## QUERY

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D


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D E
EEMYRLWKI RKTI MQLCHDRGYLVTDE
S E K Y R $\ R K T V M E M L R D R N Y L V G D F E V N M S K E E F K E$
$\qquad$ $R L \mathcal{R} V R K T V L Q M L K D R G Y F V G D F E L D M S K V Q F K N$
 D NLTRLWRVRRTCLQMLNDRGYLVSQEEI GTTKDQFRD

 EREMT R L WRTFRRTVVYEL L A D R G Y E V S D N E L L L P L LE D F R A
S E
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REAL
NSRELS
D D
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$R E \square F R \square W K \square R Q N A F Q$


S S
EGETS
DDSNLSRLFNIRKTCLELLRDRNYLISQDDFDMSLDQFRD DSEATLWKVNRTIHELVKDRGYQVADDEDHMDLTTFKS
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QUERY
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QYGDSEKKPARSDLTILVAHNDD
PADO
QMFVFFPE
QF GDSEGHPSRGDISVLVAHNDDPTD
TFGDSERHPSRNELTVLVAHNDDPTD Y Q QMFVFFPE K CDSMSRPQRKLMSFQANPTAESLEKYPELGSMWVEFCD K CDSMGMPQRKLMSFQANASQEAAEKYGDLGPLWVEFCD HVCDSMGDPQRRLMCFQANPTAEALEKFPSLGSLWVEFCD KYCDAMGRPQRKLMSFQASPTSESLGQFPNMGSLWVEFCD KYGENMKREDTVINKSKRNDSSDQV
KYGDNMKREDLVIHKSKRDGSDNQLEAWDPGYQYYVFFPE QFCDGMGQVNRKMMCYQAVPTEDALAKFPEMGSLWVEFCD KYGEGMTREGLVILKPSRTNPSD
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KYSDPLGYPDRAKMKDSARPTEAMVAKYTECGTVYVFFPE QYGETMKKEDLVINKSMRNNSSD KYGDNMKREDLTINKTKKDGPSD TYGENMKREDLDINKEKRSDSSD TFGDSENCPSBADITLLVAHNDDPTD
KYGDEPKREDLVIQKPKRSNNAEHD
KHGDNMKREDLVTLKAKRNDNSD
QFCRPGERPPRSELMVLVAHNDD
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 QYADETGAPQRTRMAFTARPSENMQKKYMP四TIHVEFSN RYGDPVRRDDLVINRYKKDDPAD

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SVGDP PSRKDLDMVVNHEED
PATS

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s

| $P D D Q L L V F F P K$ |
| :---: |
| $P A D M E F$ |

WWTNEDGTPNRAKLQFSARPSEAMIKKFPECGTIWVEFCT

80

[^0] | T | I | Y | V | E | F | C |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Q | P |  |  |  |  |  |
| Q | Y | V | F | F | P | E | Q1 Y VFFPD MDKYPECGT
RKRGDESDQ

Q Q| Q Y Y Y $M F |$| F | F |
| :--- | :--- |
| F | F | QY/FFPE QLYVFFPD Q $\triangle$ YVFFFPE

Q ${ }^{\mathrm{F}} \mathrm{F}$ \begin{tabular}{l|l|lllll}
$Q$ \& $F$ \& $V$ \& $Y$ \& $L$ \& $A$ <br>
$S$ \& $I$ \& $Y$ \& $V$ \& $Y$ \& $F$ \& $C$ <br>
\hline

 

\& $F$ \& $F$ \& $F$ \& $P$ \& $E$ <br>
\hline \& $F$ \& $F$ \& $P$ \& $E$

 

R \& $F$ \& $V$ \& $F$ \& $F$ \& $S$ <br>
\hline

 R 

Q \& I \& Y \& I \& F \& F \& P <br>
N \& E <br>
L \& F \& V \& F \& F \& P \& E
\end{tabular} E

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| :---: | :---: |
| UniRef90_11FMD4 | DMAPKY LLEQFMEAELMIN |
| UniRef90-W4XGX0 | DMAPKYLLEQF |
| UniRef90-Q9N5K2 | DMAPKYMLE |
| UniRet90-T2MG | DMAPKY |
| UniRef90-A0A024NS99 | K Y |
| UniRef90-W61 | Patv |
| UniRef90-C4R38 | VSPAl |
| UniRef90-W1 1 BJJo | AVAEPA I |
| UniRef90-G8YL20 | VSP P A ${ }^{\text {d }}$ |
| UniRet90-UPI0003593B88 | VEMPKYIL |
| UniRe990-K0k | PTVAPAVI |
| UniRef90-UPIO002B488F6 | SEAKSFHL |
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| UniRef90-V51429 | SMPGR |
| UniRef90-UP1000 | , |
| UniRef90-139 | S |
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| B5E | VEMPKYVLEQFLEAELMFN |
| A9 |  |
| O8 |  |
| UniRef90-T1FN65 |  |
| UniRet90-B3S309 | P |
|  | P |
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| UniRet90 M1B | SEISKFHLEVEQEAEMLVN |
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| UniRet90_G1PY18 |  |
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| UniRef90-G1XN | A P S V |
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| UniRef90-2JSM8 | V |
|  | S G Parle |
| UniRet90- A9NTD1 | SFHLEVF |
| UniRef90 ${ }^{\text {- } 50}$ | PSVIEVF |
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| UniRet90 W5AP | KLM |
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| - | KYKVDVQAELVN |
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DETRRLLHRTRRTILEMLRDRGYLVTKTDLIELPLEEFAH EMARLWRTWRTVHEMLRDRGYEISEEELKIDLQDFTN
$\qquad$ GKVRVW
 DADESAKLWKVNRTIHELVKDRGFQVSDDE:QMDLATFRQ KEVTRLWRAWRTAHEMAADRGYELAEDELKMSLDRFKM SEDELTRLYKVRKTMMEMLNDRGYLVEEFETKMSKQEFDQ GDREAARLWRAWRTVHEMVADRGYELSEEEVKSFADFKS EEELVRLWKVSRTVGKMVRDRGYQVSEEETNMSLDEFRA s SKEVVRLWRAWRTVHEMVADREYELAEEEVK SSLDRFRD

