

## QUERY

UniRef90_W0IOY8 UniRef90-C5A422 UniRef90 V7CGG1 UniRef90_V4THI4 UniRef90_-I1QM96 UniRef90_M4E8M9 UniRef90_K4C8B2 UniRef90_Q12UQ4 UniRef90_M0ZP48 UniRef90_F7XKU9 UniRef90_A0A022Q4M3 UniRef90-L9W5I8 UniRef90-UPI00042B2C78 UniRef90_B4FD80 UniRef90_A0A059AD94 UniRef90_D7SIN9 UniRef90_D3TBV4 UniRef90_W1PDG7 UniRef90_UPI0002B437A9 UniRef90_UPI0002C33ED7 UniRef90-M0N845
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 | $N$ | $G$ | $G$ | $V$ | $R$ | $L$ | $L$ | $H$ | $N$ | $K$ | $G$ | $V$ | $E$ | $E$ | $D$ | $D$ | $L$ | $D$ | $R$ | $R$ | $W$ | $E$ | $E$ | $A$ | $T$ | $G$ | $E$ | $R$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $N$ | $E$ | $L$ | $L$ | $F$ | $L$ | $S$ | $K$ | $H$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $N$ | $R$ | $L$ | $L$ | $Q$ | $H$ | $N$ | $K$ | $S$ | $V$ | $V$ | $E$ | $E$ | $D$ | $D$ | $L$ | $D$ | $R$ | $R$ | $W$ | $E$ | $E$ | $A$ | $T$ | $G$ | $E$ | $A$ | $V$ | $D$ |


 S E K F Y L V H D K DQ Kl Y A E N I D K H I R E R L G I D F D N I I V A S K H
 N G A V $V$ RV L L H N S S I I EE E D D L


 NGSVR L L MHERS IVA E D DLDRRWEAATGEPVDEVIFLSRH
 Y G DV R L L E Q D K FI I D E D DLLDA R WEAA S GETASSELI F L S R H GGGTYYRTVGAVLVSFDA L HDDLEDAF DCDP DLLVFASRH
 GGGEVSRTDGFEMRVFDEWHLELDAAAFDDPDLVVFASRH
 H K DVI V V T I N D D R T I R R H E N L D K E V E K E L G M K P K Q A I F I S R H
 T R DVR M DHLQQDKI VY E D F L E QR WE TVT GENVVSEI I FMSR H G G G T Y Y T L D G V E L R S F E T L H DE LDE D A F D C D P D L L V F A S R H

 GGGTYYRADGFELRAFDDLHDDLSNAFDDEPTMLVVVSRM | $G G G G T$ | $Y$ | $Y$ | $R$ | $S$ | $G$ | $P$ | $Y$ | $E$ | $L$ | $R$ | $E$ | $F$ | $D$ | $A$ | $L$ | $H$ | $I$ | $D$ | $L$ | $D$ | $D$ | $A$ | $F$ | $S$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | A $P$ D GGGTYHRS DAF E L R S F D A L H L E E L D A A D A F D D P D L I V F A S R H GHTLLRF F E T E D R L I Y E N N L D E R T $\quad$ G

 NKEVRLLQHDKSI DKEDNLDERWEEATGEVVEEVI F FSKH


 THEDVVFLETE E RLIVYE D NL DVVRT GGGRVYRHGSFELRQFDSLHLRLENVFSSTPEFI IFLSRH QY D

 GANVVVLA GFRRE DVVIVYF D F L D D E R M P R E


 G G GTVVYEMD G C ELL R E F E QL H I HMMD D S R P E I I S A V V F V S R H Y D DFEMMRT IDDEWHLEAENA SE LIS STTPQII AF L S R H







 RGDDVVMS $\square P D L H I Y S D G L D A R A R A F G F D P D V V I D P S E H$
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## QUERY UniRef90_woloY8 UniRef90-C5A422 UniRef90 V7CGG1 UniRef90- V4THI4 UniRef90-I1QM96 UniRef90_M4E8M9 UniRef90-K4C8B2 UniRef90-Q12UQ4 UniRef90-F7XKU9

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TAVSNRPALTDHPDGVPDVPPQGGKPGWAAPPNPRMGPWL SSRDGRKLLTAHDSGNTAEAELGGRSREVAMAAPVAMRN
 Th

RSSAGDRSLTVHPDGNWGKAEYGGKESTVVKTNPHLMTEA
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QUERY
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UniRef90


