVML LRFSSLVETTPCHRDYKTSPQG |  |
|  |  |
| Ref90－14FF61 QAKLYRDEK |  |
|  |  |
|  |  |
|  |  |
| NYREEKNVDLY |  |
|  |  |
| UniRef90－A0A059B4W2 QASVYREENNIVDLY I L RFSSLVETIPFHRDYQLLRPK |  |
| Ref90－D2V |  |
|  |  |


|  | 90 100 110 |
| :---: | :---: |
| UniRef90_U6HYW3 | $E L R L Q Y E S \quad A K D A Y A R\|L\| R E R\|L\| G L R ~$ |
| UniRef90_L2G6E4 |  |
| UniRef90_UPI000443D838 | KQD\\|MKNQHTAEILKKLER |
| UniRef90_J3NMJ4 | $R \mathrm{Q}$ L K R L N D R IP R I L S Q L E ELIK P H IT A A Y N E WERLS K A G Q V |
| UniRef90_CONAV4 | K AVA A A K R EVQR NLS KLELLLKPRIN K R Y ER |
| UniRef90_E7FDE6 | R K S |
| UniRef90_A8HQ18 | Y T S |
| UniRef90_D5GDW0 |  |
| UniRef90_E4YQX0 | H D GK A YMKR L VPALE R TE L L K Q I L D S R Y S G F L D M I R S E |
| UniRef90_UPI00038BB7C9 | RQKSKLKKCINK V F E K A E TLLK IKIL E G Y GREYEE Y L A D K |
| UniRef90_G0RUD9 | Y K L |
| UniRef90_M7AJP9 | PE K Q D $\square$ M K K L K E A FP R T D E L K K D L |
| UniRef90_A9SC60 |  |
| UniRef90_S2J1D8 |  |
| UniRef90_A0A059LLU4 | YGALLR R L C L SVAMP ELER L K V H L K D R T E Q L |
| UniRef90_L5LRT3 | $\square \mathrm{MKI}$ M L R R A F S F SEKL Q D IMM NKYRA EFLKKRLIE A |
| UniRef90-M5WD10 | EKVFL K K K L F N A L NELEELSKP AVK Q K N E F |
| UniRef90_S2JEX9 |  |
| UniRef90_R1EUP4 |  |
| UniRef90_A8X076 | A NAALFRSSTYENVVEEASKL Q T MLK M K Y E A A QVRR D K Q D R |
| UniRef90_G3P6E3 | P EK QL DM K K L Q E AFP R K D DL K K RL Q E K Y S R E |
| UniRef90_Q0U8H2 | $K A L N A A T T T V Y S D L K K L E T\\|A P R\\| K K R H E E F Q E R R R K Q Q$ |
| UniRef90_A0A026W7V7 | $\square R \mathrm{Y}$ ¢ H S S RKHNDAVVKME |
| UniRef90-W2SD11 | A A WKEAND TVQKELKLLD HMRPR\NERYER F S K IMRERE |
| UniRef90_F9XM48 |  |
| UniRef90_Q4RUZ9 | FEEALFPPQKLK DAFPQAEDLKKALLKKRFDQEYAQKKVNTK |
| UniRef90_G5EBW2 | A NA ALFY A DFEKVVREASNLQSVLNDKYENLVRRADTQKR |
| UniRef90_UPI00021A5736 | EK Q RVKKLVKSSFDQALLCKERLLKEKYTQEQRRESERA |
| UniRef90_G7KN01 |  |
| UniRef90_G0N0L9 | A NQSLFKANYAKVVDELSKLQSVLK |
| UniRef90_S9PZS0 |  |
| UniRef90_G2QJL9 | R A L K P LQR RIP RVI E QLETLLRPEIID D T Y D R WMR |
| UniRef90-M7TDH4 | K A AKIP L N NLK TVL S HLEKIIK P F I E R D Y T E W |
| UniRef90_Q5PNU3 |  |
| UniRef90_W1PAF8 |  |
| UniRef90_C5PB75 | R R G L E A Q R EV Q N S L K R L EVLK P RI NQRYK Q Y Q EARD |
| UniRef90_A0A022UJG2 | Q G L A A A K K EV Q A S L N K L EI L K P RI R K L Y |
| UniRef90_Q2GQ72 | K T L R P LQ K R I P K V I E T LEIL R P Q L D A Y D R WVE |

LHE F Y D TVNTALEEDT LLLKPLVQESYDELLKRQKDEDE K A L N A A T A A V S R D L K K L E E I A P R I K K R
LGPQMAKAMFDMAASNVERLKKIVKDKYAQEAEKRARARA


