QUERY
UniRef90_Q1ATJ7 UniRef90_UPI00041CC764 UniRef90-UPI00037AD191
UniRef90-10R1X5
UniRef90-12JBD4
UniRef90-R4LUU1
UniRef90-D5UU42
UniRef90_W4LXT7
UniRef90 K6X030
UniRef90-K2R7G1
UniRef90 E31D13
UniRef90-L8N325
UniRef90 O 08 K
UniRef90-Q08XE7
UniRef90-B8HKU5 UniRef90 UPIOO04621BCA UniRef90-UPIO0037F3B7F UniRef90-IOIQHO UniRet90_UPIO00371546D UniRef90-UPI00036B60CE UniRef90-Q60AF2
UniRef90-GORVR2
UniRef90_U5T2T1
UniRef90-R4YWUO
UniRef90-UPIO00360E8AC UniRef90-G3J0G1 UniRef90-G5HOL2 UniRef90_UPIOOO37274F2 UniRef90_J9Z7F4 UniRef90-A0A016PD80 UniRef90-UPIIO0045E8CE3 UniRef90-M7SXA4
UniRef90-K0JQ73 UniRef90-W5W6G8 UniRef90_UPIO0037860BA UniRef90 UPIOOO3658E87 UniRef90- F9WX83 UniRef90_UPIO0044166E4 UniRet90-S3CV93 UniRef90-C4JGU4 UniRef90-W9YFE3 UniRef90-KgWCD2 UniRef90-F8L9G5 UniRef90_UPI0003F6BE5A UniRef90 UPIO002F56268 UniReffo-BEERZ2 UniRef90-F5RQ18 UniRef90-UP100001F2AEF3 UniRef90_17M748 UniRef90-14F3P6 UniRef90-UPIO0006CBA16 UniRet90-K9XGV3 UniRef90-IOKOC5 UniRef90 B8KVG2 UniRef90_UPIO00374F2FC UniRef90-UPI0003725D86 UniRef90-R1GVM3 UniRet90-B8CMP3 UniRef90-D4TTNO UniRef90_UPloo02E65644 UniRef90_J7TQV4 UniRef90_UPIO0040F7E25 UniRef90-K6YYH9 UniRef90-Q0A5X6 UniRef90-H6RMP5 UniRef90-Q2VZDO UniRef90_UPIO0036AF633 UniRet90-F3PCT3 UniReffo-U1MZZ2 UniRef90-M1WAP6 UniRef90-FOU190 UniRef90-G8QJD6 UniRef90-UPIOOO47C3299 UniRef90-F5UHT3
UniRef90 E1Y880 UniRef90-R1FA89 UniRef90-E1VCW5 UniRef90 B3QZDO UniRef90_UPI000403E2D9 UniRef90-H5T873 UniRef90-Q6H045 UniRef90-UPIO00475A4B7 UniRef90-UP10003325311 UniRet90-K1ENK7 UniRef90-UPIO003640449 UniRef90 L7ZZK35 UniRef90 D2R2H4
UniRef90_Q1QWD2 MSATDELLRNNARYAESFRAGGLPAPPALGVAVVACMD MSVTDELLRNAEDYAARFDKGGLPLPPAKKVAIVACMD MSVTDELLEDNRSYAEGFDQGGLPMPPSRRVAVVACMD MSFTDELLENNKAYAATFSGPLPLPPAKNIAVLACMD $\square V S Y F E Q F M Q A N Q A Y V A L H G Q L N L P I K P K T R V A I V T C M D$ MSVTDELLRHEHYAAGFDKGDLPLPPARHVAVLACMD MTVTDELLANNAAYAESFS GPLPLPPAKHVAVVACMD MSSTDDLLDKNREYAHGFSKGDLPAPPGKNIAIVACMD MRMTVTDQYLANNAEYAKSFNGPLPRPPSKHIAIVACMD MATPNQQNLVEKNKQYAASFDKGHLPLPPGKKYAVLTCMD MSDTENEVLAANKEYAANFDKANLAMPPKRRFAILTCMD MSQLLQEVLSANQAYVENFDKGALP PPSRQFAILTCMD MSKLDEVLSANAAYAEGFDKGKLALPPARRFAVLTCMD MSQVLEELLSANQAYVAGFDKGTLPLPPARRFAILTCMD MSAYKDFQKANDEYVANFDKGNLPLPPSKKLLI TCMD MSVLAEVLASNEAYAESFDKRDLALPPARGFALLTCMD MSKVLKDVI DANKAYVQNFTKKDLQLPPARQFAILTCMD LIVTATDDLLANAETYARGFDQGDLPLPPELGVAIVACMD MSQILNEVLSANENYVQQFDKGSLQUPPARQFAILTCMD MSQLLSEVLAANQGYASTFDKGGLPMPPGRRFALLTCMD MSRASEFEVANQQYAAGFDKADLPMPPGRKVFVLTCMD TPNVNDII EGNARFVAGFHEPDLGVQPTRNVAVIACMD MTSIDLLLQRNSD SGATGADGLAAAPSLRVAIVTCMD MSK DLNEVLAANRDYVNDFDKGDLPLPPGRHFAILTCMD MTMTNEKIRAANERYAAAFDKGRLPHHPVRRFAVVTCMD MS LLOSLLEANRYAQGFEKRNLAMPPSRRFAILTCMD MSR MEEVLSANNRYVEAFEKGTLALPPKRQFAILTCMD MSSIFDQDMQANLGYSATFDKGDLPMPPGRGFAILTCMD MTSTKEFEAANEKYAASFNKGDLPDPRGRKVAIVACMD MTAIDELLARNTQLVDRTAGDRSTAVPS는IAVLTCMD MSETDKMISANESYASTYPGPLDLRPKRKVAVVACMD ALQKLMEGNQRFVEHKPKKEVAQTQHPFATILSCAD MSTELQQNLAASNEKYAASFTKGHLALPPAKKYLVVTCMD MPAHTEFKSANDAYVSTFDKGDLPLPPAKHLTVVTCMD MTTEDQKSLVERNAAYAGKFTKGGLPLPPGKKYLILTCMD MATLIQQNLQSKNAEFASKFDKGHLALPPAKSYLVVTCMD MSAIQKNIEASENYSASFTKGHLALPPAKKYLVLTCMD EALKKLMEGNQRFVSNKQQNEVAQGQTPFAAVLSCAD MRELDELFENNRRWAKNQFFQEMSKCQTPKYLWI GCSD MSQLEEVLSANHAYIETFGKGELAMPPRRRFAILTCMD MSKIDEVLSANSKYTKDFDKAKLPMPPGRRFAILTCMD MSTNVKEILTANEAYAAAFDKGALSHHPARSTAIVTCMD MSVAKELGVANAEYAASFNKGDLQDPPKRKVAIVACMD MAEI DRMLEANEQWAEQFPGSKPVRPARKVAVVACMD SEI QRLI QNNVEWSDPKFFDELAKQQTPKFLWI GCSD TALQKLI EGNLRFAEHHRLQEVAQAQHPFATILSCAD MKDIHKLLQNNRDWADPEFFHQLAKQQHPEYLWI GCSD EAI KALLDGNDRFANRKRRQEVAKGQKPFASILGCAD MSQTLNDVLAANQEYVADFDKGDLALPPSRHFAVLTCMD SVTDRLVEANRRYAEQFRDPGMDARPVLHVAVVACMD TGFEDLLAANADYTKNFQYSGFDGITAHAGLGVVTCMD MMSRVKQEVEHANQEYVANFDKGQLQIPPSRKFAVLTCMD MKLLKPLFDNNKRWADPKFFEQLAKQQNPEYLWI GCSD MSQLVQEVLHANQKYTEDFDKGNLPGPPGRKFALLTCMD MMKKIEELFANNKQWSDPEFFKELAQAQKPRFLWIGCSD EALKQLGEGNQRFDENKRKQEVAQGQAPFASILSCAD
 MAELDRMLEANAEWAQQVSGDAGPARPARGVAVVACMD MSDFYKKLLDNNKKWVDTKFFKDLAKGQNPPLLWI GCSD DRLLKSNHEYAERFTDPGMDARPVLHVAVVTCMD MSVTEALLTRNSDHAEVRAHGGLATKGAQKVAVVACMD MSVVQEMLAFNEKFVSEKQYEEFDKFPDKKIVILTCMD MRKLKNLFENNRRWADPEFFK LSMQQNPEYLWI GCSD DRLFENNRAWAAAKYFAKLSAGQTPEYLWI GCSD MATPTQQNLHDQNTQYANTFDQGHLALPPAKKYLVLTCMD MQKI DDGFLKFQKEVARSEDFRHLADGQSPKVLFVTCSD MTLTDEALSANETUANDFDTGR-GKPPAPRリAIVTCAD SALQKLMEGNQRYLEQKRTVEVAQGQHPFATILACSD AKEAQQNLLDGNKRYVSEKRRGEVAKGQHPFAVVICCSD MKLLNHLFANNREWAEQDFFTQLSAQQAPEYLWI GCSD MSNDIDTLDENNRAWAQMFFARLARQQTPEYLWI GCSD MRTLHELFENNKRWADPEFFPTLSKQQAPKYLWI GCSD MTLLEETLKANEAFVKNEEFKKTDKTPNKKAVFLTCMD MSKLVEEVKSANAEYVANFDKGDLPMPPSRQFALETMDD ALQRLIDGNKRFVEEKRKHEVAQDQNPFAAILGCAD MEGIKKLFKNNKAWAEQAERNSLSEQQSPRYLWI GCSD STDDFADLVAANRAFADDFSLGGFDGIAKAGVAVVTCMD KNTYYHQLLENNKEWVDPTFFEELSKGQKPPVLWI GCAD
MKEIGELLIANNQAWSANDFFERLAQAQKPRFLWI GCS EALEQLI AGNARFVEGKTRKHLVGSQHPHTVVIGCSD

## QUERY

 UniRef90_Q1ATJ7 UniRef90_UPI00041CC764 UniRef90 UPI00037AD191 UniRef90-IOR1X5 UniRef90-I2JBD4 UniRef90-R4LUU1 UniRef90_D5UU42 UniRef90-K6X030 UniRef90 ${ }^{-}$K2R7G1 UniRef90-E3ID13 UniRef90-L8N325UniRef90 Q08XE7 UniRef90_Q08XE7
UniRef90 B8HKU5 UniRef90-UPIO004621BCA UniRef90_UPI00037F3B7F UniRef90-IOIQH0 UniRef90_UPI000371546D UniRef90_UPI00036B60CE UniRef90_-Q60AF2 UniRef90-G0RVR2 UniRef90_U5T2T1 UniRef90-R4YWU0 UniRef90_UPIO00360E8AC UniRef90_G3J0G1 UniRef90-G5H0L2 UniRef90_UPIO0037274F2 UniRef90 J9Z7F4 UniRef90-A0A016PD80 UniRef90_UPIO0045E8CE3 UniRef90-M7SXA4 UniRef90-K0JQ73 UniRef90-W5W6G8 UniRef90_UPIO0037860BA UniRef90-UPI0003658E87 UniRef90-F9WX83 UniRef90-UPIO0044166E4 UniRef90-S3CV93 UniRef90-C4JGU4 UniRef90-W9YFE3 UniRef90-K9WCD2 UniRef90-F8L9G5 UniRef90_UPI0003F6BE5A UniRef90_UPI0002F56268 UniRef90-B5ERZ2 UniRef90-F5RQ18 UniRef90_UPI0001F2AEF3 UniRef90-17M748 UniRef90-14F3P6
UniRef90-UPI00006CBA16
UniRef90-K9XGV3
UniRef90_10KQC5
UniRef90-K9ZNH6
UniRef90-B8KVG2
UniRef90_UPIO00374F2FC
UniRef90_UPI0003725D86
UniRef90-R1GVM3
UniRef90-B8CMP3
UniRef90-D4TTN0
UniRef90_UPIO002E65644
UniRef90-J7TQV4
UniRef90_UPIO0040F7E25
UniRef90-K6YYH9
UniRef90-Q0A5X6
UniRef90-H6RMP5
UniRef90-Q2VZD0
UniRef90-G8X8V7
UniRef90_UPIO0036AF633
UniRef90-F3PCT3
UniRef90 U1MZZ2
UniRef90-Z5XPN6
UniRef90_M1WAP6
UniRef90-FOUI90
UniRef90-G8QJD6
UniRef90_UPIO0047C3299
UniRef90_F5UHT3
UniRef90-E1Y880
UniRef90-E1VCW5
UniRef90-B3QZD0
UniRef90_A4G8C9
UniRef90_UP1000403E2D9
UniRef90-H5T873
UniRef90_Q6H045
UniRef90_UPIO00475A4B7
UniRef90-UPI0003725311
UniRef90-K1ENK7
UniRef90-UPIO003640449
UniRef90_L7ZK35
UniRef90 D2R2H4 AF633 ,

.
 A R L D V H K I L G G L K E G D A H V I R N A G G VI T E D A I R S L V I S Q R L

 S R L H V A Q A L G L A L L A R L








 A

A
A
f


## A



ARID A A A AFGV DLGDAHII RNAGAS SRDAAL

| A | $R$ | $I$ | $D$ | $P$ | $A$ | $A$ | $A$ | $F$ | $G$ | $I$ | $D$ | $L$ | $G$ | $D$ | $A$ | $H$ | $V$ | $I$ | $R$ | $N$ | $A$ | $G$ | $A$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $N$ | $A$ | $R$ | $D$ | $S$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $A$ | $R$ | $D$ | $P$ | $A$ | $Q$ | $A$ | $F$ | $G$ | $I$ | $E$ | $L$ | $G$ | $D$ | $A$ | $H$ | $V$ | $I$ | $R$ | $N$ | $A$ | $G$ | $A$ | $S$ |$A$

 A ARLDA




## ,









## ,

## S

## 

S


|  | QUERY |
| :---: | :---: |
|  | UniRef90_Q1AT. |
|  | UniRef90-UPI00041CC764 |
|  | UniRef90-UPI00037AD191 |
|  | UniRef90-10R1X5 |
|  | UniRef90-I2JBD4 |
|  | UniRef90-R4LUU1 |
|  | UniRef90-D5UU42 |
|  | UniRef90 W4LXT7 |
|  | UniRef90-K6X030 |
|  | UniRet90_K2R7G1 |
|  | UniRef90-E3ID13 |
|  | UniRef90-L8N325 |
|  | UniRef90- ${ }^{\text {O }}$ - ${ }^{\text {O }}$ E7 |
|  | UniRef90' ${ }^{\text {B8HK }}$ |
|  | UniRef90-UPIO004621BCA |
|  | UniRef90-UPI00037F3B7F |
|  | UniRef90-ı01QH0 |
|  | UniRef90-UPIO00371546D |
|  | UniRef90 UPI00036B60CE |
|  | UniRef90 Q60AF2 |
|  | UniRef90- U5T2 |
|  | UniRefo- |
|  | UniRef90- UPIO00360E8AC |
|  | UniReef90-G3JJOG1 |
|  | UniRef90-G3J0G1 |
|  | UniRet90-G5H0L2 |
|  | UniRef90-UP100037274F2 |
|  | UniRet90_J927F |
|  | UniRef90-A0A016PD80 |
|  | UniRef90-UPI00045E8CE3 |
|  | UniRef90_M7SXA4 |
|  | UniRef90 K0JQ73 |
|  | UniRet90-W5W6G8 |
|  | UniRet90_UPIO0037860BA |
|  | UniRef90 UPI000365 |
|  | UniRef90_F9W |
|  | UniRef90-UPIO0044166E4 |
|  | UniRef90_S3C |
|  | UniRef90-C4JGU4 |

F \PFTD DEESVR
140
150
160
LI LEAFEDLEEDVRESVARIKASPFIPHKESVRGFVYDVETG
 A
F
A

| Q | R VRev ${ }^{\text {V }}$ |
| :---: | :---: |
| UniRef90_Q1ATJ7 | R L R |
| UniRef90-UPI00041CO | R L R |
| UniRef90-UPI00037AD191 | R L D |
| UniRef90-I0R1X5 | L |
| UniRef90-I2JBD4 | SM |
| UniRef90-R4LUU1 | R $\mathrm{L}^{\text {L }}$ |
| UniRef90-D5UU42 | R L H |
| UniRef90-W4LXT7 | Q L |
| UniRef90-K6X030 | L |
| UniRef90-K2R7G1 | K V R |
| UniRef90-E3ID13 | R L |
| UniRef90-L8N325 | K L |
| UniRef90-Q08XE7 | R L V |
| UniRef90-B8HKU5 | QL |
| UniRef90-UPI0004621BCA | K |
| UniRef90-UPI00037F3B7F | R L |
| UniRef90-101QH0 | N |
| UniRef90-UPI000371546D | T L T |
| UniRef90_UPI00036B60CE | K L |
| UniRef90_Q60AF2 | R L V |
| UniRef90-G0RVR2 | KI N |
| UniRef90-U5T2T1 | A L D |
| UniRef90-R4YWU0 | QL |
| UniRef90-UPI000360E8AC | L |
| UniRef90-G3J0G1 | R L |
| UniRef90_G5H0L2 | R L A |
| UniRef90-UPI00037274F2 | A L |
| UniRef90-J9Z7F4 | K |
| UniRef90-A0A016PD80 | K 1 T |
| UniRef90_UPI00045E8CE3 | R L |
| UniRef90-M7SXA4 | K I |
| UniRef90-K0JQ73 | A L |
| UniRef90-W5W6G8 | A |
| UniRef90-UPIO0037860BA | R L |
| UniRef90_UPI0003658E87 | $\mathrm{K} V \mathrm{SLV}$ T |
| UniRef90-F9WX83 | K |
| UniRef90_UPIO0044166E4 | K V |
| UniRef90-S3CV93 | LVRR |
| UniRef90_C4JGU4 | K ARQ |
| UniRef90-W9YFE3 | R T R RV |
| UniRef90-K9WCD2 | $\mathrm{M} V \mathrm{~S}$ |
| UniRef90-F8L9G5 | L L K |
| UniRef90-UPI0003F6BE5A | VK |
| UniRef90-UPI0002F56268 | KL |
| UniRef90-B5ERZ2 | K L V E |
| UniRef90-F5RQ18 | R L S |
| UniRef90-UPI0001F2AEF3 | K V |
| UniRef90-17M748 | R V K |
| UniRef90-14F3P6 | R |
| UniRef90_UPI00006CBA16 | R V T |
| UniRef90-K9XGV3 | K |
| UniRef90-10KQC5 | R V R |
| UniRef90-K9ZNH6 | K V S |
| UniRef90-B8KVG2 | A L |
| UniRef90-UPI000374F2FC | L |
| UniRef90-UPI0003725D86 | KL |
| UniRef90-R1GVM3 | R |
| UniRef90-B8CMP3 | LLSDLD |
| UniRef90-D4TTN0 | KL |
| UniRef90-UPI0002E65644 | K V T M V |
| UniRef90-J7TQV4 | LL H |
| UniRef90-UPI00040F7E25 | M I K V |
| UniRef90_K6YYH9 | LVT |
| UniRef90-Q0A5X6 | R L K |
| UniRef90-H6RMP5 | R L R |
| UniRef90_Q2VZD0 | LVR |
| UniRef90_G8X8V7 | Y V T |
| UniRef90-UPI00036AF633 | S L R |
| UniRef90-F3PCT3 | R L E |
| UniRef90_U1MZZ2 | RL D |
| UniRef90-Z5XPN6 | HL N D |
| UniRef90-M1WAP6 | LL K D L |
| UniRef90-FOUI90 | K V R |
| UniRef90-G8QJD6 | A 1 D |
| UniRef90_UPI00047C3299 | RL S E |
| UniRef90-F5UHT3 | KVE |
| UniRef90-E1Y880 | V V E I L |
| UniRef90-R1FA89 | L L D D |
| UniRef90-E1VCW5 | R V T |
| UniRef90-B3QZD0 | LL HDLS |
| UniRef90_A4G8C9 |  |
| UniRef90-UPI000403E2D9 | KADLV |
| UniRef90-H5T873 | N L V |
| UniRef90_Q6H045 | QL |
| UniRef90-UPI000475A4B7 | V V S |
| UniRef90-UPI0003725311 | L L K DL |
| UniRef90-K1ENK7 | L I D Q |
| UniRef90-UPI0003640449 | I 1 KD |
| UniRef90_L7ZK35 | RL R D M |
| UniRef90-D2R2H4 | S V |
| UniRef90_Q1QWD2 | C\|V|T D|L |

UniRef90_C1GK88 UniRef90 ${ }^{-}$K2JTL1 UniRef90-UPIOOO34A2190 UniRef90-D7ALX8 UniRef90_B8F7A1 UniRef90-A3YDP4 UniRef90-A1SKW9 UniRef90-C5AAL7 UniRef90-Q72N46 UniRef90-C5BNH4 UniRef90-C4UIN4
UniRef90
F5XW72 UniRef90-U1KB47 UniRef90_UPIO0035E28D8 UniRef90-M2RAU9 UniRef90-K9W2W7 UniRef90-K8NQ88 UniRef90-W6LRG4 UniRef90-Q1K876 UniRef90-A8L9W2 UniRef90-A5P828 UniRef90-UPI00034CC239 UniRef90_B1YEV2 UniRef90 D9V4X7
UniRef90 W6MA15 UniRef90-U4KEA6 UniRef90-A1SRY6 UniRef90-E8TST9 UniRef90-E6J5H7 UniRet90-Q55BU2 UniRef90_C4SWD4 UniRef90-Q2BLY8 UniRef90-UPI00036878D8 UniRef90-H2CAE2 UniRef90_10xsW1 UniRef90-UPI00047A8AC1 UniRef90_18TC80 UniRef90-V6HFA3 UniRef90-K9PMD8
UniRef90-H8Z284 UniRef90 H8XV84 UniRef90-R4YUA4 UniRef90-UPIO003105587 UniRef90_K1WSSO UniRef90-A7HE95 UniRef90-R9GUA3 UniRef90-E5AAH1 UniRef90-UP100035CC2EB UniRef90-A6VNL6 UniRef90-UPI0004762067 UniRef90-UPIooo3B755BD UniRef90_C1LBL2 UniRef90-D8G0A7 UniRef90-UPI00029ACA6C UniRef90-G7SUB1 UniRef90-I2NFM4 UniRef90-UPI000371A25C UniRef90_W8ZUZ8 UniRef90-AOAO10RWJ7 UniRef90-W8VAL9 UniRef90-U5QN92 UniRef90_UPIO003172D59 UniRef90 U5VF 12 UniRef90-B4D3R7 UniRef90-F2F9SO UniRef90-C5CM96 UniRef90-U1HP70 UniRef90_V2GH78 UniRef90_UPIOOO3773076 UniRef90_T2J446 UniReffo- U2EKD1 1 UniRef90-UPIO00407F5D5 UniRef90-A4YOV6 UniRef90-GoCLD9 UniRef90-M4B9Y1 UniRef9O-UPIIO0047C05F8 UniRef90-F6A9P9 UniRef90-A0A059KKW8 UniRef90_A4JRD9 UniRef90-F3KCN1 UniRef90-DoLGZ4 UniRef90 UPIOOO3822C32 UniRef90-VFXJ4
UniRef90 ${ }^{-T 1 A 9 J 7}$ UniRef90-W4FEI1 UniRef90-UPIO002E8F0A3 UniRet90-17MOMO UniRef90-A0A059G352 UniRef90_19A3M5 UniRef90-W2E8S7 UniRef90_UPIO

MKDPKTLANREWADPAFEERLSRONPHLWMCS MSNAFDDLLGGNAEYARDFGLQGLRPAAERGLGLVTCMD

IT RLLEGNRRFVAEETFATLARGQRPTVEWI GCSD
MKKI ERLFANNHAWATQMYFKQLAEHQKPSFLWIGCS D
MPKLDDLFDNNREWAEPDFFETLSKQQKPEYLWI GCAD
MATSDFDDLLTANRDFAADFGLAGFDGVARAGVAIVTCMD
MNRAKSLLAANAAWASETFFDGLAQGQNPRVLWI GCAD YQKLFENNRDWVEEKYFKNLADGQTPQYLLISCSD MEQLDTLFQNNRAWADPEFFEKLAKQQSPEYLWIGGCAD MS SDLSDLFAHNRAWAAQMERDRLQAQQKPRYMWI GCSD SPLSHLLDNNKQWADPEFFKKLSQQQNPDYLWI GCSD MSVHRDFNKANEAYVANFDKGRLAGAPTKKLAIVTCMD EALERLMEGNQRFISGKDLQSVSASQKPFAAILSCAD ALKLLVDGNERYVANQPRERDASGQAPFAAILGCAD ALQRLMDGNQRFVANRRRAEDAKSQQPFATLGGCVD RLDAASASYSSTFDKDHLALPPAKKYLVLTCMD ALDLLRQGNDAFTSAQRRDDLALGQSPFAAYVTCSD FNDVFGANAAYTEDFSLGGLKPLAARGLALVTCMD MSVVNQMLAFNQQFVEEKQYEPFDKFPDKKVVILTCMD MTS DVLLKRNQE\|GHIVPGDRSSPKPSLQVSILTCMD MKYLPELFAANARWVNPHFFADLESDQAPNYLWL GCSD MPDIKQLFNNNTWAQTEFFAQLAEAQHPEYLWI GCSD MTTSTLDELEANNREWAEQMERDRLANQQKPRYMWIGCSD

ALDRLLTGNRRYVDGARRAELTGEQHPFGMVFGCAD MKEIEKLLANNDDWSDPDFFEHLAQAQKPRFLWI GCSD
MHRLTELLEKNRDWADPQFFETLAQQQAPEYLW GCSD
MT QDLTDGAARFAKGELLFARLAAHHAPHALF SCSD MSESYQKLGRNQEWVDPEFFARHAEGQAPQTLFIGCSD MDDFYKK LDNNKEWVDPNYFADLAKGQTPPLLWI GCSD

MERLIKGFEQFRRTAFFEKLAGGQTPHTMFITCAD
ALKSLIEGNKRFVDGKRLQETADAQYPFAAILGCAD MDKTLPHLEKNNRAWAEGEFFPRLASQQSPRYLWI GCAD MTEFYKKI LENNKKWVEDQFFNDLAKGQNPPLLWI GCSD MAKKLDRLLASNKEWADPDFFANLSKQQNPEYLWIGCSD DRVFAQNKEWADPEFFTRLAAGQSPEYLWI GCSD
TYTKLLEGNRRFVEKEFFAELARGQHPTVLWIGCSD MT DRI FENNKKWAEPEFFKDLSAGQSPEYLWI GCSD MKKLEQLFANNHSWANSDYFREDAEHQTPHYLWI GCSD EAMRRLMDGNARYVENLTQNRRAAAQYPFAGILSCAD MEKLIKGFELFRKQRLFKKLASAQAPHTLVITCAD MADQALKKLMEGNQRYIQQKRISEVAHSQHPFATILACSD TAMARLLRGNARYVAGERRAELAGHQNPFAQVFGCSD MKKTEQLFANNYSWANSSYFKELADHQTPSYLWIGCSD M T MKTDEQLFANNHAWAQSDYFKELAEHQNPTYLWI GCSD MADTKQLFANNLSWSENEFFSHLAEAQHPQYLWI GCSD MKELI DGFLKFQREAFPQRSFKHLASTQSPKTLFI ACSD
MKE DKLIANNRTWSDPGFFEHLALAQKPRFLWI GCSD MEK DQGDHRFRETYFFSRASKGGNPEAAFGS A D MKDDIDGFLKRNAFPQRVKDFKDLATQQNPRALFISCSD LMSDPTDLLKRNRAWADQEFFQRLAKAQEPKYLWI GCAD

MSALQTILEFNEKFVEEKQYEQYAKFPDKKIVVLSCMD ALQRLVQGNLRYSQGRQTQRDTSGQKPFAAILACAD ALDRLVKGNLRYVEGHEREALATGQNPFAGLLSCAD
EALRRIVEGFRRFRQDVFFKKLAHEQRPRAMFI TCAD
MNKLQEILDFNSSFVENKEYDKYSKHPNKKLVFLSCMD
EALTALMAGNQRFVNNKQKPEVVSGQNPFAAVLSCAD MKQALAKLLHNNRTWADPEFFERLEQLQAPKYLWI GCSD ALQSIVEGFKRFRNEVFPQQLATAQNPRAMFITCAD ALQVLRDGNKAFVENRPKKELADGQTPFVILVSCSD
TSLERLEANNKKWREGKYFGKTSQGQHPQYLWI GCSD VLHRLIEGNRHFVAGNDFKALSQGQNPMAAILGCAD MSDLKHLEDNNERWAENDFFPRLARQQTPEYGWUGCSD MNEMKDLFQKKREWAAPDFFEQLSQQQAPEYLWI GCSD MRSLKELFDNNQRWADPTFFPRLAEQQVPQYLWI GCAD MERLESMLKKNEEFVAKGEGKKFSKFSNKNMLVITCMD MPKTAELLAQNRDWANKTSKEYLASGQHPEDLUWGCSD LHELLERNKKWADPTYFAKLEHQQAPEVLWI GCSD MSLLNEILSFNQKFVSEKQYEQFTKFPDKKLVILTCMD DDLLQYNKNWADPSFFNKLAKAQNPEYLWUGCSD IESLLDNNMNWADPKYFQRLSAQQSPEYLWI GCSD
MSLLSNLEYNKTFVDNKQYEEFDKFPDKRMVILTCMD

UniRef90_C1GK88 UniRef90 K2JTL1 UniRef90_UPI00034A2190 UniRef90_D7ALX8 UniRef90_B8F7A1 UniRef90_A3YDP4 UniRef90-A1SKW9 UniRef90-C5AAL7 UniRef90_Q72N46 UniRef90_C5BNH4 UniRef90-C4UIN4
UniRef90 F5XW72 UniRef90_U1KB47 UniRef90_UPI00035E28D8 UniRef90-M2RAU9 UniRef90 K9W2W7 UniRef90-K8NQ88 UniRef90-W6LRG4 UniRef90-Q1K876 UniRef90-A8L9W2 UniRef90-A5P828 UniRef90_UPI00034CC239 UniRef90_B1YEV2 UniRef90-D9V4X7
UniRef90-W6MA15 UniRef90-U4KEA6 UniRef90-A1SRY6 UniRef90-E8TST9 UniRef90-E6J5H7 UniRef90_Q55BU2 UniRef90_C4SWD4
UniRef90 Q2BLY8 UniRef90_UPI00036878D8 UniRef90-H2CAE2 UniRef90-10XSW1 UniRef90_UPI00047A8AC1 UniRef90_I8TC80 UniRef90-V6HFA3 UniRef90-K9PMD8 UniRef90-H8Z284 UniRef90-H8XV84 UniRef90-R4YUA4 UniRef90_UPIOOO3105587 UniRef90_K1WSS0 UniRef90_A7HE95 UniRef90-R9GUA3 UniRef90-E5AAH1 UniRef90_UPI00035CC2EB UniRef90-A6VNL6 UniRef90_UPIO004762067
UniRef90_UPI0003B755BD
UniRef90_Q1LBL2
UniRef90-D8G0A7
UniRef90-UPI00029ACA6C
UniRef90_G7SUB1
UniRef90-I2NFM4
UniRef90-UPI000371A25C
UniRef90-W8ZUZ8
UniRef90-A0A010RWJ7
UniRef90-W8VAL9
UniRef90-U5QN92
UniRef90_UPIO003172D59
UniRef90-U5VF12
UniRef90-B4D3R7
UniRef90-C5CM96
UniRef90_U1HP70
UniRef90-V2GH78
UniRef90-UPI0003773076
UniRef90-T2J446
UniRef90-U2EKD1
UniRef90_UPIO00407F5D5
UniRef90_A4Y0V6
UniRef90-G0CLD9
UniRef90-M4B9Y1
UniRef90_UPI00047C05F8
UniRef90-F6A9P9
UniRef90_A0A059KKW8
UniRef90_A4JRD9
UniRef90-F3KCN1
UniRef90-D0LGZ4
UniRef90_UPIO003822C32
UniRef90_V5FXJ4
UniRef90-T1A9J7 7
UniRef90_UPIO002E8F0A3
UniRef90_I7MOM0
UniRef90-A0A059G352
UniRef90-19A3M5
UniRef90-W2E8S7
UniRef90_UPI0003B54716

UniRef90_C1GK88 UniRef90-K2JTL1 UniRef90_UPI00034A2190 UniRef90_D7ALX8 UniRef90_B8F7A1 UniRef90_A3YDP4 UniRef90_A1SKW9 UniRef90-C5AAL7 UniRef90_Q72N46 UniRef90_C5BNH4 UniRef90_C4UIN4 UniRef90_F5XW72 UniRef90_U1KB47 UniRef90_UPI00035E28D8 UniRef90-M2RAU9 UniRef90_K9W2W7 UniRef90-K8NQ88 UniRef90_W6LRG4 UniRef90_Q1K876 UniRef90_A8L9W2 UniRef90_A5P828 UniRef90_UPI00034CC239 UniRef90_B1YEV2 UniRef90-D9V4X7
UniRef90-W6MA15 UniRef90_U4KEA6 UniRef90_A1SRY6 UniRef90_E8TST9 UniRef90_E6J5H7 UniRef90_Q55BU2 UniRef90_C4SWD4
UniRef90-Q2BLY8 UniRef90_Q2BLY8
UniRef90_UPI00036 UniRef90_H2CAE2 UniRef90_IOXSW1 UniRef90_UPIO0047A8AC1 UniRef90_I8TC80 UniRef90_V6HFA3 UniRef90-K9PMD8
UniRef90_H8Z284 UniRef90_H8XV84 UniRef90_R4YUA4 UniRef90_UPIO003105587 UniRef90_K1WSS0 UniRef90_A7HE95 UniRef90-R9GUA3 UniRef90_E5AAH1 UniRef90_UPI00035CC2EB UniRef90_A6VNL6 UniRef90_UPI0004762067
UniRef90_UPI0003B755BD
UniRef90_Q1LBL2
UniRef90_D8G0A7
UniRef90_UPI00029ACA6C
UniRef90_G7SUB1
UniRef90_I2NFM4
UniRef90_UPIO00371A25C
UniRef90_W8ZUZ8
UniRef90_A0A010RWJ7
UniRef90-W8VAL9
UniRef90_U5QN92
UniRef90_UPI0003172D59
UniRef90_U5VF12
UniRef90_B4D3R7
UniRef90_F2F9S0
UniRef90_C5CM96
UniRef90_U1HP70
UniRef90_V2GH78
UniRef90_UPI0003773076
UniRef90_T2J446
UniRef90_U2EKD1
UniRef90_B1WS28
UniRef90_UPIO00407F5D5
UniRef90_A4YOV6
UniRef90_G0CLD9
UniRef90_M4B9Y1
UniRef90_UPI00047C05F8
UniRef90_F6A9P9
UniRef90_A0A059KKW8
UniRef90_A4JRD9
UniRef90-F3KCN1
UniRef90_DOLGZ4
UniRef90_UPI0003822C32
UniRef90_V5FXJ4
UniRef90-T1A9J7
UniRef90_W4FEl1
UniRef90-UPI0002E8F0A3
UniRef90_17M0M0
UniRef90-A0A059G352
UniRef90_I9A3M5
UniRef90_W2E8S7
UniRef90_UPI0003B54716
 LKVRHI IVCGHYGCGGVMAALQGGAEGWLLDLKEVAERHN
 LCACPDIVICGHYGCGGDQALDEERADDKYDPDWLTNAYKA KKVHIMVVGHYGCGGIKAAMDGQEHGLDDNWLGHIK KVY LNVDRILVIPHTRCAMASSTLDQVREKVGASAGQDVSWQT LKVDHVIVCGHYGCGGVRASLLPPPADLPHVARR APLCA LKVKHIVVCGHYDCGGVKTAYHGLIDAWLRHIKKQVYRMNN LKIKHIVVCGHYGCGGVQAALQNQQYGLADHWVRNLRDDK LKKGHLMVVGHYGCGGVQAALHNTRVGLADNWLRHAAPPQ LKVDHIMVVGHYGCGGVQAAKFGLIDNWLRHVADVKEKHE LGVKKI LVMPHTNCRMASAEEADVHEYDEKEFGVNTRSDE LGTREI AVFHHTGCGMLTFTSSHLQTLVKDPALEAVDKID LGAKVLLVMGHKNCGAVDATGKGLLDALKPALAKLDPKKA LGTKLIMVLGHSSCGAVNATVAALQKGNKLPGHIVKKPGD (LKDPLIMVLGHERCGAIKASIEVLEHGGGEHRKAHAWGMG LGTTAVVKHGGMLTGONEDAYEVVENLLGAEARKED LGTTEVVLIHHTRCGMETLTDDGFRASVAERTGVRPSTWR LKTPLVVVMGHESCGAVKAADGPMIEPDIPAVLQARSENG GAEEVIVIGHHDCGMSTIDPAKMISEMQDRGINEQLKQW LGTREVLIVGHTDCGLSTVTDEEFKDELESAGGLRPTWA
LKVQHI VCGHYGCGGVKAALEGLIDNWLRHDQDVRDRHD LEVKH1IVCGHYGCGGVNAAIENPQLGLINNWLLHIDRDY LKVKHLIVTGHYDCGGIVAAMFDLIDGWLRNDKDIYMTYK LGIPLTLVLGHTSCGAVGATIRDVVERIAPAVFEARRDPD LQVEHI VCGHYGCGGVAASYDNPELGLINNWLLHDRDLT LQVEHII CGHLGCGGVEAA KGEEMGLI DNWLLHI RDLW LKVKHILVVGHYGCGGVAASIESEPHGLIDNWLRNIRRVY LGGVKDIVVCGHSACGAMTALAEGHDLSGAPAVANWLRLAD LNIRDI IVVGHHHCGGVTAALNPKNLGFMEGWIGHI RNIS LINKHIVVCGHDGCGGVRAALQGKATGLIDNWITHIKDVY LKVKHVIVCGHYGCGGIKAAMSNQSTGIIDNWIRHIKDVY LLKVQNIVVCGHSDCGAMKATQHSHTAKVVVDANYTFHDPA LNKHIVVCGHYECGGVKAALMGRSTGLIDNWITHIK DTY
LGAQLI FVVGHARCGAVSAAVKGFVEEUKPAVEIARNKTG LQVEHI IVCGHYGCGGVKAADHGLI DNWLRH RDVGRFHA LKVSHVIVCGHYGCGGVKAAMGNSSVGIIDNWLDAITNEE
LSVKHIIVTGHYGCGGVHAAYDNSRYGLVDNWLSHVKDVQ
LGTQEWFVVHHTDCGMEKFDQQTMATLLEESLLDEGHFVN LKVKHIIVCGHYGCGGVQAAMTPKDLGLLNPWLRNDRDVY LEIPDVVICGHYGCGGI AALDEDDGNDKYIPVWLINAYKA LKIKHVIVAGHYGCGGVAAAMFGDIDNWLRHIKDVYRGHS LKVKHIVVCGHYGCGGVKAAMTPLHQKEMDDVIAHGGTEE GTRAVMIVQHTNCGMFGFDDQKFRRRLLDESGQKPA WD GI PFLMVLGHSSCGAISATVDVIENGTELPGHLPSLTDA GVKDIVICGHSDCGAMKATLNPASVGEMHAVAAWLRHAE KKVRDIVICGHSDCGCQCLDHMPAVEEWLEHLTRPHASDR LGVPDILVLGHERCGAVKATMEGVVAAVKPALEQVQNQSG
 LKVKHILIVGHYGCGGVRAALHDMRFGLIDNWLRNVQDDE LKVKHVIICGHYGCGGVTAAIENPPLGLI NNWLDHIRDDY LGVTDVVICGHSDCGCKCLDHLPAVANWLRNAARPHNSDE LQVEHI I ICGHDGCGGVEAAELGLIDNWLLHMRDLWFKHE LKVRDIIVCGHTGCGAMHALMNPENLEHLPRVKDWLGHAW LKVADIVICGHSDCGCKCLDDMPAVAGWLRYAARHHEDQH LKVEHVLVVGHYGCGGVAAALAGLIDNWLRHDQDDRLKHS LDVPLIMVLGHSNCGATSAT KKVLQENAVLPGAASRREPA
 LRVQHITICGHSDCGAMKAVLDPHTLERMPTVKAWLRHAE LDIQQVIVCGHSHCGYDWLKHAEATRRLVKKNYSHLEGEE FKADEVLVIGHHDCGMSSLNVDSTDEKAMERGAGDDIKKW LGAKVLMVIGHQDCGAVISTMKQTLDNDKPADSNYIGKDT LKVEHILVVGHYGCGGVNAALNGLRIGLSDNWIDRHVGPAE LGVQHIVICGHSDCGAMKAVLNPASLETMPTVKAWLRHAE LKVKDI IVCGHYGCGGVHAADLGLLDNWLRNILQQDDDHE LGVTLLMVLGHSQCGAVKAA DQHLNDK KPAVLESKDKPG LKVKHILVTGHYGCGGVRAAMHDAQFGLDDGWLRNDRDEE LGVRDIVICGHSDCGCTCLDHLPAVANWLRHADAAKVINA LKVKHVIVVGHYGCGGVKAAVLNEKHGLIDSWLQHIKDVH LKVRHI VVAGHYGCGGVNAAIDNQRHGLVDSWIEPVRTLS LGVEEIFVVGHYDCGMAGFCCDNLLEKWKDRSDIQQGVQW LKVKHIVLCGHTSCGGVAAALANKKLGLIDTWLMPLRPPN LKVKHILVVGHYGCGGVQAVLDQSRLGLVDNWLRHVGDDS LKVKHVVVCGHYGCGGVNAAEFGLVDNWLRNIKDLYITNH LNAEEIYI DGHYDCGMGADQPQEMMQKMI NRGITHKLTDW LKVKH1IICGHYQCGGVKAADENPKLGLINNWLDHERDLY LKVRHVIVCGHYGCGGVRSAIDGLIDHWLQPDSDMAHRHD LLADEVLVIGHKECGMTGLNANSVLNKAQEEHSGIREEKW