$\rightarrow 1 / R$ DAGVGR VRVRRAKEMMRDRGYMVLEEDTMSLAETTS SQESHRLFLARRTALEMLRDRGYSVPESELARTLPEFRA SDTVYRGYRVWKTTKEMMNDRGYMVLEEDMNMSLDQFAR EVHSLFLARRTALEMLRDRGYSVPEPELARTGTEFRA SEEELTKLFRVYKTVVQMINDRNYVVSDSDLTMSKQDFKS
 NARETDKFWRSWRTVHEMVQDRGYELTEEEVKQSLEQFKE DEVGRVELVRKTVLQMLQDRGYDVPQSDLDMDRDSFRS DEELKKLFLVRRTLMQMLKDRGYSIADSDITMSLAEFDE $D E A A R L W R V N R T V H E L I K D R G F Q V S D E E V E V D L V T F K Q$
$S K E V V R L W R A W R T V H E M V A D R P Y E L A E E E V N I S G D R F R D$ RELARLWRVSRTVHEMVRDRGYMLADYEINVSFEEFKD SEKEISKLFRVHKTVNQMLKDRGYIVMDSEIEMTKEQFLE
 SEEEVTKLYRCRRTVEQMLRDRNYRVLDSEVNMSKQELKA E

## ESHR

S

ERAADAR F R V S R T A H E L V V R D R G Y A I A D
 $R M W R V W R T A K E M M Y E R G Y N V L D E E M T M S L E A F A D$
T K L F R I R K T V S K M LAA S R GY LV S Q K E L E R D K D S F L E


N
ESHRDFRARKTV
 D D


QETYKLWRVRKTVMQMCHDRG


ES RLWRIRKTVLQMLDARGYMVLESEKNMDLAEFES

D E E
STRLLWIRKTLMQVSRARNGLVVPKERGVSPSLSPC

 D DTT T R L W RVVRKTI FE LLQDRGYVVAQKYLNETKES FAQ
 ES YRYYMSRRTVMEMLS DRGYNVPDS ELTTRSLTEFH T ESYRFYLSRRTAMEMLSDRGGCDVSDSDLS LSLTEFHS

 ECHKYY LAAR RTTMEMLRRDRGYDVVSDEDIN LSSQQQFRA


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EAERYRRLYKVWWITLLKQMCMRDRGFRVVTQEMMNMTFADTWNE


D R E SHARYY L A R R T L L L E M L

[^1]
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UniRef90-S8C9M2 UniRef90 -S8C9M2
UniRef90-UPIOOO3F49A68 UniRef90-F6HLQ4 UniRef90-E7NEZ1 UniRef90 GТЕAE

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 $M H C G M G R N L D R S T L S F Y A K P P P \quad G S D K G T I V V E F A K$


 $K \square C P M M G E A Q R K L M C F Q A Q P T P E A A E K F P E M G S L W V E F C D$ QHTTN GTVNRTTLTFFTHHAKD PNDQLFVFFCE
 $R Y G D P D R R E D L V I N R V$ K K D N P NEQIVYVFPS HYANNGGSVDRNQLNFFTNSQENPT WWAE K PELERLAFSTALLAADQSSK EFGED
 K F GRED GEPDRSRLNFS C LDP SE EMLAAKYPQ $\square G S$ K Y GESFHREDLLINKCKKNDPND $\vee \mathrm{K} V \mathrm{~V}_{\mathrm{V}} \mathrm{F}$ C P WWAP Q QI YVVFFPN

 WWAE KPEMRRLSFSATFASDHSNK
 $\vee Q F V F C P$ A H R D G S G MV S K A S MK F S A H P S D A M M Q R Y P DVGG I WV E F L E E Y L A A D G SVVNRSK LT F S A R P S S D M L S R H P D C G P I Y I E F I A
 KFMG ESALNREALTLL MQKKDDPTDQIFVFWPE K Y GENMNRKALVTLK QFANSSGSVDRNQLNFFATHESD EYCNPDGSVNRSKLQFSARPSDAMLKKNPSSHHIFI Y F S D

K Y G G D M A R E DLD T L K I K R D D D S D

 K F GENMNRKDLTI QTTNKDDPSD


 KFGDN $\square H L K \quad R D D L L I H C N K G D$ Q Y A A G GTAIDDKAKI NF S A
 QYGAA $V$ V KAKK NFTA A LAASDPSDK K F GDS T G HVVERRLMKLQAVPTEEMDKRDTPRGTI WVEFS P

 $\begin{array}{lll}\text { V Y G Q N } \\ K & \text { Y A R E D G E P D R S L } \\ \text { R L K F S A T H K S D P S K }\end{array}$ EFGE RYGDPVNREN VI $\square M V P$ R D D | $R$ |  |
| :--- | :--- |
| $L$ | $Y$ |
| $G E$ | $P$ |


 SLGS SVSVP PKKHLALLSAGG
 $S$ L G D

TPSRKELLVVVNHEED
$Q G P R G P$
$\qquad$
$T P D V E R L R V$ SAMHRNDLTNK
K Y G Q P T P DVVERLRVSAMHRNDLTNK
K F G T GPN N







 $K Y Q A G A D V I D R R R L T Q R F N P T P E M D T R D T P R G T M Y V E F C P$
 $\square \mathrm{YGQD} \quad \mathrm{PDV} \mathrm{DRLRDSISHQSDPSK} \quad$ RILVVFCGG
 TYAGNGIIDRASLHFFASLEDN PDDQIFVFFAD