## QUERY

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Y WRRPDAAQVVAQLVWEPVGNWSSTSANNKVLL GDGGGHY YWKDPVAGRIVASSILSLDGNPLQEEVPVADGFGGGHY YWKRQDAAQAIAALVWEGIGDWSRNNGKNKVLLGLGGGHY Y WKRQDAAQVIA LLGGGAAVGNWNGEKDKNRVLLGDGGGHY YWKRQDAAQVI ALLVWKGLGKWGRENDNNKVLLGIGGGHY HWGRQDAAQAI ALLVLWKGLGLEDGNRNCEKVLLGGUGGHY YWRRLDAAKVVAQLVWEGIGNWSRDVTKKKVLLGI GGGHY HWKRQDAAQVVASLI WEKVGDWNRNDGNNKVLLGIGGGHY EWRDDRAGEVLAKTIMEL E WKRYLPALGI
YWKRQDAAQAIALLL WRGLGLWNGNEARNKVLLGGIGGGHY YWRRPDAARVI A QLVWEGLGNWNRENKNNKVLLGI GGGHY CWKRQDAAEVMALGGGAAVGNWNGENPNKKVLLGUGGGHY
EWDDPDGARAVARAVLDLRG
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EWSDKDAGRIVAQAILSVCE

YWEDPAGARAVAQSVLDLSGV TADRERHLVGFGGGHY QWKDQDAAQA ALGGGSGVGNWSRENNGDNVLLGDGGGHY
QWKDSEPGREVVARAALSTV
YWGREDAANVI ALLVWEGLGTWSST
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Y WRREDAAATVASVFMKGLGLDEEDHAGEKVLGGGGGGGHY
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E WADKDAASAVAGSLLEVL KEDSPEVIRLI GFGGNHY
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E WS DPEAGK II AKSVMNCLS KK

WT DADAARAVARAVLDLEGTGADPDANPRHVVGFGGGHY
PKNPVAICFGGTHY
$H R E R Q V V G F G G N H Y$



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 VVLVVATASDPASDGPAAAFLAMPGWSPGPPDPEGMESFT MLALIYSARDPAGSGTARIIRELLGGDRCSLPRAVECTLL MELLVAYRDDPAGYNMAKFLSEKMT
M! GlVVVSRADRASEHDGERLLAADDTARE D
KDGEDYR VTLVVATTADPASVGPASAFLAMPGWNPGPAVATGMESFA MKVVVYYPGDPAAKGAAEALEREYGDKA MELLVAYQKDPAGHNDAKF I VLISSTQDDASVNUKESITNEYDFSDKDTVDVNETIYK MHLIVASRSDPASVRMLDYLTEKYTFSEKG MKSLAYSVRDPAGRGUALYUAESLGLTSANKPGAVECFR YLL!YSTKDLAGM MAKRLREYFNLSSKNNLNKLNLQELD MYGTVFSKVDVVSRGVFE LFSKNGYLRYRMSMGDYEDYD TGLISSRKDPAGSLIHE KKGYSFLEDDKRAHSH MELLVAYEKDPAGYNMAKF VTLLLSSRADDASMNLYGAVLADGGWSEGEEFGHGFVHFH
$\square A L T N S Q Q D V G G V N K N H L Q T L L$ FRENPMLLSAMKTDTS
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QC
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$V V L V V A T K D P A S T G P A A A F L M P G W S P G P P D A E G D E L Y E T$
 UYSNADSFASRAAA LRDDAGFS GAQDGKGLKRYR MANF पSQEMKKEG D DYH

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DALIHSRLDPAGTNLARRI RALLNEREDWPLPRAAS
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VTLVAATAADPASVRPMSSILAMPGWHPGP\|VRDMLSFV I I I S S S T D P A S TN N DK N C L L E N T S WE E DD
 VVLVVATTSDAASATPAAAFLAMPGWNPGPTIPDGVESFA $\downarrow G L I V S R V D E A S \square G \square W S M L K G M V K F E \square$ NTNEYS
M $\square G \square V$ SRADGASTH $\square W A Q \square R E \square E D F E R \square G P D A$ $M Y V I V A S D N P V R \quad$ VFDDVIPTPLVKTEGNRIUS MP WUAYS DDDKVSSGVAG UKEELEFSEEGE GGGMAHYR