UniRef90 C1GK88 UniRef90 K2JTL1 UniRef90-UPIOOO34A2190 UniRef90-D7ALX8 UniRef90-B8F7A1 UniRef90-A3YDP4 UniRef90-A1SKW9 UniRef90-C5AAL7 UniRef90-Q72N46 UniRef90-C5BNH4 UniRef90-C4UIN4 UniRef90-F5XW72
UniRef90 $\cup 1 \mathrm{KB47}$ UniRet90_UPIOOO35E28D8
Uniren UniRef90-M2RAU9 UniRef90-K9W2W7 UniRef90-K8NO88 UniRef90-W6LRG4 UniRef90-Q1K876 UniRef90-A8L9W2 UniRef90-A5P828 UniRef90-UPIO0034CC239 UniRef90 B1YEV2 UniRef90-D9V4X7
UniRef90 W6MA15 UniRef90-U4KEA6 UniRef90-A1SRY6 UniRefofo-EETSTT UniRef90-E6J5H7 UniRef90-Q55BU2
UniRet90 C4SWD4 UniRef90-Q2BLY8 UniRee90-UPI00036878D8 UniRef90-H2CAE2 UniRef90_10xsW1 UniRef90-UPIO0047A8AC1 UniRef90_18TC80 UniRef90-V6HFA3 UniRef90-K9PMD8
UniRef90-H8Z284 UniRef90-H8XV84 UniRef90-R4YUA4 UniRef90-UPIOOO3105587 UniRef90-K1WSSO UniRef90-A7HE95 UniRet90-R9GUA3 UniRef90-E5AAH1 UniRef90-UPI00035CC2EB UniRef90-A6VNL6 UniRef90-UPIO004762067
UniRef90-UPIO003B755BD
UniRef90-Q1LBL2
UniRef90-D8G0A7
UniRef90-UP100029ACA6C
UniRef90-G7SUB1
UniReffo-I2NFM4
UniRef90-UP1000371A25C
UniRef90_W8ZUZ8
UniRef90-A0A010RWJ7
UniRef90-W8VAL9
UniRef90-U5QN92
UniRef90-UPIO003172D59
UniRef90-U5VF12
UniRef90-B4D3R7
UniRef90-F2F9SO
UniRef90-С5CM96
UniRef90-U1HP70
UniRef90-V2GH78
UniRef90-UPI0003773076
UniRef90-T2J446
UniRef90-U2EKD1
UniRef9O-B1WS28
UniRef90 UPIIOO2007F5D5
UniRef90-A4YOV6
UniRef90-GOCLD9
UniRef90-M4B9Y1
UniRef90-UP100047C05F8
UniRef90-F6A9P9
UniRef90-A0A059KKW8
UniRef90-A4JRDS
UniRef90-F3KCN1
UniRef90-DoLGZ4
UniRef90-UPIIOO03822C32
UniRet90_V5FXJ4
UniRef90-T1A9J7
UniRef90_W4FEI1
UniRef90 UPIOOO2E8FOA3
UniRef90_17MOMO
UniRef90-A0A059G352
UniRef90-19A3M5
UniRef90-W2E8S7
UniRef90_UPI0003B54716
 DQANRLCELNVLEAVCRVSRSPAVQKKLSVHGWIYGVADG FGTDNDQAGALRRDLERVRHHPLLPKDLPVAGALYDVDTG KERVDIVEENVRDQLEHLREYPFVQGKLSI HGWI YDMES G HRGDMLVRLNVAEQVYNLGRSTIVKKKLSIHGWVYDVNDG RFHQQACELNVVEQVANVCQTSIVQQELQVHGWVYGINNG FSMVSDQRAALADDVHKVVSHPLVPDAVKVGGFIVDVDTG LLAARHRAELNVQEQVRLLRESPIVRAGDPVVGWI FSLSDG EKHERLVELNVREQVYNLCMTTVVQNDDQLHGWVYDLKQG ERVDRLCEUNVKQQVANVCHDPVVQQSLAVHGWIYSIQDGO ALPHASVRENVIA QLANIKTHPSVQGRLRLHGWVYDIETG A RHDLLCELNVIEQVVNVAQTTVVQDALTLHGWVYGLKDG KQCAALCELNVVEQVRNVCQSNIVQQTLTVHGWVYGLADG FRTVSDQEAALADDVNRIRAFPFLNKDVVVGGAIVDVATG F LEFPDLEQSI KDDVAFLKENPLVLPETVVTGWVYEVETG A QLEAGIKANVVYQVAKLQESPVISKQLKIVGAYFDFDSG NLEQRAVVANVQYNVKRLQTTPILKKKIRVVGGVYDLATG DLAENAMRANVSLTVQRLKKSPVLAGRLKIVGARYDLDSG FLPFPELKKAVQDDVKFLRGTKLVKDEIPVSGWVYEVETG LQSFTSAAEDVWRSVTALRSSPFLRASTSVRGFVYDVETG

 V EAFRKVEDSVRTSVGEARRSDFLLHTDNVRGFVVDPGAG TRWRALCELNVDEQTRNVARTTLVADADMLHGWVYGLADG LKHRNWCEI NVAEQVYNLGNSTIMQQQVQIHGWIYGIGDG
 AGYDDVVIENVRQTVTAIRNRAITEGRTAAVGALYNLAEG FKHAEL CELNVVEQCNNLGNTTIMQQNVKIHGWIYGIHDG YKHDMLCKI NVVEQVYNL GHSTIVRQKAMIHGWVYGIEDG QKHMDFCELNVIEQSVNLCETTIVQQDLTVHGWIYGLGDG ASVARTAEQNVLAQLANLATHPSVQKRVALHGWVFDIPTG RIHDRLCEINVQEQVKNLESVYFVGEEI RLHGWLYDVRDG
 RLHNTFVEDNVKEQVFDLAKTSIVQQDLTLHGWVYGLNS G EHLAKITEENVVAQLDHLRTHPLMAGQLQIHGWVFDIEAG

 DRFNKLVEINVKEQVFNLAKTSIVQQNLHLHGWVYGLNSG YKHMRLCELNVMEQVRNLARTTVVRQELVLHGFVYGLHNG WLTDNDLKHSVVEDVQRIKASPMVPKDIPIYGYVFDCETG $R L H E R L V E L N V V E Q C R N V D K T A A V Q E Y P I V H G W V F D F R T G$ KERVDIVELNVRLQLEHLREYPFVRHRLRI HGWVYDMATG HRSNRLVELNVIEQVFNLCKTTIVQDDLEVHGWVIDDSTG DKYNKLVELNVIEQCRNVIKTAAVQQCWAV HGWVFGFEDG


 ARVDDMVRENVIEQLDHLRTHPSVAGRVDLHGWVYDI ETG
 YKHSHLLIKINVAEQVYNLGRSSII KKKLSLHGWVYDVNDG
 LREDRLCELNVDEQAMNVCETTVIRQEVRVHGWI YGLKDG LKHDKLCEINVASQVYHLGNSTIMQQDVKIHGWIYGTSNG ARDTSLVKENVIAQLANLQTHPSVQGALNLHGWVYDIESG
 AMSRVTAEENVLVQLTHLRSHPSVRGDVKLHGWMFKIETG
 VLIDAHAEENVIEQVVNVCQTTIVQQALNVHGWTYALQDG LRGFGDVKTSVLK SVVDVVRHPLMPKGVPVHGLIDDPATG
 DKHDAYCEQNVI EQVNNVCQTTVIQQQVTVVGWIVGVSDG DTYEVLTEENVVAQLDHLRTHPSVAARLAIHGWVYDIETS

 QRPNRLCELNAI EQAENVCLTTVVQQKLSVVGWVYSLHDG VARTVVAEENVVAQLDHLRTHPSVAAKLAI HGWVYDIETS DLLAASVKANVKRTVDRLRGAPLRGGSCRVVGAYYTLKDG QRMRRTVELNTDEQCMNVQRHQVKYGFPRI HGLVYDLKNG DALENAIRANVKRSVERLQTEPVVAGKVKVVGGVYDLASG ARVDRLCELNVMKQVGNVSRTSIVQQQLSVHGCIYGLKDG $R Q V D A L V E L N V L E Q A R N V C R T T V V E D E V V I H G W V Y G L H N G$ A HEYDTVRENVI AQLANLRTHPSVQGRMNLHGWVYDIESG RLHNYMCELNVLEGMKNVCRTNII QDALSVVHGWI YGLSDG RVHRRLCELNVIA QVANLAETMIVRDALDDLHGWI YA I RDG LKGFDHVEDSVKDSVSFLHEYPLLPQGIKIHGLIIINPEDG EASLKLVELNVEQGVRTLKENGVVERGLKVHGLVYDVASG






| UniRef90_C1GK88 |  |
| :---: | :---: |
| Ref90-K2JTL1 | Q |
| UniRef90-UPI00034A2190 | RI ELVD |
| UniRef90-D7ALX8 | E K ¢ L S |
| UniRef90-B8F7A1 | F L D |
| UniRef90-A3YDP4 | LI K D D D |
| UniRef90-A1SKW9 | L L E |
| UniRef90-C5AAL7 | L L K V |
| UniRef90_Q72N46 | K L D ${ }^{\text {L }}$ |
| UniRef90-C5BNH4 | LLRNIT |
| UniRef90-C4UIN4 | S I D V L D |
| UniRef90-F5XW72 | L L K D |
| UniRef90-U1KB47 | L L N |
| UniRef90-UPI00035E28D | K |
| UniRef90- M2RAU9 | K V C |
| UniRef90-K9W2W7 | K I S |
| UniRef90-K8NQ88 | K V |
| UniRef90-W6LRG4 | M V E |
| UniRef90-Q1K876 | K V R |
| UniRef90-A8L9W2 | E L D |
| UniRef90-A5P828 | EVDFFD |
| UniRef90-UPI00034CC23 |  |
| UniRef90-B1YEV2 | K L D Q VD |
| UniRef90-D9V4X7 | SLTEVVK |
| UniRef90-W6MA15 | R L Q |
| UniRef90-U4KEA6 | VL N D |
| UniRef90-A1SRY6 | RL K DL |
| UniRef90-E8TST9 |  |
| UniRef90-E6J5H7 | T V T |
| UniRef90-Q55BU2 | Y L R D |
| UniRef90_C4SWD4 | K $\mathrm{T}^{\text {T D L K }}$ |
| UniRef90-Q2BLY8 | N D L E |
| UniRef90_UPI00036878D8 | R V E |
| UniRef90-H2CAE2 | L |
| UniRef90-10XSW1 | QI S EV D |
| UniRef90-UPI00047A8AC1 | F V T D L D |
| UniRef90-18TC80 | S |
| UniRef90-V6HFA3 | NLKEIE |
| UniRef90-K9PMD8 | K V T L V T |
| UniRef90-H8Z284 | R |
| UniRef90-H8XV84 | YV T D |
| UniRef90-R4YUA4 | LIND |
| UniRef90-UPI0003105 | EL |
| UniRef90-K1WSS0 | LL K D L E |
| UniRef90-A7HE95 | A |
| UniRef90_R9GUA3 | KV |
| UniRef90-E5AAH1 | L L |
| UniRef90-UPI00035CC2EB | E |
| UniRef90_A6VNL6 |  |
| UniRef90-UPI0004762067 | K V E |
| UniRef90_UPI0003B755BD | D |
| UniRef90_Q1LBL2 | EI DALE |
| UniRef90-D8G0A7 | K V E |
| UniRef90-UPI00029ACA6C | T |
| UniRef90-G7SUB1 |  |
| UniRef90-I2NFM4 | F L |
| UniRef90_UPI000371A25C | L |
| UniRef90-W8ZUZ8 | 1 L K D |
| UniRef90-A0A010RWJ | GI D A L D |
| UniRef90-W8VAL9 |  |
| UniRef90_U5QN92 | E V V F F E |
| UniRef90_UPI0003172D59 | Q V |
| UniRef90-U5VF12 | RID AFD |
| UniRef90-B4D3R7 | LMQDLK |
| UniRef90-F2F9S0 | KLDL |
| UniRef90-C5CM96 | R V S |
| UniRef90-U1HP70 | KVELLV |
| UniRef90-V2GH78 | L R R D |
| UniRef90-UPI0003773076 | $\square$ |
| UniRef90-T2J446 | EVLE Y D |
| UniRef90-U2EKD1 | K L DVV |
| UniRef90-B1WS28 | K |
| UniRef90_UPI000407F5D5 | R V R |
| UniRef90-A4YOV6 | Q 1 R |
| UniRef90-G0CLD9 | K V D F F |
| UniRef90-M4B9Y1 | ELNEM |
| UniRef90_UPI00047C05F8 | $\mathrm{K} V \mathrm{QL}$ |
| UniRef90-F6A9P9 | R WK DL |
| UniRef90-A0A059KKW8 | LLEDL |
| UniRef90_A4JRD9 | GI D A L D |
| UniRef90-F3KCN1 | LLRNL |
| UniRef90-DOLGZ4 | L R D L |
| UniRef90_UPI0003822C32 | R V D |
| UniRef90-V5FXJ4 | T L R |
| UniRef90-T1A9J7 | Q। |
| UniRef90-W4FEI1 | II R D L K |
| UniRef90-UPI0002E8F0A3 | RLEVVVE |
| UniRef90-17M0M0 | TI T EL D |
| UniRef90-A0A059G352 | LL R N L D |
| UniRef90-19A3M5 | GL |
| UniRef90-W2E8S7 | E |
| UniRef90_UPI0003B54716 | $\underline{L} \mathrm{~V} / \mathrm{T} \overline{\mathrm{D} \mid}$ |

UniRef90 D5VPP5
UniRef90 ${ }^{-} 4$ PLL43 UniRef90-UPIOOO3956140 UniRef90-R8ZLW1 UniRef90-E6PJ84 UniRef90-C2FTE UniRef90-A0A024RFA6 UniRef90-UPIO0046FF167 UniRef90-Q13D11 UniRefigo-E4RRU6 UniRef90-K6DOG7 UniRef90-A3NDL6 UniRef90-W7WVC5 UniRef90_R6UDU3 UniRef90-UPIO003691FCF UniRef90-G2J959 UniRef90-UPIO002D3FABF UniRef90-Q21RR3 UniRef90-E6WB28 UniRef90-K2HGZ7 UniRef90-H3GC25 UniRef90-B2UDV0 UniRef90-19LH42 UniRef90_UPIo0046426BB UniRef90-X8KJM4 UniRef90-A6VCC7 UniRef90-D7AMC8 UniRef90-K5YL01 UniRef90 UPI00047AF74A UniRef90_Q43060
UniRef90-J7Q583
UniRef90-S4YBR6
UniRef90-UPIOOO37CB319 UniRef90-R8ATF9
UniRef90-U21012
UniRef90_W7ZCN2
UniRef90-UPIO00382A003 UniRef90-A0A059FIEO UniRef90_UPI00035C21F4 UniRef90_LODY29 UniRef90-B8KK33 UniRef90_UPI0003B456FA UniRef90_C3EDF9 UniRef90-R8B3T8 UniRef90_UPI000360041C UniRet90-F8EE85 UniRef90 B3E8J3 UniRef90-UPIOOO37322B2 UniRet90_X2GUM8
UniRef90 10 HXF
UniRef90-UPI0003FB1FE5 UniReffo-U1KOS8 UniRet90_K0B1F4 UniRet90_E6MZK2 UniRef90-J2GV39
UniRef90-A0A038GPU1 UniRef90_UPIOOO361EB01 UniRef90-E1T3P7 UniRef90_UPI00047E575B UniRef90_H1GUS8 UniRef90_LOMH58 UniRef90-UPIo00347B4E1 UniRef90-B4VDD6 UniRef90_UPI0003F61FA8 UniRet90-R5TRR8 UniRef90-K2J735 UniRef90_UPIOOO370E648 UniRet90-Q5P4Q6 UniRef90-U7G0B8 UniRef90_UPI000420358F UniRef90-UPIO0041E1207 UniRef90 UPIOOO2D3EEFA UniRef90_UPIO00368455D UniRef90_A0AO24Q5P6 UniRef90-W8QTR1 UniRef90-V4NYH8 nirefao-woci UniRef90-G8MM93 UniRef90-UPIOOO3496698 UniRet90_R6R788 UniRef90_O9PEZ8 UniRef90_B4W941 UniRef90-GOLAU2 UniRef90-D8J251 UniRef90-UPIo0037785AC UniRef90-X2HIX8 UniRet90-E3Q7V3
UniRef90_woAFR9

FDKILDGNKEWMDSGRFQQLAKGQNPELLWI GCAD MNRIKSMRAANAAWARETRFDALSRGQNPRVLWI GCSD ALDKLMQGNARYVGNQLRERDSQGQSPFAAILGCAD MEPINRLLENNKLWAD
MTILNEILDYNQQFVEDHEYEKYTKFPNKRMVIL
MSKLEEIIEYNRRFVENKDYEQYTK TPKKKMAILSCMD MQDIEGFLKFRRDAFAPRTFKRLAASQQPRALFISCSD A $\square S$ SLAPLLENNRAWSDPQYFERLAHQQMPRYLWI GCSD MKRILENNRRWVDPDFFERLAQGQQPKYLFIGCSD ALLQRLMEGNARYVSNDSKHKDAKAQHPDAALACAD MNTSLQDLFAHNRAWAAQMFFTKLQSQQNPKYMWI GCSD MKEIKGFLSFQQNFPERKDFKSLASNQNPKALFISCSD MKSLPELFSNNEKWRHPGFFEQLVGQQSPEYLWI GCAD QHLLDNNKKWREDLTKRRLSEGQHPPY W GCSD MMQVLEQVLAANQTFTKNHYFSEPSKLPKRQLAIFTCMD LKRLVEGNARYVRGPERKALVGAQNPYAAILSCAD TAMQHLIEGFLNFQKEITPRQLISAQNPKALFISCSD MSDLQQLFENNVRWADPDFFAKLARQQTPEYLWI GCSD
 MNRLEEILAFNOKFVEGHEYEOYSKFPDKKLI SCMD AMPGKSNIFANNEAWRDPEFFNRGANGQSPEYLWGGAD MQRLDEGLHQFQSRVFFERLAKGQAPETLFI CAD FKELATTQSPSALFITCSD
 MSKLDTILAFNQSFVENKQYEQFSKFPQKKMVTLTCMD MSKLPSLLEFNQKFVEEKRYEAYDKYTEKKVALLTCMD MATSNTDEDFRNNQQYASGEPQKLANGQNPEVLFITCSD MSEYDNLLIQNKAWVDESFFQRLAVQQKPHFLWI GCSD MSSFDDLLAGYRRFRNDGWKAQLAEGQSPDTLVIACSD促
MPDHLNNLFANNRQWADPTFFEKLSHQQAPEYLWDGCD MQSYKKLLLANKSWAAEKYFDELAADQKPEFLWI GCAD MKH T LEGNKRFVEKDYFAELSKHQRPTVLWIGCSD MFDVNDLDRFNHEWSDPEFFKQLADAQNPKFLWI GCSD MTQTLSDLFANNRAWADPGFFTKLLHQQTPQYLWI GCAD LDQI LDFNKKFVENKEYEQYSKFPNKEVVVVTCMD MNKLAHLFVKNRSWADPEFFK LSMQQNPEYLWIGCAD MSEDDNLAANRQFVESGEYEKYDKYPERGLAVLSCMD MQRIIEGFKKFREDEYPERLATKQEPGTLFVTCSD MQNVFDGFRKFHRDYSKNKSFYGLARQQKPKALFICCSD MAEDRQLFARNRAWADPEFFQRLSRLQVPKYLWI GCSD MNRPKRLLVANVAWANPEFFRDLARGQNPHVLWI GCSD MEQYQRLLDFNKTWAAEQYFEDLAKDQKPDFLWLGCAD MAHSDFKKILERNKQWVEERYFKRLSEKQTPPVLWI GCSD $M K D\|E G F L K F Q R D\| F P G R A F Q D L A T R Q S P R A L F I S C S D$

DLVEGVERFAKADLFARLATTHRPQTLF
NELDRNRDWADPEFFRRLSLQQAPKYFWI GCSD
I GELMQNNKKWVENKAYEPYSKYPDKKLAWLICMMD
MPHIENLLEGYRQFYNPETYKNLTKGQTPHTLVIACSD
ALKRLMEGNDRYVQGASRGDLVDGQNPYAAVLSCAD MHEIDQLIFTNNRNWSDPAYFRRLANQQSPQYLWI GCSD

MEKTFENNKKWVAEKYFAKLAKGQEPRYLF TGCSD MKPYEKLLLQNKAWSDKNFFHRLANQQKPKFLWI GCSD

MEEVVRGVKKFQQHGYFKELANGQSPEVLFITCAD MTNLEKVFEHNQEWVDTDYFDKLSAGQNPEVLYIGCSD
ESFAHLVDGFRRFRTEVYFARLAKAQQPRAMFITCAD
TGGNLEDNNRNWVDPDFFSRLVRQQNPEYLWIGCSD MDKDIAALLENNLS WADPDYFTRLSSQQNPHYLWI GCSD MNRPKRMLLENLAWADAEFFPRLAQGQSPKVLWLGCAD DDELFQKNREWAETFFTRLLKQQTPQYLWI GCAD MHSLEHLLQNNRNWEDPEFFARLSKQQSPEYLWI GCSD

LDHIFQNNKKWVSSKFFDKLSAGQSPDYLYIGCSD
I EDLLRNNLA WADPEYFRRLSAQQSPEYLWUGCSD MRDI NTFANNEEWIDPDYFGQAEGQNPELLF GCOD MRDINGFLRFQQEFPSRKEFKTLATGQTPKALFIS
 MRTYKQLLDANRAWSNTDFFSRQVAGQKPDFLWIGCSD

UniRef90_D5VPP5 UniRef90-F4PL43 UniRef90_UPI0003956140 UniRef90_R8ZLW1 UniRef90_E6PJ84 UniRef90-C2FTE6 UniRef90-A0A024RFA6 UniRef90_UPI00046FF167 UniRef90_Q13D11 UniRef90-E4RRU6 UniRef90-K6D0G7 UniRef90-G7LZF9 UniRef90-A3NDL6 UniRef90-W7WVC5 UniRef90-R6UDU3 UniRef90_UPI0003691FCF UniRef90_G2J959 UniRef90-UPI0002D3FABF UniRef90-Q21RR3 UniRef90-E6WB28 UniRef90-K2HGZ7 UniRef90-H3GC25 UniRef90-B2UDV0 UniRef90-19LH42 UniRef90_UPIO0046426BB UniRef90-X8KJM4 UniRef90-A6VCC7 UniRef90-D7AMC8 UniRef90-K5YL01 UniRef90_UPI00047AF74A UniRef90_Q43060
UniRef90-J7Q583
UniRef90-S4YBR6 UniRef90-UPIO0037CB319 UniRef90-R8ATF9
UniRef90_U21012
UniRef90-W7ZCN2
UniRef90_UPI000382A003
UniRef90-A0A059FIE0
UniRef90_UPI00035C21F4
UniRef90_LODY29
UniRef90_B8KK33
UniRef90_UPIO003B456FA
UniRef90-C3EDF9
UniRef90_R8B3T8
UniRef90_UPIO00360041C
UniRef90_F8EE85
UniRef90-B3E8J3
UniRef90_UPI00037322B2
UniRef90-X2GUM8
UniRef90-IOHXF3
UniRef90-UPIO003FB1FE5
UniRef90_U1KQS8
UniRef90_K0B1F4
UniRef90-E6MZK2
UniRef90-J2GV39
UniRef90-A0A038GPU1
UniRef90_UPIO00361EB01
UniRef90_E1T3P7
UniRef90_UPI00047E575B
UniRef90-H1GUS8
UniRef90-LOMH58
UniRef90_UPI000347B4E1
UniRef90-B4VDD6
UniRef90_UPI0003F61FA8
UniRef90-R5TRR8
UniRef90_K2J735
UniRef90-R6HP32
UniRef90-UPI000370E648
UniRef90-Q5P4Q6
UniRef90_U7GOB8
UniRef90_UPI000420358F
UniRef90-UPIO0041E1207
UniRef90_UPI0002D3E8FA
UniRef90_UPIO00368455D
UniRef90-A0A024Q5P6
UniRef90-W8QTR1
UniRef90-V4NYH8
UniRef90-W0SC84
UniRef90-W7QG18
UniRef90-G8MM93
UniRef90-UPIO003496698
UniRef90_R6R788
UniRef90_Q9PEZ8
UniRef90_B6HIZ4
UniRef90-B4W941
UniRef90-GOLAU2
UniRef90-D8J251
UniRef90_UPIOO037785AC
UniRef90-X2HIX8
UniRef90-E3Q7V3
UniRef90_WOAFR9



UniRef90_D5VPP5 UniRef90 F4PL43 UniRef90-UPIOOO3956140 UniRef90-R8ZLW1 UniRef90-E6PJ84 UniRef90-C2FTE6
UniRef90-A0AO24RFA6 UniRef90-UPIO0046FF167 UniRef90-Q13D11 UniRefigo-E4RRU6 UniRef90-K6DOG7 UniRet90-A3NDL6 UniRef90-W7WVC5 UniRef90-R6UDU3 UniRef90-UPI0003691FCF UniRef90-G2J959 UniRef90-UPIooo2D3FABF UniRef90-O21RR3 UniRef90-E6WB28 UniRefefo-K2HGZ7 UniRef90-H3GC25 UniRef90_B2UDVO UniRef90-19LH42 UniRef90-UPIoo046426BB UniRef90-X8KJM4 UniRef90-A6VCC7
UniRef90 D7AMC8 UniRef90-D7AMC8
UniRef90_K5YL01 UniRef90_UP100047AF74A UniRef90-Q43060
UniRef90-U70583
UniRef90-S4YBR6 UniRef90-UPIOO037CB319 UniRefofo_R8ATF9 UniRef90-U21012 UniRef90-UPIOOO382A003 UniRef90-A0A059FIEO UniRef90_UPIooo35C21F4 UniRef90-LODY29 UniReftoo-B8KK33 UniRef90-UPIO003B456FA UniRef90_C3EDF9 UniRef90-R8B3T8
UniRet90 UP10003 UniRef90 UPIOOO360041C UniRef90-B3E8J3
UniRef90_UPIOOO37322B2 UniRef90-X2GUM8
UniRef90 - 10 HXF 3
UniRef90-UPIo003FB1FE5
UniReffo-U1KOS8
UniRef90-K0B1F4
UniRet90-E6MZK2
UniRef90-J2GV39
UniRef90-A0A038GPU1
UniRef90_UPIOOO361EB01
UniRef90-E1T3P7
UniRef90-UPIo0047E575B
UniRef90-H1GUS8
UniRef90-LOMH58
UniRef90_UPIooo347B4E1
UniRef90_B4VDD6
UniRef90-UPI0003F61FA8
UniRef90-R5TRR8
UniRef90-K2J735
UniRef90-R6HP32
UniRef90-UP1000370E648
UniRef90-O5P4Q6
UniRet90
UTG0B8
UniRef90-UPIO00420358F
UniRef90-UPIOO041E1207
UniRef90-UP10002D3E8FA
UniRef90-UPIOOO368455D
UniRef90-A0A024Q5P6
UniRef90-W8QTR1
UniRef90-V4NYH8
niRef90 wosC84
UniRef90_W7QG18
UniRef9O_G8MM93
UniRef90-UPlooo3496698
UniRet90-R6R788
UniRef90-Q9PEZ8
UniRef90-B4W941
UniRef90-GOLAU2
UniRef90-D8J251
UniRef90-UPIo0037785AC
UniRef90 - X2HIX8
UniRef90_E3Q7V3
UniRef9_-_WOAF

130
140
150
160
 YKHQSMCELNVVEQVMNIGNSTIMQQKVDVVGFVYGIQDG






 LQ GFENVNDSVAH SVVDMIKHHPLLPKGVPVHGLVIDPKTG LRGFESVEESIKESVRMIKNHPLFPKEVRVHGLLISPETG

 LE GF D D G C V S V A K S V E L L K K H P LI P K D V R I Y GF M M D S T S G AR L R R L V E L N V I E Q V R N L T K T S I I Q N A L K L H G L V Y D I R E G

 NKK Y D MVVK ENVI A QLLHND K T H P S VV K G M L R L H G WVVY D I E S G L R N D R M C E L N V V A R Q V I N L
 D Q H D R L C E L N V DH Q V N N V C L T T I V Q D A L TVV H G WI Y GV K D G LD N F H H P I N N V K E V V LA P A N A I K Q NVA D NVVR K L R S S P F L Q K K L K V V G G L Y R L D T G



 FKRIVESIPDSVRETVRTIRNHPLVPKTLTVHGLVMDPETG




 $L$ R GF D R A E E G V V M H S V R M I R R H P L L F P Q A V





 ER F D R L V E F NVI E Q TK N L LAK T T I V Q K S W K L H G WV F D L H T G
 FRND LLCELNVVI E QVVYNLGHSTI I QQKTNLH GWVY GI DN G $R R V D A L C E L N V L E Q A R N V C R T T V V E Q E V V V H G W V Y G L H N G$ LT GF S NVVYD S V N H SVVSVI KN H P L V P K EVVEI H G L V DD P H T G

 A K V A G M V R ENVVIA QI A N L R T H P S VVA G R V R L H G WVV $\operatorname{Y}$ D I G E G
 QRSAR LCELNVMAQVQNLAMTKIVQQRLSSLHGWIYDIRDG

 A K V


 L G G F D CVVE Q S VVKC D R A N A L C C E Y N V I R Q V $\operatorname{G} N \mathrm{~N} V A$ DRQHDCEREAVRVSLRNLLTFPFVAERLKLHGWLFDLAGG LAPAEATRQNVIDNVNKLKSAPILQNRLKVVGGLYRLATG
 R H G ID G G I E E N V L Q Q V Q H L R T H P V V A G K I E I H G WV Y D I K S G
 A QVDRRLVELNVLEQCQDLDKTSII QKAWRVHGWVYGLDDG
 $R L H N R L V E D N V Q E Q C V N V V K N P F V Q R G L Q I H G W V F D L F T G$ L N G F A DV E D S V K T S V S T I RNHPLI P D NI P V H GLI IDD PN T G $V$ A R S L V E E E NVVA QL D H L R T H P S V A S R L A I H G WV Y C I E T S

 E QVDRLCELNVKA QVNNLCRTKILQQSLAVHGWI YGLGDG T R A N RLLA L L NVLDE QV R L L R Q H A V V R E R D E V H G WI F G L H D G DRHHAFCELNVLE QVRHVCDTTVFQDAVVI HGWVYGLHNG LGGFSSSEESVRETVATLKEHPLMPRDVTIQGFVMDSITG


 S RP H A M V R E N V I A Q L N N I R T H P S V Q G R L A L YTHQDEVVELNVMQQVANVSHTNNVQQELTLHGWCYSICDG
 A CVNRFVEFNVREQL DRLARTAVVQARDALHGWVYDLRDG

| D5 | V T D |
| :---: | :---: |
| UniRef90-F4PL43 | Y L R D |
| UniRef90-UPI0003956140 | LI T DLE |
| UniRef90-R8ZLW1 | $\checkmark \mathrm{N}$ |
| UniRef90-E6PJ84 | HVDRLD |
| UniRef90-C2FTE6 | E l D L D |
| UniRef90-A0A024RF | HLMELD |
| UniRef90_UPI00046FF167 | HL R DL K |
| UniRef90-Q13D11 | K |
| UniRef90-E4RRU6 | M V K |
| UniRef90-K6D0G7 | K L D |
| UniRef90_G7LZF9 | E L |
| UniRef90-A3NDL6 | SI D |
| UniRef90-W7WVC5 | L L R |
| UniRef90-R6UDU3 | KL S S V S |
| UniRef90-UPI000369 |  |
| UniRef90-G2J959 | K V N $\square \mathrm{MD}$ |
| UniRef90-UPI0002D3FABF | EV |
| UniRef90-Q21RR3 | L |
| UniRef90-E6WB28 | K |
| UniRef90-K2HGZ7 | R L S |
| UniRef90-H3GC25 | G L |
| UniRef90-B2UDV0 | M L |
| UniRef90-19LH42 | E |
| UniRef90-UPI00046426BI | EV DLL S |
| UniRef90-X8KJM4 | DI R AL D |
| UniRef90-A6VCC7 |  |
| UniRef90-D7AMC8 |  |
| UniRef90-K5YL01 | R A Y D |
| UniRef90-UPI00047t |  |
| UniRef90_Q43060 | K |
| UniRef90-J7Q583 | E |
| UniRef90-S4YBR6 |  |
| UniRef90-UPI00037CB319 | S I Val ${ }^{\text {d }}$ |
| UniRef90_R8ATF9 | LL R D K |
| UniRef90-U21012 | E |
| UniRef90-W7ZCN2 | KLDVV |
| UniRef90_UPI000382AC | KL DV |
| UniRef90-A0A059FIE0 |  |
| UniRef90-UPI00035C2 |  |
| UniRef90_LODY29 | EL E EV |
| UniRef90-B8KK33 | - |
| UniRef90-UPI0003B456FA | QL Q |
| UniRef90_C3EDF9 | GL E |
| UniRef90-R8B3T8 |  |
| UniRef90-UPI000360041C | LL N D |
| UniRef90-F8EE85 |  |
| UniRef90-B3E8J3 |  |
| UniRef90-UPI00037322B2 | HL K Q |
| UniRef90_X2GUM8 | K |
| UniRef90-10HXF3 | L |
| UniRef90-UPI0003FB1FE5 | KL E |
| UniRef90-U1KQS8 | HIR |
| UniRef90-K0B1F4 |  |
| UniRef90-E6MZK2 | K |
| UniRef90_J2GV39 | S 1 E |
| UniRef90-A0A038GPU1 | RL D |
| UniRef90-UPI000361EB01 | LI R D |
| UniRef90-E1T3P7 | RL K V |
| UniRef90_UPI00047E | $\underline{1}$ K |
| UniRef90-H1GUS8 | YV T DL |
| UniRef90-LOMH58 | GI D A |
| UniRef90_UPIO00347 | EVLT Y D |
| UniRef90-B4VDD6 | TVER |
| UniRef90-UPI0003F61FA8 | R V R |
| UniRef90-R5 | ELTKV |
| UniRef90-K2J735 | LV R |
| UniRef90_R6HP32 |  |
| UniRef90_UPIO00370E | RVD |
| UniRef90-Q5P4Q6 | LV R |
| UniRef90_U7G0B8 |  |
| UniRef90_UPI000420358F | L L R D |
| UniRef90-UPI00041E1207 | LVK |
| UniRef90_UPI0002D3E8FA | KVK |
| UniRef90-UPI000368455D | KLID |
| UniRef90-A0A024Q5P6 | RLDLVE |
| UniRef90_W8QTR1 |  |
| UniRef90-V4NYH8 | LVTDMN |
| UniRef90-W0SC84 | LMRDL |
| UniRef90-W7QG18 | R1 S D |
| UniRef90_G8MM93 | LI DV |
| UniRef90_UPI0003496698 | 1 l N DL |
| UniRef90-R6R788 | A $\mathrm{T}^{\text {T }}$ |
| UniRef90_Q9PEZ8 | L V H D |
| UniRef90-B6HIZ4 | L L K D |
| UniRef90-B4W941 | L V R D |
| UniRef90-G0LAU2 | KL! ${ }^{\text {d }}$ |
| UniRef90-D8J251 | S 1 LA |
| UniRef90_UPI00037785AC |  |
| UniRef90 X2HIX8 | K $\mathrm{N}^{\text {N }}$ |
| UniRef90-E3Q7V3 | L L K |
| UniRef90_W0AFR9 | V I K P L |