RFCKTMNKVNKEALVVSANKGPNPADK

K P S E GQPRCT DLTAPVAHKDDPTD

AHGSS GVVEMKKELVVNSRNNMHFTCD
F Y S Q K P D P DRLRISAALDRSDPSKK

SYTMNGHDDRTADNFHARHVPVAGREETEVQQIVVFFAE

|  |  |
| :---: | :---: |
| UniRef90_M1VLA1 | EEK\|VG|V |
| UniRef90-B6QBA7 | DTGVGAKQVRQFNHLVDEGNYHSG\| FITRTAMSPSAVRLL |
| UniRet90- V2YKU5 | EKSVGVKTMRKMLEDLEQKGDQRGIIVFPGNMTPSARKVI |
| UniRef90-B6JZQ6 | EPSVGIKEMRTFVHTLGDHNHKTGILIYANNMTPSATKII |
| UniRef90 R7SOD8 | EKSVGVKTMRKLLGLLEEKSIQRGATEPGNMTPSARKV |
| UniRef90-H1 W093 | DTSFG\| KElKK Kill |
| UniRef90_F9XDHE |  |
| UniRef90-k1 ${ }^{\text {k }}$ 222 | ETNVGIKQMRTFAQYCSANSFATGILVTAVT |
|  | EASVG\|KTMRNFCTHTSEKNFSTGIFIYQ |
| UniReef90-UPIOOO4414684 | DKNVSIKTMRKFLDVLQQKGDQRGM IVFSGTMTPSARKVI |
| UniRef90 F9FE3 | DKTFGVNQIRQFAKYVITNNYKTGIMVTHVPLSPAARKTL |
| UniRef90-111224 | EAKPGVKTVRGYADKMKQENVTNGITVAEQALSAFARNVL |
| UniRef90 UPI000455D33C |  |
| UniRee90-C1 | EEKVGVKTI KEYAKRMKDEQVNRAIIVVQQSLTPFARQSL |
| UniRef90-E5ACT1 | DENVGLKQLRDYMGHLLNGNFYSGVM |
| 1 HSL | DEKVGMKHIKKYVEMMNAEKVSRAVVVVQQNLTPFAKSFL |
| UniRet90-W5FTH7 | PEPVRDATIQKUYDQEGENF |
| UniRef90-B2VUN9 | D ENVGMKQLREYMA |
| UniRet90-111UJ2 | PKPVNITTI REVYSQTEEENLSRILILILQGDITSKARDCI |
| UniRef90-UPIOOO32 | DAKVSVRVVRSFFNRMTTDNVGRGIVVCQSQLGPARNAL |
| UniRet90-S3D) | GDNVGIKHMRTFAQYLSAHNFHTGLLITSVNTTPSALKAL |
| UniRef90-c9s9 | EGS GVQHLRRFVQHVLEGHFKAG MVTSSPLTSAGRKQL |
| UniRef90-R8BB95 | DNSIGVKEIKKFVQHCAGSNFKAGIMVTVGAMSPQARKVI |
| UniRet90-L8HGII6 | DLKVGVRPVKKYCDRMKEEAVERAIVIIQQTLTAFAKQVF |
| UniRet90-ROG2M9 | RPKVGVAEMKKYTSKLK S |
| UniRef90-UPIOOC |  |
| UniRef90_E9DUT1 | DKQFGVGQLIRQFAKYTISNNYKTGIMVTHVPLLSPAARKSL |
| UniRef90-V9VK16 | DKNVKASMKTFGSMDKMGARRGM WSEKMSPAAKKT |
| UniRef90-J3NS76 |  |
| UniRet90-W9C8C5 | DVSIGIKQMRTFAQHLSTNSFSAGI LIAPVAPSGPAAK |
| UniRet90-G7KIC |  |
|  | RGFITRMLQENVDSGILVICQ |
| UniRef90-88C1C | DEKVGVKP K |
| $\begin{aligned} & \text { UniRef90_Bgst46 } \\ & \text { UniRef90_E1ZGJ } \end{aligned}$ | EAKVGVKTI KLLAERMRNEGVQRAVMVTQANMTPFAKQCL |
| UniRef90-UP10002C | PGIVKVNVIRGLHSQUANKDTLSG\|LILQGQ |
|  | ELKVGVPMVRNCAKRMKADNVF |
| UniRet90-M7 WM95 |  |
| UniRef90_U5GYN8 | EPSVGIKTMRKFIGILEEQADGKGIIIYKTNMTPSANKVI |
| UniRef90-H6BQW5 | ETT G\|KHLRAFAQHLDANKFTTG|FITSPVTAAALRAF |
| UniRef90_U1HN41 | ETT G KHLRQFAQHLDANN TNGIF TMGPVTAAAMRAF |
| UniRef90 Q0UZB4 | GLKQLRDFMNHLLSGSFYSGl MVTVKPITGMAlRRLI |
| UniRef90-K8EYU3 | EEKVGVKMIKDYAKRMREENVMRAITVIRSSLTPFAKQSL |
|  | RNYVDRMKQESVFNGILVVQQALSAFARSAV |
| UniRef90 W1NSF3 |  |
| UniRef90-M71323 | OPAVGAEQMKKYCQRMQEENTTRALIVVQQGMSPSAKQEV |
| UniRef90-F4QDK5 | DVKVGVTPI RKFVDQMKPHGGNRAII IVQSNLTAFAKQAL |
| UniRet90-G3U8M3 | EPKVGIKTIKVYCQRMQEENDTRALIVVQQGMTPSAKQSV |
| UniRef90 U6IF41 | EDRVNMKTIRAYVDQMQHDSCTKAILVLREG |
|  | DTKIGKTIKAI CQQMQEQTITRAIIVVQTGMTPSAKQAl |
|  |  |
| UniRef90-A0A059A175 | PGPVKVTSURYDSGQTANKDGLSGILVLQGEMTNQALKAL |
| UniRef90 A8QAC6 |  |
| UniRet90_W9QWZ4 | PGVVKVTSVRG\\|AGQUVNRNTLTGILVLQSQMTNQAQKAV |
| UniRet90 UPIod | EPKVGIKTIKVYCQRMQEENITRALIVVQQGMTPSAKQSV |
| $\begin{aligned} & \text { UniRef90_D7G1 } \\ & \text { UniRef90-FOYYIF } \end{aligned}$ | D |
| UniRef90 W WX | ESSFGTEQMRKFGKFCSENHHRVGII VISHVAVSSAAKKEV |
| UniRef90-C5KB88 | ENKVGVKP R ${ }^{\text {E P }}$ |
| UniRef90 UPI0002E |  |
| UniRei90 UPIO002C321F6 | TDEIGKANAREMYAKLIMNKDI SSLMLVLQSKINSFARKE |
|  | RKQTMCIYAGLPNKENIHRLLTVLQSKMNS |
| UniRef90-L71/ | EEKIGVGRTKQFVEVLLQSGFRDG\| LVTQGA |
| UniRef90 M2XGL8 | ERVSVKTLRDYFVRMDQERV |
| UniRef90-W2S8D2 | EAPVGIKHIRAFAQNLDQQNYSNGILVKVEPNAAALRAL |
| UniRet90- W5BAJ9 | ESKTGLAVVRSCVEKMKLGNATNGILVLQKALSGPAR |
| UniRef90-V4TZF8 | PGIVKVNVIRSIISQUNRDTLTGILILQNQ |
| UniRef90-UPIOOO42B2516 | T NDURKATVCALKGQULNESLSGLILILQSKMN |
|  | EKKTGVKPIRELTERMEERNI QRAILVTQNVLTAFARDAI |
| UniRef90_14YJR7 | EPSIGIM KMRKFLTVLEERKIGRGILIYPEKLTPAANKVI |
|  | SPDVKVAAIKSLYDRLKSDNLRRALIVYQRKVAPVAKSH |
| UniRet90- F6HVG1 | TDEI RKAVIRVIFQQTNREGLHRLILVLQSKMNSHARKV |
| UniRef90-M4DKB1 | , |
|  |  |
|  | V |
| UP10003F49A68 | S\| KIFLGQMEHRSANKGILIHPDKMGSAANKAM |
|  |  |
| E7NEZ1 |  |
| ef90_G7EAE1 |  |