GTRSK $\square$ NKT T N RVFEKAE ILK S K L L E Q Y S K E F A E
P DGRRFYY LF D QCIA Y L N ELLE ESLLNKRYELKK VEKSY DER ERANYKKRSFAVLSELES SKK E F HRRVDE $\square E$
F SALL
GKRLMK QARLED IFKNLEMDRP I I NREYDEWLANE F E KI Y Y K K KLL LNV VDELLESLK P E F D R R V N E L E



 $K K N Y L \quad K K N L L R A L C E L E E D L B P A V R Q K \square D E L$
K K A LL
RA K K T Q F L N A L T ELE QL K P K
R R QL L F F Q T V V K N D A L F E K T K TEEQKCDDVKQE I E K L R GQQL S E L Y E


Y R KRLLDAVLD ELE S SKP EVV HR RVE EL
TQRHNMGQHGQKILLDDLANNKKAL DEQYE
$N K L S L$ KRKLITTALTELEELKP AVQEKLQELD
R R GV A E A REVQUSSLERLE ILK PRIINQRYEQ YIQGLIRDNE

T Q R Q NL L G L N GQN I L D S L S E L K P TLLVD R YERWA A QRR QE E D
EKEFLKK DKLLNVVNELETLK P
 A N NSLFKKAHFKQIVVEDGGKLQSVLKMKYESAQVRRD KQER


UniRef90 U6HYW3
UniRef90-L2G6E4
UniRef90-UP1000443D838
UniRef90-J3NMJ4
UniRef90 CoNAV4 UniRef90-E7FDE6
UniRef90-A8HQ18
UniRef90 D5GDW0
UniRef90 E4YQX0
UniRef90_UPIo0038BB7C9
UniRef90 GORUD9
UniRef90 M7AJP9
UniRef90-A9SC60
UniRef90-S2J1D8
UniRef90 A0A059LLU4
UniRef90-L5LRT3
UniRef90_M5WD10
UniRef90-S2JEX9
UniRef90 R1EUP4
UniRef90-A8X076
UniRef90-G3P6E3
UniRef90_QOU8H2
UniRefo- A0A026W7V7
UniRef90-W2SD11
UniRef90- F9XM48
UniRef90 Q4RUZ9
UniRef90-G5EBW2
UniRef90_UPIOO021A5736
UniRef90_G7KN01
UniRef90 GONOL9
UniRef90-S9PZSO
UniRef90-G2QJL9
UniRef90 M7TDH4
UniRef90-Q5PNU3
UniRef90-W1PAF8
UniRef90_C5PB75
UniRef90 A0A022UJG2
UniRef90-Q2GQ72
UniRef90-F4PTM7
UniRef90 B6K089
UniRef90-M2UTB8
UniRef90-F2U819
UniRef90-H1A1M9
UniRef90 G3HQY1
UniRef90-V7CU04
UniRef90-H2S305
UniRef90-V2WZI5
UniRef90- H2VR54
UniRef90-B9RZL9
UniRef90_11F351
UniRef90 N1PCV0
UniRef90-M3ALG1
UniRef90-R7YTC8
UniRef90 A0A022RU16
UniRef90 E5A3S9
UniRef90-UPIO002B4511A
UniRef90-G4N2G6
UniRef90 D7KD54
UniRef90-A0A016PTH5
UniRef90-UPIO00454332F
UniRef90 A0A044UFE0
UniRef90 B9HWW9
UniRef90-C7Z0G6
UniRef90-W3W174
UniRef90_UPIO002B41076 UniRef90-UPIO002C31118
UniRef90-Q8VYB5
UniRef90-UPI0002C2FBF6
UniRef90_Q9P371
UniRef90-F7W8P5
UniRef90-B2AFE3
UniRef90_D7SJ09
UniRef90-A0A059D0Z7
UniRef90-K4AWD1
UniRef90 S9W3D8
UniRef90- D2VQF6
UniRef90-K4BM82
UniRef90-S3CFY0
UniRef90 A8P 113
UniRef90-UPI00042B5947
UniRef90_W4JVG4
UniRef90-A0A022PZ68
UniRef90 C4JZN7
UniRef90-I1HF61
UniRef90-F8PSQ9
UniRef90 UPIO0032AB7E0
UniRef90-b9EX28
UniRef90-J3KZ15
UniRef90-E3MF83
UniRef90 A0A059B4W2
UniRef90-D2V4NO
UniRef90_w7דM83

K R P
SEQR

DNHRE
STKEENERKGREAQ KKRQEVEKNK

ERKR】AQMRQQ
NRRNENQNNGWGR
K K
AVKQEAEKR

ARLKTQQQQSS
AEQEAADKR
EERKPDPQLSEPR
SRNAHQQN
AAAHEAEKR
QMRPSPQLERQ
RRGKQQ
SRQ
DRYQELQQRSQ
N LiNKF L
KQEQPNMSAEEEA
MRQQQLESEQ