## UniRef90 Lodgx3 UniRef90-A1ATA2 UniRef90- S9TM82 UniRef90-E6WYQ6 UniRef90_D2B6U0 UniRef90-Q7NWU8 UniRef90-F7Z6D6 UniRef90-A4BGP7

 UniRef90-UPIO003752DFF UniRef90_UPI00036D7B91 UniRef90-V5BA45 UniRef90_UPI00036BC384 UniRef90-S9T8D7 UniRef90_R6PAE6 UniRef90-G4CTQ8 UniRef90-M7MHV9 UniRef90_A0A024BI77 UniRef90_O34872 UniRef90_UPI00047A2C78 UniRef90-B4WHI8 UniRef90-G8QHQ4 UniRef90_UPI00036C6B4E UniRef90-UPI0003B5FE0E UniRef90-UPI00038155DA UniRef90-B6FWM5 UniRef90-S2JTP3UniRef90_UPI00047EA42F UniRef90-W8X901 UniRef90-M1 YZG2 UniRef90-I8IW24 UniRef90-I5BY26 UniRef90-W4QKC1 UniRef90-D3P564 UniRef90-R7III9 UniRef90-UPI000348FAD2 UniRef90_UPI00034C6603 UniRef90-D7A6X7 UniRef90-UPI00036635B5 UniRef90-A0QAA7
UniRef90-K2NVF5 UniRef90-Z5XFC3 UniRef90_UP10002FD2A62 UniRef90-D4XEK8 UniRef90-W0E6G3 UniRef90_B2IZJ7 UniRef90_UPI00047B7E9F UniRef90_UPIO00360FDD8 UniRef90_T3GHH44
UniRef9O_R5W7P5 UniRef90-B3E2Q3 UniRef90-R5LXB6 UniRef90-AOCEX6 UniRef90_V6SD44 UniRef90-C7Q7I7 UniRef90_UPI0004645886 UniRef90_UPIO00465EDF8 UniRef90_CODVIO UniRef90_UPIOOO4762665 UniRef90_E4U070 UniRef90_UPIO004769CC1 UniRef90-W8YT21 UniRef90_UPIO00255D776 UniRef90-UPI00036CF379
UniRef90 UPI000474ACBB UniRef90_C0QT99 UniRef90-K9RD36 UniRef90_D5XDG7 UniRef90-A2SQ33 UniRef90_Q7NA34 UniRef90_A0A011N8B6 UniRef90_R6KHZ0 UniRef90_15CNQ7 UniRef90-A7HD59 UniRef90_UPI00047A879C UniRef90_A0A033UA69 UniRef90-A0A016XEB9 UniRef90_UPIO0047466AD UniRef90-C6MA28 UniRef90_UPI00038289D9 UniRef90-F6GFA0 UniRef90-W1JN66 UniRef90-UPI00047DE3FB UniRef90_F2BA72 UniRef90_R6AIE5
UniRef90_C4GHM3 UniRef90_A0A024GJH5 UniRef90-F5ZE31 UniRef90-T4VNQ6 UniRef90-Q2G713 UniRef90-N1PS19
UniRef90-L8PL88
UniRef90_UPI000380AA53

80
SR|V|APELI|FDQGVGDLFVVRAAGNVV|SP IVKGS|IEFA|V|AE

 ARVVPELITQSEPGELFVI RTAGNLVPAYAPGSI EYAVAV SRVVPELLTQREPGDLFVIRNAGNVVPGYVSASVEYAVTA TRIIEHKAMNDQNGDAKIVKNAGAILTSPTMRSLLVAIYQ SRAPAE LLFDLGLGDLLVVIRVAGNVVAPSGVGSVEFAVES SRVPANELVKMDPGTVFVHRNAANLVDMNVLTVI QYAVEV
 SRVQPEDFMGVKPGEVFVHRNIANLVANNDTNSLQYAVKF TRLVEPKAMNLRNGDVKI IKNAGAIISQPVVRSVLVAIVE
 SRVTAEELMGVQPGEVFVHRNVGNIVNPIDMNSVRYAVRY
 TRLVEPHAMNLRNGDVKIIKSAGALVTHPIMRSILVAVYE T RLLEPKALNLGNGDAKi I KDAGALISHPVMRSILI ALYQ SRVQPE LITQSDLGDDLVIVRNAGNIIPPYGSATVEYAIKS
 SRVPASEI MNLLPGDVFVQRNVANQVDMNCLSSLQFAVDV





- 


都

[^0]
## B

## 

 TRIVEYAALGVKNGDVKMIRNAGAVVSHPVMRSLLVAVLE






## UniRef90_L0D9X3

 UniRef90_A1ATA2UniRef90_S9TM82 UniRef90-E6WYQ6 UniRef90_D2B6U0 UniRef90-Q7NWU8
UniRef90-F7Z6D6 UniRef90-F7Z6D6
UniRef90 UniRef90_UPIO003752DFF UniRef90_UPI00036D7B91 UniRef90-V5BA45 UniRef90_UPI00036BC384 UniRef90-S9T8D7
UniRef90-R6PAE6
UniRef90-G4CTQ8 UniRef90-M7MHV9 UniRef90_A0A024B177 UniRef90_O34872 UniRef90_UPI00047A2C78 UniRef90-B4WHI8 UniRef90-G8QHQ4 UniRef90_UPI00036C6B4E UniRef90_UPI0003B5FEOE UniRef90-UPIO0038155DA UniRef90_B6FWM5 UniRef90-S2JTP3
UniRef90_UPIO0047EA42F UniRef90-W8X901 UniRef90-M1YZG2 UniRef90-_I8IW24 UniRef90-15BY26 UniRef90-W4QKC1 UniRef90-D3P564 UniRef90-R7III9 UniRef90_UPI000348FAD2 UniRef90_UPI00034C6603 UniRef90-D7A6X7 UniRef90_UPI00036635B5 UniRef90-A0QAA7
UniRef90-K2NVF5 UniRef90-Z5XFC3
UniRef90_UPIO002FD2A62 UniRef90-D4XEK8 UniRef90-W0E6G3
UniRef90-B2IZJ7
UniRef90_UPI00047B7E9F UniRef90_UPI000360FDD8 UniRef90-T3GHH4 UniRef90-R5W7P5
UniRef90 B3E2Q3 UniRef90-R5LXB6 UniRef90-A0CEX6 UniRef90_V6SD44
UniRef90_C7Q717 UniRef90_UPIO004645886 UniRef90_UPIO00465EDF8 UniRef90_CODVIO UniRef90_UPI0004762665 UniRef90_E4U070 UniRef90_UPIO004769CC1 UniRef90-W8YT21 UniRef90_UPIO00255D776 UniRef90-UPI00036CF379
UniRef90 UPI000474ACBB UniRef90_UPIO0047
UniRef90_C0QT99 UniRef90-K9RD36 UniRef90_D5XDG7 UniRef90-A2SQ33 UniRef90-Q7NA34 UniRef90_A0A01N 8 B6 UniRef90_R6KHZ0 UniRef90_I5CNQ7 UniRef90-A7HD59 UniRef90_UPIO0047A879C UniRef90_A0A033UA69 UniRef90-A0A016XEB9 UniRef90_UPIO0047466AD UniRef90-C6MA28 UniRef90_UPIO0038289D9 UniRef90-F6GFA0 UniRef90-W1JN66 UniRef90_UPI00047DE3FB UniRef90_F2BA72 UniRef90_R6AIE5
UniRef90_C4GHM3 UniRef90_A0A024GJH5 UniRef90-F5ZE31 UniRef90-T4VNQ6 UniRef90-Q2G713 UniRef90-N1PS19
UniRef90_L8PL88
 L EVE HIIVLGHSGCGGINALMDGFI SRWMSIAAPARKDPR
 LGVSDIVVCGHSGCGAMTAVADGLDPAALPAVAGWLRHAD L GVADIVVCGHSDCGAMTAVACGKDLSGMPAVAGWLRHAD LKADEVFVIGHYDCGMTGLKGETVLENMKKRHAGIDLDEW YGTPLVVVLGHTNCGAMQATLDTLAHPEQAPSTNLVDQPE
 FGTPLVVVLGHSHCGAVTATMDDLRQPTENQRADVIK DRD
$L Q M K H I I V C G H Y N C G N K W L M H I K D I Y R F H R K E D D A L A T E E ~$ LKVKHIIVCGHYGCGGDKAADLGALNSWDRNDGDVHRDHE LEADEVIVIGHYGCGMTGLNSQQDIDKAKKRGVEDVLHHW L GVEEIMVIGHTDCGVQHINSDMMIEHMINRGVSEENIKW LKVKHI IVCGHYNCGGVAAAMEQQDHGALNAWLRNDRDVY LKVKHVIVCGHYACGGVKAAMQSADLGULNPWLRNIRNED

 L D Q H IVVCGHTTCGYNWQKHTEATRELVEEEHYGYNPKAE
 LKVKKHIIVVGHYGCGGMKNDSFGYVDNWL RNDKEVI ENEEE LKVVKHVVVCGHYLCGGVKAAMQSRDDGGIVMNPWLRTVARDED
 LNTPLI MVLGHDACGAVDATDKSLKDNEIDPGHLPSLVAA
 LKATEVCVIGHYDCGMAGDDSEAFIGTMKETGDDMDLNNW AGSKLVVVLGHTKCGAVGAACQDVKDGNDTTGLEKDKPNP LKADEVMI GHHQCGMAGLESSNILDGAESRGVNMDSDKD LNDPLILVLGHSGCGADGATDKAIQDGAQLPGAADARKPA L GIVRLVVLGHTHCGAVGAAIMHAPEGYVKTIVLKADGDE LGI EQ I IVCGHTHCGAMWLKLAEGTQRLVLENYTNYPEKE L GVPLLMVLGHTNCGAVDAAIKVVRDKITLPGHLDELVAN LKVKHIVVCGHYNCGGMTAQDLGLLNPWLRNGRDVYRIHQ LNVPLIVVLGHDSCGAVKAADRDVVERVAPSVLMGRREGQL $L N V P L I A V L G H D S C G A V Q A T I R D L V E R V T P S I L V G R R E G L$ L YGTKLVVVLGHSCCGADNATLETMLDGADSESRNVAADRE LD DQQI IVCGHSHCGHDWLKYAEATRRLVKDNYSHYEGEE
L NVKHI IVCGHSHCGACKSLYQDLENKKWLELGKKAKEYT $\frac{L}{G A H L I V V L G H D K C G A V R A T D R D V V E R V T P S V L S A R R D G Y}$

L GVIKEIMII GHTDCGAQHLNPDEMI S LMLKRGIS QEHDD W LNIHSIIVMGHTCCGGIKAAMAQDSVGGLLDLWLNQDKIV LKVNHIIVCGHYGCGGUKAAMQQDDLGQLNPWLRNQRNEE AGAFEVAVIHHTQCGTGFLADTDFRDRAADATGVSPQTLA LSTPLI LVLGHDNCGAVASTDKSLKEDKPPPGHIPSLVSA LGTGLVVVGHDHCGAVDAAMNHEPDGYDKYIIVKAI GDE L HEEI MVVAHHDCGMCGFSPERLLNKARAAGIPEANINW LKVRHI IVCGHYGCGGIRAAMERSPHGLVDHWLQPDRDDA L GVSEII I CGHSHCGAI WLT LGEKAKSMAMDALGENATQE L NTPLI LVLGHDSCGAVEAKIQGLANAFRPSVNTVLKAPG LLNADEVFII GHYNCGMTG $\square$ NPDSMI GKMVDRGVPSQFTRW LEVPLIVVLGHDSCGAVTAADRSLVERDTPSVLSARRKGI L
 LIDNQI I I CGHSHCGAMWLKYA EATRRDVLDDHSKY E E E D LHTPVLVVMGHSNCGAVKATVEAVEKGDKMEGNDGADLTD LGVTDIVICGHSDCGCKCMNHLPA DTSWLRYADCAKA DSQ LKVRHVMVVGHYGCGGVKAALNRDRTGLVDDWLRHVRPPE L G V E Q V M V I G H T D C G A Q S L N S K R V L A H M K E R GI A D K N I D W L GTPVVVLGHTGCGAVAATCAGGHAGGHVAADAAABND L GTPVVVVVGHTGCGAVAATCAGGHAEGHVAAVVEEIRPA LGAEEIIIMGHKDCGMGNLDVDSVIDTMKDEHSGINDHQR LKVEHIVMVVGHYGCSGVQAALEGARIGLADNWLRHIMPEQ LKVKHI I I CGHYNCGGIKAAMKPQDLGSMNPWLRS IDRDVY

 $L D V K H V I V T G H Y N C G G V K A A M Y G L V D L W L Q P D R N V V R W N Q$ L R V S El MVIA H H D C G M R G M N P A E F L A H T E A R N A G I N L D N W L GV K E V MVI A H S DCG GACHMS SA Q MI E HMKA R G I K Q E F D S W


 $L \operatorname{L} V$ K E V V V M G H G M C G G C K A A L T Q D L K G T E P G E G G F I A D W

$L \operatorname{LV}$ S D $\quad V \operatorname{V}$ C G H S H C G A
UniRef90 LoD9x3 UniRef90-A1ATA2 UniRef90-S9TM822 UniRef90-D2B6U0 UniRef90-Q7NWU8 UniRef90-F7Z6D6 UniRef90_A4BGP7 UniRef90 UPIIOO03752DFF UniRef90-UPI00036D7B91 UniRef90-V5BA45 UniRef90-UPI00036BC384 UniRet90-S9T8D7 UniRef90-R6PAE6 UniRef90-G4CTQ8 UniRef90-M7MHV9
UniRef90- A0AO24BI UniRef90-AOA024E
UniRef90 O34872 UniRef90-UP100047A2C78 UniRef90 B 4 WHI 8 UniRef90-G8QHQ4 UniRef90-UPI00036C6B4E UniRef90-UP10003B5FEOE UniRef90-UPIIO0038155DA UniRef90_B6FWM5 UniRef90-S2JTP3 UniRef90-UPIOOO47EA42F UniRef90-W8X901 UniRef90-M1YZG2 UniRef90-I8IW24 UniRef90-15BY26 UniRef90_W4QKC1 UniRef90-D3P564 UniRef90-R71119 UniRef90-UP1000348FAD2 UniRef90-UPIO0034C6603 UniRef90- D7A6X7 UniRef90 UPIOOO36635B5 UniRef90-A0QAA7 UniRef90-K2NVF5 UniRef90-Z5XFC3 UniRef90-UPIO002FD2A62 UniRef90-D4XEK8 UniRef90-W0E6G3 UniRef90-B21ZJ7 UniRef90-UPIOOO47B7E9F UniRef90-UP1000360FDD8 UniRef90_T3GHH4
UniRef9O_R5W7P5 UniRef90-B3E2Q3 UniRef90-R5LXB6 UniRef90-AOCEX6
UniRef90 V6SD44 UniRef90-C7Q717 UniRef90-UPIOOO4645886 UniRef90OUPIOOO465EDF8
UniRefoo- C0DVIO UniRef90-CODVIO UniRef90-UPIOOO4762665
UniRef90 E4U070 UniRef90_E4U070
UniRef90-UPIO004769CC1 UniRef90-W8YT21 UniRef90-UPIO00255D776 UniRef90_UP100036CF379
UniRef90-UPIO00474ACBB UniRef90-COQT99 UniRef90-K9RD36 UniRef90-D5XDG7 UniRef90-A2SQ33 UniRef90-Q7NA34
UniRefo-AOAO1N8B6 UniRef90-R6KHZO UniRef90_15CNQ7 UniRef90-A7HD59 UniRef90-UP100047A879C UniRef90-АоАоз3МА 69 UniRef90 AOAO16XEB9 UniRef90 UPIOO047466AD
UniRef90 C6MA28 UniRef90-UPIO0038289D9 UniRef90-F6GFAO UniRef90-W1JN66 UniRef90-UPIOOO47DE3FB UniRef90-2BAT2 UniRef90-C4GHM3 UniRef90-A0AO24GJH5 UniRef90-F5ZE31
UniRef90-T4VNQ UniRef90-Q2G713 UniRef90-N1PS19
UniRef90_L8PL88
UniRef90_UPI000380AA53



160 LQRRAAEQAAILLSLENLRSFPWI DERVALHGWYFDISEG KRHWRRCELDVLAQVENVVETHLI QDEVEVHGWVYGLADG ALGDDTLEASVVFQLENLLSYPLVKKRVDLHGWHYDLSTG ASRARVVRQNVLTQLANLATHPSVAKTVTLHGWDYDIGTG CKVDAMARENVIAQLANLRTHPSVQGRLRLHGWMYDLASG LSGFEKVESSVKKSVGITKNHPLMDKKVPVHGLVIDPETG A RVNRLCEDNVQEQVRNVCHVPAVRKALSI HGTDYDICDG ELI EHAVRANVRASVNQLRHGSVISGKLLI VGAEYSLETG QRINRLVELNIDEQVHTISHTSLIQHRPVI HGWVYGLSDG ALFRRLVELNVQEQCLNIMKLAFVQEYPRIHGWVYDIAQG LRGFNDVHEGVMNSVQVLRKHPLLPSDVPVHGMVDHPDTG LEGGFDVDTSVHETVKFLKEHPLIPKDVRIAGYVMDSVTG ERYDKLVELNVKEQCVNLTKTAAVQKGLKVHGWVFDVHTG LTGFHSVEESVAHSVNMVRHHPLLPEEVPVHGLVIDPGTG EKSFDSVEASVKDSVVDVIKHHPLEPENVPVHGLVIDPK TG LHGFDNVTESVEESVGLIKNHPLMPKDVPVHGLVIDPKTG KLSGTLVAENVLTQIDNLKTYPSVRGEVQLHGWIYNVVDG ERTNRLVELNVVEQVRNLAKTKPVQQELDIHGWVYGLDTG EKLNRLCELNVIEQVVNVCNTTTLEDETTVHGLIYGIHDG ARYDRLVELNVEEQCINVIKMAVWQKRPQVHGWVFDMKSG LHGFDSVEQSIVDTVKTIKEHPLMPKDIKVHGLAMDPSTG RLHRRLI ELNAI NSAENVCHSTIVQQKLTVHAWAFDIEDG
 DLLAAATAQNVRDNVAALAERSTIAGKLRLAGAVYRLDTG LGGFNVVEDAVVDSVNMVKQHPLLSKGVPVHGLAYDPASG EDADAVAGENVRVMI EEIRRSEI AGSIKIVGGMYDDSTG LLEGFQSVEESVEHSVSMVRKHPLMPDDVPVHGLVIHPETG DLMAEATMENVRHNVRRLADAPIVASRVRIVGGLYDTATG KDEYKAACLNAEGSVKRIETSLEI QREESEHGAILDIETG ARHRRLVELNTVEQVLNVCRTTIVNDALTVHGWAYGVHDG LLEDTSAENVLTQIDHLKTYPIVQGRLNIYGWVYNLETG I TPDAAVVENVRLNVKELQATPVISEKIKVVGGLYDLASG ARYDRLVELNVQEQCINVIKMACVQERPIVHGWVFDLRTG SRVDEFEERHVRETVARLSRSTTIAERVAVAGVTYHLADG
 TRVDEFEARHVIETTQLMARSALIAERVALVGLTYHLADG
 ALQHAAVRANVRASVDHLRHGSAIREGLLVVGAEYSLETG
 TDVDDFMARHVEETGNLLMRSRI AEKVAVVGLTYKLSEG LHGFDSAEESVKDSGDLIKGHPLIPDGUVVHGLIVSPETG KECAACKEDNVKLVTANLKNSKVLKKKLKIVSAKYDLDDG YNGFENSEEAVKSVENKHPLMPRD VVGFITDSYTG YEKNQELIQLNVRAQVMNI WKNPIVQKSLMVHGWLFRVETG ASKVDDPAVTVAEDVERLLTSPLLPRGATVSGHVYDVETG A APDNADRQNVADNVAKLKSTPILQNGLKVVGGIYRLHTG KDEVRACCLNVKHSCQVI KHSLQLQKDLKVLGAIYHLESG LTGFDNADDSVRHTVNLIKQHPLMPAHVAVHGLDHPTGG SRHRDECELSVESQCARVLQSPVRDD HVGWAYRLTDG
 NLLDNAIAQNVRDTVARLRESSLLTEALAVVGGVYRLHSG TDVDGTVEEHITQTAARLTEHSVDAGRTAVVGVTYRLAEG LQNRQELDANVLAQVKNICNTSVMQRAPKVHGWVLDDHKG DHGHLVTEENVVQQLQHIKTHPAVAGQVKLHGWFYNI ETA
 DLLKNAENENIKAVLAELEKSPVVKEKLKLLGAKYHLDTG ARVHSMVRENVIAQIANIKTHPSVQRHLNLHGWIYDIEAG RQHDRLCELNVLEQVANVCQTFVIQDAVTVHGWIYGLRDG LLNGFDSVEEAIKSSVELIRKHPLIPSDIKINGFIDDSIDG SHQHAMVRENVIAQLTNLRTHPSVAGTVRLHGWVYDIETG LRNTRLCELNATEQVVNVCHTTMVGQKLSVHAWCYSLSDG LRGFDDVTENVQTNI QKVYNHPLFDQSVPIHGLVIDPHNG HRHDALVELNALEQVVNVAQTTVMLQKVTLHGWVFGLHDG EAVRAMEHETVRVSLRNLRTFPFVAGKLTI HGAYFAI ADG RLHDRLVELNVQEQCLNVITKMACVQERPIVHGWVFDLRTG KRLDMLCELNVKRQVDKLSHTRIVQRKLSLHGWVYRLQDG HKSAETVENNVQLTINRI RKSPILKEEIKIVGGVYSLQSG LLAPANAVRQNVAENVYKLMSAPLLQNRLRVVGGLYRLDTGG
 LYGFGDTEKSVRETVKAD LDHPLDPEDVHVSGFI DSDTG FTGFDNVEQSVRHTVNMIRHHPLMPSNVVVHGLVIDPSTG ARFDREVVELI IE QI NMVQRCQI KYGYPRI HGLVVDMES G DHLEDVTKENVVQQI QHLRTHPAVAKHVTLHGWVYNDGSG ETYNNAVKFNTENSINLIKENEIIKKRVKVTGANYDMETG ALERAMEEAGVRASLANLRTFPCIRGELKLRGTFFADSDG RLHNRLAELNVLEQARNVVKTAAVQQSYAVHAWDFDFKDG PTVAEAVQNHVLAQLLRLRSYPC:SGEDRLHGWYYEVHTG

| UniP | LV K VYE |
| :---: | :---: |
| UniRef90－A1ATA2 |  |
| UniRef90 S9TM82 UniRef90 E6WYQ |  |
| UniRef90－D2 |  |
| UniRef90－Q7 |  |
| UniR |  |
| UniRef90＿A4BC |  |
| UniRef90－UPI0003752DFF |  |
| UniRef90－UPI00036D7B91 |  |
| niRef90－V5BA |  |
| PIo |  |
| UniP | A |
| UniRef90－R6PAE6 | KL |
| UniRet90－G4CT | LLK |
| UniRet90－M7M |  |
| UniRef90－A0A024Bİ | T ${ }^{\text {L }}$ |
| niRef90－034872 |  |
| 7A |  |
| UniRet90－B4WH18 |  |
| UniRef90－G8Q |  |
| UniRef90－UP10003 |  |
| UniRet90＿UPIooo3B5F | ML |
| UniRef90－UPIO0038155 |  |
| iRef90－B6FWM5 |  |
| UniRef90－S2JT |  |
| niRef90－UP100047E |  |
| UniRef90＿W8X901 | R |
| iRef90＿M1YZG2 |  |
| niret90＿81W24 |  |
| Ref90－15BY26 |  |
| iRef90＿W4QKC |  |
| 隹ef90－D3 | K VR |
| UniRef90 UPIO00348 |  |
| UniRef90－UP100034C66 |  |
| UniRef90－D7A6 |  |
| niRef90－UP100036635 |  |
| A0Q |  |
| 2N |  |
| iRef90－Z5XFC3 |  |
|  |  |
| UniRef90－D4XEK |  |
|  |  |
|  |  |
| NiRef90 UPIOOO47B7E9 |  |
| UniRef90－UP1000360FD |  |
| UniRef90＇R5 |  |
| UniRef90－B3E2Q3 |  |
| iRef90－R5LXB6 |  |
|  |  |
| 44 |  |
|  |  |
| UniRet90－UPIOOO4645886 | HV |
| UniRef90 UPIO00465EDF8 | E |
| RRef90－CODVIO |  |
| iRef90 UPI00047 |  |
|  |  |
| UniRef90 UPI0004769CC1 |  |
|  | R A |
| UniRef90－UPI00 |  |
| UniRef90－UPIO00474AC |  |
| Ref90＿COQT |  |
| Ret90＿K9RD36 |  |
| D5X |  |
| iR |  |
|  |  |
| UniRet90－A0A011 N |  |
| Rer90－R6KH |  |
| （iRet90＿5CNQ7 |  |
| 俍et90＿A7HD59 |  |
| 947A879 |  |
|  |  |
| UniRet90－UPIOO004746 |  |
| UniRef90 C6MA28 |  |
|  |  |
| UniRef90－F6GFA0 | K |
| UniRet90＿W1JN66 |  |
| UniRef90 UPI00047DE3FB |  |
| 俍et90－F2BA72 |  |
| 隹ef90＿－26AIE |  |
|  |  |
| ， |  |
| niRe990－F5ZE31 |  |
| 90＿T4VNQ6 |  |
| UniRef90＿Q2G713 |  |
| UniRef90－N1PS19 |  |
| Ref90＿L8P |  |
| Ref90＿UPIO00380AA5 |  |

UniRef90 UPIo00467A76D UniRef90-K9FHA7 UniRef90-Q13MJo UniRef90-E6X7B4 UniRef90 UPIOOO4769650 UniRef90-R5TD3
UniRef90-G21210 UniRef90-S2DH40 UniRef90-UPIOOO36A3921 UniRef90-F8WYDO UniRef90-D31HO7 UniRet90_UPIO0037BF349 UniRef90-V9Z727
UniRef90
WoH2Z5
UniRef90-U7V415 UniRef90-K9Z6T2 UniRef90-10YJA2 UniRef90-A0A031HJ72 UniRef90 D2PLS5 UniRef90_UPIO0047B2392 UniRef90-EORBL6 UniRee90-UPI0002E79F57 UniRef90 F5LK69 UniRef90-E1WXA5 UniRef90-LOA2A4 UniRef90-UPI00037166EC UniRef90-L1LXT5 UniRef90-S4XPN1 UniRef90-UPI0004798E6E UniRef90-A1KCN7 UniRef90-G2DW48 UniRef90-D2W1R2 UniRef90-A1TVC2 UniRef90_UPI0004251FA5 UniRef90-B8N3B1 UniRef90_D1W8X2 UniRef90_V9HLD9 UniRef90-S2YF42 UniRef90_UP100031B9056 UniRef90-B1W4M1 UniRef90-D5MHI8 UniRefofo-AFE4C4 UniRef90-14X434 UniRef90-E9C177
UniRef90-F5IY55
UniRef90-10WHB6 UniRef90-B6BLP4 UniRef90-E8TKY3 UniRef90-WoV1C1 UniRef90-R6VXY8 UniRef90-J2L6T9
UniRef90-A0A017S5A5 UniRef90 D1BNN3 UniRef90 UP100016C3D9C UniRef90-C4K9E3 UniRef90-U5MLU4 UniRef90-H2BTS7 UniRef90 K7YP76 UniRef90-C4Z718 UniRef90-C9ZAU6 UniRef90-J8Q5W2 UniRef90-UPI000473CA3A UniRef90-UPI0003497C98 UniRef90-UPIooo36184AB UniRef90-N1MQB2 UniRef90-C3K5T5 UniRef90_B3PSW2 UniRef90-A0AO24PR93 UniRef90-G1VF90 UniRef90-R7S573 UniRef90-UPIo00289B2A9 UniRef90-A6WBH9 UniRef90-UPIO0036CA5F8 UniRef90-F7V856 UniRef90-UP100047B17D7 UniRef90-UP100004778379 UniRef90-UPI00036F84B1 UniRef90-B0E7MO UniRef90-E5V3T1 UniRef90-UP10002885E7C UniRef90-UPIO0036EDA79 UniRef90-W2RLH6 UniRef90-UPIOOO312521C UniRef90-E7G6G9 UniRef90-W9Bz59 UniRef90-H1W5K3
UniRef90 A1UMG3 UniRef90_C1A761 UniRef90-J2T2E8 UniRef90_UPIO00475B60F MKKLMRGLRQRQDTYVPSHLLAKGQSPNTLFITCSD EALGRLMQGNARYAANTGRAARVSAQYPDAAIVGCAD NLDFVFENNKKWVNDKYFDEMGKGQNPELLYIGCSD ALKRLKKGNKRWRKRARREELVGGQDPFALVLSCSD IEDVIDYNRKFVAEKNYEPYSKYPDKKLAILTCMD
MCQLDLE NLNKVFENNKKWISGKYFEELGK
MANLLDQDINHNKTFVAQKGYEKYDKYPDKKLAVLSCMD LIEHARTFPEQEEFARLAGGQQPQALFISCSD ALQQ1VSGFVHFRHEVFPQQLATAQSPRAMFITCAD MKKLIEGLHRFQAGYFKSHLSHGQNPRILFITCSD TSDDTPLLEANRKWADPTYFSKIAGSQSPEFLY GCSD MTDFADMVQGYRRFRDKERWSQLSQGQDPKVMVI ACSD ALRRLLEGNARFVADRTEAAVSKSQQPFATVLGCVD
 MSLKR1最GLNEFHDTYFFEQLSQGQSPEVLFITCSD MSLISEALNYNESFVESKEYEQYTKFPDKRMVILTCMD EA ATALKRGNARFFSGQTTQQLIMSQTPFALVLGCSD ALKHVVDGFDRFHHEVFFKKLATAQKPRAMFITCAD ALERLAEGNRRFVDQRARAALVDGQRPFADILSCSD TPD KL FENNKKWADETYFDKLGAGQAPEALYG GCSD A DEALKRLRDGNRRFASNQQRADLLAGQEPFAGILGCSD MTAPS DDELVHNRAWAARMERERLMAQQKPRYMWVGCSD UQKIFDNNKNWVSKQFFEKLGQGQSPEFLYIGCSD MSELDMILKHNQEFVEKGNYGKFNKEPEKKLAILSCMD MT LLNQL KYNKDFVASKAYEQYSKTPSKKAVLLTCMD MSLLHDLLEYNQQFVENKEYEKYTKSPDKKMVLVSCMD ETLERLRDNARFRREEALAAGSEVFICS ETLERLREGNRRFASNTRRGELQTGQRPVALVLGCSD MALLDEILDYNEEFVKEKHYEEFTKFPDKKVVILTCMD NMEHGSDAYAATFNQGHLADPPSQRYTIVTCMD SSEQYNRLLENNRRWVSPDFFEVLARGQKPPYLLI GCSD MNDKSYKGIFEANKKWVEPDFFTHLADQQNPDYLYIGCSD MNDPLYQNVFKNNAEWAAQKFFSHLATQQTPETLYI GCSD MSHLEHMLEAGYRFMNGRRYRDLAEGQAPETMIVACCD TEELVGYNRRWAASMVEKDPEEAQSPEYLWIGCSD MPDDALKAMMDGNRRFIDGRGKAKAAEKQEPFAAVLSCAD MSLLDDTLAHNREYVEDQNTGYVSKMPSREMAIVTCMD MSQSMEKLISGINKFQASDFFRKLVEGQHPQALFWTGCD MSRLEELEYNEKFVSENEYEQYSKNPKKKMAULSCMD MNNINRITDRNRQWANPSYFDQNSLQQNPDTLWI GCSD MNRDQEVLSHNEQFVNNKEYEQFTKYPDKNMVILTCMD MTTTMETVMTFNRTFVEKKQYEEYTKFPNKKLVELTCMD MSLLNEILTYNEKFVENYRKYETSKLPDKKMVILSCMD MKKLLKGLREFQSTYFFEELSHGQKPR\|LFITCSD AWANLREGNERFVAGKDRARLAEGQHPQAVLFGCAD MADFSNMDEGYRRFRQTERWDELSEGQSPRVMI ACSD DLLKGISSFRGAVFPNQSALGQQPQALMISCAD HLEDMLKGNKQFVEGKSYEPYDSGQNKQMVMVSCAD PVLERLLSANAQWVEPGFFERGAKGQSPKVLWI GCSD A LDLLRQGNARFVASGEYRKLADGQSPEVLFITCCSD MQDLAEGVARFAKAARFRRLATTHRPSTLFISCSD EADEKLKEGNQRFMETRKARNLADGQHPYAVIVSCSD AWQRLADGNERFVDAPRRAALVDTQHPFAVIVGCSD MSDVLAELKEGNQRWVDPARRQAVAQEQKPFAAVLSCIDD KLLTFSMLDGNNRFVEGKRRKELDNKQEPDATVICCSD MKLLDSMLEYNKYFVKFEEYQKYDKYPAKRVVMFTCMD
MRTLNQLFVNNEAWADPDYFKRLVNGQQPQVLFWI GCAD AYAHAFNNNSAWRNPELFERLGKGQAPQILWIGCAD MEKALQGLREFQENYUPKQLAKGQTPRVLFVGCSD LS SNQAWANPAFFKNLASGQSPSALWLGCSD MPSTPYEQLFENSARWADPTYFASLAEGQRPTYVVFGCGD MTQSYEAIFENNRKWIDDPDFERLASEQRPDYLYGSD MT QSYEA IFENNRKWDDPDFFGQLAKTQNPEYLYMGGGD

UniRef90_UPIo00467A76D UniRef90-K9FHA7 UniRef90-Q13MJ0 UniRef90_UPIOO04769650 UniRef90-R5TD31 UniRef90-G21210 UniRef90_S2DH40 UniRef90_UPI00036A3921 UniRef90-F8WYDO UniRef90-D3IHQ7 UniRef90_UPI00037BF349 UniRef90_V9Z727 UniRef90-WOH2Z5 UniRef90_U7V415 UniRef90-10YJA2 UniRef90-A0A031HJ72 UniRef90-D2PLS5 UniRef90_UPIO0047B2392 UniRef90-EORBL6 UniRef90_UPI0002E79F57 UniRef90-F5LK69 UniRef90-E1WXA5 UniRef90_LOA2A4 UniRef90_UPIO0037166EC UniRef90_L1LXT5

## UniRef90_S4XPN1

 UniRef90_UPI0004798E6E UniRef90-A1KCN7 UniRef90-G2DW48 UniRef90-D2W1R2 UniRef90_UPI0004251FA5 UniRef90-B8N3B1 UniRef90-D1W8X2 UniRef90_V9HLD9 UniRef90_S2YF42UniRef90_UPI0003 UniRef90-B1W4M1 UniRef90-D5MHI8 UniRef90-A7E4C4 UniRef90-14X434 UniRef90_M2UFU7 UniRef90-E9CI77 UniRef90-F5IY55
UniRef90-10WHB6 UniRef90-B6BLP4 UniRef90-E8TKY3 UniRef90-W0V1C1 UniRef90_J2L6T9 UniRef90-A0A017S5A5 UniRef90_D1BNN3 UniRef90-UP100016C3D9C
UniRef90 C4K9E3 UniRef90-C4K9E3 UniRef90-U5MLU4 UniRef90-H2BTS7 UniRef90-K7YP76 UniRef90-C4Z718 UniRef90_C9ZAU6 UniRef90_J8Q5W2 UniRef90_UPI000473CA3A UniRef90_UPIO003497C98 UniRef90_UPIO0036184AB
UniRef90_N1MQB2 UniRef90 C3K5T5 UniRef90-B3PSW2 UniRef90_A0A024PR93 UniRef90-G1VF90 UniRef90_R7S573 UniRef90_UPIO00289B2A9 UniRef90-A6WBH9 UniRef90_UPI00036CA5F8 UniRef90-F7V856 UniRef90_UPI00047B17D7 UniRef90-UPIO004778379 UniRef90_UPIO0036F84B1 UniRef90-B0E7M0 UniRef90_UPIO002885E7C UniRef90_UPI00036EDA79 UniRef90_W2RLH6 UniRef90_UPIOO0312521C UniRef90-E7G6G9 UniRef90-W9BZ59 UniRef90-H1W5K3 UniRef90-A1UMG3
UniRef90_C1A761
UniRef90_J2T2E849
$\qquad$
-