UniRef90 M1VLA1 UniRef90-B6QBA7 UniRef90-M7NQ44 UniRef90-B6JZQ6 UniRef90-R7SOD8 UniRefe90-H1 W093 UniRef90-M1CLJ4 UniRef90-K1 $\times 422$ UniRef90_C4Y929 UniRet90 UPIOOO4414684 UniRef90-F9FE32
UniRef90-I1Z24 UniRef90 UPI000455D33C UniRef90-K3ZJPO UniRef90-C1EDR8 UniRef90-E5ACT UniRef90 11 HSL 7 UniRef90-W5FTH7 UniReffo-B2VUN9 UniRef90 R1EHD UniRef90_111UJ2
UniRef90-UP1000 UniReffo-UPIOOO32A6558 UniRef90 S3DXN5 UniRet90_c9s900 UniRef90-V5GF43
UniRef90
U8BB95 UniRef90 L8HGIG UniRef90- RoG2M9 UniRef90_UPIOOO440970F UniRef90_E9DUT1 UniRef90-J9VK16 UniRef90-V4LHY3 UniRet90_W9C8C5 UniRef90_G7KIC7 UniRef90_G7KPG3

UniRef90 B8C1Q1 UniRef90-B9ST46 UniRef90-E1ZGJ5 UniRef90-UP10002C2F82S UniRef90_UPI00042B35D7 UniRef90 M7WM95 | UniRef90_R4XGA4 |
| :--- |
| UniRef90 U5GY | UniRef90_H6BQW5 UniRef90 U1HN41 UniRef90-b9IHS9 UniRef90 QOUUZB4 UniRef90-J3LZ33 UniRef90-W1NSF3 UniRef90-M7323 UniRef90-F4QDK5 UniRef90_G3U8M3 UniRef90 U6IF41 UniRef90-U6PFA2

UniRef90 K4BRF UniRef90_D2UZT4 UniRef90 A0A059A179 UniRef90-A8QAC6 UniRef90_W9QWZ4 UniRet90_UPI0002236305 UniRef90 D7G1Y9 UniRef90-FOYIF7 UniRef90_W3X8Z6 UniRet90 C5KB88 UniRef90-UPIO002B494F9 UniRef90_E9C5B4 UniRef90 UPI0002C321F6 UniRef90_M5XLD8 UniRef90-L7IA26 UniRef90 M2XGL8 UniRet90_W2S8D2 UniRef90_Q9ZVB9
UniRef90 W5BAJ9 UniRef90-V4TZF8 UniRef90 UPI00042B2516
UniRef90-B9PN94 UniRet90_14YJR7 UniRef90 A9UR01 UniRef90-Q9FJL8
UniRef90-F6HVG UniRet90_M4DKB1
UniRef90-F6VZ57
UniRef90-S8C9M2 UniRef90_UPIO003F49A68 UniRet90_F6HLQ4 UniRef90 ETNEZ
UniRef90-G7EAE1

AELIPRFHLELLEEAELLVN NSAllGHICEHFQESDLLVN ATMAKFTIEAFQESDLLVN AMAAQYRLEEFSESDLLVN STVTQFTI ETFQESDLIVN VAMSQFRLEEFSESDLLVN
 SEVSTMHLEVFQEAELVVN PAVASETIECFMDADLLVN PTVSPAT:EVFQESDLVVN QSMESAKIECFALEDLLVN QDNSKFFLEVFQEGELLVN KEDFPFKVDTFQ DTELLVN DEAQKFYIEQFQEAELLVN SDGPKGGVEVFVEQDLLVN QELIPKITHLEVFQDAEMLIN KEKFTFKVDIFQVNELLVN SDGPKGGVEVFIEQDLLVN
 GEVSKHRYEVFLEDELLVN