AKHREAVEAQMK
AASEQTEKKK
DGPE
A QMQF NEGSSQ
RVQNEFDQAARDR
QRREENRRSVQ
$T Q Q L N Q F S G S N R$
A $\square$ Q
GRQQQNGS $\square E$
D D R

DQREETRKDED

NHQ QQAPPKKQN
D LKKLSMKDSQ SREKRRSTSSQ $S Q P$

NRKQANQ
Q $V K$ Q P S Q S $\square R Q$

H $\square \mathrm{KQ} \mathrm{Q} \mathrm{Y} \mathrm{Y} \mathrm{L} \mathrm{N} \mathrm{K} \mathrm{Q} \mathrm{KRQ}$ SRQTPASQLRNE
TRQQDAWQEQKARQ

NRAR
AAAHEAEKR

```
UniRef90_G0S2U8
UniRef90_K3XGS8
UniRef90-W5CJH6
UniRef90_G2R8H6
UniRef90-F0XG39
UniRef90 A9TIT6
UniRef90-J9FCP2
UniRef90-F4R6Z7
UniRef90_M7P320
UniRef90-UPI0004561B92
UniRef90_G7L9Q6
UniRef90-W5DLQ7
UniRef90-G4VEI6
UniRef90_G1LS96
UniRef90-C1BSI2
UniRef90-Q6FKA3
UniRef90-UPI000440779D
UniRef90_U9T9D1
UniRef90-U5CU06
UniRef90-U7PWH3
UniRef90-W2T035
UniRef90-J7RZD5
UniRef90-B9T631
UniRef90-X6MQN3
UniRef90-W1PHV5
UniRef90-K0RFZ4
UniRef90_M0TRK0
UniRef90-W9R3Z7
UniRef90_UPIO001FE26BA
UniRef90_LOPFG1
UniRef90 S8EVV9
UniRef90_S9WJ71
UniRef90_J0LDR
UniRef90-11L4B5
```

1 PQE $\square \mathrm{Y} \square \mathrm{A}{ }^{10} \mathrm{H}$ R D

20
 Y F R I A G S L L R
D $\square$ S $\square G S S A K E \square T E K A K A F D W N P R D K Y W A R A A E T I H H$ ELAKEAEKFEFNDPLKNY円GADDTLYR KKVDVD NRLPLKYYYRTADNLLK NRPTLIHLATSLEHLKSWCDVTHKQKWEQA IFDHAERVFD
 S I AELADKANPFSPADPI RRYLNGANTLRA

 YFCSGAEIIQ SS $\square E E \square$ NKHAS $\square$ N $\square$ S KMHMPM N MCK SMRKSYD S $\square$ QE LIA QRAE $T$ NWDASKDFKWLKVAERARH K S FA QLKK K E A S I E P NGFS DK Q WL A V T N K K Li E SSKDLARSAEMFEPQUPLKFH口GSLDAMYR

| SAPGR $\square \mathrm{N} \square \mathrm{ATS}$ |
| :---: |
|  |  |

[^0]

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


90
KVLST ${ }^{100}$
YKPLLKRTQ KVLISTLEG[LRAELNKRYQ ${ }^{110}$
EKA FYDKদNDVI IELESLKPVVKRYQQ VQRVAEH FVRNANSSTLDDVVNELESLKPV VKRQLVEH
 TLLKTTKRRIKDVLVELENIKPDLDERWTAEHPEATLNPN Y KRALLDGRRFDQCIAYLKELEESLKKRYELKKAEKSYDEQ
YQELRQETSLSFFRFQK】HQ\LKDR
RAAVKRDQELDDATSDA KSALANRYEAW
KKELLRKKLLTSVI ELEKLKPLAQQKGNELNSRKSYQ
EKEFLGPHNSDKVISELESLKPLVKQ QQEAELNRRAAEE



KERILYKKK
YFALCKTA
QTLKMRD $\square E K K Q \square L D E S N N \square$
KKELLR KKVTEDMERAEKПKEYDD
AKQASHETGGEAAKLRAEENADAVRRHQEQEREWRKAEEA QKESLKKK

C C C C C C C C C C C C C C C C C C C C


N R
NRRGSPEANGLN
D
A Q Y E
D

NEKEHGQ
DRRDSKVGKERKK
HDTQEPR

S
S $\square$ RK $\square E$ WEKSMRQ

QRRAQEPRKKDE
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
C

99999987258999


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