SR|V|PPE|LV|F
50
60
SRVQPELITQAE GDIFAARVAGNIVNDDDLGSLEFATQL
 S RVVSAEELMGLEPGEVFVVRNDANMVDDNAMSVVEYAVMH



## S



S T R L L
 S R A P P N L I T Q A N V G E
 SRVPVVEVV D R GLLGDLVVVRSAGEALDHSVTGSLEFGVAE


 S R V P T E M I F D Q GF G D I F S I R L A G NVVA S G A A L G S V E Y A V K H

 S RVVTAE EVVMGLQP GEVVFVHRNIANMVPNTNDNSIN YAVGS



S

## S S A

UniRef90_UPIOOO467A76D UniRef90_K9FHA7
UniRef90_Q13MJO UniRef90-E6X7B4 UniRef90- UPIOOO4769650 UniRef90-R5TD31 UniRef90-G21210 UniRef90- S2DH40 UniRef90-UPIOOO36A3921 UniRef90-F8WYDO UniRef90_D31HQ7 UniRef90_UP100037BF349 UniRef90-V9Z727
UniRef90-WOH2Z5
UniRef90_U7V415 UniRef90-K9Z6T2 UniRef90_10YJA2 UniRef90-A0A031HJ72 UniRef90_D2PLS5 UniRef90-UPIO0047B2392 UniRef90-EORBL6 UniRef90_UPIO002E79F57 UniRef90-F5LK69 UniRef90-E1WXA5 UniRef90-LOA2A4 UniRef90-UPI00037166EC UniRef90-L1LXT5 UniRef90-S4XPN1 UniRet90_UPIo004798E6E UniRet90_A1KCN7 UniRef90-G2DW48 UniRef90-D2W1R2 UniRef90-A1TVC2 UniRef90_UPI0004251FA5 UniRef90-B8N3B1 UniRef90_D1W8X2 UniRef90_V9HLD9 UniRef90-S2YF42 UniRef90-UPIOOO31B9056 UniRef90-B1W4M1 UniRef90 D5MH18 UniRef90-A7E4C4 UniRef90_14X434
UniRet90_M2UFU7 UniRef90-E9CI77
UniRef90-F5IY55 UniRef90-B6BLP4 UniRef90-E8TKY3 UniRef90 WoV1C1
UniRet90_R6VXY8 UniRef90_J2L6T9
UniRef9O_AOAO17S5A UniRef90 D1BNN3 UniRef90 UPI00016C3D9C UniRef90-C4K9E3 UniRef90-U5MLU4 UniRef90-H2BTS7 UniRef90 K7YP76 UniRef90-C4Z718
UniRef90-K6F137 UniRef90_C9ZAU6 UniRef90-J8Q5W2 UniRef90-UPIO00473CA3A UniRef90 UPIOOO3497C98 UniRet90_OPIo0036184AB
UniRet90 N1MQB2 UniRef90 C3K5T5 UniRef90-B3PSW2 UniRef90-A0A024PR93 UniReffo-G1VF90 UniRef90_UPIo00289B2A9 UniRef90-A6WBH9 UniRef90-UPIoo036CA5F8 UniRef90_F7V856 UniRef90-UPIO0047B17D7 UniRef90-UPIOOOO4778379 UniRef90-B0E7M0 UniRef90-E5V3T1 UniRef90-UPIO002885E7C UniRef90-UP100036EDA79 UniRet90_W2RLH6 UniRef9O-UP1000312521C UniRef90_E7G6G9 UniRef90 W9BZ59 UniRef90-H1W5K3
UniRef90 A1UMG3
UniRef90_C1A761
UniRef90_J2T2E8
UniRef90_UPI000475B60F

90
100

120



## L

 AV L G H T S C GAVTAAVDVHRGAPMPEGHVRHLVEG
 IV CGHSSNCGAMKALLDDPESSNNLSNKMP TVVASWL RN VVYGHYGCGGVKAAYENQSNGMLDNWLANIKDVI
 L GVK E V VVVA H S HC GA CHMNYDHFHH EMMA R G ITTD E L D S W
 LGVQUH I I C GHSDDCGAMRAVVLNP QS LDDKMP TVVKA WLLRHA E FKAPI MVLGHDSCGAVTAAIRNLVERILPSVIAPSLPPH LGIE QVIVCGHSHCGAMKAEDMPLVYEWLKQAEATRRLIK
 $L E V P E V V V M G H A S C G G C A A D W V G L L D A A R D K V K A E F G E G A$


 L D A E V L V DGHRDCGMTGLNS EKVLSKARERGVQ IDNLDKW

 LGV H HI I I CGHSDCGAMRAVLNPQSLEKMPTVVAWWRHA E FGTRLAVVMGHSRCGA DDATLSEQLQQESRSVAGRHAPRD


 L QVEHL MVVGHYGCGGVRAALEGVRVGLADNWIRHVKPTD


 LGADEVMIMGHHDCGFGALDPEPVME EMENR HSGDDDKE W $\frac{L}{F}$ GTTDVVVCGHSHCGAVGATVPAVRDWLAHDEPECSDPAD
 L N A D E I Y I I G H H D C G M S S I K P E K I L E K M K K R GV D QK T DD W LGTREVVMVVKHTGCGMLTHDNPTAKADISKKRGEVAAHMD

 L HVKHVVVEGHYGCGGVMAALQPKDLGILENPWLRNIRDVY LKVKEVI I CGHTHCGACSSLYEEDDDPSLIHTKKWNAPKE LLKVKNVVVMGHGRCGGDRAAPGDFDGKWMSLIAPAAAETV
L K V K HV I I VGHY GCK GVVHAAMTGTRVGVVDNWLRHVQDVH
LLGVKEI MVVAHSNCGACHMNGAEMKRLMLERGIHQDLDHW $L G A R L L M V L G H T N C G A V K A T \square P G Q \square G A L Y A P D W P A V N A A G$

 L R V $V$ K H F GAEDV FVVGHMGCGMSNLDTKSVVNKMIERGAGDDVEGW A GAKLI LVLGHEYCGAVKAA DD DVKLGNI TAMGDRTSKNE



L QAE EI LI I GHHGCGMTGLEESATLLENAK DRGVDDDVIE P LQADEVVYVI GHHDC GA GKGLEP DSFL E AVKE Q GI S E EV I D W L G I EHIVVCGHSHCGAMWLKHAEATR RLLKENYSTLEGEP

L GVQ H I I V C GHS DC GAMRAVLDMPTVRA WLR HAEVAAKSMVV $L G V S D V V V C G H S D C G A M K G L V H P E L L Q P M P N V A A W L R H S H$



 $L G V S D V V V C G H S A C G A M T A L A D D H D L T A D P A V A H W L R H A D$ LGAALVVVLGHTRCGAVDAAIRRQQDGFIGSLVASULPAI L S V P L I I I L G H D N C G A V T A T V R D L V E R ITTP SVV L TA R R N G V $N G T P L L M V L G H Q R C G A V K A A H A A L R D G E T L P G H L A D I V T A$

 $L G V R D V V V C G H S H C G A V G A L V R G D D D N G V P A V R D W L A H A A$ L K V K H I MVV VGHY GCS GVNKAL R QERVGVSDNWLRHVRDVA

 L K V P HIVVI CGHTECGAMK GAMNPEGLDSDPHVREWLGYAA L K V $V$ K H V V L L C G H S A C G G A K A A L L G D S R

 | $L$ | K | K | K | K | H | I | V |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| V | C |  |  |  |  |  |  |

UniRef90 UPI000467A76D UniRef90_K9FHA7 UniRef90-Q13MJ0 UniRef90_UPI0004769650 UniRef90_R5TD31 UniRef90_G2I2I0 UniRef90 S2DH40 UniRef90_UPI00036A3921 UniRef90_F8WYD0 UniRef90_D3IHQ7 UniRef90_UPI00037BF349 UniRef90_V9Z727 UniRef90_WOH2Z5
UniRef90_U7V4I5 UniRef90_K9Z6T2 UniRef90_IOYJA2 UniRef90_A0A031HJ72 UniRef90_D2PLS5 UniRef90_UPI00047B2392 UniRef90_E0RBL6 UniRef90_UPI0002E79F57 UniRef90_F5LK69 UniRef90_E1WXA5
UniRef90_LOA2A4 UniRef90_UPI00037166EC UniRef90_L1LXT5 UniRef90_S4XPN1 UniRef90_UPI0004798E6E UniRef90_A1KCN7 UniRef90_G2DW48 UniRef90-D2W1R2 UniRef90_A1TVC2 UniRef90_UPI0004251FA5 UniRef90_B8N3B1 UniRef90-D1W8X2 UniRef90_V9HLD9 UniRef90_S2YF42
UniRef90_UPI0003 UniRef90_B1W4M1 UniRef90_D5MHI8 UniRef90_A7E4C4 UniRef90_14X434
UniRef90_M2UFU7 UniRef90_E9CI77
UniRef90_F5IY55 UniRef90_B6BLP4 UniRef90_E8TKY3 UniRef90_W0V1C1 UniRef90_J2L6T9 UniRef90_A0A017S5A5 UniRef90_D1BNN3 UniRef90_UPI00016C3D9C UniRef90_C4K9E3 UniRef90-U5MLU4 UniRef90-H2BTS7 UniRef90_K7YP76
UniRef90 C4Z718 UniRef90_K6E137 UniRef90_C9ZAU6 UniRef90_J8Q5W2
UniRef90 UPI000473CA3A UniRef90_UPI0003497C98 UniRef90_UPI00036184AB UniRef90_N1MQB2 UniRef90_C3K5T5 UniRef90_B3PSW2 UniRef90_A0A024PR93 UniRef90_G1VF90 UniRef90_UPIO00289B2A9 UniRef90_A6WBH9 UniRef90_UPI00036CA5F8 UniRef90_F7V856 UniRef90_UPI00047B17D7 UniRef90_UPI0004778379 UniRef90_UPI00036F84B1 UniRef90_B0E7M0 UniRef90_E5V3T1 UniRef90_UPIO002885E7C UniRef90_UPIO0036EDA79 UniRef90_W2RLH6 UniRef90_UPIO00312521C UniRef90_E7G6G9 UniRef90_W9BZ59 UniRef90_H1W5K3
UniRef90 A1UMG3
UniRef90_C1A761
UniRef90_J2T2E8
UniRef90_UPI000475B60F






 K K Y D RLVVELNVQE QCVNLDKTAAIQKNLKVHGWVFDVHTG D M Y N K A I K A N V I H G V K Q L R R E S P I L S E K I Q I V G A I Y Hil E S G LE GFKD T H T S V R K TVVDTIK T H P L V P K DVVV R GFI ID S E T G
 $P W P T E V T Q Q H V L T Q L D H L R S Y P F I A G R L R L H G W Y Y T V E T G$
 A HVNDMVREH TRQTAMRI TE QSVLS GEVAV DGVFYHLRDG ENYSHVPE ENVLTRQLENLSTYPI I Q GKLLS HGWVYNIERG

 TSPDEFEAHHVAE IVEHIIDQSRIVNGQVGVVGMRYQLSDG

 LTGFEHIDEAVIGGVNDI RNHPLLPKNLPVHGLVMNPQTG RLLHKNTVVELNV QE QC|INLDKTACVVQQDIKVMGWVFDMETG EKARMRVISNVRS QVALLRENPVVQGSLKVIGAFYEDGS G ARHRRLVELNTIEQVVNVCRTTIVNDALTVHGWTYGVHDG
 L L M R EAVRANVRNSCDHLRHGSRLLERLQIVGAEYALETG EKYKR LVELNVQE QCDNVIKTAEVQKNLKVYGWVFDI H S G LRVDRLCEFNAMQQVVNI CQTSVLDRKVNVHAWCYGLKDG

 L Q L D V L C E L N A I E QVVVNV A Q T TVVMA Q KV T L H G WC Y G L K D G




 HLI RDAVRANVLASANHLRHGSVLNDGLVVVGAEYSLETG


 RLUNRLV E I NVVE QCLLN I QK S Y L AAK GYPR V A G WV Y D L N D G RLHKRLVVELNTEE QCFNVIDKTAVIQKHPKV HGWVFDLHNG ELLLRLTE KL S I M K Q I D N L L T Y P I I K G T L S I H G WYY DI E T G S S T F M T A S E S I R Y S I A N L R T F P CVV K G R L S L H G A WF D I S T G
 LEGFHDTEDSVRNTINTISHHPLVPRDVNLHGYI IDDVTGG

 A R A K V M V Q E N V L LT Q V D R H IVD R C E L N A M H Q V V N V C Q T S V L R E GVV T V H G WC Y S L Q D G L H GFE SVVE D S I R E S V R A I K N H P L I P K DI R V H G LI M D S E T G






 TRVDEFEAR HVVKET GRLLLQRSRII SEKMIDIVGGLTYELAE G
 A R VRAVAMENVVVQLDHLKTHPSVAAKDALHGWFFDIETGG F H G F D TVVE E S V M Q S V S II R N H P L L P K E V K



 GEETDDYRAGCREQLRRALQAEAKHPDLQVSGAMYHLDTGG



 D E P D R A V Q N H V L A Q L L R L R S Y P C V D R G DR LV

 AKMKMLLEQNVILQLNHLKTHPSVAGDLQLHGWVYDIATG LR A V R IVA E M N V E T G V




| UniRef90＿UP1000467A76D |  |
| :---: | :---: |
| UniRet90 |  |
| UniRef90－ |  |
| UniRet90－UP10004769650 | E |
| UniRef90－R5TD |  |
| UniRef90－G21210 | EVVVLD |
| UniRe |  |
| UniRef90－UP |  |
| UniRef90－F8W | EV |
| UniRef90－D31HC | ELEEI |
| UniRef90－UPIO0037BF： | K L |
| UniRef90－V9Z727 |  |
| iRet90＿woh2Z5 |  |
| 77V415 |  |
| UniRef90－K9z |  |
| UniRef90－10YJA |  |
| AOAO31HJ7 |  |
| UP1000 |  |
| UniRef90 UPIooo47B | A |
| E79 |  |
| UniRef90－F5LK69 | KL |
| F1W | KLID ${ }_{\text {A }}$ |
| Ref9o－0A2 |  |
| Ree90－UP1000371 |  |
| $\begin{aligned} & \text { UniRef90_LILXT5 } \\ & \text { UniRef90 S4XPN1 } \end{aligned}$ |  |
| P10004798 |  |
| A1K |  |
| UniRef90－G2 | LVDFFD |
| UniRef90－D2W1R2 | LIKDLE |
| TVC |  |
| iRet90－UPIO004251FA5 |  |
| 俍ef90＿B8N3B1 |  |
| D1W8X2 |  |
|  |  |
| UniRef90－S2Y | A $L$ |
| UniRef90－UP100031890 |  |
| UniRef90＿B14 |  |
| D5MH18 |  |
| A7E4C4 |  |
| 4X43 |  |
| M2U |  |
| Uni |  |
| UniRef90－F5IY55 | 1 L |
| 10W |  |
| B6BLP4 | $N$ |
| 8TKY3 |  |
| NOV1C |  |
|  | K |
| iRef9－J2L6T9 |  |
| Ref90 A0A017S5 |  |
| D1B |  |
| 俍100016C |  |
| 星 |  |
| 5M |  |
|  |  |
| UniRef90＿K7YP76 |  |
| 137 |  |
| 66E137 |  |
| iRef90＿C9ZAU6 |  |
| J805W2 |  |
| UP1000473C |  |
| UP10 | D |
| U100036 |  |
| C3K5T5 |  |
|  |  |
| iRet90－B3PSW2 |  |
| UniRef90－G1VF90 |  |
|  |  |
| UniRef90＿UPI000289B2AS |  |
| A6W |  |
|  |  |
| niRet90＿－F78856 |  |
| niRef90＿UP100047B17D7 |  |
| UniRef90 UP | A |
| UniRef90－UP100036F841 |  |
| UniRef90 BOE7M0 |  |
|  | KVEV |
| niRef90－UP10002885E7C |  |
| niRet90＿UP100036EDA |  |
| iRef90－W2RLH6 |  |
| UP1000312521C |  |
| UniRef90－E7G6G9 |  |
| Ref90－H1W5K3 |  |
| UniRef90 A1UMG3 |  |
| UniRef90－C1A761 |  |
| UniRef90＿J2T2E8 |  |
| UniRef90＿UP1000475B6 |  |



UniRef90-I3ZKL9 UniRef90-HOROA3 UniRef90-UPIO00310D310 UniRef90 UPIO00441165E UniRef90-UPIO0026C81EA UniRef90-K9APR0 UniRef90-A8GBN1 UniRef90_A5FWA5 UniRef90-L1L3K7 UniRef90-M4UMX3 UniRef90_V5BXD4 UniRef90-E7GMQ5 UniRef90-J3A9R6 UniRef90-K0J460 UniRef90-E5WJQ7 UniRef90_UPI000345F0E3 UniRef90-UPI00037D0837 UniRef90_UPI0003FA7220 UniRef90-S9WM28
UniRef90-B5EH65
UniRef90 G6AIE0
UniRef90_UPIO0036984D4 UniRef90-F8KW48
UniRef90-A1VJF0 UniRef90-L1L8H4 UniRef90-G9MPV0 UniRef90-UPI00039F1197 UniRef90-F0T279 UniRef90-UPI000362B5C9 UniRef90-B8KVE3 UniRef90-A4APN0 UniRef90_I3ZKV9 UniRef90-W4CF35 UniRef90_UPI00037B795C UniRef90-I3BXB7 UniRef90-D4DD54 UniRef90-WOBDQ0 UniRef90-S2YNL9 UniRef90-K4IFH8 UniRef90_UPIO0030534FE UniRef90-F4B170 UniRef90-M3BHX7 UniRef90-14YKK4
UniRef90_UPI000421A1BC UniRef90-Q1DEN8 UniRef90-A5EXQ2 UniRef90_UPI00045E868F UniRef90-D9T8E8 UniRef90-W6WAB0 UniRef90-I3ZD95 UniRef90_A6CGK1 UniRef90_C5AE95 UniRef90-L8PIE6 UniRef90_UPIOOO29B2316 UniRef90-B9QTC0 UniRef90-J1SKF4 UniRef90-M3TCH3 UniRef90_UPIO0039EE739 UniRef90_C5EQ41 UniRef90- M3B3U8 UniRef90_UPI0003687713 UniRef90_UPI00047E99D2 UniRef90-H1H601 UniRef90-UPIO0037E7118 UniRef90-TOAVE3 UniRef90-M3JLU5 UniRef90-UPI00041AEE80 UniRef90_Q2YLK1 UniRef90_UPI00041F4D8C UniRef90_F3ZNT8 UniRef90_UPI00026CB533 UniRef90-UPI00037E4C9B UniRef90-R9MZQ9 UniRef90_UPI000408F1C1 UniRef90-A4G7Z6 UniRef90-M1WKF2 UniRef90_UPIO0036A3F13 UniRef90-C5C0V0 UniRef90_U3GWY2 UniRef90_U6B2X5 UniRef90-C6WXD4 UniRef90-10TCR7 UniRef90-B3U3W7 UniRef90_B3U3W7
UniRef90_UPIO0036D9223 UniRef90-S3YNC4 UniRef90-B3Q842 UniRef90_H1Y933 MQKLLEGYQKFQ IEVFFKSLESGQKPSTLFLTCSD
 MSAYKDFEKPNEAYVANFDKGNLPDPPSKKLLIGT VLN LLHEGNQRFSNQVD KKHTAKAQHPDAVLGCDD MPNQAWKRLQEGNRRFVNDERREAVSADQTPFVSLFGCAD MTTINHLLVKNRSWADPNFFPQLAQAQKPHILWIGCSD MEELLAGYRRFRAARWPAQRETGQKPHTLAIACCD MEALKELSQGNRRWRTFHQRKADTTGQQPFALICMCDD MSATAKLISGYQRFRNEYYPKNAEEGQSPKVVI A CSD VLALKKGNERFVYEQVNDTRDGQFPAALSCMD MKVRNLDEILAFNHEFVANQEYEKYTKFPDKRLVVLSCMD ESLELLMEGNKRYANSKKNRDLAHQQFPHAIVLSCMD LDEIDKHNQDFVENKSYQLYTTNPNKRAVI LTCMD
 MEHVLERATRFRGQVFPAQSADGQSPKALMISCAD LLDDII EYNRGFVDRKEYEPYTKFPDKKFVILLTCMD PSFAELMENNRKWADTKFFRRLKVQQPDFLWI GCSD EALQKLVDGNNRYVESKARGKLAKGQQPYAIILSCSD I SEILQYNQRFVAEKGYKPYSGQPDMKLAIVSCMD $A W D A L Q E G N Q R W Q A S Q R R E E L R E G Q A P N V C V L A C S D$
$A$
$A$ MT TSLQHLLDNNCCWAAPDFFSRLVDQQTPKYLWI GCSD SAFARLMEGNKRWVDPTRRKAVAQEQKPYGVIVSCDD MADSADDEI LERNRDFAVTHRPYQFNQGQKPS ILI I TCCLD TAWKSLREGNARFVAGQFRAELAQGQKPTAVIFGCGD MTMLEQVLAANEKFDHSDPQGEVSKYPNRQLAIFTCMD SLPDELI RRNREWASPEYFRGLAADQRPDYFWIGCAD VLDDLMDGNKRF IETKQRNQTVGGQFPKAVVLSCDD EALDRLMRGNARFAVDQLKEHTVEKQEPFAAVLSCAD MT TLKPLLARNRSWASPKYFEQTAQPQQPHSLWI GCSD ALEALQQLSEGNQRF DNNARREVITAGQNPFALD $V L N D L K E G N Q R F D H D N R \square H R T A T T Q H P D A V V L G C D D$
$M Q P L D D N A R L F Q R P E E F A K L A E G Q S P Q V L F I T C S D$ E LLNDLMEGNNRFTSDNFHSRATVGQYPKAVILSCVD EAWETLAEGNRRFVAGERRSTLTSGQEPDAVIFGCSD ALDULKEGNKRFVAAKQVKDTTGGQWPHSVVLSCDD EALDARLKAGNAKFVNAEERANTAGDQSPWATILTCSD FAELADGQSPTTLFI ACAD AQDALARLREGNQRFVLNARRQALVAGQSPFAIILSCSD MPELYQQLLQRNRAWVAQHYFDRLLSGQSPQDFWI GCAD A DAELLSGNRRFVSGQPVHGHSGDQQPYAVVLGCDD MTDFPDRLLAGYRNFMERERYRVLADGQKPHTLLIACCD $P T L N T L K E G U L K F Q R E T Y P A R Q A H P Q K P H T L L I$
$E V L C A D$
$V$
$V$ LSDLFENNETWVDPHFFERLKDQQAPAYLWI GCSD VFDRLLEGNERWVAETRRKSVAAEQKPYGVIVSCDD MAFMDQLLNGLHQFHERSFFESLASGQHPSALFI GCSD MSFPNSLLDGYRNFMSGRRYRQLANGQNPTTLVIACCD A WTVLKEGNQRFVESRDREALVDGQSPHVVLFGCGD $E A F E L L L A G N Q R F V A G T R R T E I A P S Q R P F A V L F G C S D$
$S P D R E M L E F N A G A A A L S S Q S V K R P R K K V A V L T C M D$ AYHHCLDCNKKWAEPNFFPTQAKGQAPPILWLGCAD M $\square$ S ENLEMDLAYNEEFVRTFEQYQYSRYPAKRMVIVTCMD LQFLKEGNQRFQDNEQVNDTSEGQFPFATILSCDD LELLLEGNNRFVNNHQLQETKDGQHPHAVILSCMD ALAELLDGNRRYATDHSRRQLAAAQHPFAVIVGCDD MPQTIEHLFGNNKAWSDPEFFTRLVNQQSPEYLWIGCSD

A $\square$ QF LKEGNERFVNNQQVNETSTGQFPFAVILSCDD DS LLA GYKTFMSEHRYRD LAKGQSPETLVVACCD
 ENFDDLLDANRRYANS APRNFDGGQRPKALVVSCAD KLKKGNETYLNTSRKDTCENGQYPYAVVITCSD LSKIFENNEKWI QSKTFENLNKGQKPEVLYI GCSD AKEALERLREGNYRFVSRARRQEVANGQEPFAIILGCSD $M Q D I R K F I S G F N N F R N T Y F F E A L R Q G Q N P R T M V I A C S D$ A WQNLKEGNERFVSSETRERLTAGQNPHVMLFACSD EAWEALRAGNERFVAGRPRAKLSREQHPFAVI FGCSD WEALQAGNRRFMDHRRRVELTAGQEPHAVVLACSD LLRSHRNFDADNYFQELANQQNPKTMIISCSD
EA VEGNDRFMNNYSHDKT
$\qquad$ ILAYNKEFVANKGYEPFVT TEVFELLAGNQRFVAGTRRAEIAPGQRPFAVLFGCSD TEVLLDLQRGNARFKSAFERRALDMQQYPSVAILGCSD
$M N D L L E R A R S F R D R G Y Y R S L A A G Q A P A A L F I ~ T C S D$
$V F Q L L K E G N Q R F V N H E R \square Y H A Q S G Q H P F A A V L G C M D$ MTSFPKSLDDGYEAFREQSRFREDSEGQSPEVMVI GCCD


## UniRef90_J2dsuo

 UniRef90-13ZKL9UniRef90 - HOROA3 UniRef90-UPI000310D310 UniRef90_UPIO00441165E UniRef90 UPIOOO26C81EA UniRef90-K9APRO UniRef90-A8GBN1 UniRef90-A5FWA5 UniRef90-L1L3K7 UniRef90-M4UMX3 UniRef90_V5BXD4 UniRef90-E7GMQ5 UniRef90-JЗA9R6 UniRef90-UPIO0028850E5 UniRef90-K0J460 UniRef90 E5WJO7 UniRef90-UPIOOO345FOE3 UniRef90-UPI00037D0837 UniRef90 UPIOOO3FA7220 UniRef90-S9WM28 UniRef90-B5EH65 UniRef90 G6AIEO UniRef90_UPIo0036984D4 UniRef90-F8KW48
UniRef90-A1VJFO UniRef90_LLL8H4 UniRef90-G9MPV0 UniRef90-UPIO0039F1197 UniRef90-FOT279 UniRef90-UPIO00362B5C9 UniRet90-B8KVE3 UniRef90-A4APNO UniRef90-I3ZKV9
UniRef90 W4CF35 UniRef90-UPIO0037B795C UniRef90_13BXB7 UniRef90-D4DD54 UniRef90-WOBDQ0 UniRef90_S2YNL9 UniRef90-K41FH8 UniRef90_UPIO0030534FE UniRef90-F4B170 UniRef90-M3BHX7 UniRef90_-14YKK4 UniRef90-UP1000421A1BC UniRef90 Q1DEN8 UniRe90_A5EXQ2
UniRef90_UPIOOO45E868F UniRef90-D9T8E8 UniRef90-W6WAB0 UniRef90_13ZD95 UniR Refo ${ }^{-A 6 C G K 1}$ UniRef90_C5AE95 UniRef90-L8PIE6 UniRef90_UPIOOO29B2316 UniRef90-B9QTC0 UniRef90-J1SKF4 UniRef90-МзТСН3 UniRef90-UPIO0039EE739 UniRef90-C5EQ41 UniRef90-M3B3U8 UniRef90-UPIOOO3687713 UniRef90_UPIOO047E99D2 UniRef90-H1H601 UniRef90-UPIOOO37E7118 UniRef90-TOAVE3 UniRef90-M3JLU5 UniRef90-UPIO0041AEE80 UniRet90_Q2YLK1 UniRef90-UP100041F4D8C UniRef90-F3ZNT8 UniRef90-UP100026CB533 UniRef90-UPIo0037E4C9B UniRef90_R9MZQ9 UniRef90 UPIOOO408F1C1 UniRef90-A4G7Z6
UniRef90 M1WKF2 UniRef90-M1 WKF2
UniRef90-D8RVH2 UniRef90_UPIOOO36A3F13 UniRef90-C5COVO
UniRef90 U3GWY2 UniRef90-U3GWY2 UniRef90-C6WXD4 UniRefefo-lOTCR7 UniRef90-S3BCD7 UniRef90_B3U3W7
UniRef9O-UPIOOO36D9223 UniRef90-S3YNC4 UniRef90-B30842 UniRef90-H1Y933
-868
1

 SRVAAE:IFDQGLGDMFVVRTAGHVVDSSVIGSVEYATEV VYAELGIIQEGEAHIVRNAGGSA KEALRSIIISQRL SRVPVETDFDMSFGDDFCVRVAGNVVNNDVLASI EYACNV

 SRVPPELVFDQGLGDLMTVRSAGEVLDEAVLGSVAYGVLE俍 TRLVEPKAMNMRNGDIVKHVKSAGAIVSHPIMRSILIAAVYE SRVPLESIDGGGDGDMFSLRVAGNVVSDE\| IGSMEYACNL TRLTEPKAMNFKNGDVKILKTAGAIINHPMMRSILVAIHA TRLVEPKALNVRNGDVKI KNAGALVTHPDMRSVLVAVYQ SRINPHLITQTEPGELFIMRNVGNIIPPYEAAAIEYAIQA SRVVPELITQAAPGDLFVCRNAGNIVPPFVSSAVEYAVVA TRLVEPASMNVKNGDVKMIKSAGGVVSTPVMRSIVVAIYE SRVPTNQJTGTEAGQVFVHRNVGNLVDFNLLCVLQYAVNI TRLTEPRALGLKKGDAKIIKVAGGTLYDSVMRSLLVAMYE SRAPDETV FDQGLGDVFVIRTAGETVDNAVLASLEFAVEG

S
P
S
S
T
A
$S$
$S$
$S$
$S$
$S$

S


## 

## の

## S

## 

## T

## A <br> A

inenen
זر

T


## S

S
$S$
$S$
$S$
$\begin{array}{ll}S & R \\ S & \\ S \\ S & \\ S \\ S \\ S\end{array}$

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

SRVP A



## UniRef90 J2DSU0 UniRef90_I3ZKL9 UniRef90-H0R0A3

 UniRef90 UPI000310D310 UniRef90 UPI000441165E UniRef90_UPI00026C81EA UniRef90_K9APR0UniRef90_A8GBN1 UniRef90_A5FWA5 UniRef90-L1L3K7 UniRef90_M4UMX3 UniRef90 V5BXD4 UniRef90_E7GMQ5 UniRef90_J3A9R6 UniRef90_UPI00028850E5 UniRef90 K0J460 UniRef90_E5WJQ7 UniRef90_UPI000345F0E3 UniRef90 UPI00037D0837 UniRef90_UPI0003FA7220 UniRef90_S9WM28
UniRef90_B5EH65
UniRef90 G6AIE0
UniRef90_UPI00036984D4 UniRef90_F8KW48
UniRef90_A1VJF0 UniRef90_L1L8H4 UniRef90_G9MPV0 UniRef90_UPI00039F1197 UniRef90 F0T279 UniRef90_UPI000362B5C9 UniRef90_B8KVE3
UniRef90_A4APN0
UniRef90_I3ZKV9
UniRef90_W4CF35
UniRef90_UPI00037B795C
UniRef90 I3BXB7
UniRef90_D4DD54
UniRef90-W0BDQ0
UniRef90_S2YNL
UniRef90_UPI00030534FE
UniRef90-F4B170
UniRef90_M3BHX7
UniRef90_14YKK4
UniRef90_UPI000421A1BC
UniRef90_Q1DEN8
UniRef90_A5EXQ2
UniRef90-UPI00045E868F
UniRef90-D9T8E8
UniRef90_W6WAB0
UniRef90_I3ZD95
UniRef90_A6CGK1
UniRef90_C5AE95
UniRef90_L8PIE6
UniRef90_UPIO0029B2316 UniRef90_B9QTC0
UniRef90_J1SKF4
UniRef90_M3TCH3
UniRef90_UPI00039EE739 UniRef90_C5EQ41 UniRef90_M3B3U8 UniRef90_UPI0003687713 UniRef90_UPI00047E99D2 UniRef90_H1H601 UniRef90-UPI00037E7118 UniRef90-TOAVE3 UniRef90_M3JLU5 UniRef90_UPI00041AEE80 UniRef90_Q2YLK1
UniRef90_UPI00041F4D8C UniRef90_F3ZNT8 UniRef90_UPI00026CB533 UniRef90_UPI00037E4C9B UniRef90_R9MZQ9 UniRef90_UPI000408F1C1 UniRef90_A4G7Z6 UniRef90-M1WKF2 UniRef90_UPI00036A3F13 UniRef90_C5C0V0 UniRef90_U3GWY2 UniRef90_U6B2X5 UniRef90-C6WXD4
UniRef90-I0TCR7 UniRef90_S3BCD7 UniRef90-B3U3W7 UniRef90_UPIO0036D9223 UniRef90_S3YNC4 UniRef90_B3Q842
UniRef90_H1Y933

## 90


 L GVQNVVVGHSDCGAMKAVLMPTVDKWLQHSASAMQMVP $L G V P$ L $A V M G G H D S C G A V T A T P G G H I D R T V E K D A P S V L E G K$ $L G A P L V V V L G H D S C G A V T A A S E D V V E R V M P S V L A A R S Q G Y$ LGTREI AV FHHTGCGMLTFSTPQLRALVKEDALKAVDADD $V$ G V K L I I V L G H S R C G A I Q S A C D G V
 L R V R RI AV G G S S S C G GIA A L L H D FVVA N WV R DA EA A R K R A V


 L N A E E V M V V GHY DC GMS A I D S K RTME KMLLERHAG DNLHK W $V G T K L I L V V G H S R C G A V T G A C D H V I S P S I D E V R K K N H K G E$ L Q A D EVV YVVGHHHCGMSNLDAAQLMKQMEANGIKQADYEW

 L GADEV FVV G H H DCGMSH LDN P EQTKKK F I E EHS G L N L E K W



 GS L L K E: MVV I H H T D C G A T Y M A D K K Q L NV P LI VVLGHDHCGAVKATIRSIVERVMPSILQGRTEGL LKI QHIVVEGGHSNCGGCRSLYLPTIPHTKKWLELAVPVKN
 IGIRKI IVEGHYGCGGVNAACADHLESGLVDHWDEPURS P A GSKLVLVLGHESCGAVKAA IDGVELGNITSMGEAS SSNS LGVVVLIVMGHSNCGAVSAALPGQIASLYPHLEPAVADAG L H V P L L V L V L G H E N C G A K H P A Y L Q S I V N K L KVSA I L CGHY GCGGVQAA LXQALSSESLNPSPDPTRDES Y N T R L V V V M G T H C G A V Y A T L


 $L G V R D V V \operatorname{CGHSHCGA} V R A S G D P A V R G W L E R T A A R P G D G P$ L GSP LVVVEGHQRCGAVQAACDVVAKHMVEADVPAAMSQE LKVT SIIV CGHSNCGAMMALLDDPDPAKDAKMPTVQS WLR N FGRAVMGHSHCGAIQATLDYLRDGKSEAAAGPKADPE

 LEIDNIVVMGHGRCGMKPLSPGDFIGKWMGLVRPAAEQDQ LKVQHAVI CGHTDCGAMQLDAMPTVVKSWLRNADAA KRVAS
AGSKLVFVVLGHESCGSMLANNDKPAVDHFKDYKGEK TS S KN P


 LKVKNIVVMGHGRCGGIRAALDDFIGRWMSLVRPAAEQ G G

 L K V K Y I V V CGH T Q C G GVVA A S L A N SKL D DL D DWL E P L R T L R

 IL R R $\quad$ R P L L V



 L GVVRDI I V CGHSDCGAMKALLMNWLRH SHAA HSVVS DA YPD

 YKTKLVVVLGHS QCGAI LAT LEE ELVVDRIVPSVAELDKHDHE $L K V A N E I V L G H S G C G G I D A N N T E F I D K W L E V L G H F G E V H K$ L K V E H I L V I G H S R C G G I K A L L L T T D P E K K W S D Y I Q H S H D I D
 L HVPLIVVLGHES CGAVAATQRVLI EKVVPSILEARAMGK LNIN HIVVVMGHANCGGIM LS P GD FI GK WMDVI RP IA Q G LGSKLIV VMGHSSCGAVKAACDDFKD GHDGE DNF DKP S I