 GEMSRYRLEEFSESDLLVN ASVENLKLECFLLEDDLLVN DLQSKLHELVFQDTELLMN PAVASSTI ETFVEQDLLVN NLFSEVRIEAFLEDELLVN TEMSSKRLEVFLEDELKVN SEMPKYYVEMFQUTDDLLVN DLYP FKVEVFQDTDDLVN AMAQQFTMEAFQESELLVN QGVNQFQUDTFQESDLVVN EPLAERG| EWF WESDLLVN
 SDGPKGGI EVFVEQDLLVN QEVSKYHLEVFQEAELLVN KEMPPYSVELFQMSDLLVN DMAPKYILEQFLQQELLIN SEFSQAKLEQFNEAELLVN AEANKITMECFYENELMVN DMAPKYGLEHFLESELMVN E A EAMRQLVLEDFEEAFLLVN DMAPKYULEQFLLQQELLI QEELRESVQVEDFKDAELMV AKWKEWT EWF LEDDLLIN

 AQAGQHTAEALSESELLVN
UniRef90_M4CRFO UniRef90-E3K8W7 UniRef90-IIJN69 UniRef90-A9SWJ6
UniRef90_B9GM22 UniRef90-ROFTH9 UniRefefo-OODOC1 UniRef90_A7APR4 UniRef90-A0A024VM31 UniRef90-D3BQV7 UniRef90-A0Ао23B374 UniRef90_E1ZAD9 UniRef90-ROH733 UniRet90-I1EUN3 UniRef90 M4CQN2 UniRef90-W9S4Q9
UniRef90
Q54EH2 UniRef90-Q5CNJ4 UniRef90-UPIO003D74A41 UniRef90-B9RGC5 UniRef90-K7LQL5 UniRef90_UPIO0034413AB UniRef90_V7BSM5 UniRef90- 9914 V 3
UniRef90-I7IS07 UniRef90-I71507
UniRef90
R7QDZ3 UniRef90-W7U8C8 UniRef90-Q2HW77 UniRef90 BOEA74
UniRef90 U9UN94 UniRef90-I3EK01 UniRet90-UPIO0032A5EB1 UniRef90-S9XPD4 UniRet90_-998RN7 UniRef90-F0ZR32 UniRef90-A0A022RHA5 UniRef90_T1FY50 UniRef90-A9BK88
UniRef90 UniRef90-M5BPA2
UniRef90-A0A058ZFC6 UniRef90-B4GWF6 UniRef90-A0A034WRM9 UniRef90-F2TY65 UniRef9-F2H1316 UniRef90_UPI0002C3EB66 UniRef90_1N8T7 UniRet90-GOU485 UniRef90-WGKJW7 UniRef90-L7KOF6
UniRef90 F2UGE2 UniRef90-KOS997 UniReffo-J7G5W4 UniRef90-K4DX88 UniRef90_V4UEF9
UniRef90 CgZZV1 UniRef90-Q8SRJ3 UniRef90 G3J8B1 UniRef90_GOUY96 UniRef90-A2DNL3 UniRef90_KVVBS3
UniRef90 UPIOOO23B1DB UniRef90-E9BDQ8 UniRef90-UPIO00440DE1E UniRef90-Q19PJ3 UniRef90-K7KK93 UniRef90_A0A059F4L5 UniRet90_ $99 D M V 7$ UniRef90_L8WUD1 UniRef90M3D3L4
UniRef9O_Q9LUS5 UniRef90-A9CSN6 UniRef90 FoVDU4 UniRef90-C4VBP1 1 UniRef90-D8LZP5 UniRet90_L2GJA8 UniRef90-O9P8M6 UniRet90-L1JCW1 UniRef90-A9USL7 UniRef90_F2D6U6 UniRet90 ASBOH1 UniRef90_G7YY
UniRef90_RoM334 UniRet90_X6LYE7 UniRef90 V6LV15 UniRef90- W5S4C2
UniRef90
Q7RKX1 UniRef90-AOBLZO UniRef90_U6LCC1 UniRef90_AOBL34

GEDEITTRIVFKVVRTVLQMLKDRGYNTEESDIIELKREDFV ${ }^{40}$ DDREVSRLHRVNRTIKELVRDRGYEVSDAEINVSLDEFKA DRESHRYYLSRRTTLEMLKDRGYSIPSHEIDLSLSSDFRD GSAQSYRYYISRRTVLEMLKDRGYDV DDSELNRSLTEFRS SSEESHRYYLARRNALVMLRDRGYDVSSEDISLSLDDFRN DREMTRLWRTWRTVFEMLQDRP SPQRLLLUA DEEGRLFRCRRTCCEMLEDRGYFTPNQERLETFAEFKA EDPVTRFYKCRKTCCEMLEDRGYMMTPREKLENFSTFKE SDDYVRRFWRCRKTCCEMLEDRGYUVSQHEKNEAFPDFMR DSKRFYLARTTAFEMLRDRGYEVNEAELS LS LSEFRS NEEVTYR[WR1RKTVMQMCHDG

LIFRVNKTLNHMLKDRGYIVTDAELEMTQEQF 门D EDINRLDQDRKTVLDMLSDREYVITAYEQEYPRESFVS ESYRYFLSRRTVLQMLNDRGYAVPNSELTRSGTEFRF ESQRYYLSRKTVMEMLRDRGYDVADSELTGSFTEFLSS GSAESSRYFLSRRTVLEMLGDRGYDVVQHNLAQTLEEFKV
 EDAEVRLLFRCRRTCCEMLEDRGYFIVUQEKLELLSEFKS QELMRLFRIRKTVLKMLTKRGYNVLEQTLEATFSSFR ENVTHDYRAWKTVLEMLRDRGYDSEEDHNTTLEGFKE