VFTATKSDDASFSDYNYFTSNGPGDGKYDLTEGR
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                                    MEMASRLLEपFKFDK\DE NKYS
NKYS
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## ПS $\| V V \mathrm{STRDPVGET} \square \mathrm{K}$

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UniRef90 M0SOE6 UniRef90 A8ABM7 UniRef90_B3T615 UniRef90_UPI00037805C7 UniRef90_Q9HM47 UniRef90_E8R9M7 UniRef90-F8AKP9 UniRef90-FOQU46 UniRef90-Q2FPX3 UniRef90_V6ARF5 UniRef90-B3T544 UniRef90_XOUT85 UniRef90_A3CSJ1 UniRef90-M1XK66 UniRef90_UPI00036DAC64 UniRef90-Q6L1F5 UniRef90-XOZE40 UniRef90-A6UUZ4 UniRef90_A6UP03 UniRef90_A4FY35 UniRef90_D7DTN7
UniRef90_A7IAL9 UniRef90-Q97CM5 UniRef90-K01L02 UniRef90-A0B5C3 UniRef90-X1RTP1
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UniRef90-M4ECM3
UniRef90-X1VAZ8
UniRef90-TONIS4
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UniRef90-AORUG0
UniRef90-K0BCT4
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UniRef90-M8AJZ3
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UniRef90-GOEDN4
UniRef90-JOSBH4
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UniRef90-A8MCV2
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UniRef90_H2C3G8


RDCTVVGLEADTPYLDNLDD LPPHAEGAGDGYVR SRH NDDVR LLEHDKGVVEEDDLDQRWENATGQTVDEVIFLSKH TSDPVGLT, KKGYSFEEDDFDVTDFGYKNGEALVVLSR
 RDGVRFHLTAGDLI E EDEARE DABAGARKFDVIVFASRH

 I QDAVGKTIKELGYKFEEDNED\IDFRYEKGDVIVVFSRH FVDFPVVVYRGEPT DFSREDILASFGK YA VF $\square$ SRH
 LPLLEFPEKLI A DNEDR
 Y QTAKKLFGFDSVEEDVTDFTYDKADAVVLSRH

 HADGHYRTDGAELVVVDQLHDELETPFSTPPALVAFASRH RGEVEAVVVEGDHLYLSPNELREVAD ELIVVASTH NRDVRLLKHDSSIVREDHLDMRWEETTGETVDEVIFLSKH NVDAVGKTVRKLGYKFEEVANDVIDFKYNSGDAVVVICRH SKDPVGQTVKRLGYSFEEI DEDVTEFSYSKGDSIVMICRH RRDAVGRVVKALGYDFREVENDVDDFEGDFTKPVVVISRH