## UniRef90_J2dsuo UniRef90-13ZKL9 UniRef90 - HOROA3

 UniRef90-UPI000310D310 UniRef90-UPIO00441165E UniRef90-UPIOOO26C81EA UniRef90-K9APR0 UniRef90-A8GBN1 UniRef90-A5FWA5 UniRef90-L1L3K7 UniRef90-M4UMX3 UniRef90-V5BXD4 4 UniRef90_E7GMQ5UniRef90 J3A9R6 UniRef90-J3A9R6
UniRef90 UPIOOO28850E5 UniRef90-K0J460 UniRef90-E5WJQ7 UniRef90-UPIOOO345FOE3 UniRef90-UPIO0037D0837 UniRef90-UPIOOO3FA7220 UniRef90_S9WM28
UniRef90-B5EH65
UniRef90 - G6AIE0
UniRef90_UPIo0036984D4
UniRef90-F8KW48
UniRef90-A1VJFO UniRef90_LLL8H4 UniRef90-G9MPVO UniRef90-UPI00039F1197 UniRef90-FOT279 UniRef90-UPIO00362B5C9 UniRef90-B8KVE3
UniRef90-A4APNO
UniRef90 $13 Z \mathrm{KV} 9$
UniRef90-W4CF35 UniRef90-UPIO0037B795C UniRef90-13BXB7 UniRef90-D4DD54 UniRef90-WOBDQ0 UniRef90_S2YNL9 UniRef90-K41FH8
UniRef90-UPIO0030534FE UniRef90-F4B170 UniRef90-M3BHX7
UniRef90_-14YKK4
UniRef90-UP1000421A1BC UniRet90_Q1DEN8 UniRet90 A5EXQ2 UniRef90-UPIOOO45E868F UniRef90-D9T8E8 UniRef90-W6WAB0 UniRef90_13ZD95
UniR Refo ${ }^{-A 6 C G K 1}$
UniRef90_C5AE95 UniRef90-L8PIE6
UniRef90_UPIOOO29B2316 UniRef90-B9QTC0 UniRef90-J1SKF4 UniRef90-М3ТСН3
UniRef90-UPIOOO39EE739 UniRef90-C5EQ41 UniRef90-M3B3U8 UniRef90-UP10003687713 UniRef90-UPIO0047E99D2 UniRef90-H1H601 UniRef90-UP100037E7118 UniRef90-TOAVE3 UniRef90-M3JLU5 UniRef90-UPIIOOO41AEE80 UniRef90_Q2YLK1 UniRef90-UP100041F4D8C UniRef90-F3ZNT8 UniRef90-UP100026CB533 UniRef90-UPIo0037E4C9B UniRef90-R9MZQ9 UniRef90-UP1000408F1C1 UniRer90 A4G7Z6
UniRef90 ${ }^{\text {M1WWK2 }}$ UniRef90-D8RVH2 UniRef90-UPIOOO36A3F13 UniRef90-C5COVO
UniRef90 U3GWY2 UniRef90-U6B2×5 UniRef90-C6WXD4
UniRef90 IOTCR7 UniRef90-S3BCD7 UniRef90-B3U3W7 UniRef90-UPIOOO36D9223 UniRef90-S3YNC4 UniRef90-H1Y933
UniRef90 H8GT88
140
150
160
 PVGDNNIRANVLTQLQHLQTHPSVRGQLKLFGWVYEI HTG SEGLTTVDEFVARHVQNLDRDRVDAGDLAVVGTYRLSDG TEVDEFVDEHIRRTVALVGRSATLADEVAVVGLSYRLADG NAEFRGLEESVKVDVKFLEENPLVLPGTKITGWVYEVETG NAETHVTELNVANAMQG|EQSPLLHEDRAMVGAVYDVQTG DDLNKAAHANVQLQLNTLSKTQLIQRGLTLVGCDYDMHTG RFADDPVEESVRVSLENLMTFPWI AGELGVYGFYFDVPSG ARMSATIDANVRLVRSKLAAEPDLAGEVALVGARYDLTSQ ELVQKVADKNVQLSVENIRKQSAVAGDIADGGMYDIETG FQGFETPQEEAERTVSLLRTHPLLPRDVKINGFVIDVVTG LSKADFIVEEVSKENVRNVKQIPQUSEELAVVGAYYDVATGG

 A AHSVVCSENVVVQINHLRTHPSVQGELSLHGWFFEIETG LRGFNDVTESVKASVNLIRSHPLVP DIPVHGLVIDPKTG EREHRLTEESVIQQVKNLSYSSTIQRRPHLHGLVYSLSDG AEGFHDTPRSVRRTVDAI RQHPLVPKDVTVRGFIIDSRTG TTTDDFEREHALQTLKVIHRDPVIQESLGVVGARYRDDDG DLLANAVKANVRADVAQLKETSVVKRK KVIGGYYELVSG LRHDALCEMNVDEQVGNVAMSNVMQQKVEVHGWCYGLKDG | $L R P A D P V D A M I R R T A A D L R S N P L V K K D L T V V S A Y Y S L D T G$ |
| :--- | :--- |
| $Q L V F T D L E Q S V R D D V S L L K A S R I I V R E L R E H G Y U Y D V K S G$ | TSVYELEARHVAETARLLQRSKLVADKIA ASATYRLEDG KVLADVIEENI LEQMKNLLTYPFI QEKLSI YGWYYMIETG

 EFVAKTVENNVALSIDERIRKSPILKEEINVGGGVYHLSTG NDIVVATRRNAKLQANLLAKTPLVRERLK EAAYYDVGTG DAEKDLIDWAVIENVKMLLEYPLVNGGLKVUGGEYHLESG ELITRHAVRANIRASVAHLQAGSTIGORDLVEGCVYDLHSG EQHMDVLEDNVENGLRVLRENSAVERGLKLHGVIYDVGSG
 KFVHDVVEKNVRLTMERVRKSPILKGDIKI IGGVYSLQSG EEVDDFVAEHVDQTCDRLETSQAVRDAVAVVGLTYSLAGG AGAWGPVQRHALAQLERLRTHPCVAERIALHAWYYEVHTG GKPGDFVDNTVRENARRLAGSDIVREQVKVVYAYYDLDSG AEARSMAEQNVLLQDAHLRTHPSVKQELLLQGWFYDIGSG FLMKESVRANI RNSCDNLRHGSRLLERLLIVGAEYSLETG SRWRRLVELNVIEQTHSVALTSTVQKKLAVHGWIFDLRTG ALLNAAVEANVRWSMQQLAKRALREKRVTLDGGVYELNTG DAHPLADRRHVRRTVAALRRDPVDAGELAVEGALYDLATG NNEFMTQAESIIRNSIANLQTFPFVRKKLGIHGAWFDISTG TVDDTMTEQNVLLQMQHLRTHPSVRGALSVSGWVYDIASG EFVKMVIAQNVLGTMDR1RNSPOLKEETMKVGGVYNMQTG LRPDAMI RVHTKLTSAALRSNPLVKKRLAVVSAYYSLDTG LLEDAVVREHVLVQLENLQTHPSVRGDLTLHAWDYGMNTG CMPVDKIEAGVRQSLKNLMTFPFVKEELKKLHGAWFDVGSA SEYFEFVTRHVQETSRVLMRSRIAAKRVKVVGASYRLEDG VEADEILAEHVRHTVRLLLRSRVLAERVAVVGLCYRLVDG EKYADELEANVQNGVEHLKRFPVVERGLEVHGCI YHLEKG LTGFDSVWDSVANSVRDVRNHPLKPANVRVHGLIDDPQTG
 ALPGDWAEHTMRAHTAWVRD A ARADPAVVAARFDLDTG
 ERLNRLCELTVVSQVQSLSRTPVLQKSIAI HGWIYGLKDG
 AAGFDDVEEDVKLTVNTVRCHPLMPRGFTVRGFDDDSHTG ALGDRLVELNVLEQCKHI ANNPDFQKGVELHAFVFDLNTG LDGHDQVRENVVVQTAHLRTHPAVRGELALHGWFFDIHQG FGADPDQFTHLRADVRLLAEHPLIAGRALVGGFHYDVDSG KRYDRLVELNVKEQAINVVKMAAVQRGMQI HGWVFDIKSG ALVHQSVRANI RASVNHLRHGSIQNEGLLIVGAEYSLETG KSCTACEMAGLLASVRNLMTFPWIAGELDLHGWYFDMETG AQVDEFVAKHVKETAQLLQRSSKIAERVKIVCLTYTLADG
 EDSTYKEQLSIRNSINNLRKFPWI QKILYI HGAWFDISSG RHEKTVLNLNVHQIEIRQSDVVRQ AVVGSVYDLTGG LDGFHDTEASVRRTVAGLLLHPLVPKDVVVRGFIDDSRTG SQDREAVASNVENQVEQLAKDPALKDQLAIVGAFYEISSG TELEAHVQCHVAAQLEALRGYPQAAGRLGLHAWYYRVDTA LKP $\quad$ MQAAENVI ANVQNLRNSPVLKKE GI AGGDYDVKTG


| UniRef90_J2DSU0 |  |
| :---: | :---: |
| UniRef90-I3ZKL9 | CI DTY |
| UniRef90-H0R0A3 | HVE |
| UniRef90_UPI000310D310 | TVNQV |
| UniRef90-UPI000441165E | K A |
| UniRef90-UPI00026C81EA | K |
| UniRef90-K9APR0 | H T T |
| UniRef90-A8GBN1 | F L NVLE |
| UniRef90-A5FWA5 | T L R |
| UniRef90_L1L3K7 | R V HLL K |
| UniRef90-M4UMX3 |  |
| UniRef90-V5BXD4 | K V E F |
| UniRef90_E7GMQ5 | R L E |
| UniRef90-J3A9R6 | R L D |
| UniRef90-UPIO0028850E | EVILLD |
| UniRef90-K0J460 | K L D |
| UniRef90-E5WJQ7 | K L D |
| UniRef90-UPIO00345F0E3 | K |
| UniRef90_UPI00037D0837 | R |
| UniRef90-UPI0003FA7220 | K L D |
| UniRef90-S9WM28 | S L K EL |
| UniRef90-B5EH65 | K V T |
| UniRef90-G6AIE0 | EL E |
| UniRef90-UPI00036984D4 | V |
| UniRef90-F8KW48 | K V V L D |
| UniRef90-A1VJF0 | LVKDME |
| UniRef90-L1L8H4 | RVEVL ${ }^{\text {V }}$ |
| UniRef90_G9MPV0 | LVR R |
| UniRef90-UPI00039F | NV HL |
| UniRef90-FOT279 |  |
| UniRef90-UPI000362B5C9 | K V N |
| UniRef90-B8KVE3 | R L T |
| UniRef90-A4APN0 |  |
| UniRef90-I3ZKV9 | K V T |
| UniRef90-W4CF35 | K V T WL |
| UniRef90-UPI00037B795C | HL K E |
| UniRef90-I3BXB7 | LV D F FD |
| UniRef90-D4DD54 | K L R L E |
| UniRef90-W0BDQ0 | EVKFKD |
| UniRef90-S2YNL9 | A |
| UniRef90-K4IFH8 | K V E |
| UniRef90-UPI00030534FE |  |
| UniRef90-F4B170 | E |
| UniRef90-M3BHX7 | A V R |
| UniRef90-14YKK4 | MVDFID |
| UniRef90_UPI000421A1BC | E V M V L |
| UniRef90-Q1DEN8 | AV D F F N |
| UniRef90-A5EXQ2 | N |
| UniRef90_UPI00045E868F | Q V R |
| UniRef90_D9T8E8 | EVTLL |
| UniRef90-W6WAB0 |  |
| UniRef90-I3ZD95 | DVR\\|FD |
| UniRef90-A6CGK1 | EVDLLE |
| UniRef90_C5AE95 | R M R |
| UniRef90-L8PIE6 | R VEVLD |
| UniRef90_UPIO0029B |  |
| UniRef90-B9QTC0 | EL R V M D |
| UniRef90_J1SKF4 | ELWVMD |
| UniRef90-M3TCH3 | QV HL VE |
| UniRef90_UPI00039EE739 | R A DVV |
| UniRef90-C5EQ41 | EL |
| UniRef90-M3B3U8 | ELE |
| UniRef90_UPIOO03687713 | K L D |
| UniRef90-UPI00047E99D2 | TVS |
| UniRef90-H1H601 | KVELI |
| UniRef90-UPI00037E7118 | LVSLL |
| UniRef90-TOAVE3 | L I R DL |
| UniRef90-M3JLU5 | L R R D |
| UniRef90_UPI00041AEE80 | $\mathrm{R} V \mathrm{D}$ |
| UniRef90-Q2YLK1 | ELWVMD |
| UniRef90_UPI00041F4D8C | KLSEV |
| UniRef90_F3ZNT8 | K 1 DDLE |
| UniRef90-UPI00026CB533 |  |
| UniRef90-UPI00037E4C9B | L L |
| UniRef90-R9MZQ9 | HVEFLD |
| UniRef90_UPI000408F1C1 | K L |
| UniRef90-A4G7Z6 | AVEFFD |
| UniRef90-M1WKF2 | E |
| UniRef90_D8RVH2 |  |
| UniRef90-UPI00036A3F13 |  |
| UniRef90-C5C0V0 | RAKLV |
| UniRef90-U3GWY2 | LAEP |
| UniRef90-U6B2X5 | E L W |
| UniRef90-C6WXD4 | K V K |
| UniRef90_10TCR7 | ELT |
| UniRef90-S3BCD7 | $S$ AQVV |
| UniRef90-B3U3W7 | 1 V D |
| UniRef90-UPI00036D9223 | EVKEL |
| UniRef90-S3YNC4 | K V D |
| UniRef90-B3Q842 | D |
| UniRef90-H1Y933 | LVT F |
| UniRef90_H8GT88 | A $\mid$ V $\mathrm{DF} \mathrm{F} \mathrm{L}^{\text {c }}$ |

UniRef90 UPIO00464CC07 UniRef90 G0SAJ8 UniRef90-UP10003735CAA UniRef90-UPI00039EED9F UniRef90-UP100035ECE2D UniRef90-UPIOOO3AA97CB UniRef90-R5FRU7
UniRef90_J2JVU5
UniRef90-F7VAP5
UniRef90-F7VW42
UniRef90-M2W6A2
UniRef90 ${ }^{-}$W0E9E2
UniRet90_L8EFP4
UniRef90-F8ETQ7
UniRef90-UPI000377DF71
UniRef90-A0A015MJT1
UniRef90-F3YXTO
UniRef90_UPIo001FFE804
UniRet90-K6VN43
UniRef90-B9JV33
UniRef90-E1SEX8
UniRef90-W6RTE5
UniRef90-V6JQQ0
UniRef90-N1PQK8
UniRef90-R7EZ13
UniRef90-M1NVA6
UniRef90-UP100046AD74B
UniRef90-UPIO0026C7DB6 UniRef90-GovN99 UniRef90-A6UPU3 UniRef90-UPIO0037E5DAC UniRef90-V6EYR7
UniRef90-T1XL33 UniRef90-15BGQ1 UniRef90-B8CXX3
UniRef90 U7PVB9 UniRef90-Logs34 UniRef90-G7GUC4 UniRef90-B2T2W1 UniRef90-W6XJH5 UniRef90_D7WA05 UniRef90-G8×5×3 UniRef90-UPIO0041BB702 UniRef90 E4PFW2 UniRef90-A0A031K4D1 UniRef90-R7ZQ98 UniRef90-H3NWK0 UniRef90-UP100035DC17C UniRef90-M1NZ72 UniRef90-D5SQ21 UniRef90-UPIo00381A490 UniRet90_A7HXN5 UniRef90-UPIO003602321 UniRef90_H1KZN5 UniRef90_A1V826 UniRef90-UPIO0045E5A54 UniRef90-UPI000455E3D6 UniRef90-UPIO00469D3D0 UniRef90-UP1000288A5E7 UniRef90-D8JWT1 UniRef90-A0A022MJR9 UniRef90- N6Z1F0 UniRef90-UPIO002D50DB5 UniRef90-UP100036DFECF UniRef90-UPI000378D081 UniRef90-A0A023RVV8 UniRef90-M2SB86 UniRef90-B2VWC6 UniRef90 UPIOOO47D2046 UniRef90-UPIOOO47567E0 UniReffo-O89X22 UniRef90-C5M9L8 8 UniRef90K8NSB3 UniRef90-J2PGS7 UniRet90_M7XWA9 UniRef90_Q3AGBO UniRef90_UPIO00475373C UniRet90_U1IEK9 UniRef90-G0AG18 UniRef90_UPIO003F49793 UniRef90-UP10004671C29 UniRef90-A5CVM8 UniRet90-Q1NBG6 UniRef90-N1JGG8 UniRef90-D3FXY7 UniRef90-GOL3Y5 UniRef90-UPIOOO37C2109 UniRef90-Q24XC5 UniRef90-B9KE21 UniRef90-K2QJ33
UniRef90_S3CGB9

AQEALVRTREGNARYVAGERRSQLTDGQAPSATVLGCSD EAWQVLRAGNERFVSGEDRERLVMGQHPHVVLFGCGD MTYPKRMLVENDAWRDPAYFRRLASNQQPNVLWIGCSD MNFNDVMLERNARFAETEFSPELKMLPSTGTVVVGCVD MAMETWQHLLEGNERFANSARLQELRAGQEPYAAVLACSD NALETLKEGNQRFVNNAKFHRTRDGQWPFATILSCIDD MGQLDHLLEKNRAWADGQFFTRLSNQQAPEYLWI GCAD

VLNHLIEGYRRFANRARWDELGQGQSPEVMVIACSD
A MQKLIDGVAKFKSEVVPEHLATGQSPDVLFITCAD MDSVTNILQHNEKFVQTKEYEAYSPFPDKKLVILTCMD MTRLERLLSGYRSFIKNHFYQQLADGQKPEVLVIACCD MRTLFAGLHQFHKEVYEKQRFEKLSSGQKPVALF GCSD MDA $\square D S$ SEGYRSFRAGTYKQNAAKRQQPKALI ACCD

LKEGNDSFRTEAPYRELARGQAPFCVLVGCSD
पSHTFDNNDAWVDPQYFSRTADQQAPEYLWIGCSD A WSALDEGNARFVRGEHRAELSTEQNPFAVVFGCSD DDNLFKRNALWMDPTFLPTLDKGQSPKVLWIGCAD GQDLTDGNESFKDRKFKKYVENGQNPKVLFI ACSD MKSFPDSLSDRYRRFKFRHFTPNAAHGQDPQTMIISCSD MRDLAEGVSRFQRHVHPAKFARLAGHHAPHTLFIGCSD HLFDYNQAWSDPDFFEKLSHLQSPEYLWIGCSD MKKL GEGIVKFRQGDFENHLKEGQNPHTLFIS VITLLKEGNERFVKNERLERAD MADFTLKEGNERFVKNERLQRADEGQHP仏AVLGCMD MADFQTLLEGYRRFRETGRYDELASGQSPGTMVIGCSD HLTPLLTGNTGYRNPTFFTTLABGQTPSTLWI GCAD NRLVKGNGRFAQEHRFRKLATGQKPKVLLI MVTFPKHLLEGYQAFAEQTRYRELSKG

## STGQDYL HN <br> PD $\square$ RDA

ASSELI GELA
DEALMAGNRRFAEAWRRGKLASSQNPEDLIUSCCD MLYETLDQQIKNYADWVLRRQRG MKFFKQLIDGYRTFAEQSRYRDLS EDLFORNREWADPGFFKKLASGQPETMVIGCCD
LDALMWSNLK WAEPKFFEATTEGQAPKYLWMGCAD MNSLNHLLVRNRSWADPSYFSQLAKSQHPEILWTGCSD MQAKKRLIDGNQRFDDGTTTLHHQLPQKPFALLGCSD NDFDYADKSNDAWANYKGHQNPAAGQSPSULWLGCSD

ALINFLKEGNERFQNNEQVNDTSEGQFPFATLLSCID RLLRGYATFRDQRRYKVLATGQRPRTMILGCSD
VTEKLLKGDVNFRGDFFEELKDNQKPHTLFTCSD
MKDLIEGALKFMQEDFKEHLKNKQNPHTLFIGCAD


UniRef90_UPIO00464CC07 UniRef90_G0SAJ8 UniRef90_UPI0003735CAA UniRef90_UPI00039EED9F UniRef90_UPI00035ECE2D UniRef90_UPI0003AA97CB UniRef90_R5FRU7 UniRef90_J2JVU5 UniRef90_F7VAP5 UniRef90-F7VW42 UniRef90-M2W6A2 UniRef90_L8EFP4 UniRef90_F8ETQ7 UniRef90_UPI000377DF71 UniRef90_A0A015MJT1 UniRef90_F3YXT0 UniRef90_UPIO001FFE804 UniRef90_K6VN43 UniRef90_B9JV33 UniRef90-E1SEX8 UniRef90_W6RTE5 UniRef90_V6JQQ0 UniRef90-N1PQK8
UniRef90-R7EZI3 UniRef90-R7EZI3
 UniRef90-UPIO0026C7DB6 UniRef90_G0VN99 UniRef90-A6UPU3 UniRef90-UPIO0037E5DAC UniRef90-V6EYR7 UniRef90-T1XL33 UniRef90-15BGQ1
UniRef90_B8CXX UniRef90-U7PVB9 UniRef90-LOGS34 UniRef90-G7GUC4 UniRef90-B2T2W1 UniRef90-W6XJH5 UniRef90 D7WA05 UniRef90-G8X5×3 UniRef90-UPIO0041BB702 UniRef90-E4PFW2 UniRef90_A0A031K4D1 UniRef90-R7ZQ98 UniRef90-H3NWKO UniRef90-UP100035DC17C UniRef90-M1NZ72 UniRef90-D5SQ21 UniRef90_UPIO00381A490 UniRet90 A7HXN5 UniRef90-UPIOOO3302321 UniRef90-H1KZN5 UniRef90-A1V826 UniRef90-UPIO0045E5A54 UniRef90-UP1000455E3D6 UniRef90-UPIOOO469D3DO UniRef90-D8JWT1 UniRef90-A0A022MJR9 UniRef90- N6Z1F0 UniRef90-UPIO002D50DB5 UniRef90-UP100036DEECF UniRef90_UPIOOO378D081 UniRef90-A0AO23RVV8 UniRef90-M2SB86 UniRef90-B2VWC6 UniRef90 UPIOOO47D2046 UniRef90-UP100047567E0 UniReffo-O89X22 UniRef90-C5M9L8 UniRef90K8NSB3 UniRef90-J2PGS7 UniRef90_M7XWA9 UniRei90_O3AGB0
UniRef9O-UPIO00475373C UniRef90-U1IEK9 UniRef90-GOAG18 UniRef90-UPIO003F49793 UniRef90_UPIO004671C29 UniRef90 A5CVM 8 UniRef90_O1NBG6
UniRef90-N1JGG8 UniRef90-D3FXY7 UniRef90-GOL3Y5 UniRef90-UPIOOO37C2109 UniRef90-Q24XC5 UniRef90-B9KE21 UniRef90_K2QJ33

UniRef90_UP1000464CC07 wrase mesa UniRef90-UPIOOO3735CAA
UniRef90-UPIO0039EED9F UniRef90-UPIO0035ECE2D UniRef90-UP10003AA97CB UniRef90-R5FRU7 UniRef90_J2JVU5 UniRef90-F7VAP5 UniRef90-F7VW42 UniRef90-M2W6A2
UniRef90 WOE92 UniRef90-L8EFP4 UniRef90-F8ETQ7 UniRef90-UPI000377DF71 UniRef90-A0A015MJT1 UniRef90-F3YXTO UniRef90_UPIo001FFE804 UniRef90 K6VN43 UniRef90 B9JV33 UniRef90-E1SEX8 UniRef90-W6RTE5 UniRef90-V6JQQO UniRef90-N1PQK8 UniRef90-R7EZ13 UniRef90-UP100046AD74B UniRef90-UPIO0026C7DB6 UniRef90-GovN99 UniRef90-A6UPU3 UniRef90-UPPOOO37E5DAC UniRef90-V6EYR7 UniRef90-T1XL33 UniRef90-I5BGQ1
UniRef90
B8CXX UniRef90-U7PVB9 UniRef90-LOGS34 UniRef90-G7GUC4 UniRef90-B2T2W1 UniRef90-W6XJH5 UniRef90-D7WAO5
UniRef90
G8 UniRef90-UPIO0041BB702 UniRef90-E4PFW2 UniRef90-A0A031K4D1 UniRef90-R7ZQ98 UniRef90-H3NWK0 UniRef90-UP100035DC17C UniRef90-M1NZ72 UniRef90-D5SQ21 UniRef90-UPIO00381A490 UniRef90 A7HXN5 UniRef90-UPIOOO3302321 UniRef90-H1KZN5 UniRef90-A1V826 UniRef90-UP100045E5A54 UniRef90-UP1000455E3D6 UniRef90-UP1000469D3D0 UniRef90-UPIO00288A5E7 UniRef90-D8JWT1 UniRef90-A0A022MJR9 UniRef90- N6Z1F0 UniRef90-UPIOOO2D50DB5 UniRef90-UP100036DEECF UniRef90-UPIOOOO378DE81 UniRet90-M2SB86 UniRef90-B2VWC6 UniRef90 UPIO0047D2046 UniRef90-UP100047567E0 UniReffo-O89X22 UniRef90-C5M9L8 UniRef90K8NSB3 UniRef90-J2PGS7 UniRef90_M7XWA9 UniRef90 Q3AGBO UniRef90-UPIOO0475373C UniRef90_U1IEK9 UniRef90-GOAG18 UniRef90-UPIO003F49793 UniRef90-UP10004671C29 UniRef90-A5CVM8
UniRef90
O1NBG UniRef90-N1JGG8 UniRef90-D3FXY7 UniRef90-GOL3Y5 UniRef90-UPIOOO37C2109 UniRet90-O24XC5 UniRef90-B9KE21 UniRef90_K2QJ33
UniRef90_S3CGB9
 LKVKHIVLCGHTNCGGAMAALSDKRVGGVLDTWLLIPLKTV SGTPLVVVGHQRCGAVEASYTSHRDGKPLPGNLEAIARA LGVPLIVVMGHESCGAVAAAAKALDEGADPEGWQRALVER LGVRDVVCGHSHCGAVNASSLPAVQGWLEHAAAQPETTT LLGUQEDMLIHHTDCGAGKMHGHHMEELIRQRIPEDKICQW GVSAIIVCGHSDCGAMKADSMPTVATWARNAEAARASMG LKVKHIVLCGHSACGDTWLLPDKTVRYNHAEELDATTDEK LDVPLIVVLGHDGCGAVKATPDGFIRSVIERVAPSILMGR LEIENIVVCGHSNCGGCKSLYNEDPHTKKWLELAYEAKTK GVTDVIVCGHSGCGAMTAAGWLDAAGPPTDPARPAAGTE LEVSDILVMGHGACGGMKASDEGLLDQARDKVVAEHGHGP LINAAEVLVLGHHKCGMTKANPEQVLSHMTERGAGFNQNCW GVEMVVVLGHSQCGGIGAVDGGVHGAGGEFIGGWMSDCD LGIPLLVVLGHSHCGAVKAAVSVAAGGDTPAPAVCSGEGD LSVPLIVVLGHDSCGAVKAAIRHIVERVTPSVISAHRAGA LKVENIVMGHGRCGGIRAAPGDFIGKWMNLKPAAEQDQ LGVKRLVLSGHYGCGGVEAADQTLRDDVQHGLAEMPSPPG SGTKLIVVLGHGNCGAVKATMPGQISALYAPDRPAVDVAG LKVTDIVVCGHTSCGGVAAWLQPLRLLRERFSEEMEGMEV LGVNEIMVIGHTRCGVQGMNAEEMFGLMRKRGDSEEHDRW LVVDVVVMGHESCGAVKATARVLVEKVAPSILEARSQGM SGAKLVMVLGHEYCGAIKSADDGVKLGNDTKLGKSDSSNP AGSKLIVVLGHTNCGAIKGACDDLLDKDKPALSLEKSFKE LHVHDIIVMGHDDCGMLKTTADSLCRHMAEEGIDDAADQW LGVENI MVIGHTDCGMAAASFEDVRKKMVERGANPNFTPD AGSKLIVVLGHSKCGAVKGACDHLLDKDEPAGKAVAYAGD LKVGHIIVLGHARCGGVRADQSDFIRGWMQALTLSAGQPD LKVERIVVCGHSHCGAI RAAYEGVADRLADEALLPVRPSP LQVQHVLVVGHYGCGGIQAAMAPETHDAVGEWLAPVRSLD LQVKNIVICGHSNCGGCKALFMDEKDNDTPYTQKWVQLVE YGTRLVVVLGHSQCGAVLATLDELVDRIRPAVVPGRADPD LSVPLIVILGHDSCGAIAATIRDVVEKVAPSILAGRSEGLD LQVEHVIVCGHHCCGGVQAALRPPIGGI RRLSALHSAEFE DGARNLVLLQHTDCGII GCHRHAPALLARHLDVETDALD पGVSLIVVLSHESCGAIGAAATSFVEKI APSV EAKKLEH AGSKLIVVLGHTKCGAVKGACDHVEMGNLTELLSKLLQPAV LKVKHVLVVGHYGCGGVRAALFGLI SNWLRHVQDVRDRHQ LKVKEVVVMGHGLCGGCKAALTQDLKDAEIGHGGFVADWD AGSKLIVVLGHTKCGAVTSACNRVKDGNDTALMHKIKPAI
LGVKHIVIVGHTDCGAIKGAMAPQNLDAIPRVQDWVDNSR KGVKHVVVGGHDCGAIKGAMAPQNLDAIPRVQDWVDNSR LEVKIVVFGHAHCGYKSLSSKDF GQWIDLLAPAAQTMP LNVSDIVVCGHSQCGAIKALLNPASTEKLPMVRQWLLHAE LRVQHILVVGHYGCGGVKAALDGARVGLVDNWLGHVGPAE LEIADIIVMGHYEAGCGHPPEGDFISNWMSETAIRTKHGD LGCPLIVVLGHQSCGTFPGVIGEMVQPWIPAVLAARGQSS LKVKHVMVVGHYGCSGVNAALHNRRVGLADNWLHHVQDVE LNAPLVIVLGHDSCGAVGAAAEALTTGRMPDRADNADSAD IVGCEHVAIVGHTQCGGALACLHAALTKLATSLQLSGKPHH LKVTDI IVCGHSHCGAIE SLYKDIDSUNLLHVKRWLDDG LETPLIVVMGHEDCGAVISAYDMLNNRHNLTGLLKKIETS LNGRHLIVIGHSGCGGIIKAA WDEKAAVQTEAHFVIRWMS LKVKHVMVVGHYGCGGVKAALEGMVDGWLRHVAVDTLPPE VGVENIVVCGHSNCGGCAACSYPURDKVMSEVGE EVGPE LGGVSDVVVCGHSGCGAMKGAMKPESLEPMPNVAAWLRHAA KGSKVILVLGHTDCGAVTSACQRLQQKQDSDVKEMPHDQY
KVVSDIFVVGHGGCGGCQAALTRDFHGND GEGFFDASWI GVEHIVVMGHSDPHYTPLIS GDFIGHWISLI EPAAEKLG GVVRVTVCGHSGCGAVKAMMAGDSDGDLGRWLARSGPEM
 LKVKHIVVLGHAQCGG| KASPGDFIGKWMSEPRKPGESQH LG| DRDVVCGHTGCGGIQALSEPUPRQQEAHCGRWVEYEE LEVKHIVVLGHYANKAKPLSPGDFIGKWVSLVGQAESKAG LKTPLLVVMGHSGCGAVTAAMDVNPLTPSLDRLDQPDREN FGTEEIIIVNHTECGMMSAKTETLVQAMKDKVGPNAFGRW LKVKNIVVLGHAQCGGMRAFVDKIKPATPGDFIGKWMQMF LKVKHVFVVGHYGCSGVHAALTKRRVGLADNWLRHVEDVH VGCTHITVAGHTCCGGCIAAYESPRTGNPDTHLHHELPEE
 LGVRDIVVCGHSDCGAMWLRHSHAAQKVCRDSYPGDUSDA LKVNHIMLCGHTCCGGATAADDDVRVGGVDDTWITPKDTK LKVADI LILGHTSCGGVRAAAEGNTEDALAPWLASVRECE AGTKLIVVLGHTSCGAIKGACDHARLGNLTALINKIEPAV AKVRNLVVMGHGRCGGITAYMAERDAPGMQAPNDY SKWK

 UniRef90- UPI0003735CAA UniRef90_UPI00039EED9F UniRef90 UPI00035ECE2D UniRef90_UPI0003AA97CB UniRef90_R5FRU7
UniRef90_J2JVU5 UniRef90_F7VAP5 UniRef90_F7VW42 UniRef90_M2W6A2 UniRef90 W0E9E2 UniRef90_L8EFP4 UniRef90_F8ETQ7 UniRef90 UPI000377DF71 UniRef90 A0A015MJT UniRef90-F3YXT0 UniRef90_UPI0001FFE804 UniRef90_K6VN43 UniRef90-B9JV33 UniRef90_E1SEX8 UniRef90_W6RTE5 UniRef90_V6JQQ0 UniRef90_N1PQK8 UniRef90_R7EZI3
UniRef90_M1NVA6 UniRef90_UPI00046AD74B UniRef90_UPI00026C7DB6 UniRef90_G0VN99 UniRef90_A6UPU3 UniRef90_UPI00037E5DAC UniRef90_V6EYR7
UniRef90_T1XL33 UniRef90_15BGQ1
UniRef90_B8CXX3 UniRef90_U7PVB9 UniRef90 LOGS34 UniRef90_G7GUC4 UniRef90_B2T2W1 UniRef90_W6XJH5 UniRef90-D7WA05
UniRef90 G8X5X3 UniRef90_UPI00041BB702 UniRef90 E4PFW2 UniRef90_A0A031K4D1 UniRef90_R7ZQ98 UniRef90_H3NWK0 UniRef90_UPIO0035DC17C UniRef90_M1NZ72 UniRef90_D5SQ21 UniRef90_UPI000381A490 UniRef90_A7HXN5 UniRef90_UPI0003602321 UniRef90_H1KZN5 UniRef90_A1V826 UniRef90_UPI00045E5A54 UniRef90_UPI000455E3D6 UniRef90_UPI000469D3D0 UniRef90_UPI000288A5E7 UniRef90_D8JWT1 UniRef90_A0A022MJR9 UniRef90_N6Z1F0 UniRef90_UPI0002D50DB5 UniRef90_UPIO0036DFECF UniRef90_UPI000378D08 UniRef90_M2SB86 UniRef90-B2VWC6 UniRef90_UPI00047D2046 UniRef90_UPI00047567E0 UniRef90_Q89X22 UniRef90_K8NSB3 UniRef90_V5SD13 UniRef90-J2PGS7
UniRef90_M7XWA9
UniRef90_Q3AGB0 UniRef90_UPIO00475373C UniRef90_U1IEK9 UniRef90_G0AG18 UniRef90_UPI0003F49793 UniRef90_UPI0004671C29 UniRef90_A5CVM8 UniRef90_Q1NBG6
UniRef90_N1JGG8 UniRef90_D3FXY7 UniRef90_GOL3Y5 UniRef90_UPI00037C2109 UniRef90_Q24XC5 UniRef90_B9KE21
UniRef90_K2QJ33

R A HRDV
 V TP S D Y E R $\square H$ VT E T I G QL M H E E I AA A G R I G V V GLLR Y VL G D G PLSSPDVAEAHAVA QLERLHTHPCDAERVVVVAWYYEVHTG


 NEGLS TVVDEHVVETGSLI MRSRII A DKV A I VGVVTYALISDG







 LKPDAMIRDHTKQTSAALRSNPMVRKDLAVVAAYYSLDTG ER V K K C C E K N V L A G M E N L E R D P T V


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

R EAAEKVAEVNVLRMVEEI KRSHDLREEIVGVGAMYDVETG

 P LK K K VLK ENNI LQMKNL LTYPYIKNKLKIYGWYYDI GNG FLAFPDLDQAVRDDVLFLKKHSAIPDDVTVSGWVYSVETG ALVHQAVRANVLAAASHLRHGSALLEKLVVVGAEYSLETG SRVDEFEARHVVETGRILMRSRII AGKLAVGGTYNLDQG
 A DRAVIEETHATVTAEHLRHRPDVEDRIAIVAARYRLEDG

 SMERAMEQAAVKVSLDNLMTFPCVQGDLKLRGAFFAISDG
 A A M
 QRWDRLCEDNALEQAHNVCRTTVLQQHVEVHACCYGLKDG LLEKRLMEQGAVVQSLDMLRTFPFIAEKLVRLHGWFYGIGTG

 SAGGDPV DEHVRHTVRMLQSYSVAQGRCAVVAGVEYGLADGO DALTTLI E ENVRVQVENVCASAPIGEGVAVHGWDYEVGTG KEAKLHVEKSI RKQLKNLLTYPEVREKLSLRGWYYKIATG IKNSNSIEEAIKLNIENVKKDSIISEKVKIVKGYYSL DG
 LRHDRLCELNVLEQVVNVAQTVVVQQRVTVHGWIYGLKNG L REWMMEQGNVVEQLKHLLDTYPYI KEKVKLSGWHY ILI K TG AFVNRVTELNIANTLQTMKRSSVIKDEIAMVGAVYDVSSG AARSIVCEENVRVQLDHLKTHPSVAGEVRLHGWYFEIESG
 A RAVRLAELDNVRRSVDALREHPAVRKAl ALHGLIVDI GVG PRSERLAKASVVQQLANLRGFPYIKGRLKLHGAYFGIADG SDERACCVANVARQVTNLRTYPVVREGLTLTGLYFDLAEAB


 DPSAPDEYAVVKQSLENLMTFPFVKERVQLHGAHFGVATG

 QKHERYCELNSMEQVANICRTTIVQDALTIHSWVYGVRDG S S V D D LI I E A N V K L N NV E NVVA N S QTMMQ E QVVYV H G WM Y D L G S G E HLLK K A V Y A NVVQVQLIN K L S K T A I I Q K A L T L F G C I Y D M H T G ELMNKAVKVNI I NSVVKQLQQSTII K EKLKIIGANYSUAS G