DDKNTQHLFKVRRTVLQMIRDRGYVVSKDDLNTSRSSFEE
EDPVRLTQURKTVIQMLSDRGYITSADDAEVPRD ESRRYYMARGTLVEMLRDRGYVVPDAELRRSLPEFRS DVYKЉWRTRKTIYEMCNDRGYRVTDAELNEPLQTF Q DYKEILNLFKURRTILQMLRDRSYVVNQDDLEMSRSSFEQ

EREFTRLWRVRRTVFQMLNDGYSVTNADGNMTLDAFRK DEAEDYKLWHI RKTVFEMSHDRGYLVTQGELDQTVEQFTE DEAETYKLWRIRKTIMQLSHDRGYLVTQDELDOTLEQFKE EVFNLFRDRRTVLQLLKDRNYLVSKDDLNMSRDDFEF TTKLERVRKTVGKMLSKRGYAISDKDQSMTLDTFVK DTLTRVYHVWKTVLDMLKDRGYVTNDLDHQTTLDEFRE RMFRVMRTVGEMMRDRKYNIACNVIPESVEQFRE
 DVERLRRAYNTTVQLCSDRGYSVPHT EVSKTEFEQ
DKE $\square F N V F R V R K T V F Q \square L R D R G F \| V N Q E D L D M P R T V F E R$ KMFRVMRTVGEMMCDRKYQVADKDIPSSVEEFKD


RMFRVLRTVGEMMRDRKYHFPTSLDPETVEQFCE SEKES MYFRIYHTINQMMRDRGYNVDPSRLEDSHDKFNK DEATVGRLYRIRRTVMQMLRDRGYLVVDHELATSRRDFLR ESHRYY LARRTLLEMLRDRGYSI PALDV DDY L R Q F X S



DEE $\square K R L F L V Q R T L M Q M L K D R G Y L D D G S E D T M T L E E F \square E$ LWLARNTIDEMLTDRGYIFEQS IFSQ LEDFKN

RKFFLCRNTLVEMCTERGYTTDQKVL SYDNFDA MLRDRGYSVPEDELARTDPEFRA F $\square$ ARKNADKMMTKRGYVLRMTD DMTKDAFDS LWLARNTIIEMLNERGY SSSNMPLDYASFVS



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| UniRef90－E3K8W7 | G |
| UniRef90－11JN6S | GQF PDPDRLRLSLTATNSSK |
| UniRef90－A9SWJU | KYREDPKQEDMML |
| UniRef90－B9GM22 |  |
| UniRef90－R0FT | $V Y G E \quad R P D V D R L R D S K H D S D P K K V K ~ V V F F S ~$ |
| hiRef90 Q0D | SRAKMKI QARPTEAMQVKYTDCGT YVEFCP |
| UniRef90－A7APR4 |  |
| UniRef90 ${ }^{\text {D }}$－ 3 BQV7 7 | KSREDMNSIHTKREDAADK NNRIFIFFPN |
| UniRef90－A0A023B | QRGQMLLLGSLRTD ENQKI |
|  | RRDAlt ${ }^{\text {a }}$ A |
|  | DLERLRI CVS |
| UniRef90－－11E | QFGENDGHPSRNDLSULVANDDPTD |
| UniRef90＿M4C | ENMERKDLVILKTKKNDESD |
| UniRef90 Q 54 EH 2 | ENDTMYCVKKDDPTDSI |
| UniRef90－Q5CNJ4 |  |
| UniRef90－UPIOOO3D UniRef90 B9RGC5 | TFGDKC DLESLRLCLPLRSNPSKK MSM |
| Ref90 B9RG | EFGDN P P ${ }_{\text {R }}$ |
| UniRef90－UPIO003441 | QFGDSEGRPQHTDLMELVAHKDDPTD SNMEVFFPE |
| UniRef90－V7BSM5 | RFGQQ PNPEALGFCVSHLSNLSN TVQVVFAG |
| UniReef90－j914V3 | TF NNTRDSLNLIVTKRDPNSQVAQNSEEQQKLIVFFPD |
|  |  |
| UniRet90－R7QD | EFTQNYNRESLTLLR |
| UniRef90 W7U8C8 | D |
| Re90－Q2H4 |  |
| UniRef90 BoEA74 | EGVDHKELMMFKVVKENDATDG PNEOLVFFAE |
| UniRef90－I3EK01 | SYPALINTGSKHSLSMLFQHTT MPEKQL |
| UniRef90＿UPI00032 | RFG AIVPKPETLGVCVSLLT |
| 9x | GDSEGRPRRTDL |
| UniRet90－Q98RN7 | MKN HAICRKSLEVKRPRWDN WKM PENRLIVFVE |
| AOAO22R | S |
| UniRef90－T1FY50 | M |
| UniRef90－A9BK88 | VI RSELEINRSKWL |
| UniRef90－M5BP | EN DDRTR NFFT |
| UniRef90 A0A058ZFC6 <br> 促 | RVDDFPRSSLNMIVKHQDD |
| UniRef90－A0A034WRM9 | DSEKRSACSDLTVLVAHNDDPTD QMLVS |
| UniRef90－F2TY65 | MHGDKDRRE |
| UniRef90－F2HI31 | VKNYK VVREKME |
| UniRef90－UPIO002C3EB66 | RVGVGADGVDRGKLTI KA |
| UniRef90－11 N8T7 | MHGQS PDPDRLRLSLTHATNSSK |
| UniRet90－GOU | WYTDQHNA LJRERM |
| UniRef90 W6KJW7 | P |
| 7 K |  |
|  | SVFOVLT YSQE KADDDQNQLAVFFPD |
| UniRef90－J7G5WW |  |
|  | 硡 |
| UniRet90－V4UEF9 | LVINKALRNDSSDQEAELLVNITKEHV |
| Ref90－C9z | QYVDREGRDYRERMTVPC |
| －${ }^{\text {a }}$ | RYPLALIK |
| $\begin{aligned} & \text { UniRef90_G3J } \\ & \text { UniRef90_GO } \end{aligned}$ | OYVDRDTREDRSRMTLPC ERVGGSQRGRA |
| A2DN |  |
|  | ， |
| UniRef90－UPIO0023B1DB1 |  |
| UniRee90－E9BDO8 | T |
| UniRet |  |
| Ret |  |
| AOA | E |
| L8W | ETFSNALQ DRSTDKMLVLHS DKTNEQL |
| UniRee90－L80 ${ }^{\text {U }}$ | E A |
| UniRet90－Q9LUR5 |  |
| UniRet90－A9CSN6 | SCNFTA |
| UniRef90－FoVDU4 |  |
| UniRef90－C4VBP1 UniRef90－M8BXY | SCDK DVNSNNFVCK |
| UniRef90－D8LZP5 | PDYESLSVIGKRLSNKND GCLLDFND |
| UniRef90＿L2GJA8 | ENNPSATLNFVCSK |
|  | GVKKGYPSARSVKNQGRATEAMRGEYTPKSTALVEFPN |
| UniRet90－L1JCW1 | CTDRGHILDPGLLTMRSHRVEN |
| UniRet90－A9US | GSQPEQPRRSDLDFVVQRASDPTD |
| UniRef90－F2D6L |  |
| UniRet90－G7IYW7 | K |
| UniRet90－ROM334 |  |
| 俍ef90－6LYE7 | DWMANGDNKNRQKFQLVEHKDNQSN |
| niRef90－V6LV15 | NWV |
| UniRef |  |
| er90－A0 | KYRDNDPE K VCFKRDDESDKL LIIFYTK |
| niRef90－U6LCC1 | RFNENEQ SRSRMLLIASHKADPEAK LIVYFAD |
| niRef90－A0BL34 | RTDVLPQ R｜VVCFKKEDETDK MVIVQFYTK |