 GLGEAAS IK N VKTQMERLVKHPVYQQGVSIVGAVFHVES G EAVKEPADENVLLTDDNVRKSPVLAEEIKIIGGAMYDLSNG
 M R A WM T E K M N L L V G N S T M T P A E S I R N S I A N L R R T F P Y V R G K L R R I H G A WF D I

| UniR |  |
| :---: | :---: |
| UniRef90-GOSAJ8 |  |
| UniRef90-UP | KV |
| UniRef90 UP | H V |
| UniRef90 UPI00035EO |  |
| iRef90 UPIO003AA97CB |  |
| R5 |  |
| Ref90_JJVVU5 |  |
| F7 |  |
| UniRef90-F7VM | R |
| UniRef90- ${ }^{\text {a }}$ | R M ${ }^{\text {c }}$ |
| UniRei90-WOEGE2 |  |
| Ref90-L8EF |  |
| -8E |  |
| -10 |  |
| AOA |  |
| Ref9- | ${ }_{\text {E }}^{\text {A }}$ LSVY |
|  |  |
| UniRef90- $\mathrm{BgJV33}$ | ELWVMD |
| UniRef90-E1SEX8 |  |
| W6RTE5 |  |
| V6JQ | QVE |
| N1P0 |  |
| R7EZI3 |  |
| UniRef90-M1NVA |  |
| niRet90-UP1000 |  |
| iRet90_UP10002 |  |
| Gov | ERVVD |
| UP100037 |  |
| V6EYR7 |  |
| RRe | EVGVFD |
| UniRef90-15BGQ1 |  |
| IRet90_88CXX3 |  |
| J7PVB9 |  |
| -0GS3 |  |
| UniRet90-G7GL |  |
| UniRef90_B2T2V |  |
|  |  |
| Ref90_DTWA05 |  |
| niRet90_G8×5×3 |  |
| P10004 |  |
| UniRet90-E4PFW2 |  |
| UniRee90 A0A031K4D1 | V |
| UniRef90_R7ZQ98 |  |
| niRee900-H3NWK |  |
|  |  |
| NRef90_M1NZ72 |  |
| 5s |  |
| UP1000381 A7HXN5 | L |
| iRef90-UPIOOO36023 | DVEWME |
| UniRef90-H1 KZN5 |  |
| UniRef90-A1V826 | R |
| iRef90-UP10004 |  |
| UP1000 |  |
| UniRef90 UP1000469D3D0 |  |
| UniRef90_UPI000288A5E7 | K V |
| D8JWT1 |  |
| AOAO22MJR |  |
| RRef90_N6Z1FO |  |
| 俍et90_UP10002D5 |  |
| UniRef90_UPP000366FECF |  |
| 哖 | A L La |
| Ref90-M2S |  |
| UniRef90-B2V | QL |
| iRef90-UP100047D2 |  |
| iRef90-UP100047567 |  |
| Q89 |  |
| C5M9L8 |  |
| UniRet90_K8N: | SLSLID |
| 5SD13 | Q |
|  |  |
|  |  |
| iRet90_Q3AGB0 |  |
| UniRef90 UPIO00475373C |  |
| UniRee90-U1 |  |
| UniRei90-UP10003F497 |  |
| UniRef90-UPIO004671C29 |  |
| UniRef90-A5CVM8 | M |
|  |  |
| 1JGG8 |  |
|  | ElEWMN |
| GOL3Y5 |  |
|  |  |
|  |  |
| - ${ }^{\text {BMKE21 }}$ |  |
| K2QJ33 |  |
| S3C |  |

UniRef90 C5ZYQ6 UniRef90-UPI000424227E UniRef90-A6DAW8 UniRef90-F4H8N9 UniRef90 K4KU87 UniRef90-D3FAB2 UniRet90-O2GSWO UniRef90- T2GG81 UniRef90-UPIO00408CE21 UniRef90-UPIO0046FBB77 UniRef90 N1ZE01 UniRef90-M5BSH6 UniRef90-F8AJK4 UniRef90-O6BY49 UniRef90_UPIO0036D791B UniRef90-UPI0003714B64 UniRef90-R9CG38 UniRef90-K9HU01 UniRef90 B1HUN9 UniRef90-K5WMK7 UniRef90-UPIO0034919D5 UniRef90 N9PBT5 UniRef90 R4XPW9 UniRef90-A0A024KE38 UniRef90-A0A059G6E6 UniRef90 R6J593 UniRef90-D5V4Y1 UniRef90-A5IEU9 UniRef90-UPI0003728B89 UniRef90 G2ILS9 UniRef90-G8PMP5 UniRef90-G8TIV3 UniRef90-A1TNZ3 UniRef90_F8JDY5 UniRef90-A9S2Fg UniRef90_GOJ880 UniRef90_UPI000382ADC8 UniRef90-L9PCF8 UniRef90_UPI000348D839 UniRef90 Q6MCP5 UniRef90-Q0G3L9 UniRef90-N6VAT2 UniRef90-W9X7E3 UniRef90 UPIO0036D2CB4 UniRef90-UPIO0029AA2CA UniRef90-UPI0003B43353 UniRef90- Хомk03 UniRef90-UPIO003B63DCB UniRef90-।12FB51 UniRef90-UPI0003B66703 UniRef90 L1QH59 UniRef90-A9RV59 UniRef90_UPIO0037FE4E1 UniRef90_UPI0002EE333B UniRef90 A0A058YZC6 UniRef90-N9ABP2 UniRef90_G9FZ36 UniRef90-H0ENQ9 UniRef90-MOSP05 UniRef90-M9LNK1 UniRef90-M1AH63 UniRef90 E6YJF7 UniRef90_UPIO0036A6363 UniRef90-A2ENQ8 UniRef90-L9Y247 UniRef90-R7LH16 UniRef90-A3LZZ4 UniRef90_UPI0003B5AA7E MCM UniRef90_V8CBT2 UniRef90-U5ELJ7 UniRef90-FOXBY1 UniRef90 UPIOOO38062CB UniRef90_UPIOOO16211A8 UniRef90-UPI00037E540B UniRef90 A5DF53 UniRef90-D1BYP2 UniRef90-W5WHL2 UniRet90_M4F311 UniRef90_FOBMM5 UniRef90-J7Q932 UniRef90-UPI00034757F1 UniRef90-UP100037C7CA5 UniRef90-M4RDM4 UniR Refo-SgNZS1 UniRef90-F9RP63 UniRef90-Q41729 | UniRef90-F4GWP9 |
| :--- |
| UniRef90 V 7 CBY | UniRef90-DCCT71 UniRef90 A1TJY1

UniRef90_w9HB89

MAQS ${ }^{10} 20$
30
40 VIKSLADGNTRFGNNKQVKNSVSGQFPEAVILSCVD EAWSALRDGNARFVRGERRTEVSTAQYPFAVIFGCSD MEKLLQGLIQFKETDFQQHLGNSQSPHTLFIGCSD NLLAGUHDFQREGFRSQRTLGGRPQAALVSCSD
AGYKAHQNPNFPKLASGQSPQI LWLGCSD MHDTARFTKGFQSFQKRFFCDDLKGGQKPRTLVIACID LENMLEYNRKFVDGKP ALELLKSGNTRFVENQQANETSDGQHPFAVILSCDD MMNDGLKKMLEYNRIDVEHEMYKKYTKYPDRKIAILACMD MSEVALAPLIAGNAKWAAPTFFADAAKGQSPKVLWI GCAD EEFLENNQYYDDSTKHNHSGKGQSPHTLWIVGCD MDHDPEKLLAGYRNFAETDHYRSDAEGOTPETMVIGCD MSDLDHLLVANRRFAATGAKDRVPADPTRQVYLLTCDD VLELKKRNQEFVNSERDRKASLGQYPAAVVLSCLD MTMLQDILGFNKEFVQEKKYEPFTKYPDKRIVVLSCMD PILEQLLNQNQVWADPTFFQRTAEVQDPKVLWIGCCD AQESDDRLKAGNARFVKGEERAEMASDQNPFAIVLGCSD LTEGYQSFLAG RFHSERSRYEKLATGQSPEILIIGCCD LLKGYSNFMAGYRYAEEERYRDLAKGQNPSAMLVACCD MATLLQE LTNNHEFANNKCTKETGKYPQKKFALLTCMD
 GNRRWR
MTDFPRELLAGYGपYKEEEEYQNLA El LAKLKAGNANFVARFSFVNGK MDLTTRLLLQNRAWADEMFFENLVSG

ADELLQEGNQRFVSNGKVNRTK
KRLEGYQSFNSRRYOA GQFPFAIVLSCID MQD\EKFISGFGRFQQQYFYGTLRTGQRPGTLLIGCCD
 MSEHDPDHLVTGYKTFLEKRRFRQLAAGQKPPTMVI ACCD MTDLERLLNGYRSFMANNFSQQAEGQKPEVMMI ACCD
 MQSLVEHARTFANAKDFERLADGQTPEALFVTCSD MPEFKALLEGYRRFRTGAYQEQADKGQAPGVLVIACSD MSKPTVDRMLAGFKSFKAQETYGRLAAGQSPLALFI MKELFQGAVKFREEDFNEHLKKHQEPHVLLI TCTD YGHLATGQSPKALMISCAD ■AEDTKGYHRFRANRWPSEHAQGQPHTLVVACSD EA品DLIEGNNRFVANKDMQTLKEKQHPFASFLSCSD ALEKLRQGNERFARTSFQEDLAQKQEPFAAVLACAD VLKLLKEGNQRFVKNERLQRADEGQHPDAAVLGCMD ERKSGFDRFKTEKYYGELAKGQSPKFLVFACSD MDPMERLTSGFQRFKKEVYFTQLADGQSPKFMVFACAD MF QVSDLLQKNQSWSANFAAKQLAQTQTPK LWUGCAD EKLLRGYQSFDTNHFVHKLEEGQKPETLVIACCD MS QLe LITSANQAF LenPE TTKLNKAPQRHAAIVTCMD KQLLVVACMD
LTKLLQGNKNFVNGTPTQKFAFHQEPYACVLTCSD EFFENNQFYVDNLKHNHSAKGQSPHTLWIGCSD QQLIDGYVRFRSDVFPQHLATGQQPQALFICCSD MKELFEGAIKFQEEDFYESLKKHQEPHTLFISCVD SAWKSLREGNDRFVAGTHRAELAGGQQPSALEGCGD AGYKAHQNPSFFQQLATSQTPQULWGGCD LKEGNDRFQQNEQVNDTSDGQFPFATILSCDD VIEKLKNGFRNFKVTQYYARLAEGQQPKVMMI TCAD ALAELVAGNKRFVSGRPEHGHSGGQQPHAVVVGCDD

KAFLDNNRYFVDSUKHNHSSEGQSPHTLWIGCSD WAALRVGNDRFVAGERRRELASSQHPHTVDFGCSD A DQ DRRDGNNAFVENRPKKELALGQTPFVILVSCSD ETLDEGYESFADHDRFEELARGQTPKTMIISCCD LAAGAREYHAGTADRRLPHGQKPTTLFVSCAD AVAELHAGNRRFAAGTPDRPLAEGQQPFAVILGCSD ATSTWSRLLAGNRRFADRETRESLDDSQRPDAAVLSCSD
AMSVISFLEKGNDRFVNNKPLNHDYKAQKPAAVILSCAD AUERLTSGFQQFKKPELLGPLKSGQAPKYMVFACSD
 NEKFQKNPEYGELAKGQSPKFLVFACSD DELLQRLRRFHDDQRFQDLAQGQRPTTLF GCSD

UniRef90＿C5ZYQ6 UniRef90－UPIOOO424227E
UniRef90 A6DAW8 UniRef90－A6DAW8 UniRef90－F4H8N9
UniRef90 K4KU87 UniRef90－D3FAB2 UniRef90－Q2GSWO UniRef90－T2GG81 UniRef90－UPIOOO408CE21 UniRef90－UPIO0046FBB77 UniRef90－N1ZE01 UniRef90－M5BSH6 UniRef90－F8AJK4 UniRef90－Q6BY49
UniRef90－UP100036D7918 UniRef90－UPIO003714B64 UniRef90－R9CG38 UniRef90－K9HU01 UniRef90－B1HUN9 UniRef90＿K5WMK7 UniRef90－UPIOOO34919D5 UniRef90－N9PBT5 UniRef90＿R4XPW9 UniRef90－A0А024KE38 UniRef90－A0A059G6E6 UniRef90－R6J593 UniRef90＿D5V4Y1 UniRef90－A5IEU9 UniRef90－UPIO003728B89 UniRef90－G2ILS9 UniRef90－G8PMP5 UniRef90－G8TIV3 UniRef90－A1TNZ3 UniRef90－F8JDY5 UniRef90－A9S2F9 UniRef90＿GOJ880 UniRef90－UPIIO00382ADC8 UniRef90－L9PCF8
UniRef90
UP10003 UniRef90＿UPIO00348D839
UniRef90＿O6MCP5 UniRef90＿Q0G3L9 UniRef90－N6VAT2 UniRef90－W9X7E3 UniRef90＿UP100036D2CB4 UniRef90＿UPIOOO29AA2CA
UniRet90 UPIO003B43353 UniRef90－Хомk03 UniRef90－UP10003B63DCB UniRef90－I2FB51 UniRef90＿UPIO003B66703 UniRef90＿L1QH59 UniRef90－A9RV59 UniRef90－UPIO0037FE4E1 UniRef90－UPI0002EE333B UniRef90－A0A058YZC6 UniRef90＿N9ABP2 UniRef90－G9FZ36 UniRef90－HOENQ9 UniRef90－MOSPO5 UniRef90－M9LNK1 UniRef90－M1 AH63 UniRef90－E6YJF7 UniRef90＿UPIOOO36A6363 UniRef90－A2ENQ8 UniRef90－L9Y247 UniRef90＿R7LH16 UniRef90－A3LZZ4 UniRef90－UPIOOO3B5AA7E niretao－V8CBT2 UniRef90－U5ELJ7
UniRef90 FOXBY1 UniRef90－U5EJE1 UniRef90 UPIOOO38062CB UniRef90OUPIOOOO16211AB 8 B
UniRef9－UPIOOO37E540 UniRef90＿UPIO0037E540B UniRef90－A5DF53 UniRef90－D1BYP2
UniRef90－W5WHL2 UniRef90－M4F311 UniRef90－FOBMM5 UniRef90－J7Q932 UniRef90＿UPIO0034757F1 UniRef90－UPIOOO37C7CA5
UniRefgo－M4RDM4 UniRef90＿M4RDM4
UniRef90
S9NZS1 UniRef90－F9RP63 UniRef90－O41729 UniRef90－F4GWP9 UniRef90－V7C8Y8 UniRef90－DOCT71 UniRef90＿ATMYY
UniRef90＿W9HB89
$\qquad$
 CB4
B5AA7E

[^1]
## \footnotetext{  

}50
60
70
80
SRVV VPNTTTNTLPGELFVVURNTANTVPPYTTSAIUEYADEE SRVPVEDVFDRGIGDIFVARVAGNFANEDILGSMEFACAV

いくらの SRVPETTLLGLQPGDVFVVRNMANLVSATDIAAVLEFAVAH SQUESLLALDBEDGDVEMIKNAGGFVSDPVMRSLEIGAVYE

 SRAAPETIFEAGPGELFVVRNVANLVPHSTSAALEFAVQA
 SRVDPAVVTNAEPGELFIVRNVANLVPPYMSAALEFAVRD SRVPESVILGCMPGQUFTHRNDANQVDPNGISALTYALAE

 SRAEPSDIFNAAPGQLFVVRNVANLVPPYVSAALEYAVNV

T

9 | S |
| :--- |
|  |
|  |
| S |
| S |

$$
3
$$

$$
1
$$

からのくら

$$
\begin{aligned}
& \text { S } \\
& \text { S } \\
& \text { S }
\end{aligned}
$$

．

## \section*{\section*{の}}

Komoomooad

\section*{s

## 

## 

S

## S S S

$S$
$S$
$S$
$S$
$S$
S $R$
S $R$
S $R$
S $R$
S $R$
S $R$
S

UniRef90_C5ZYQ6 UniRef90-UPIOOO424227E UniRef90-A6DAW8 UniRef90-F4H8N9 UniRef90-K4KU87 UniRef90-D3FAB2 UniRef90_Q2GSWO UniRef90-T2GG81 UniRef90-UPI000408CE21 UniRef90_UPIO0046FBB77 UniRef90-N1ZEO1 UniRef90-M5BSH6 UniRef90-F8AJK4
UniRef90 O6BY49 UniRef90-Q6BY49
UniRef90 UPIO0036D7918 UniRef90-UPIOOO3714B64 UniRef90-R9CG38 UniRef90-K9HU01 UniRef90-B1HUN9 UniRef90-K5WMK7 UniRef90_UPIO0034919D5 UniRef90-N9PBT5 UniRef90-R4XPW9 UniRef90-A0АО24KE38 UniRef90-A0A059G6E6 UniRef90-R6J593 UniRef90_D5V4Y1 UniRef90-A5IEU9 UniRee90-UPI0003728B89 UniRef90-G2ILS9 UniRef90-G8PMP5 UniRef90-G8TIV3 UniRef90-A1TNZ3 UniRef90-F8JDY5
UniRef90 A9S2F9 UniRef90-G0J880 UniRef90-UP1000382ADC8 UniRef90-L9PCF8 UniRef90_UPIO00348D839 UniRef90_Q6MCP5 UniRef90_Q0G3L9 UniRef90-N6VAT2 UniRef90-W9X7E3 UniRef90-UPIO0036D2CB4 UniRef90-UPIOOO29AA2CA UniRef90-UPIOOO3B43353 UniRef90-хомкоз UniRef90-UP10003B63DCB UniRef90-I2FB51 UniRef90_UPIO003B66703 UniRet90 LL L1OH59 UniRef90-A9RV59 UniRef90_UPIO0037FE4E1 UniRef90-UPI0002EE333B UniRef90-A0A058YZC6 UniRef90-N9ABP2 UniRef90-G9FZ36 UniRef90-HOENQ9 UniRef90-MOSPO5 UniRef90-M9LNK1 UniRef90-M1 AH63 UniRef90-E6YJF7 UniRef90-UPIO0036A6363 UniRef90-A2ENQ8 UniRef90-L9Y247 UniRef90_R7LH16 UniRef90-A3LZZ4 UniRef90-UP10003B5AA7E UniRef90-V8CBT2 UniRef90-U5ELJ7
UniRef90 FOXBY UniRef90-U5EJE1 UniRef90-UPIO0038062CB UniRet90 UPIOOOOOC211AB UniRef90-UPIOOO37E540B UniRef90-A5DF53 UniRef90-D1BYP2
UniRef90- W5WHL2 UniRef90-M4F311 UniRef90-FOBMM5 UniRef90-J7Q932 UniRef90-UPIOOO34757F1 UniRef90-UP100037C7CA5 UniRef90_M4RDM4
UniRef90_S9NZS1 UniRef90-F9RP63 UniRef90-Q41729 UniRef90
UniRef9-
UCBPP UniReffo-V7C8Y8 UniRef90-DOCT71
UniRef90-A1TJY1
UniRef90- W9HB89
$\square Q V I E N I I I C G H S H C G G C H F T K M P N V Q N W K Q V L A L N P Q N K A$ SGSKLVLVMGHNHCGAVRAAVDDVKLGNTTPMLQKIKPAV
 LGVQHVVCGHSNCGGCWLELAGPVKDKITAMDIPEQDMA LGVRDVVVCGHTHCGAVDAILNPETIAGLPNLERWHLDGD LRVAHIVLCGHSGVLDTWLTPLRAVHRAHAEELDADKDEK LEVEHI LVLGHACCGGDQMTLQEHQDQKTEFLGNWVRPTD RRADEVFVIGHYGCWMKDFDAEAADERMKDQGVSEESDEW AGSKIIVVLGHTSCGAVKGACDHVVEAEKTEKENRNSKNS LDVDTI IVIGHDDCGGQLLDGKKVIQKMDQHGDHKNVEQW LDVKIMIVGHTDCGMKSVDDEDDKNKMDERGANPYFTPN LKVKKI VVCGHTDCGGDWASMSSKRTGGVLDLWLTPDDPK LKVKNIVVMGHGRCGMAPLSPGDFIGKWMSLVAPAAENVA HEVFEFVVIHHTDCGTGLMADPELRAGFVAR GFDDATLQ SGAKVVIVLGHEHCGAGKSADDGLLNK KPADEKSSNFKG LKVE HVVVLGHSRCGGIRAFMDSEREFIGPWVSICHCAGG LGVEHI IVAGHTRCGGVAVCVDHAPDKALAWPPPSPLDVW AGSKLIVVLGHTNCGAVKGACDHVEMGHLSGLVEYQGERS YDCAVVVVLGHSHCGAI QAT DDTLMHPEQPPSSNLMSIVN LNVKHIVVLGHASCGGIRATKGDFIGKWMSQПAPVAGDDR LEVIKDLIVMGHGRCGG|| HAALNDFVGNWVRLLNPVAEQVN LKVGHVVVMGHGGCGGIAASLDGAGNPALGEFVTPWVRLL $\square K V S^{\prime} I V C G H S H C G A C Q N T D D Y I N R K W L E G G E A K D M T$ VGARLVVVLAHTSCGAVAGACKDVKLGHMESTGDDNCSDP LD DPLVVVLGHQSCGAVKATH $Q$ QYLADQ TTPYIDRTKEGD LGVRDI IVCGHSDCGAMKALSKPESLATMPNVAAWLRHDD LKVKHLVVLGHCKCGGVQAKTGQFVGPWDKMLEPAAITDA KNIKLIVVMGHTNCGAI AAAAKELYELIAHVKRAKVPNDQ LRVPAVIVCGHEGCGGVRAALLQSRERVGEPGEGDYLGRH LRVKNMIVMGHSGCGGVKATDAHFTSKWMSMLAHQTSSSS LKVEHTIVIGHRGCGGIKAGSHDFI ENWLEKAVSGSDEVD LIVRHIVVLGHASCGGI RAFHDDFIGKWMSQLQPVAERMR LEVERVIVLGHAGCGGURARETDFVGQWMRIAEPVARGSA LDVPSIVVCGHSHCGAMKALLDGGAHTDPGGARAGRLQR LKVKHIVILGHSHCGGDKAAPGDFIGKWVGLLDPVAKGMH LKVKHVVILGHGRCGNCMGLWMDLLVSVGKETCCRESMSE LDVPLVIVLGHEGCGAVAAAVEALDGGDLPDDHQR乌LISR LQVRDI VCGHSHCGAVGASAMPAVRHWLEHSTDGRTPPA LLKVHHILVLGHARCGGIKASDEGTFDDAAPGEGGFDKRWM LKVADIVVCGHSHCGAVGARAPAVRDWLLAQLSELPGDDG LKVKDiVILGHSGCGGMEALVEHGEAGKWVSMAKCCLHHG LGI KNVI CGHSDCGACSAENAPYVQKWDELLEPVKQKVD LSIREIIVCGHSDCGAMPNVAAWLRHGSAARAVVDASYPD LKVRHIVVMGHASCGGVNAMLNGAPANCQDFVAPWVEQAA LHVEHIVVVGHRKCGGIEALVHDFDEKWMEKAIVGKESVD LDSKLIVVMGHSSCGAVKAACDDFKDGHDGEDINMDKPAI GVKAMVV GGVDCGAVKAAAANAGAPGASALAPSAREA KGAKVIVVLGHTDCGAVTSACQDDKEMPHIQYVLGPLMHS LNVENVVVIGHSCCGDCGTTSTDFIEEWVKKAEVSSAEFT KVKHIVLCGHTSCGGCWDTPLKAVRAANQKELSADQDDG LKVENIVVIGHSRCGGRKAF EDWVKVCLPALEKVKANHS LGEHVVVVGHTSCGGVLAALAGASAPPSKDAANPELQGA LKVENILVIGHSRCGGIRATNSSF TRSWVINAVASNLSFD LEVKHVVILGHAHCGGISKVLNGTCKSLLSDDFIGRWMSL LEVPSIVVCGHSHCGAMQALLDGAHEAPGDARLTQLQQWLV LGVQEIFIMGHECCGMTHASTDSAGAQMLKSGIKPEDTEW LKVKKIVVCGHTDCGGIWWASLRHRRAANLALLSEFNNDPK LKVGDIVICGHSDCGAMKGMLEHVVQAWLQHAGPSSKWLT LEIKNVIICGHSNCGACSA I YEPLLEPVKDKVLIQNPTSR LQVPLIVVLGHDSCGAVAATIDALVVRVTPSILLGRREGL RVKHILCGHTGCGGATAALHDAIRREHADELAADTDVK AGTKLIVVLGHTACGAVKGACDDLDEKDTPAVKATPEPKD LGVERVVMGHSNCGGIRALMDGLPAKKKALSVMKGKPLD LGVPL MVLGHKRCGAVQSTVEALRDQ\|APAVTTDGLDDP LKVKKITVCGHTDCGGVWASIRHURAANLKLLNEYNDPK LGASLVVVLGHDDCGAIAATAHGFVRAVVDKVDPSVAGDT LGVQEIVVCGHSDCGAMKAALGDWLKHADPSVLRFAGSPG
 LGVPLVVVMGHESCG
LKVSDLVVLGHGQCGGVRADWDKMDGPAADRDGVRPDPKD LAVPSIVVCGHSHCGAMQALLDRTHRSANESETTHMRRWLD LGAPLVVVLGHDSCGAVQAAVSGHLRAVVEAVLPSVREAE LVVSLLVILGHQHCGAIQAADQQ
$L G V S D V I V C G H S A C G A M K A L L D S K D K P E G L P G V V T W L A E P D$
 LKVEVLVVI GHSCCGGI RADNFHFVEDWVRIGSPAKNPFD L K V
L K V E NIVVI GHSCCGGI K GTASEFI EN WKVK TEASALLE F S L K V A HL I V L G H S Q C G GV Q GCDWMDIL


UniRef90_C5ZYQ6 UniRef90-UPIOOO424227E UniRef90-A6DAW8 UniRef90-F4H8N9 UniRef90-D3FAB2 UniRef90-Q2GSW0 UniRef90_T2GG81 UniRef90_UPIO00408CE21 UniRef90_UPI00046FBB77 UniRef90-N1ZE01 UniRef90-M5BSH6 UniRef90_F8AJK4

## UniRef90_Q6BY49

 UniRef90_UPI00036D791B UniRef90-UPI0003714B64 UniRef90-R9CG38 UniRef90-K9HU01 UniRef90-B1HUN9 UniRef90-K5WMK7 UniRef90-UPIO0034919D5 UniRef90-N9PBT5 UniRef90-R4XPW9 UniRef90-A0A024KE38 UniRef90-A0A059G6E6 UniRef90_R6J593 UniRef90-D5V4Y1 UniRef90-A5IEU9 UniRef90_UPI0003728B89 UniRef90_G2ILS9 UniRef90-G8PMP5 UniRef90_G8TIV3 UniRef90-A1TNZ3 UniRef90_F8JDY5 UniRef90-A9S2F9 UniRef90_G0J880 UniRef90_UPIO00382ADC8 UniRef90_L9PCF8UniRef90 UPI0003 UniRef90_UPIO00348D839 UniRef90_Q0G3L9 UniRef90-N6VAT2 UniRef90-W9X7E3 UniRef90_UPI00036D2CB4 UniRef90_UPI00029AA2CA UniRef90-UPI0003B43353 UniRef90-X0MK03 UniRef90_UPI0003B63DCB UniRef90-I2FB51 UniRef90_UPIO003B66703 UniRef90_L1QH59 UniRef90-A9RV59 UniRef90_UPI00037FE4E1 UniRef90_UPI0002EE333B UniRef90_A0A058YZC6 UniRef90_N9ABP2 UniRef90-G9FZ36 UniRef90-H0ENQ9 UniRef90-M0SP05 UniRef90-M9LNK1 UniRef90-M1AH63 UniRef90-E6YJF7 UniRef90_UPIO0036A6363 UniRef90-A2ENQ8 UniRef90_L9Y247 UniRef90_R7LH16 UniRef90-A3LZZ4 UniRef90_UPIO003B5AA7E UniRef90_V8CBT2 UniRef90-U5ELJ7
UniRef90-F0XBY1 UniRef90_U5EJE1 UniRef90_UPIO0038062CB UniRef90_UPI00016211A8 UniRef90_UPIO0037E540B UniRef90_A5DF53 UniRef90_D1BYP2
UniRef90-W5WHL2 UniRef90-M4F311 UniRef90-FOBMM5 UniRef90-J7Q932 UniRef90_UPI00034757F1 UniRef90_UPI00037C7CA5 UniRef90_M4RDM4
UniRef90_S9NZS1 UniRef90-F9RP63 UniRef90_Q41729 UniRef90-F4GWP9
UniRef9- V7C8Y8 UniRef90-V7C8Y8 UniRef90-D0CT71 UniRef90_A1TJY1
UniRef90_W9HB89

MRAYTE 130
140
150
160



 S LDMRVAVVA E H V L V Q L

 $L$ N G C Q QV




 K T D S D E V L T P L R E L A E N V K Q Q V L N A VQ T E V V V K D H I G V H G WMYE L E T G


 EKA R E R V V E S V E V S I A N L M T F P F V V A K E L S L H G A WF A I V H G LD P Y T D P A K N V L TVVI K K L K A N P F II P N DII P I H G L I I D P H T G




 D R P D R R F


 EQ H H A C E E L A S I L L L S L A N L L T Y P W W L K G K


## \section*{D}



 P DV D K V S R H S I RN S L D N L M T F P F I K D R V A LT WL M E Q M N I E H QL E N L M T Y P F V R G D L N V Y G WY Y II I T G $L D P A A R V R E N V V A Q L A N L R T H P S V V R G E I S L H G W F V D I H A G$ P S L R R A V E A V V R L S L D N L R T F P WI A E K L K L S G L H F G I A L G E Q C K F C E K E S V $V$ NV S L S N L L T Y P P W I K E K V




 HQCKHCEKESVNCSSLMNLLTYPWIKEKVNIHGGYYDFVD LA P A R E A V I N I R Y S L K N L ET F P WL K A R L T V H GA WF DI A S G
 V S M T D D I D E A CRA QV D Y L A E H P L I P D EVVEV H G YVVYEVES G K T D S N F V A A K K H T H M V K K A K K LA A L N VI S SVVTALKRHPLVNGEVIVWGMMYDVATG RLLRDDAMEANVIT QMHNLKMHSSVVNSVRVHGWMYDIGSG A K K I WLT E Q NI E Q QLE NL M S YP F V R G E L RI F GWY Y I I E T G

 A A A A R AVR A NVVA QLDSH L A T H P A V A R A L A L E G WV F D I A S G


 A A A HT TH D D H V RH TVVEMLA GY S I E K G S L A I V G VE Y D L A E G





ATPEDAAKANALVQLDNALTNPVLRGEVRLHAWFYDVGHS A DNYDFVDAVARTNVD DRKNSPTLKGSI KLVGAMYDISTG D Q C S L L E KEAVNVSLQ NLK S Y P LVVKE GLASSSGWHY DFVK G $P P G A D R Q W A V V D Y S L D E N L M T F P A V R E T L T L H G A Y F G V G T G$
 E QAR QF E R Q A V V A S L E N N L M T F P F V


| UniRef90_C5ZYQ6 |  |
| :---: | :---: |
| UniRef90-UP | K V D WL |
| AcDaw |  |
| UniRef90-K4KU87 |  |
| UniRef90-D3FAB2 | D |
| UniRef90-Q2GSW0 | RVRDL |
| UniRef90-T2GG |  |
| UniRef90-UP10004080 | KLDVI |
| UniRef90-UPI00046FBB77 | K V |
| UniRef90- N1ZE01 | EL |
| iRef90 M5BSH6 |  |
| UniRef90 F8AJK4 UniRef90 O6BY49 | ${ }_{\text {R }}$ |
| UniRef90-UP1000 |  |
| iRet90-UP1000 | V |
| UniRef90-R9CG338 | NVE |
| UniRef90-K9HU01 | N L W |
| UniRef90-B1HUN9 |  |
| UniRef90-K5WM |  |
| Ref90-UPIOOO34919 |  |
| Reef90-N9P |  |
| UniReef90-R4 |  |
| UniRef90_AOAO24KE | EL WVMD |
| R6, 593 |  |
|  |  |
| UniRet90-D5V4Y1 |  |
| UniRef90 A5IEU9 UniRef90 UPIOOO3728 | KVVFFE |
| UniRef90-G21LS9 |  |
| UniRef90-G8PMP5 | SLRVMn |
| UniRet90_G87IV3 | K V |
| UniRef90_A1TNZ3 |  |
| IRet90_-8JD |  |
| UniRet90_A9S2F9 |  |
| GOJ8 | EV |
| UniRef90-UP1000382AD |  |
|  | A |
| UniRet90-Q6MCP5 |  |
| UniRef90-Q0G3L9 | DL |
| N6 |  |
| W9X7E3 |  |
| UniRef90-UP100036D20 | A VETV |
|  | V |
| UniRef90 ${ }^{-}$XOMK03 |  |
| UniRef90-UP10003B63DCB |  |
| niRef90-12FB51 |  |
| UniRef90_UPIO003B66703 |  |
| niRef90-L10 | LS |
| UniRef90- UPI00037FE4E1 |  |
| UniRef90- UPIO002EEE333B |  |
| UniRef90-A0A058YZC6 | RVS WL |
| - |  |
|  |  |
| iRef90-HOENQ9 | K $\square$ Q D L |
| nireego Mospo |  |
| niRee90-M9LNK1 | L |
| UniRef90 E6YJF7 |  |
| UniRef90-UP100036 |  |
| A2EN |  |
|  | AL |
| UniRef90_R7LH16 |  |
| iRef90-A3LZZ4 |  |
| UniRef90-UPIOOO3B5 |  |
| iRef90_V8CB |  |
| iRet90_U5ELJ7 |  |
| UniRef90-FOXBY1 |  |
| UniRef90-U5E, |  |
| UniRef90_UPI0003806 |  |
| Ree90 UP1000 |  |
|  |  |
| UniRef90-ASDF53 UniRet90 D1BYP2 |  |
| UniRef90_D1BYP2 |  |
| UniRef90'M4 | SL |
| UniRef90 ${ }^{\text {FOBMM }}$ |  |
| UniRef90-J7093 |  |
| UniRef90_UP100034757F1 |  |
| niRef90_UP100037C7CA5 |  |
| iRef90_M4RDM4 |  |
| UniRef90 S9NZ |  |
|  |  |
| UniRef90_Q41729 |  |
| iRef90-F4G4 |  |
| DocT71 |  |
| -DOCT71 |  |
| UiRef90-A1TJY1 SiRef90-W9HB89 |  |
| UnRef9 | VVEEF |

UniRef90_UPIO0047EOEEB
UniRef90-15D219
UniRef90-F5L8K5
UniRef90-M0X526
UniRef90-M4FOH8
UniRef90-MOTANO
UniRef90 A81504
UniRef90-UPI00030BB97F
UniRef90_UPIO0047A4A2B
UniRef90-UPIOOO42B0880
UniRef90_UPI000477C704 UniRef90-F8NJT5
UniRef90-UPIO00478DCB6
UniRef90-E6TTF1
UniRef90-UPIOOO360A030
UniRef90-D4H5Y8
UniRef90-UPI000409F1CF
UniRef90 X5LY92
UniRef90-LOB7P1
UniRef90-UPI000370BCDA UniRef90-B2VDD4
UniRef90_-256X90
UniRef90-F2YLE3
UniRef90 V4MEC7
UniRef90-X7STM0 UniRef90-B9SHA8 UniRef90_UPIO003473E9F UniRef90-A8MOD8 UniRet90-A9NSY6 UniRef90-V6KBW6 UniRef90-COHIK4
UniRef90 W7IE10
UniRef90-UPI00034BDDA5 UniRef90-A91J85 UniRef90 W7SVO6 UniRef90-T5KME4 UniRef90-A1VXV9 UniRef90_FOSGE7
UniRef90-10EK38
UniRef90-A9NNYO UniRef90 F7NP52 UniRef90 UPIO0042B30BC UniRef90-P16016 UniRet90-D3HKK7 UniRef90 R6X0K6 UniRef90-UPIO0035EAE1F UniRef90-_00C694 UniRef90-G8MHR5 UniRef90 UPIO0036E2577 UniRef90-UP100030EC83C UniR Refo W8A2L5 UniRef90-F4KRX4 UniRef90_E6X298 UniRef90-Q43230
UniRef90-B9IFR6 UniRef90-Q2NGR4 UniRef90-Q1D328 UniRef90-E2L7X8 UniRef90 UPI00036F824A UniRef90-W4FGDO UniRef90-J4YRV2 UniRef90-V4MLX7 UniRef90-G7W9T6 UniRef90-F4B2G99 UniRef90-A4G418 UniRef90-UP10002E8B2A7 UniRef90-UPI0003B3F276 UniRef90_H8MJ17 UniRef90 S5FU55 UniRef90-A0А031HS96 UniRef90_CoW094 UniRef90 F5LEG8 UniRef90-A0A014PYM3 UniRef90-F8C8C5 UniRef90-G9N604 UniRef90_UPI000476E689 UniRef90-A3JLN7 UniRef90_O9ZN54 UniRef90- D2B5J7 UniRef90-W9BL39 UniRef90-UPIo0037AE7DB UniRef90-G7KBK0 UniRef90-HOETTO UniRef90_UPIo003B33130 UniRef90-U2PXT4 UniRef90-s5W3W7 UniRef90_UPIO002C31FD5 UniRef90_G9NK.J9
$1 \rightarrow 20$
K QHVSVQKPHSL WI GCSD $\begin{array}{rl}M M K T G N E R F R S ~ G K ~ Q ~ D ~ F ~ L L A ~ Q ~ K ~ R ~ A ~ S ~ & A\end{array}$ L A M D
FTDFKQRN YVENFTYKKLAEQQTPEFMVVACAD RFLAFKKKYMDNEHFKKLADAQAPKF LVIACAD
MEPVERVVKSGFADFKKEVYFADLKKGQSPKFMVFACAD TA A

MT TLK PLLAKNRSWALQRRQRNPQHGQQKP SSLWIGGCD
LARLLSGNEEWARTGFFKGEAEGQWPK LLWIGCSD $S T L K D L E E G N G R F V A G K P R R E A A P G Q E P A A V V F T C D D$

ELRNKNKDFI DP TFFDE LKK G GN P DYFILLSCSD
 STWSRMLAAGNRFAE GETRESLDDAQNPDAAVLSCS D

A K A DLFA HL ATTHRPHT LFFI GCSD
K R LLD GY F SFRN GK RYKELATGQNPE IMMIGCCD
 AVKRDKTGFAKFKTEKYYGEVAKGQSPKYMVFACSDD


DPTLYGA $T A K G Q S P K F M V L C B D$
 AIERVKNGFKNFKSEVYFKFLAKGQSPKFMVVACA ERLK D GF HK FKK P E L F F E P L K A G QA P K YV V F A C S D MNGFQRLIDGYRAFVEQSRYRALSEGQSPETMVIGCCD RKLASSSQAPHALELTCAD
LERFDS GF QRFQQHYFYRGLLCRGQNPGTLLI GCACD AMDVLVDGNRRFAETDFRPDLTMRPSLATIVISCFD A WK QMQDGNRRFVQDERRKDLTAAQHPVATMGGCS D