UniRef90_M4CRF0 UniRef90-E3K8W7
UniRef90-I1 INS69 UniRef90-A9SWJ6 UniRef90_B9GM22 UniRef90-ROFTH9
UniRef90 QODOC1 UniRef90-OODOC1
UniRef90 A7APR4 UniRef90-A0A024VM31 UniRef90-D3BQV7 UniRef90-АоАо23В374 UniRet90-E1ZAD9 UniRef90-ROH733 UniRef90-l1EUN3 UniRef90-M4CQN2 UniRef90-W9S4Q9
UniRef90 Q54EH2 UniRef90-O54EH2 UniRef90_UPIO003D74A41 UniRef90 B9RGC5 UniRef90-K7LQL5 UniRef90-UPIO0034413AB UniRef90_V7BSM5 UniRef90-J914V3 UniRef90-17IS07 UniRef90-R7QDZ3 UniRef90 W7U8C8 UniRef90-O2HW77 UniRef90-BOEA74 UniRef90-I3EK01 UniRef90_UPIOOO32A5EB1 UniRef90-S9XPD4 UniRef90-Q98RN7 UniRef90-FOZR32 UniRef90-A0A022RHA5 UniRef90-T1FY50 UniRef90-A9BK88 UniRef90-M5ВРА2 UniRef90-A0A058ZFC6 UniRef90-B4GWF6 UniRef90-A0A034WRM9 UniRef90-F2TY65 UniRef90-F2H131 UniRef90-D8LV16 UniRef90-UPI0002C3EB66 UniRef90_11N8T7 UniRef90-GOU485 UniRef90-W6KJW7 UniRef90-L7KOF6 UniRef90-K0S997 UniRef90-J7G5W4 UniRef90-K4DX88 UniRet90-V4UEF9 UniRef90 C9ZZV1
UniRet90
O8SRJ3 UniRef90_G3J8B1 UniRef90-GoUY96 UniRef90-A2DNL3 UniRef90-K7VBS3 UniRef90-UPI00023B1DB1 UniRef90-E9BDQ8 UniRef90-UPI000440DE1E UniRef90-Q19PJ3 UniRef90-K7KK93 UniRef90-A0A059F4L5 UniRef90-J9DMV7 UniRef90-L8WUD1 UniRef90-M3D3L4
UniRef90 Q9LUR5 UniRef90-A9CSN6 UniRef90-FOVDU4 UniRef90-C4VBP1 UniRef90-M8BXY1 UniRef90_D8LZP5 UniRet90-L2GJA8 UniRef90- O9P8M6 UniRef90-S9UEP8 UniRef90-L1JCW1
UniRef90 A9USL7 UniRef90-F2D6U6 UniRef90-A5BOH1 UniRef90-G7IYW7 UniRef90-ROM334
UniRet90 - $\times 6$ LYE7 UniRef90-V6LV15 UniRef90-W5S4C2 UniRef90-Q7RKX1 UniRef90-AOBLZO UniRef90_U6LCC1 UniRef90_AOBL34

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PDVVKVNATRSTATQ\|VNKDLSKLILVLQNH TTSQALKAV PNHLSSEVVKK TDETRTANTRAVYGQLLSKESRQGULI LPGUMTPSARK PKEIRKGTVNEI CSQUADKGSLKLILVVKSKMTSFAKKDL EKKLSKGAAREMLENAKSYN NNVLVVVQEGHSHQVNDDV EAKVGLKAGKLTVEGVLSQKVENVVLVCKEGLSPAGAKFV ETSVGUKHLKQFAQELSEKNYYTGGYVSQVAPTSAALKUI NDK TSKKQ ET DTDYSNQSTSKLILISCNKLNHAADAYL
 SKMTSRARESU
SPSLGAPATRETDEQLEKENTSSA\IVVKNRIPSTAKHAC EDKLSKKSLETLTNEYAAQGLANVILITSAKLNPACKVLM P LK PG G
PHDDTGKNLQSHVSLAENDGCRLLVLVTPSKPNA VKKY RKDKFVTDDAKYVFSC $\square D D E S L T A V V I D H K N G T S Y A K R F L$ DPKVGIAVVRDFFE TDEIRKKAVI REVI FQQQNGENLSRLILILLGKDMPRAKESV

QDKTGKATLELILNDYKRENTTNVTETSSTKVSSACQSLI

 EKKTGVKPLREYNKKLKD
QAP号THEEAKKT पQDFSNRQVKRLIMDFPTD PFATKQV
EKKTGVKPDR

| UniRef90 M4CRFO | N |
| :---: | :---: |
| UniRef90-E3K8W7 | ASMAQFTLEAFQEAELLVN |
| UniRef90-_11JN69 | N LIFSFKVE |
| UniRef90-A9SWJ6 | KAQKYHLE |
| UniRef90-B9GM22 | EKFPFKVEVF |
| UniRef90-R0FTH9 | 他PFKVE |
| UniRef90-Q0D | SGVPGR |
| UniRef90-A7Al | LEAAPRLTENFLETELLVN |
| UniRef90 A0AO24VM31 | KEAAPRH1 |
| UniRef90-D3BQV7 | AEFSQNRLE |
| UniRef90-AOAO23B374 | AEAPQRH\| E |
| UniRef90-EE1ZAD9 UniRef90 RoH733 |  |
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| UniRef90-M4CQN2 | TDANSKR |
| UniRef90 W9S409 | MRSAEFN EVFOEDEL |
| UniRef90-Q54EH | AEFSKDTLEQFNEAEL |
| UniRef90-05CNJ4 | DAAPKHYIESFLENEL |
| UniRef90-UPIOOO3D74A | LKFPFKVETFHITDL |
| UniRe | GQFPS KV |
| UniRef | EStP FKVEl |
| UniRef90-UP1000344 | DMVPKNVLEQF |
| UniRef90-V7BSM5 | SNLP YKVEI |
| UniRef90-J914V3 | DELKPCEI EC |
| UniRef90_IIIS07 | AAPRII |
|  |  |
| UniRef90- 22 HM | KV |
| UniRef90-B0E | EQPREVKWEALL |
| UniRef90-U9UN94 | QENRHYEVDIFSEAD |
| UniRef90-I3EK01 | DESRKYDL |
| UniRee90-UPIO0032A5EB1 | EKCP YKVEITKLNDLVVN |
| UniR |  |
| UniRef90-Q98RN7 | S STNSNNTEYFSENELI |
| UniRef90 FozRa | YSQDKL EQF NEAELL |
| UniRee90-AOAO22RHA5 | YPTYNDVF |
| UniRef90-A9BK88 | STNSLKIL YFSESEL |
| UniRef90-M5B | MSSYSLEEFAEAD |
| UniRef90-A0A058ZFC6 | GDRYELFMEVDLV |
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| UniRef90_AOAO34WRM9 |  |
| UniRef90-F2TY | EVLS GFVFEVF |
| UniRet90-F2H131 | DTKNSDK |
| UniRei90 UPI0002C3EB66 | NSSQKVKWELLLEDEL |
| UniRef90-11N8T7 | N LFS SKVE |
| UniRef90- GOU485 | N R L |
| UniRe | NNRRHVQ |
| UniRef90-L7K0F6 | P M Nilak |
| UniRef90-F2UGE2 | A SATV |
| UniRet90_KOS997 | ST |
| UniRef90_J7G5W4 | S SiNSV |
| UniRet90_K4DX | DINRL |
| UniRef90 C9ZZ |  |
| UniRef90-Q8SRJ3 | RFSIEIFL |
| UniRef90-G3J8B1 | ASVENGKIECF |
| UniRet90-GOUY96 | DSNTGAKVQLFDEDS |
| UniRef90-A2DNL3 | DNVSGKTIEFFSFDEVIIN |
| UniRet90_K7VBS3 |  |
| UniRet90_UPIOOO23B1DE | QV |
| UniRef90 E9BDQ8 | LR F |
|  | Pr VEEFAEADLLV |
| Ref90-Q19PJ3 |  |
| UniRef90-A0A059F4L5 | YKETKVE |
| UniRef90-J9DMV7 | AEFK NVEVFK |
| UniRef90-L8WU | SAMSSYSLEEF |
| UniRet90-M3D3 | PSVLPTVMEIFREED |
| UniRef90_Q9LUF | AVYP\FHIEVFQEKE |
| UniRef90 A9CSS | SNFS |
| UniRef90-FOVDU4 | A P |
| UniRef90-C4VE | S |
| UniRef90 M8BXY1 |  |
| UniRef90_D8LZP5 | KKFEPFHLDLFKESSLLVD |
| UniRef90-L2G. |  |
| Ref90 S9UEP8 |  |
| UniRef90-L1JCW1 | GEGPRMKUEIFFEVELVVN |
| niRef90_A9 |  |
| UniRef90_F2D6U6 | V |
| UniRef90-A5BOO | DEYP पKVEFFQ】TELLI |
| UniRef90 ROM3 |  |
| UniRef90-X6LYE7 |  |
| UniRef90-V6LV15 | KV |
| UniRef90 W5S4C2 |  |
| -90-QRK |  |
| Un | QTYSFELF GEDDLV |
| Ref90 A0BL34 | QT Y S FELF GEDDLV |

UniRef90_Q3LW39 UniRef90_U5GQ62 UniRef90_V6TMT2

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FKVRRTVIEMLIDRGYMVQSDDLNQTMAEFRS
lupas 21 lupas_14 lupas_28 jnet cont
sol25 sol5 sol0 jhmm
jpssm

UniRef90_Q3LW39 UniRef90_U5GQ62 UniRef90_V6TMT2

KCTEKKRYK ${ }^{50}$ 60

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lupas_21
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UniRef90_Q3LW39 UniRef90-U5GQ62 UniRef90_V6TMT2

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lupas }2
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sol5
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UniRef90_Q3LW39 UniRef90-U5GQ62 UniRef90_V6TMT2
lupas_21
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