LE MLKE GHKRFFTGERVGGTASS
QKLKNGFRNFKDTDLFSKLSKGQSPKFMVGACSS MTVLDELLQSNAEFKNQVQPEKLSKKPRRQDALITCMD

N NFLSFKKKYMENLEFQALSKGQAPKFMVIACAD QR K K G F DK FKKE KYY GELS K GQAPK FMVFACSD A LQRLKKE GNQRF LDSNK QAHQSSSFGQYYFAVILDNCMD AV D L K K G N K R F V Q NE QVNDTRD GQWPFAAVLSCDD $M K T V D D M \square T G Y R R F R S G V Y Y R Q L G E G Q D P D D M L I G C A D$

I EAMKRGNERFQK GERKPRSAK GQYPAAVLL SCDD

SAWKALREGNERFVVTGTARAKLMAGQQPGAVLEGCGD TKALEFLKKEGNQRFVNNLKVSRTRDGQWPFAVMLS CDD


MRKLIRGLLDFNARSSYREKFALLAQEQKPDCLFDA CAD ALD DFI K HNETYSKERHRPNLPTPPSKKLLIVTCMD LIEGNQRFTNNISSNKTKDQQHPLAAILSCSD MQ GHKNFKHSFNENRADHGQHPKVLWIGCSD MGDIUERFI DGFQRFQQQYYYRNLDRGQHPSTLLI GCCD RFLAFKKKYMDNEHFKNLADAQAPKFLVIACAD MQRMLDGLI KFRQEDFEEHKFSKLLKRRQEPHTLIIACSD
 ALQALKDGNARFVSGNVKRDDPAGQFPLASIVSCID
 E A Y A A L M E G N T R F VA GE R R A E L
M S LK Q QLFE GHKRWA
$\square R R Q M G \square$
GQFPPKAL M I S CA D
MST E DYLTRNEQFRPETRRRQLAERGQKPLR ALV TA A
VI EMI KA GNKRFRNGEKLEHDF LSSQKPVAVILGCDD MRKLI R GLLDFNARSNYREKFALLAQQQKPDCLEIACAAD
 AVAELHAGNRRFAAGAPDRPLAEGQQPFAVILGCSD

F A ENKAYNRLATGQHPRAMI, S CCD
PAVPDLLAGAREFHRRTFLLAMARKQEPS HLEFIDCAD TWKA LKA GNERFVQGRDRARLTHTQK P QVVVEGGAA $A L D R L K E G N Q R F L T N K Q L S R D Y L Q Q A P F A V V L N C M D$ QRFLNFNQKYMELDHYESLAEAQYPKFMVIACAD MATPVQENLITSNKSYAANFDKGHLPLPPGKRYTVI AWQEMRRGNERFVDVDRRNELGSTQTPHAALFGCSD AKEY LK R L L K GNENFYNKDNYEELRENQYPFGVVVSCS D

$V \operatorname{V} V \operatorname{L} C \operatorname{S}$

UniRef90＿UP100047E0EEB UniRef90－I5D219
UniRef90－F5L8K5 UniRef90－F5L8K5
UniRef90－X8C1Z8 UniRef90＿M0X526 UniRef90－M4F0H8 UniRef90－MOTANO UniRef90 A81504 UniRef90＿UPI00030BB97F UniRef90＿UPI00047A4A2B UniRef90＿UPIO0042B0880 UniRef90－UPI000477C704 UniRef90－F8NJT5 UniRef90－UPI000478DCB6 UniRef90－E6TTF1 UniRef90－UPIOOO360A030 UniRef90－D4H5Y8 UniRef90＿UPIO00409F1CF UniRef90－X5LY92 UniRef90－LOB7P1 UniRef90＿UPIO00370BCDA UniRef90－B2VDD4 UniRef90＿Q56X90 UniRef90－F2YLE3
UniRef90 V4MEC7 UniRef90－V4MEC7
UniRef90 ${ }^{-}$YSTM0 UniRef90－B9SHA8 UniRef90＿UPI0003473E9F UniRef90－A8MOD8 UniRef90－A9NSY6 UniRef90＿V6KBW6
UniRef90 C0HIK4 UniRef90＿Q3SNU6 UniRef90＿W7IE10 UniRef90＿UPIO0034BDDA5 UniRef90－A91J85 UniRef90－W7SV06 UniRef90－T5KME4
UniRef90－A1VXV9 UniRef90－FOSGE7 UniRef90－I0EK38 UniRef90－A9NNYO UniRef90－F7NP52 UniRef90＿UPI00042B30BC UniRef90－P16016
UniRef90－D3HKK7 UniRef90－D3HKK7
UniRef90－R6X0K6 UniRef90＿UPIO0035EAE1F UniRef90－Q0C694 UniRef90＿G8MHR5 UniRef90＿UPIO0036E2577 UniRef90＿UP100030EC83C
UniRef90 W8A2L5 UniRef90 F4KRX4 UniRef90－E6X298 UniRef90－Q43230 UniRef90－B9IER6 UniRef90＿Q2NGR4 UniRef90＿Q1D328
UniRef90－E2L7X8 UniRef90－E2L7X8
UniRef90－C6X918 UniRef90＿UPI00036F824A UniRef90＿W4FGD0 UniRef90－J4YRV2 UniRef90－V4MLX7 UniRef90＿G4W2T6
UniRef9O－F4B2G9 UniRef90－E6WLY7 UniRef90＿A4G418 UniRef90＿UPI0002E8B2A7 UniRef90＿UP10003B3F276 UniRef90－H8MJ17 UniRef90＿S5FU55 UniRef90＿A0A031HS96 UniRef90－C0W094 UniRef90＿F5LEG8 UniRef90－A0A014PYM3 UniRef90－F8C8C5 UniRef90＿UPI000476E689 UniRef90－A3JLN7 UniRef90＿Q9ZN54 UniRef90＿D2B5J7 UniRef90＿W9BL39
UniRef90＿UPI00037AE7DB UniRef90＿G7KBK0 UniRef90－H0ETTO UniRef90＿UPIO003B33130 UniRef90－U2PXT4 UniRef90－＿S5W3W7 UniRef90＿UPIO002C31FD5 UniRef90＿G9NKJ9
473E9F

SR｜V｜PAEVLTGGSPGE｜L｜FVHRNIJANMVISHEDMSVLQYALLEY









いのかんの
S
S
S
S
S
S

## S S S



GVPGDDNNATKALENDGE
LGAKVVVVLGHTKCGAVKAACDHFVVDEKECREHRHSGNP LKVKHIFVCGHTGCGGITALVKGMPNDSRKPKASNDANYN L K V K H I IVVCGH Y GCG G GVNAAMF GLVD N WLR S D
L RVSRVIVLGHAHCGGI RAMD DAEPARHRVLDQMP HATDA L N V
 A GAKLVLVMGHTSCGAVRGAIDGGLLDEI KPAI GERKGSNY VGTKLIVVLGHTHCGGVKGACDQLLNKIRPAVNMTPDVHH IL E V Q HV L V L G H GK C G T P R L S H S D FI G D W I K M L A P A V E R L G $L$ HTP LVVV LGGHQGCGAVGAAA EAVTGTAER DGAD GTVNKD


 LKAKEVVVIGHHECGLANFRSADDSESVRQFGDSDPYMQW

 LSAPLVVVLGHDSCGAVQAARSAEATGAPVPGHLGAVVEA L K V A H I I V V G H S Q C G G V K G C H WM D I L R R P G Y E R V K H DE N P D V GVQ NLI I C GHSDC GACDANWIQ FL EPDKEELKNHPQFS N L N I R TI TVVCGHS GCGAMA ALLS GHEKA P GLDPALSRWLDH G
 |LQVENILVI GHSSCAGI EALLMKMQEDTEPRNAATSHLCC D $L$ QTQEVVLLVKHTGCGMLTFQNSDATS IVEKNLGPEAVTAD

 $L$ K V E N GAPGT\|VVMHHTDCGMTHFHDAD\|KKALVE\|APQEKTS\||E


## UniRef90_W4FGD0

UniRef90-J4YRV2
UniRef90_V4MLX7
UniRef90_F4B2G9
UniRef90_E6WLY7
UniRef90_A4G418 UniRef90_UPI0002E8B2A7 UniRef90_UPI0003B3F276
UniRef90_H8MJ17
UniRef90_S5FU55
UniRef90_A0A031HS96 UniRef90_C0W094 UniRef90_F5LEG8 UniRef90-A0A014PYM3 UniRef90_F8C8C5 UniRef90_UPI000476E689 UniRef90_A3JLN7 UniRef90_Q9ZN54 UniRef90_D2B5J7
UniRef90_W9BL39
UniRef90 UPI00037AE7DB
UniRef90_G7KBK0
UniRef90_H0ETTO UniRef90_UPI0003B33130 UniRef90_U2PXT4 UniRef90-S5W3W7 UniRef90_UPI0002C31FD5

E R R R A CEQAS L L I S L R N LEELPPFVRGDLTLHGWYFDLVAG HQCQHCEKASI NHSLEKLLGYPWIE EKVRLHGGYYD
 DFVDAV ARKNVELLTILDNIRNSPVLQKKIIKIVGSMYHDVGG


 VK M Y Q DVVDETVCAR QVVE YMR N H P LI P P K H V T I S G W D WE V E T G




 HFAKR SWR L N A RLLQLN NL LS Y D F I Q E R V KI F GWH Y II E T G D H S D R L CRVNV I Q QLE NL RTYPQVAGRLQLVGLYFDI GTA TQADALGARHVVETATQLRRSVVVAQRAAVAAATYHLADG
 QQCRF CEKES I N Q SL L N L L S Y P WI K D R V R I HGGYY D


 UniRef90_G9NKJ9

| UniRef90_UPI00047E0EEB | H\|L K E L |
| :---: | :---: |
| UniRef90-15D219 | V |
| UniRef90-F5L8K5 | E |
| UniRef90- $\mathrm{X8C178}$ |  |
| UniRef90-M0X526 |  |
| UniRef90-M4F0H8 |  |
| UniRef90-MOTANO |  |
| UniRef90-A81504 | D |
| UniRef90_UPI00030BB97F | EVS F Y E |
| UniRef90_UPI00047A4A2B |  |
| UniRef90-UPI00042B0880 |  |
| UniRef90-UPI000477C704 | H L K |
| UniRef90-F8NJT5 | RL R DL |
| UniRef90-UPI000478DCB6 | V V S |
| UniRef90-E6TTF1 | E |
| UniRef90-UPI000360A030 | AVEVLS |
| UniRef90-D4H5Y8 |  |
| UniRef90-UPI000409F1CF | LVEVL |
| UniRef90-X5LY92 | V V S AVD |
| UniRef90-L0B7P1 |  |
| UniRef90-UPI000370BCDA |  |
| UniRef90-B2VDD4 | HLKEL |
| UniRef90-Q56X90 | A |
| UniRef90-F2YLE3 |  |
| UniRef90-V4MEC7 |  |
| UniRef90-X7STM0 | R I D V D |
| UniRef90-B9SHA8 | A FEL WD |
| UniRef90_UPI0003473E9F | RVHLLD |
| UniRef90-A8M0D8 | EV H TVT |
| UniRef90_A9NSY6 |  |
| UniRef90-V6KBW6 | A V S V |
| UniRef90-COHIK4 |  |
| UniRef90-Q3SNU6 | S L Y A LD |
| UniRef90-W7IE10 | T V |
| UniRef90_UPI00034BDDA5 | R V H L L D |
| UniRef90_A91J85 |  |
| UniRef90-W7SV06 | LVEVV |
| UniRef90-T5KME4 | T A VP |
| UniRef90-A1VXV9 | ElY EYD |
| UniRef90_FOSGE7 | D L Q F L |
| UniRef90-I0EK38 |  |
| UniRef90-A9NNY0 |  |
| UniRef90-F7NP52 | E |
| UniRef90_UPI00042B30BC |  |
| UniRef90-P16016 |  |
| UniRef90_D3HKK7 | QVH F F E |
| UniRef90_R6X0K6 |  |
| UniRef90_UPI00035EAE1F | QVE F Y N |
| UniRef90_Q0C694 | E L |
| UniRef90_G8MHR5 | AVEF F N |
| UniRef90-UPI00036E2577 |  |
| UniRef90-UPI00030EC83C | A L E |
| UniRef90-W8A2L5 | E 1 |
| UniRef90-F4KRX4 | V V D |
| UniRef90-E6X298 | NLE |
| UniRef90_Q43230 |  |
| UniRef90-B9IER6 | ELLW |
| UniRef90_Q2NGR4 | E L D $\mathrm{V}^{\text {V }}$ |
| UniRef90_Q1D328 | Q V |
| UniRef90-E2L7X8 | K V H |
| UniRef90-C6X918 | M |
| UniRef90_UPI00036F824A | DIS Y Y E |
| UniRef90-W4FGD0 |  |
| UniRef90-J4YRV2 | A L |
| UniRef90-V4MLX7 |  |
| UniRef90-G7W9T6 |  |
| UniRef90-F4B2G9 | K V N F $\square \mathrm{N}$ |
| UniRef90-E6WLY7 | K V D F |
| UniRef90_A4G418 | K I R |
| UniRef90_UPI0002E8B2A7 | RLL $\quad$ A $L$ D |
| UniRef90-UPI0003B3F276 | T ARTVE |
| UniRef90_H8MJ17 | QV |
| UniRef90-S5FU55 | HL R |
| UniRef90_A0A031HS96 |  |
| UniRef90_C0W094 | LL QKL |
| UniRef90-F5LEG8 | RLDVV |
| UniRef90-A0A014PYM3 | RLEFL |
| UniRef90_F8C8C5 | Q V ${ }_{\text {H }}$ |
| UniRef90-G9N604 | AI T K V |
| UniRef90-UPI000476E689 | V V R TV |
| UniRef90_A3JLN7 | T L M A V |
| UniRef90-Q9ZN54 |  |
| UniRef90-D2B5J7 | R V HVL |
| UniRef90-W9BL39 |  |
| UniRef90_UPI00037AE7DB | QVT F F D |
| UniRef90-G7KBK0 |  |
| UniRef90-H0ETT0 | K V K N V |
| UniRef90-UPI0003B33130 | R A |
| UniRef90-U2PXT4 | K V E V L |
| UniRef90-S5W3W7 |  |
| UniRef90_UPI0002C31FD5 |  |
| UniRef90_G9NKJ9 | A $\mathrm{L} \mid \mathrm{T}$ E V \| |

UniRef90_B8EQQ9 UniRef90-A1AXN7 UniRef90_UPIO0042B6C17 UniRef90_F8KZY5 UniRef90_LORAB6 UniRef90-A4BWT3 UniRef90-S7X866 UniRef90 UPIO0029B41CC UniRef90-L1JFQ1 UniRef90-U5WUB4 UniRef90-A3SIB4 UniRef90 C3XHV4 UniRef90-K2JGC2 UniRef90-D8PSQ6 UniRef90 A0A059IKG1 UniRef90-UPI00037F213D UniRef90-K0KKU6 UniRef90-W9S8P5 UniRef90 R7SRU1 UniRef90-V4ZW85 UniRef90-UPIO002C31FF1 UniRef90-UPIOO02892162 UniRef90-111QU9 UniRef90-T1VTR5 UniRef90-C6DJQ5 UniRef90 W4GX97 UniRef90
UniRef90-A9TMC2 UniRef90 UPI0002C376F9 UniRef90 - IYYGY5 UniRef90-K3XL96 UniRef90-G8RHU5 UniRef90 W8WULO UniRef90-UPIOOO3610726 UniRef90-I4D551 UniRef90_UPI0004705606 UniRef90 A0A022QUH8 UniRef90_UPIO0029B0E25 UniRef90-UPIO0036DECF8 UniRef90-UPIo00225F15F UniRef90 C6XRS7 UniRef90-UPIO00469F337 UniRef90-Q1JYM7 UniRef90 UPI000412BF73 UniRef90- X8E120 UniRef90_UPI000379E12D UniRef90_UPI00032A6101 UniRef90- D8R755 UniRef90-UPIO0041123D5 UniRet90_K1ZHN5 UniRef90 M8AD05 UniRef90-R8BR06 UniRef90-F4CIW5 UniRef90-UPI00037CF6AD UniRef90-UPIO0046889B3 UniRef90-UPIO00369AC63 UniRef90-X6L4T9 UniRef90 E8WV58 UniRef90 K5WM14 UniRef90-V9CZO2 UniRef90 B7FNUO UniRef90_UPI00042B6A47 UniRef90-G0B1V7 UniRef90-A0A024F1K9 UniRef90_Q9ZUC2 UniRet90_G2FVYO UniRef90-D5BQ17 UniRef90-12K204 UniRet90 - XOUEZ9 UniRet90-H8HYN9 UniRef90-W011R2 UniRef90 UPIO0035CAB04 UniRef90_A3YTLO UniRef90 FFXVVI2 UniRef90-E1QEE
UniRef 90 B2ARO3 UniRef90_-11HPT5 UniRef90-G2RCG7 UniRet90_W9FZ32 UniRef90 F4RNR6 UniRef90-UPIOOO4185314 UniRef90-J9SHZO UniRef90 M1YJ87 UniRef90 ${ }^{-}$Q3AI34 UniRef90_UPIO00363D565 UniRef90 I2NOY2 UniRef90 A3V4X0 UniRef90-10WY35 UniRef90-D9W1F5 UniRef90 D8QZW8 UniRef90_U2YIPO
UniRef90_B9NTZ2
$\frac{10}{10}$ Y $-\frac{20}{20}$
$F \rightarrow 30$
30
40
KRLIDGNQRFVNGHRYIKNIQDQAPFAIVVGCSD QRFLKRHKYLEELDHFQTLKEAQSPKFMVIACAD Lᄂ

LKEGNLRFVKGHQRKILAKGQHPFATIVTASD

VWNEMSRGNERF $\square$ A GERRT ELDANAQAP HAA LGGCSD



FAENKSYRRLAD GQRPRAFII SCCD
$\square A R L L S A N A Q W V E P G F F A E C A K G Q T P R V L W I G C A D$ NKAW
$M A L D D P L L Q G F R R F Q Q E Y F Y A G L C Q G Q H P A T Q V I A C C D$ SNLKDYLYNNRLWAENETKPGLGKGQNPHTLVWIGCSD

M A T P A LT D L LA R N K A NPA LYYSELAKGQSPKFMVFA

FAELALGGQSPKFLVVACCDD MFIAACAD
RFMDFK Q Q Y LENFTKQNLAEQQTPEFMVI ACAD
 L H EL L E R N RLDWA E P F F F Q K L S K Q Q S P E IL L Wi G C S D
 F DKLALGQSPKFLVFACSD MAKTEALDSGFQRFKQRYFYDSMKTGQPAK LMMACS D

$R L T D G Y R S F T E R A R Y L E L A K G Q H P D I M V I S C G D$ WD S LKE GNKRFS SMKRLQELQSGQEPDAVI L S CS D
 $\square R T G F E H F K K E N Y E$ KNPELYGALAKGQSPKFLVEACSD MEKTFK Q LIE GYRLFQEKYVQGDNTHGQKP Q LML I A C CD $\square K E \square V A D Q A T Y V A T H F F K E L S K G Q H P R A T V V T C C S D$

DRLLTGYRRFRNGRYYK DLGSYQDPDDMI I SCAD
EA $\square \mathrm{KMLQQQ} \mathrm{L}$ NKR

FAENRSYSHLANGQHPRAMVI
SAWKALKEGNQRFVGGFRRAELANGQNPQVMLFGC $S L L Q G I N K Y H R R F A D Q V R P H D L A E V Q N P D S L E F A C D V D$ QRFLNFNHKY $\square E L E H F Q S L A E A Q Y P K F M V I A C A D$


 EAIA MLKA GNERFVTGKATQPHDQGDHAYATVI TCSD Y ADNKSYRRLATGQRPRAMVI SCCD
D S LVKGVARFHRSYFRKNRSKGQNPDTMEITCAD MSADDTMLTRNKDFAA HEKSAGTAMPPNVKAVVVACA STLNQLLMRNRQWAQLNS GLFPNGDQTPRWLWIGCSD
 IT E I F D G N K K F DE TK Y F D T L G TVVHS P K Y L Y I G C VD
 $\square K K$ G F LLH F KT N N Y E K K N P T L Y N S


 D P S AMASGQRPWAALLSCAD
 VI E MLS Q GNA RF VA GQAT GSHNQGDHAYA TVI T C S D A GYKSHQNPHFFPKLADGQTPQDVWLGCSD
R L K T GFERFK N L K LF E P L K T S Q T P K Y MV FA C S S D $\square K E L A A G N R R W R T \square H Q R H P L V S G Q S P F A D I L G C D D$


F QRFLEGHTAHASEARRHQLAGGQHPQVALLACSD $H G Q Q P K V L L V A C S D$ REYADTRTP LVAAQHPWAMIVSC $\square$ NKTTYGELAQGQQPRVMIVSCCD
 $\square S A F Q R D T A P H V R D E L A E G Q R P S$ QL F L T CA D

MRA GNDRF VE GERRHEI A GS QTPRAA L FGCS D
$L V K R Y H G W K A T T Y Y R R L A T G Q R P R A M V I S C C D$

UniRef90_B8EQQ9 UniRef90_A1AXN7 UniRef90_UPIO0042B6C17 UniRef90_F8KZY5 UniRef90_LORAB6 UniRef90_A4BWT3 UniRef90_S7X866 UniRef90_UPI00029B41CC UniRef90_L1JFQ1 UniRef90_U5WUB4 UniRef90-A3SIB4
UniRef90-C3XHV4 UniRef90_K2JGC2 UniRef90_D8PSQ6 UniRef90_A0A059IKG1 UniRef90_UPI00037F213D UniRef90_K0KKU6 UniRef90_W9S8P5 UniRef90_R7SRU1 UniRef90_V4ZW85 UniRef90_UPI0002C31FF1 UniRef90_UPI0002892162 UniRef90 I1IQU9 UniRef90-T1VTR5 UniRef90-C6DJQ5 UniRef90_W4GX97 UniRef90_11CZJ4
UniRef90_A9TMC2
UniRef90_UPI0002C376F9 UniRef90-I1YGY5 UniRef90_K3XL96
UniRef90 G8RHU5 UniRef90-W8WULO UniRef90_UPI0003610726 UniRef90_I4D551 UniRef90_UPI0004705606 UniRef90_A0A022QUH8 UniRef90_UPI00029B0E25 UniRef90-UPI00036DECF8 UniRef90_UPI000225F15F UniRef90_C6XRS7 UniRef90_UPI000469F337 UniRef90-Q1JYM7 UniRef90_UPI000412BF73 UniRef90-X8E120 UniRef90_UPI000379E12D UniRef90_UPI00032A6101 UniRef90_D8R755 UniRef90_UPI00041123D5 UniRef90_K1ZHN5 UniRef90_M8AD05 UniRef90_R8BR06

## UniRef90_F4CIW5

 UniRef90_UPI00037CF6AD UniRef90_UPI00046889B3 UniRef90-UPI000369AC63 UniRef90-X6L4T9 UniRef90_E8WV58 UniRef90_K5WMI4 UniRef90-V9CZ02 UniRef90_UPI00042B6A47 UniRef90_G0B1V7 UniRef90_A0A024F1K9 UniRef90_Q9ZUC2 UniRef90_G2FVY0 UniRef90_D5BQI7 UniRef90-I2K204 UniRef90_XOUEZ9 UniRef90-H8HYN9UniRef90 W0I1R2 UniRef90_WOI1R2 UniRef90_A3YTL0 UniRef90_F7XVI2 UniRef90-E1QEE3 UniRef90_B2AR03 UniRef90-I1HPT5
UniRef90-G2RCG7 UniRef90- W9FZ32 UniRef90_F4RNR6 UniRef90_UPI0004185314 UniRef90_J9SHZ0 UniRef90_M1YJ87 UniRef90_Q3AI34 UniRef90_UPI000363D565 UniRef90_I2NOY2 UniRef90_A3V4X0 UniRef90-IOWY35
UniRef90-D9W1F5 UniRef90_D8QZW8 UniRef90_U2YIP0
UniRef90_B9NTZ2
 F
$\rightarrow$

\section*{} | A |
| :---: |
| L |
| A |
| L |
| L |
| L |
| L |
| L |
| L |
| L |
| L |
| L |
| L |
| L |
| L |
| L K |
| L | MVLGHSNCGAI GATIDECINKTYLSGSLHSIPNH

## 

L



GHARQSHAENVAVQLGKLHNHPLAGGQVQATGLFYD!ATA Q QCRFCEKESINQSLLNLLSYPWIIEDRVRIHGGYYNFSN


 A R A I R I A E L N V A LGDPFT SVVRADVVIARRQSIRRPGHL V SGLVVD
HVVG T D DE ENI WK GI E DLMAS PVNA GKAKVVGAI Y DVVNG EQERQFEKHAVMTSLENLMTFPWVNEKVTLHGLWTDIGEG
 NKPEAFE K E A I R T S L R N L M T FP F V F K A V A L H G V WN E I A E G

 D R H R R L V D L N V I E Q CVVN L Y K T G VI QA K P R V H P IV F D P K T G




 RLEHLDEELNVLHSVEXVRRHP
A RLT A TVE ENVLVQLEHLRT
 G F V D A V A K T N V I M T L AFVGEVCDANV MVS IVEQIRRSPILLKE EI LIVGGAVYNMKTG

 ARGTKIA ELDVVAGVNVLMANVTVREGLQVHGCLFEIGCG D Q CTVLEKEAVNESLANLKSYPFVKDRLRLLGARYD




A HEHASVRHNVA QLANLRTHPGLQGRLNLHGWVYDLES G
D S C Y R Y VR A A $\quad$ R G S LD N L L T Y P W GTPNREINENI RRIRNQLLQEPQIAGTLNVIGARYELDT SRRK E A L L K K A S LE H A QPSKRNV AL QL Q T L QRHP LI E GRRVMIA GLEFDI P T A


| UniRef90_B8EQQ9 | $\mathrm{K}\|\mathrm{~L} \square \mathrm{~A}\| \mathrm{L} \mid \mathrm{D}$ |
| :---: | :---: |
| UniRef90_A1AXN7 | T V Q F L T |
| UniRef90-UPI00042B6C17 |  |
| UniRef90-F8KZY5 | EVS |
| UniRef90-LORAB6 | A V $R$ |
| UniRef90-A4BWT3 | F |
| UniRef90-S7X866 |  |
| UniRef90-UPI00029B41CC | SVN F Y E |
| UniRef90-L1JFQ1 | ELKRLN |
| UniRef90_U5WUB4 | R V H EVD |
| UniRef90-A3SIB4 | T L E |
| UniRef90-C3XHV4 |  |
| UniRef90-K2JGC2 | D L H QYD |
| UniRef90-D8PSQ6 | K L K D L E |
| UniRef90-A0A059IKG1 | DLE Q Y D |
| UniRef90-UPI00037F213D |  |
| UniRef90_K0KKU6 | FLELVIE |
| UniRef90-W9S8P5 |  |
| UniRef90-R7SRU1 | LLT EV |
| UniRef90_V4ZW85 | EL |
| UniRef90-UPI0002C31FI |  |
| UniRef90-UPI0002892162 | Q $\square \mathrm{K}$ A Y D |
| UniRef90-I1IQU9 |  |
| UniRef90-T1VTR5 | R V I E VT |
| UniRef90-C6DJQ5 | LK L |
| UniRef90-W4GX97 |  |
| UniRef90-I1CZJ4 | Q VY L LD |
| UniRef90-A9TMC2 | K L |
| UniRef90_UPI0002C376F9 |  |
| UniRef90-ITYGY5 | E L K |
| UniRef90_K3XL96 |  |
| UniRef90-G8RHU5 | A V 1 R V |
| UniRef90-W8WUL0 |  |
| UniRef90-UPI0003610726 | QVEES V |
| UniRef90-14D551 | E |
| UniRef90_UPI0004705606 | S V T F F E |
| UniRef90-A0A022QUH8 |  |
| UniRef90_UPI00029B0E25 |  |
| UniRef90-UPI00036DECF8 | R L N $\square \mathrm{l}$ |
| UniRef90_UPI000225F15F | VLEQYD |
| UniRef90_C6XRS7 |  |
| UniRef90_UPI000469F337 | S L |
| UniRef90-Q1JYM7 | K V K WL S |
| UniRef90-UPI000412BF73 | GLE Y F D |
| UniRef90-X8E120 |  |
| UniRef90_UPI000379E12D | R V L E VT |
| UniRef90-UPI00032A6101 |  |
| UniRef90-D8R755 |  |
| UniRef90_UPI00041123D5 |  |
| UniRef90-K1ZHN5 | D V E |
| UniRef90_M8AD05 |  |
| UniRef90-R8BR06 | $\mathrm{R} \square \mathrm{R} \mathrm{D}$ L |
| UniRef90-F4CIW5 |  |
| UniRef90-UPI00037CF6AD | K 1 D W |
| UniRef90-UPI00046889B3 | GLE |
| UniRef90-UPI000369AC63 | V V E A Y D |
| UniRef90-X6L4T9 | G L H LD |
| UniRef90-E8WV58 | LVEVV |
| UniRef90-K5WMI4 | L V E |
| UniRef90-V9CZ02 | A V K DVE |
| UniRef90-B7FNU0 | A IRKL |
| UniRef90_UPI00042B6A47 | T |
| UniRef90-G0B1V7 | HLK E L |
| UniRef90-A0A024F1K9 | L |
| UniRef90-Q9ZUC2 |  |
| UniRef90-G2FVY0 |  |
| UniRef90_D5BQ17 | DLY F Y N |
| UniRef90-I2K204 |  |
| UniRef90-XOUEZ9 |  |
| UniRef90-H8HYN9 | R V Y E |
| UniRef90-W011R2 | KVEFFS |
| UniRef90-UPI00035CAB04 | KVEFFN |
| UniRef90_A3YTL0 | AV S |
| UniRef90-F7XVI2 | 1 L E |
| UniRef90-E1QEE3 | EVVHWL |
| UniRef90-B2AR03 |  |
| UniRef90_11HPT5 |  |
| UniRef90-G2RCG7 | K VER V N |
| UniRef90-W9FZ32 | LV HRV |
| UniRef90-F4RNR6 | K 1 R |
| UniRef90-UPI0004185314 | K V Y LV D |
| UniRef90-J9SHZ0 | R V Y EVT |
| UniRef90-M1YJ87 | RILDALD |
| UniRef90-Q3Al34 |  |
| UniRef90_UPI000363D565 | D L |
| UniRef90-12N0Y2 |  |
| UniRef90-A3V4X0 | LLEDY |
| UniRef90-10WY35 | $\mathrm{R} \vee \mathrm{L}$ A V S |
| UniRef90_D9W1F5 |  |
| UniRef90-D8QZW8 |  |
| UniRef90-U2YIP0 | A AE |
| UniRef90_B9NTZ2 | G\|L |



UniRef90 X7F402 UniRef90-Q5ENU2 UniRef90-W0YP02 UniRef90 UPI0003B74E50 UniRef90-G9NEM0 UniRef90_Q607T9 UniRef90 M9R378 UniRef90 C7NQM3 UniRef90-M4DQA5 UniRef90-LOE3E2 UniRef90 K2CNJ2 UniRef90_E4TZY6 UniRef90-F8GJV1 UniRef90 XOW9G0 UniRef90-S7VX64 UniRef90_L8WLD5 UniRef90_S3ZGL1 UniRef90 R9XGG0 UniRef90-D8J7K0 UniRef90-B8LTU2 UniRef90-D3D975 UniRef90 K0EVC3 UniRef90-H5TTN6 UniRef90-UPI0002DE7EB1 UniRef90 S5FT07 UniRef90-M0L192 UniRef90-V6KYC3 UniRef90_M8CEF5 UniRef90 G4SWV0 UniRef90_A4D0K0 UniRef90-J7LVB4 UniRef90_UPIO00360A76A UniRef90-V6L368 UniRef90_UPI0003C75CFF UniRef90_F8AAD2 UniRef90 UPI000367C19F UniRef90-W8S491 UniRef90-I2N361 UniRef90-UPI000262FC66 UniRef90 Q6MMA1 UniRef90_L9VHD5 UniRef90 G7E375 UniRef90 L1KKX8 UniRef90 S7S6G5 UniRef90-UPIO003665BA4 UniRef90_V4YFS0 UniRef90-A0A022MCL9 UniRef90_UPI00046532A8 UniRef90-U5G8M5 UniRef90_UPI00036E2292 UniRef90 G2Y076 UniRef90_UPI0003B5B764 UniRef90-UPI000366800D UniRef90 X8C9J7 UniRef90-J9HME5 UniRef90-U1NS88 UniRef90 K5WYR9 UniRef90-UPIO0026C7976 UniRef90_X5KTE6 UniRef90-UPIO00475F2E8 UniRef90_E9GLB5 UniRef90-G8BRV8 UniRef90-KOVPR0 UniRef90-V5XCT9 UniRef90- M0LP47 UniRef90_UPI0003600AFE UniRef90_M8AMR2 UniRef90_A9NX90 UniRef90-M5BU43 UniRef90-W9HME1 UniRef90-X5ECL6 UniRef90 M4DQA6 UniRef90-UPI00035C1CC9 UniRef90-W6WUR1 UniRef90 L8ET03 UniRef90-J3NYW5 UniRef90-B6HIZ5 UniRef90-W2RXY5 UniRef90 UPI000367B5A6 UniRef90-F8UH78 UniRef90_UPIO00478BEC3 UniRef90 U5EVE3 UniRef90-UPI00034D0136 UniRef90-UPI000371F98E UniRef90-UPI0003F88D34 UniRef90-J9NEF0 UniRef90_Q0W2C5 UniRef90_D6WK56 UniRef90 UPIO003768381 UniRef90_E8T340
UniRef90_D1Z1A5 FAENSSYRRLASGQRPRSMVISCCD $E A L R L L Q E G N A R Y T A E Q R K Q L V E Y G Q K P M A V V F G C A D$ MR

 MHDVLGSLLAGNTAHASAFRFDTLQDGQRPDAVTVCCCD MTTLKEQLTARVDEYTENRRQYGAKSQNPKFLVFACSD MKKLLKGI DDFRQRFLRRYRFSKLAGQGQAPDLLLVACMCD FAEVISQNDYYVNHQFFEKLKNGQHPRATVI GCSD ALQMLKEGNSRFVRGKMHQRTGGGNNRKLWVLACMD NNVFKNNEKWIDAKFEK $\square$ GGQNPELLF GOD MSDVALAPLTAGNAKWAAPTFFADAAKGQSPKVLWI GCAD

TDEE SAFQQHTAPRVRGELAEGQQPVQLFLTCAD MSGVSLDALLERNDAHADSQPEDHFDAGQRPAVVSVCCSD T I AKFLANNEKYASTF PGTFTMEQMRPAMVLTCVD $\square A A Y H R G H A H L L R P H L A G L Q H P D A F F L T C A D$
 MSTLKEQLASYDHWAQRRRYGP DGHNNRSLWVLACMD TFLEELLA GNQRHVEEDYFSEVQTGQHPDTVAICCSD ALAELSAGNRRWRTYKQRHSLVSGQAPFALIVGCDD MNAVVRLKTGFERFRNPKLFESLRKDQSPKYMVFACAD MTTLKNKLESDYDFWATRRRYGAEGHNNANLWVLACMD

## KYHRRHAEKVRPQDLTDGQNPDTLFVACVD

 GQRPSQLFITCADA R R A R R G NRRWATRHQTHPHESGQQHPFAVVLGCDD EALNRIAEGNNQFVKKHYFKPYQTSQHPFVTMITCSD S LPQY LLDRYQEWKEHTFFRQLAKGQRPRAMVV A EALRELAAGNRRWRAFRERHPLATGQRPSQLFLTMCAD LKNGNTRFVRGTFRRRVSALQRPHSAIYTCS MDHDVLNELLAGNERHVDGTYFDAVQAGQHPDVVTVCCSD VLSRLLRNNRAFAQGADSDLLAKGQEPKVLWFGCSD
 MDEFVTELLAHNAEHAEQFRFDDVQKSQAPHAVTVCCSD QRTTAPHVRDELAEG GQRPS

TASQA VAGAREFQQQPF $\square E R \square A \square G Q K P A Q L F \square A C S D$ TASQALVAGAREFQQQPFLERLALGQKPAQLFI I C C A D VWT QMLE GN R R F V S GE R R A E L A N S Q H P T A A L F G C S D EVLQMLKD GNERFLS GKEYPHLDKGDHAYATILASS D

MKSFVTELLAGNLDHAAEDRFDELQEGQLPNAVTVCCSD FFEESSKGQKPPYMLVDCSD
SAWKALKDGNARFVAGERRASLAHTQRPTAVVFGCGD EGNARWRDSGRRRALADAEHPYASVLGCAD MDK ILKG\|LKYRKTYRFKQVADRPEPKAVFFTCMD S D $\square D Q F L H S N H K W V N S M N S A H P G K G Q D P H T L L I S C S D$ NGRYADARRYRQLANGQSPSTLVIACSD ETLERLLAGNRRHVESDYFADVQTGQHPTVVAVCCSD
MNAVVRLKTGFERFRNPKLFESLKKDQFPKYMVMFACA D AlVERVKNGFKNFKSEVYEKELSKGQSPKFMVVACAD KVAVVTCMD
EAVELLMVGNRRFMDEDRRELLTGGQRPNAMVLACSD MSTESYEDALEGNKVAAKKKLFGELEEFESKKFLVFACSD MT TKYSEFEFRTQPWFDQDNFQGFNAABDPMK TMVIMCCBCD MTTKYSEFERAFQRHTAPLVRDELAEAQRPSQQLFLDCAD
 MPSPA $\square$ NTLLSSNAAVASSNYTAPPTFAQFGEAMIVTCVD A $\square$ AR VSAFQRHTAPLVREELSEGQRPTQLFLTCAD
 MERILRGDMRYRNTKEFKQVKDNPKPKAVFFTCMD AWDALAAGNERFMDTDRRHELAGGQAPDAAF GCAD $\square L S G L S S F Q R N T A P L V R D E L A R L A S E G Q S P S Q L F I T C A D$ $R L E G G N R A F A E L L D R A A H S K P Q Q P F A A V V G C A D$
EVVREVFFDNEKFARAKGREFFEAAQSPVITLVTCSD

## UniRef90_F2L6D1 UniRef90_X7F402

 UniRef90-Q5ENU2 UniRef90_WOYP02UniRef90 UPI0003B74E50 UniRef90_G9NEM0 UniRef90_Q607T9 UniRef90_M9R378 UniRef90_C7NQM3 UniRef90_M4DQA5 UniRef90_LOE3E2
UniRef90_K2CNJ2 UniRef90_E4TZY6 UniRef90_F8GJV1 UniRef90_X0W9G0 UniRef90_S7VX64 UniRef90-L8WLD5 UniRef90_S3ZGL1
UniRef90_R9XGG0 UniRef90_D8J7K0 UniRef90_B8LTU2 UniRef90_D3D975 UniRef90_K0EVC3 UniRef90-H5TTN6 UniRef90_UPI0002DE7EB1 UniRef90_S5FT07 UniRef90_MOLI92 UniRef90-V6KYC3 UniRef90_G4SWV0 UniRef90_A4D0K0 UniRef90-J7LVB4 UniRef90-UPIO00360A76A UniRef90_V6L368 UniRef90_UPI0003C75CFF UniRef90_F8AAD2 UniRef90_UPIO00367C19F UniRef90_W8S491 UniRef90_I2N361 UniRef90_UPI000262FC66 UniRef90_Q6MMA1 UniRef90-G7E375 UniRef90_L1KKX8 UniRef90_S7S6G5
UniRef90 UPI00036 UniRef90_UPIO003665BA4 UniRef90_V4YFS0 UniRef90_A0A022MCL9 UniRef90-UPI00046532A8 UniRef90_U5G8M5 UniRef90_UPI00036E2292 UniRef90_G2Y076 UniRef90_UPI0003B5B764 UniRef90_UPI000366800D UniRef90_X8C9J7 UniRef90-J9HME5
UniRef90-U1NS88 UniRef90_K5WYR9 UniRef90-UPI00026C7976 UniRef90-X5KTE6 UniRef90_UPI000475F2E8 UniRef90_E9GLB5 UniRef90_G8BRV8
UniRef90 K0VPR0 UniRef90_V5XCT9 UniRef90_MOLP47 UniRef90_UPI0003600AFE UniRef90_M8AMR2 UniRef90_A9NX90 UniRef90_M5BU43
UniRef90-W9HME1 UniRef90-X5ECL6 UniRef90_M4DQA6
UniRef90-UPIO0035C1CC9 UniRef90_W6WUR1 UniRef90_L8ET03 UniRef90-J3NYW5 UniRef90-B6HIZ5
UniRef90-W2RXY5 UniRef90_UPI000367B5A6 UniRef90_F8UH78 UniRef90_UPIO00478BEC3 UniRef90_U5EVE3 UniRef90_UPI00034D0136 UniRef90_UPI000371F98E UniRef90_J9NEF0 UniRef90_Q0W2C5 UniRef90_D6WK56 UniRef90_UPI0003768381
UniRef90_E8T340
UniRef90 D1Z1A5 60A76A
C75CFF 2FC66




S R|V|SPELLTLSGVGEMF|VVRDAGNVV|DDLVYHS|L|K FA|V|DR SRV HVT SIIF GADS GEFFI HRNIANLVPPHTSAALE YAVTA




 SRVVA P NVIFA S T N P G DVV V L R R N I G N L I D D



















 S RVVCPTHILLNFNLGEAFVI RNVANMVAPYVGSAVVYAVLVH




 S RMIP T RYT DTHVGDMFVIRRNAGNLVPHCEPAGLELGCVV





## UniRef90_F2L6D1 UniRef90-X7F402

 UniRef90-Q5ENU2 UniRef90_UPI0003B74E50 UniRef90_G9NEM0 UniRef90_Q607T9 UniRef90_M9R378 UniRef90_C7NQM3 UniRef90-M4DQA5UniRef90-10E3E2 UniRef90_LOE3E2
UniRef90_K2CNJ2 UniRef90_E4TZY6 UniRef90_F8GJV1 UniRef90_X0W9G0 UniRef90_S7VX64 UniRef90_L8WLD5 UniRef90_S3ZGL1 UniRef90_R9XGG0 UniRef90_D8J7K0
UniRef90 B8LTU2 UniRef90_D3D975 UniRef90_K0EVC3 UniRef90-H5TTN6 UniRef90_UPI0002DE7EB1 UniRef90_S5FT07 UniRef90_MOLI92 UniRef90-V6KYC3 UniRef90-G4SWV0 UniRef90_A4D0K0 UniRef90-J7LVB4 UniRef90_UPI000360A76A UniRef90_V6L368 UniRef90_UPI0003C75CFF UniRef90-F8AAD2 UniRef90_UPI000367C19F UniRef90_W8S491 UniRef90_I2N361 UniRef90_UPI000262FC66 UniRef90_Q6MMA1 UniRef90_L9VHD5 UniRef90_G7E375

## UniRef90 L1KKX8

 UniRef90_S7S6G UniRef90_UPI0003665BA4 UniRef90 V4YFS0 UniRef90_A0A022MCL9 UniRef90_UPI00046532A8 UniRef90_U5G8M5 UniRef90_UPI00036E2292 UniRef90_G2Y076 UniRef90_UPI0003B5B764 UniRef90_UPI000366800D UniRef90_X8C9J7 UniRef90-J9HME5UniRef90-U1NS88 UniRef90-K5WYR9 UniRef90_UPI00026C7976 UniRef90-X5KTE6 UniRef90_UPI000475F2E8 UniRef90_E9GLB5 UniRef90_G8BRV8
UniRef90 K0VPR0 UniRef90_V5XCT9 UniRef90_M0LP47 UniRef90_UPIO003600AFE UniRef90_M8AMR2 UniRef90_A9NX90 UniRef90_M5BU43
UniRef90-W9HME1 UniRef90-X5ECL6 UniRef90_M4DQA6
UniRef90-UPIO0035C1CC9 UniRef90_W6WUR1 UniRef90_L8ET03 UniRef90_J3NYW5 UniRef90-B6HIZ5 UniRef90_UPI000367B5A6 UniRef90_F8UH78 UniRef90_UPIO00478BEC3 UniRef90_U5EVE3 UniRef90_UPI00034D0136 UniRef90_UPI000371F98E UniRef90_UPI0003F88D34 UniRef90_J9NEF0 UniRef90_Q0W2C5 UniRef90_D6WK56 UniRef90_UPI0003768381 UniRef90_E8T340


100
110
120
 L EVSHLIVLGHSRCGQGCLDMCAGRAPELEEQSSFVGRWM


 L HVP HV I VLGHA QC G G $\quad$ GKALLDDMAT GAEFES $\square G E W V S M A M$




 AGAK LI LVLGHTECGAVKGACDDVVANDKPAVAAVPGYDS LKVNHVVVCGHYAC G GVKAAMQSADLGVLNGWLRNDRDVY L GVEHTAACH
$L Q V K S D T V C G H S G C G A M Q A A S T P L K R W L R H G L P P W P R \square A G$ $L Q V S R I V L C G H T D C G G V N T C L T G T R R A L C S S L H A H L D S L D$


 L F GTKEIVIVVQHTQQCGMLS GNANEMEKVLRREK LAAKGAFAKW







 $L G T N L V V I$ MGSDSCGDLTAAAE GLAANELLERRSA
$A D T D V A A V V G H T$ GCGAVTAAYHAATGGELDPBRGVDKWVE
L HVENIVVTGHYGCGGVAAA
LEVRSI TVVCGHSGCGAMQALLNSDPGGARTPLKRWLRHAG L H I P LI VV L G H E HCTAMMKTAL E S WN NV V DP E GA SRAVVVE Q $L$ RVESITVVCGHS GCGAMAALLDDAAGSPPPSDEATPDARWLD

 L A V
 |VRTPVVVVLGNTQCAAVTAVTRAINGHGHAMEENDPPMFD




 L K V S D I V V M G H GRC G GI R A A
$L S V R T I A B C G H S G C D A M H D L M H E D A D G A V E K W H P V A A A A A$
 LKVECIVVI GHSRCGNTYHF IEDWVK IGMEAKKK VQQRENR L K V E N I MVI G H
 GAAKTILIVHHNDCGMSHYSDADIRTAMEEEKAIGKSRYG LGVPLVVVLGHESCGMPPGFQRVLVEKVTPSLLAARSQGA




 $L R V G S \| T V C G H S G C G A M D A E P T P L A R W L R H G R P S L A R M Q R$
LGVP LI LVLGHDECGADRAA $\quad \mathrm{V}$ D S L V VER VVPAVRRVAGGDP

 $L$ RVES TVVCGHS GCGAMQALLLRGSLLERMASRRHSRPRLSSG $L G L K D V V L G H S G C G V V S A A V D V F L N$
FVIDDELVIVHHTVDGSLMFTNEWMRDTVKARVGESHWQDN
 $N D \square R H I V C G H S D C K A Y K L Q D S E F A S Q D N R R \| S P L R A W L C$ LRDRTIVVLGHSRCGAVSAAVDDHLE


## UniRef90 F2L6D1

 UniRef90-X7F402UniRef90-Q5ENU2 UniRef90-WOYP02 UniRef90_UPI0003B74E50 UniRef90-G9NEMO UniRet90-Q607TT UniRet90-M9R378 UniRef90-C7NQM3
UniRef90-M4DQA5 UniRef90-LOE3E2 UniRet90-K2CNJ2 UniRef90-E4TZY6
UniRef90 F8GJV1 UniRef90- xow9G0 UniRef90-S7VX64 UniRef90_L8WLD5 UniRef90-S3ZGL1 UniRef90-R9XGG0
UniRef90 D8J7K0 UniRef90-D8LTM2 UniRef90-D3D975 UniRef90-KOEVC3 UniRef90-H5TTN6 UniRef90-UPIO002DE7EB1 UniRef90-S5FT07 UniRef90-MOL192
UniRef90-V6KYC3
UniRef90-M8CEF5 UniRef90 G4SWV0 UniRef90-A4DOK0 UniRef90_J7LVB4 UniRef90-V6L368 UniRef90-UP10003C75CFF UniRet90-F8AAD2 UniRef90_UPIo00367C19F UniRet90-W8S491 UniRef90-l2N361 UniRef90-UPI000262FC66 UniRef90-Q6MMA1 UniRef90-L9VHD5 UniRef90-G7E375
UniRet90-L1KKX8
UniRef90_S7S6G5
UniRef90 UPIOOO36 UniRef90-V4YFS0 UniRef90-A0A022MCL9 UniRef90-UP100046532A8 UniRef90-U5G8M5
 DLARALEKEAVLVSLENLMTFPFVRRTLSLHGLWTEI GAG ALD ARAMNSAHEHASEAARL
FLWQKAVEANVDFQVSWLERYTALANELATIGLTYDLSN MHNGQNLEESVRRDLQFLRDSPYLRKELKARGFVFYLKAN EACWQYVRAADQGSLGNLDTYPWVREAVELQGWWFDLESG VTRVRQLEDSVVISLKNLMTFPHVKERLSLHGLWNDVGHG LEPHHLVEYNVDRQVEFLRDSDHVPAAVDVVGVVYDFQDG IGMMDDVDETCLKTVEYLKNHPLIPDDVVISGWVWETEFR LKKNNVEFENVLQQIENIKSYPEVKKRLRVHAWWFDLVSG AK WLAAVVSNUNQQVYYAQKEDVESGKLTIVGVVYDLANG DGMMDDVDETCMKTVEAFKNHPLIDPKDVVISGWVWEVETR DRSSKNTDKNVVLTVER $\square$ RK
R M H H N


REPADAVEQNVIQQLEHLRAHESVARALRLHGMYFHV AMSDELAEAHVVHTSSLLHKSPVVAKAVAIDCLVSDSNDG RHGRPSLARNVRQQLDHLRAHPCVARRLTLHGMYFHVAEA LTPNRLVVYNVRQQIVELCRASEDVPTRVSIVGVVYDFQDG DETERLSLANVVQQLEHLRAHDPVARALRLHGMYFQVA RAPADDVEANVVQQLEHLRAHESVAHALRLHGLYFHV EQCHSCEKEAVNVSLGNLLTYPFVREAVSLKGAHYDFVKG A GPMPPVEQNVVQQLDNLLEHAVVAGRLRLFGLYFDLASA FGA VVEPEKTVKQDVEYLRSFSWGKADVEVVGLVLDTFSG
 NDKPAVIE ENVWTSIRDLFTKSVKAGKVKVVGADYDVSDG TSVDEFEARHVRETAQLLARSTVVAERVAI ACVTYRLAEG
 LEPNRDVEYNVDRQVDHLDDSDDVPDELTAVGVVYDFQDG PAFRALVEENVKANVNRI ANSFVMRDHVFIHGWIYDLENG LK VRKATMLNVLAQMEHLK S YPLIAKKLTI HGWFYDL ERVDEFEAQHVKETVAQLQMRSAADAQGAI VGATYHLADG ILDDACVRANTVHVADQLRHEPGLREELRRIEPAHFSIIKRS


## EAGFTGADQNVA $\operatorname{DQVQAAQRHPLVAQNLAVVGLFDDLPTA}$

 L V I N QLV E Y NVGYQARLLRAADDVPDRVDVYGFVYD

F L P DR NYTESVLDD DALVTHHPLLKSNAKVSGYDYND E DERSDEKSLNHDVAFLRDCPFIIPGTQIMGLAYDIKTG DTGEDFEKHHVVEIANHI DRSPGILERLRVVGMRYRLSDG EQCTYCEKEAVNVTLGNLDSYPFVREKLTI RGAHYDFVNG RPVADDVERNVVQQLEHLMAHACVARRVALHGMYFHVAEA SLA $\square$ M N FEESLKHDVKLLRDSPAVPKHI KLYGFFYEMNS G ALAERPVADNVVQQLHHLMSYPCVARRVALHGMYFHVAEA HRDGRFVELNVLEQMKRVHDFPEVQRDLKVHGTVY
 $\square G R L G R G E V N V M Q Q L D H L R A H P C V A R R V G A L H G M Y F H V G E A$
EAA DESGDEHLRDTVAELLESS!AAGTLATVGANYRLFEG EHAQTSLDKNTLQQIENI ASYGFLKRRLEI HALWFDIYTG QVWFKTRRESVTT INQLLRSSRVLSEAVAVVGCQYQLDNG $R L P A D E V E Q H V V Q Q L E H L R A H E A V A R R L A L H G M Y F H V$

WGANTDMAGSVKGDLEWLRANQVIREEDKARGFDFDDKTG TVAEVQTEANVDKQI DNLLNDASI RGKMMIVGAIYDFKDG $T H A L T S D E K N T L Q Q L Q N I A S Y G F L K K R L E U H A L W F D \square Y T G$

VA WR E AVEESNVH WQVR V LER Y G L L R N R L A V I G A IV D F A N G


| UniRef90_F2L6D1 |  |
| :---: | :---: |
| UniRef90-X7F402 | ELE Y F D |
| UniRef90- ${ }^{\text {a }}$ ENU2 |  |
| UniRef90-W0YP02 |  |
| UniRef90-UPI0003B74E50 |  |
| UniRef90-G9NEM0 | K L V E V K |
| UniRef90-Q607T9 | D L |
| UniRef90-M9R378 | GLEEVY D |
| UniRef90-C7NQM3 | E V |
| UniRef90_M4DQA5 | ELWELD |
| UniRef90-L0E3E2 | R L R |
| UniRef90-K2CNJ2 | NI Y Y Y N |
| UniRef90-E4TZY6 | RLK K V V |
| UniRef90_F8GJV1 | R L R |
| UniRef90-X0W9G0 |  |
| UniRef90-S7VX64 |  |
| UniRef90-L8WLD5 |  |
| UniRef90 S3ZGL1 |  |
| UniRef90-R9XGG0 | A LT V V |
| UniRef90_D8J7K0 |  |
| UniRef90-B8LTU2 | V VTEVD |
| UniRef90-D3D975 | RAIVLD |
| UniRef90-K0EVC3 | R V I EVT |
| UniRef90-H5TTN6 | Q V Y E V T |
| UniRef90-UPI0002DE7EB1 | Q |
| UniRef90_S5FT07 | RL |
| UniRef90-M0LI92 |  |
| UniRef90-V6KYC3 | L V H R L S |
| UniRef90_M8CEF5 |  |
| UniRef90_G4SWV0 | $\mathrm{R} \square \mathrm{R}$ |
| UniRef90-A4D0K0 |  |
| UniRef90-J7LVB4 | R V V L VT |
| UniRef90_UPI000360A76A |  |
| UniRef90-V6L368 | QT Y VMD |
| UniRef90-UPI0003C75CFF | R V EL I N |
| UniRef90-F8AAD2 |  |
| UniRef90-UPI000367C19F |  |
| UniRef90_W8S491 | GLEET F D |
| UniRef90-I2N361 |  |
| UniRef90_UPI000262FC66 | A V H R V |
| UniRef90_Q6MMA1 | N |
| UniRef90_L9VHD5 |  |
| UniRef90-G7E375 |  |
| UniRef90-L1KKX8 |  |
| UniRef90_S7S6G5 | R L R V |
| UniRef90-UPIO003665BA4 | QAY L |
| UniRef90_V4YFS0 | A V |
| UniRef90_A0A022MCL9 |  |
| UniRef90_UPI00046532A8 |  |
| UniRef90-U5G8M5 |  |
| UniRef90_UPI00036E2292 | Q M Y L Y D |
| UniRef90-G2Y076 | LLKRV |
| UniRef90-UPI0003B5B764 | EAVPV |
| UniRef90_UPI000366800D | R V Y WLE |
| UniRef90-X8C9J7 |  |
| UniRef90_J9HME5 | ELK |
| UniRef90-U1NS88 | E 1 HV |
| UniRef90-K5WYR9 | DVT DLN |
| UniRef90-UPI00026C7976 |  |
| UniRef90-X5KTE6 | R V |
| UniRef90-UPI000475F2E8 | R V E WL |
| UniRef90-E9GLB5 | DI Y VF S |
| UniRef90-G8BRV8 | LI |
| UniRef90-K0VPR0 |  |
| UniRef90-V5XCT9 | R L Y L V |
| UniRef90-MOLP47 |  |
| UniRef90-UPI0003600AFE | T VD MV] |
| UniRef90_M8AMR2 |  |
| UniRef90-A9NX90 |  |
| UniRef90-M5BU43 |  |
| UniRef90-W9HME1 | F LT K V |
| UniRef90-X5ECL6 | LAEP |
| UniRef90-M4DQA6 | ELWEL |
| UniRef90-UPI00035C1CC9 | QAYVLD |
| UniRef90-W6WUR1 | E L |
| UniRef90_L8ET03 | Q A Y V L |
| UniRef90-J3NYW5 |  |
| UniRef90-B6HIZ5 |  |
| UniRef90-W2RXY5 | R\|VEG|V |
| UniRef90-UPI000367B5A6 | QAYVLD |
| UniRef90_F8UH78 |  |
| UniRef90-UPI000478BEC3 | RAE |
| UniRef90-U5EVE3 |  |
| UniRef90_UPI00034D0136 | R V A P V T |
| UniRef90_UPI000371F98E |  |
| UniRef90_UPI0003F88D34 |  |
| UniRef90_J9NEF0 | K A E E I K |
| UniRef90_Q0W2C5 |  |
| UniRef90-D6WK56 | E $\square$ |
| UniRef90-UPI0003768381 |  |
| UniRef90-E8T340 | $\mathrm{R} \quad \mathrm{V}$ V V N |
| UniRef90 D1Z1A5 |  |

## 10 <br> GQRPSQLFLT CA D

FMVFACSD
ERTKTGFVQFRTEKYYGALAKGQSPKFMVFACSD MDRUFRGDMKYRRTNRFVQVKNHPEPKALFFTCMD QRFMSFNQKYMEDEHFQGLAEVQSPKFMVIACAD MPTISKQSEGNQRFQEQCFTEERELFESDKALIVACAD $M P V I E K\|L Q G\| V R Y A A L K Q L D E V N K N V Q P K A V V I S C D D$

DFAQRRAALETLFPPGKVS KGQSK Q L L WLGCS D
$\square S$ A F QRDTAPHMREELAEGQRPSQLF $\square T$ CAD
PHPDAVF FTCDD
DYHEPTVRQEFAKAVP LRTVVVYCYD
VAASASYYSTFDKGHLAFPPAKKY
$M P G L H K V L Q G \| I K F R Q T K Q F E H V R S N P N P T A V F F S C M D$



QRFLAFKKD NLKQFEDVKNNPKPTAVMFTCMD NDPIISRNLNWVVHRTHDDPE I FRRRKRLWI GCSD QRFLAFKKD NLEHYKNLADVQAPKFLVIACAD
MSAFAK $\square$ LKGVVKFRHGKK LQE $\square K K H G H P T A V L F A C M D$
$\square N F L E E G N K R Y T D G Y Q N K K \square K D F \square K P \square A V M V N C \square D$ NFISGNRRFSDTSRGVELSNDQKPFAAFLCCSD EMLARNSKFASSYQSPPLQMVSTMRAVVLSCSD

QKYRKNTEYGQLAKGQSPKFMVFAC
$S V L G N \square M G A N H Q \quad A \square K D \square D P T A P G P S P H L V W L A D P D$ NKKVLFLIGMN
NVLSALLLGNERFVSQET $\square P D T A D R R K P F \square L L T D D D$ NKKVLCLTDIE VIT MLRQGNDRFCAGRWHYRLEGSAPPCAVVLGGSE

KKALFITCTD NKKVLFLTDME

NKKALTLTD DE
MSAD LVR Q $\square$ A K GNE QYKKNFTFSFKEFPEQKG■IILSCLD


971
588886158 $\begin{array}{lllllllll}B & B & B & B & B & B & B & B & B \\ B & B & B & B & B & B & B \\ & B & & \\ & & & & & & & \end{array}$

| UniRef90_UPI00046501B6 |  |
| :---: | :---: |
| UniRef90_S4MTX5 | SRLVTSMITSSGPGDLFVVRNVGNLVDDSVAAA |
| UniRef90-M8ANX9 | SRVCPSVTLGLEPGEAFTIRNI A A MVPCYCKNAPSRSSRC |
| UniRef90-UPI0003831283 | MEPAAVLGVRLGEA IVARNLGGRVTPAVIK D L A W V |
| UniRef90-G7J5H1 | SRVSPSIILNFQHGEAFMVRNI ANMVPTFN |
| UniRef90-U5FY07 | SRVCPSHILNF QPGEAFMI R NIA A MVPPPYVGAATEYAV |
| UniRef90-J9K706 | SRMLPARFTESNVGDMFIVRNAGNLIPHCEPAALELGCVH |
| UniRef90-T2DMI5 | SRVCPSNlLGFQPGEAFMI R N 1 A HPVPTMCNAALQFAVTP |
| UniRef90-A0A011PEC0 | SRVDLALLTGAEPGDMVIVRNVANLVPPYALGSLELAVLS |
| UniRef90_V4AN41 | ARVLPAKFLDNEDGDHFMVRNVGNMIPDADAGALEFCCVQ |
| UniRef90-B8MEU1 | S GYEETTTLNLLQDEMIVVRNWGNMALSTDLAAVQHAVDV |
| UniRef90_A3ZX09 | A RVPVRQLFGQSAND\FEVRTAGQTMGDECLGSVEYALSH |
| UniRef90-G2GNH1 | MFELRNAGNIVPPYEAATIEYA |
| UniRef90-UPI0002000 |  |
| UniRef90_T1IZQ6 | S RMIIP TRFTMTNVGDMLI TRNAGNLI P HASSAALELGCV |
| UniRef90-A8ZLZ4 | PRVYPGE\\|LT DEQGNFEVIVAGGRAID A L R S I TVA Q |
| UniRef90-G4UEC7 | SNAGAS DKDALLSIVISQQ |
| UniRef90-W2SJ13 | S R M L P ARFTS S QVGDMFVVRNSGNMDP HTEPAALELAV |
| UniRef90-IOHFM7 | SRVVPDSSVGAAIEYAVD |
| UniRef90_K2K7R4 | S RVVPNLIT G |
| UniRef90-Q0E9S1 | QRVPDEKVFDSAPGELIVQRVSGGTAGKTLFSSTE |
| UniRef90-C1C2M7 | SRIHPNVFMNSD\GDAFTVRNAGNIVPKSGLAGLEL |
| UniRef90_G5LJ15 |  |
| UniRef90-H2WK41 | S RMLPT RFTQS QVGDMFVVRNAGNMIPNTEPAA |
| UniRef90_D7MU16 | SRVCPSTVLGFQPGDAFTVRNIANLVPSYESGALEFSVNT |
| UniRef90-V4P2A6 | NASATLETGAFEEDGCLVYRNLGNQVSPHDMATIEYALHI |
| UniRef90-D7LBG0 | SRVGCPSTVLGFQPGDAFTVRNIANLVPSYESGP |
| UniRef90-A0A022NQC8 | CL |
| UniRef90-F1LE18 |  |
| UniRef90-J7KKI5 | MLT GSAPGELFVHRNDANMVDDNFMSVLQYA |
| UniRef90-G0J6G5 | MREPLNMLMNTG\| G DLI PLIKVA GNLLDRHLLIESIEE |
| UniRef90-UPI00036F( |  |
| UniRef90-S3D054 | PRLNPYQILG\\|DATKATMVRNAGGRA FDAI R T L S L L |
| UniRef90_V6SZZ5 | QEI YPEVITNKKNKDMMILNSFGAVITQCLI RNI ILAVYN |
| UniRef90_UPI00040E24ED | N $\square$ R A E N M LTIUQ S G SVILLHPIMRS |
| UniRef90-UPI00032A7A1E | SGTG A AI EYAVL |
| UniRef90-Q1PG92 | NFQPGEAFMVRNTASMVPPFVGAAI EYAVIH |
| UniRef90-Q1NQY8 | PRLRPAMVWGEQKGG\\|FTVRNLGNQL ETATAALDYGIRQ |
| UniRef90-UPI00041AD1E5 |  |
| UniRef90-UPI000472 |  |
| UniRef90-UPI00028 | N GLEPLEATNTSAGNMLTLQSYGAAISHPDMRSV |
| UniRef90-R1E9P1 | S RVPIE DLIF DVEPGRLVVQRVLGSVAGRTAYS S I QYAVMR |
| UniRef90-M7Z0F7 | GSAIEYA |
| UniRef90-V6KF59 | A NFSPTR |
| UniRef90-G4NQL2 | NGLEPQEVTHTPAENMLTIQSYGADI SHP\MRSVIIA |
| UniRef90-MOKXY3 | NSEPGHLFTCSNDGNRVDQRVSGDVLYPIEH |
| UniRef90-X8F4D8 | DQGLGDMFVVRTAGHVIDSAVLGSI EYAVTV |
| UniRef90_UPI00036F1FCF | RVPPPELVFDQGLGDLMTVRSAGEVLDEAVLGSIAYGV |
| UniRef90-UPI00047EF7DE | LAPQEVTN】R S ENMLTIKSYGTDISHPIMRSV |
| UniRef90-X8C | MRNVGNLVPTDVDAALDFALNA |
| UniRef90-M2MU46 | PRADPKDLWNLTANVA ITRNAGGRA K DALRSMEALA |
| f90-C3IU83 | $\square \vee R S V I I A$ |
| UniRet90 M1A9Q2 | A I E Y AVLD |
| UniRef90_A4BWT6 |  |

[^2]

|  |  |
| :---: | :---: |
| UniRef90－S4MTX5 |  |
| UniRef90－M8ANX9 | GGUKALLNVKDSADDTFHFVEDWVR\GYKARKKVKAECSE |
| UniRef90－UPI0003831283 | ADWFEI AVI HHTDCGSALLADDDLRAGYAARGG WDEQTS |
| UniRef90－G7J5H1 |  |
| UniRef90－U5FY07 | LK V D T |
| UniRef90－J9K706 | NDI RHVIVCGHSDCKAMNLLHVNRRKSPLRAWLCSHAMSS |
| UniRef90＿T2DM15 | L QVENI |
| UniRef90－A0A011PEC0 | LKVEHI I L G HARCGGワ HVLIGWYF D L EVGALLHY |
| UniRef90＿V4AN41 | KNVKHVIVCGHSDCKT |
| UniRef90－B8MEU1 | EVKHI I VCGHYGCG■VKSDPYPWQKK $\square$ S NLLS THQHELE |
| UniRef90＿A3ZX09 | MPTKTVVVLGHGSCGAVTASVDSYLSNWGLNLG |
| UniRef90－G2GNH1 | LGVQDIVVCGHSHCGAMAADAWLQLARPELAPADSAADDD |
| UniRef90＿UPI000200098A | LRVASITVCGHSGCGAMQALLSEDLARLRGDASALPGFAR |
| UniRef90－T1IZQ6 |  |
| UniRef90－A8ZLZ4 | FG】KNIVIVHHTHCGATSFTADGIVNAFQKEQGND】STQD |
| UniRef90－G4UEC7 | LATEAIVIVKHTGCGGMTCKNEDAHGVVERNLGAEARKED |
| UniRef90＿W2SJ13 | GHINHVIVCGHSDCKAQNFDPQSPMDHWLRRHGDDEEDKW |
| UniRef90－IOHFM7 |  |
| UniRef90－K2K7R4 |  |
| UniRef90＿Q0E9S1 | WNPKVLVVLADSDSKIVRAAID QVSGDVIPSPPQRGVLDR |
| UniRef90＿C1C2M7 |  |
| UniRef90－G5LJ15 | EVEHI I I C GHS GCGG |
| UniRef90－H2WK41 | ASGICGCPKNFDVASPMDHWVLNERLHRGPSLMKYDSE |
| UniRef90＿D7MU16 |  |
| UniRef90－V4P2A6 | VKINEIVVCGHYRCACCWSGP $\square$ RVVIFDERRRQFEE\｜VSED |
| UniRef90－D7LBG0 | FSVNTLNSYQDTECGAVNASNGPIN |
| UniRef90－A0A022NQC |  |
| UniRef90－F1LE18 | GGLKHAIVCGHSDCKAM |
| UniRef90－J7KKI5 | LHVSRIVLCGHYGCGGVQAATT DLRQALSPHTAASQGSD |
| UniRef90＿G0J6G5 | QKARLILIMGNTSNKLI LIS SLK K |
| UniRef90＿UPI00036FC726 | LGVK I I V L G H C K GLLT GEYS WKY WNLVRA L PAAPNTK |
| UniRef90＿S3D054 | GAPRTIA M H H T D C M M H H D A I K K A |
| UniRef90－V6SZZ5 | EMVDEI Y I TGEMESKEVKLNMSDKIK E H Y I DVVERDVIS W |
| UniRef90＿UPI00040E24ED | ENVEEI FVVGTESTKNKIQTLDYLFQNSKPEFSGGTVDEW |
| UniRef90－UPI00032A7A1E | LKVENIVVI GHSCCGGIKGTSSDFIEQWKVKQEASKLDFS |
| UniRef90－Q1PG92 | LKVENILVIGHSCCGGIKGTQSDFIEEWKVKAECNNLDFS |
| UniRef90－Q1NQY8 | LYAPVLLITGHSDSHHLPAATRGELNHLHPALGHDERAAA |
| UniRef90－UPI00041AD1E5 |  |
| UniRef90－UP100047283A5 |  |
| UniRef90－UPI000288E1C1 | EDVEEIFVVGTKDKKSSTGYVRTQLEDMKDKIHCKPEFFG |
| UniRef90－R1E9P1 | WKPPVLLVLVESSSAVVTAADEELRGHYLPRAPVHDMVSA |
| UniRef90－M7Z0F7 | LKVKVIVVIGHSRCGGIKADSFHFVEDWVRTGECCDLPFE |
| UniRef90＿V6KF59 | S SLR DVILCGHSRCVAHNAPVPPAVKRWLSIGRSRVA |
| UniRef90－G4NQL2 | EDVEEVFVVGHVRTQLETMKDDYLFQNCRPEFSGGTFDKW |
| UniRef90－MOKXY3 | TMTETAVVVGHTGCGAVTATYDDLTDGLDEPAGDDHCLSV |
| UniRef90－X8F4D8 | LNVPLVVVLGHDSCGAVNAALRDVVERVAPS L L M R R R GL |
| UniRef90－UPI00036F1FCF | LGI PLVVVLGHQSCGAVAAAHLPAHIQYVADQ |
| UniRef90－UPI00047EF7DE | ENVEEI FVVIGTKGKRNSKVNVLTQLEAMKDKISGGTLDEW |
| UniRef90－X8C221 | LEVRTI VVCGHSGCGAMASLLSESIDAPTSSVGRWLDNAR |
| UniRef90－M2MU46 | LGLGAI AVIHHADCGNNFHDNHVVQRRLKDR |
| UniRef90－C3IU83 | ENVEEI FVVGDEDKQTSSVNLQTQRDNCMPEFSNGTLNEW |
| UniRef90－M1A9Q2 | LQVENILVI GHSTCGGINALMDGLPAKAKVL |
| niRef90＿A4BWT6 | A GSKLIFVLGHESCGAIKAACDHVELGNITAMGDHNSSNI |

[^3]


AEPGAH
MAFEEQCKEAVNVSLQNLSTYPFVKETLKLVGGHYDFVSG LKMAVLSSKTVQEDVAKLRSTPELAGNI AVGGYAYDLATG EQCKFCEMESVNNSL VNLKTYLYVNKNLALGGGYYDFVNG
$\square E K Y Q Q L E A N T \square Q Q \square Q N \square A S Y D F \square K K R \square E \square H A D W F D \square Y T G$
NPARNTVEEA
S LIADHLVELNVIKQMES VRDSPGKNRRVNVHGF $\square$ Y D
$P S L P G V A Q G N D V N Q L A V L G S Y P V V R Q R L R L H G W Y Y E V H T G$ $R D P A D V T E Q N I V Q Q L D H L R G H P A V A R R L A L H G V Y F H V$
 SICDSDFVTSLQHDTRLVRASKGTPHNVDIYGYVYNIDTD




LK H DA $\square Y E \square N V M E Q V Y N L G H S T \square M Q Q N V T D H G W A Y S D N D G$ $V$ S P S QS F E ANV $\operatorname{LQQLDNLCSHEFLKERLHIHGMWFDIYKG}$
A Q $\square$ QS $\square C E \square N V R M Q \square R N \square Q E N V L \square R G R \square R \square Q G L I W S P R D G$ ERVDRLCE LNVIQQVANVSHTS VVQS $\square$ VSVGGC $\square Y G \square K D G$

DESTRQVEANVLAQFAHLDACEPVQKDLDVFGCVYDDHSG FKPEQLTKANLEEWSERLMNHEISLGKGGLCTAIFDRKS G NLE GDSVDNAVNENDQL


LIRRQENVSENDEKSDDADLHDP LVPPDVKVHGFMDDKTGG EQCKYCEKEAVNVSLANL LTYPFVRKKLALKGGYYDFDKG
lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


UniRef90 UPI00046501B6
UniRef90-S4MTX5
UniRef90-M8ANX9
UniRef90-UPI0003831283
UniRef90-G7J5H1
UniRef90_U5FY07
UniRef90-J9K706


UniRef90-T2DMI5
UniRef90-A0A011PEC0
UniRef90_V4AN41
UniRef90-B8MEU1
UniRef90 A3ZX0
UniRef90-G2GNH1
UniRef90_UPIO00200098A
UniRef90-T1IZQ6
UniRef90-A8ZLZ4
UniRef90_G4UEC7
UniRef90-W2SJ13
UniRef90 IOHFM7
UniRef90_K2K7R4
UniRef90-Q0E9S1
UniRef90 C1C2M7
UniRef90-G5LJ15
UniRef90-H2WK41
UniRef90-D7MU16
UniRef90 V4P2A6
UniRef90-D7LBG0
UniRef90-A0A022NQC8
UniRef90 F1LE18
UniRef90-J7KKI5
UniRef90_G0J6G5
UniRef90-UPI00036FC726
UniRef90 S3D054
UniRef90-V6SZZ5
UniRef90_UPIO0040E24ED
UniRef90 UPI00032A7A1
UniRef90 Q1PG92
UniRef90-Q1NQY8
UniRef90-UPIO0041AD1E5
UniRef90-UPI00047283A5 UniRef90 UPI000288E1C1
UniRef90-R1E9P1
UniRef90 M7ZOF UniRef90 V6KF59 UniRef90 ${ }^{-}$G4NQL2 UniRef90-MOKXY3 UniRef90 X8F4D8 UniRef90_UPI00036F1FCF UniRef90-UPI00047EF7DE UniRef90-X8C221 UniRef90 M2MU46 UniRef90-C3IU83 UniRef90-M1A9Q2 UniRef90_A4BWT6

| lupas_21 |  |
| :---: | :---: |
| lupas_14 |  |
| lupas_28 |  |
| jnet |  |
| conf | 688469 |
| sol25 | B B |
| sol5 | B |
| sol0 |  |
| jhmm | $\rightarrow$ |
| jpssm |  |


[^0]:    

[^1]:[^2]:    lupas 21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

[^3]:    lupas＿21
    lupas＿14
    lupas＿28
    jnet
    conf
    sol5
    sol0
    jhmm
    jpssm