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|  |  |  |
| UniRef90-C7P647 | LKNIYKNYRNEFDVSFEVVHHSPTDLKSPTVFV |  |
| UniRef90-F6BB88 | LRNDFKYNNQYFDVSFEVVHHGPSDLNAPA |  |
| UniRef90-D8J6W0 | LENFREHAPDGYEVGMECTHHGPTSV |  |
| UniRef90-M4YM63 | LRMTKERCDPEFNICFEATHH |  |
| UniRef90-D5E961 | LMQ QSYAGMDYDVSMESTHH |  |
| UniRef90 UPIOOO3721770 | L NKS EYNSLDEDVSFEVAHGP |  |
| UniRef90_A2STU3 |  |  |
| UniRef90-B9G2A9 | RLMQK\AVDQEFEITLEATHHGPVTNTPTMF |  |
| UniRef90-A2BK×3 | TYRRVAEEEFQVTLEATHH |  |
| UniRef90-F3KMG4 | QVNKSNFSDF |  |
| UniRef90-V4 | AGFDEHAPDGYGVAVECTHHGPTELSV |  |
| UniRet90_MOSOE6 | RLMKRIAQEPEFEITLEATHH |  |
| UniRet90-A8ABM7 | LRAMNAFRREGYDVTYEATHHGPTS DKPLVFAE |  |
| B3T615 |  |  |
| UPI00037 |  |  |
| Q9HM | RRMMESYSGSRFEVTFEATHHGPI FDI |  |
| UniRef90-E8R | RLLDSYGRSEYEVSYEATHHGPTSIS |  |
| UniRef90-F8AK | LKNYKHKLNEFEISFEAVHHGPTDLNVP |  |
| UniRef90-EOSR16 | KNGKFSPRFESYETHHGPTSR | G |
| UniRef90-OQU46 | YN |  |
| UniRet90 V6ARF5 | MKSLRKSDYAKFQIITEATHHGPTALSKPTLF |  |
| UniRef90- ${ }^{\text {- }}$ - ${ }^{\text {a }}$ - | FLELQRSASEEFDITLETTHHGPF LTKPTLY |  |
| UniRef90-X0U | FEKLKKFNLKDYNITLECTHH |  |
| UniRef90-A3CS | NLAARAPEGYRVSYEVTHHGPTALS |  |
| UniRef90 U3A2S9 | E |  |
| M1XK66 | REGLETHAPRGYGGI CIHHGPSTVGCPSLFV |  |
| UniRef90_UP100036L |  |  |
| Q6L1F5 |  |  |
| TOMTD6 | LRLVKEYRGDRFMLTLEATHHGPLTI D P |  |
| UniRer90-XOZE40 | LVNTKYNNLEFDVSFEADHHAPTK |  |
| UiRe90-A6UP | QN DKYNELGFEVSFEVLHHGPTDL |  |
| UniRef90-A4FY35 | LQNMNKYNEMGFDVSFEVLHHGPTDLKAP |  |
| UniRet90-D7DTN7 | QKINDYNNEYFEVSFEVLH |  |
| UniRef90_A7IAL9 | LRALARYCPEGYRVSYEVTHHGPTGLS |  |
| UniRet90_Q97CM5 | RQMLESYSGTKFOV |  |
| UniRef90_K01L02 | LKAIARHKVPEYDI I IEATHHGPTSLKK |  |
|  | LMALQRHAPSTFRLSAEATHHGPVDLR |  |
| UniRef90_X1RTP1 | FVSLKDLNNSSFSLDITVIHH |  |
| UniRef90 UPIO0036B0D99 | N |  |
| UniRef90_l7KAZ2 | LRNLAARAPEGYRVSYEVTHHGPTALSTPSLFVE | GS. |
| UniRet90_LOHDR8 | RALARHC |  |
| UniRef90_B8G1X8 |  |  |
| 90 |  |  |
| UniRef90-E6NS | NSGVRDVEVGMEATHHGPHS EK |  |
| UniRef90-W7TND3 | RQLHRAVQDAGFEVTLEATHHGPWH |  |
| UniRef90 M4ECM3 | KDA ENY SVY C |  |
|  | Kly |  |
|  | SGDYFET TEATH |  |
| K3YZB9 |  |  |
| UniRet90_AORUGO | ENGFDITEATHHGP |  |
| UniRef90 K0BC | SEFQVTIEATHHGPTALT |  |
| UniRef90 M8AJZ3 | GHEV的 |  |
| UniRef90-F9CUR9 | LOTLNRSVFSDFQ |  |
| UniRef90- X1DDY3 | RVQI DNFTIPDFSLDMEVTHHGPTTLD |  |
| GoEDN4 | A |  |
| UniRet90-JoSB | GLAAHAPAGYRVSYE |  |
|  | K 1 A E S |  |
| UniRef90-B1L713 | VSKRAEEGYWVGFEPTHHGPT पDI |  |
| UniRef90 ${ }^{\text {C3}}$ | K |  |
| UniRef90_A0A059/ | A |  |
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| UniRef90 P58851 | RFADDP |  |
|  | THHGPF VDK |  |
| UniRef90-x1DD | SIDMEVNHH |  |
| UniRef90-B0R38 | VDSLRSYAPPEYDVAMECTHH |  |
| UniRef90-Q96YQ2 | YRETRKMN DDUEKADEATHHGPTYQHDPIDFVE | GS SKE |
| Ref90_A1RS |  | GSTEN |
| 俍ef90_C7DIA1 |  |  |
| UniRef90 MoWXJ1 |  |  |
|  |  |  |
| UniRef90-L1J3F | RSLYKKTAAS |  |
| UniRef90-N6VR25 | D |  |
| UniRet90_W7KXS2 | YRELLKI DVPIDDKVIEATHHGPT LDKPVVFAE | GS |
| UniRef90 S0APK3 |  | GTTEN |
| UniRef90-Q4JCK7 |  |  |
| UniRef90- X1KC25 | FLKALEDPPRGFEVSLEATHHSPTQFRTPMFFAE |  |
|  |  |  |
| UniRef90-U1N | dehapat udvgatc |  |
| iRef90-UP1000371F5BC |  | GGNDA |
| UniRef90- M0ZY26 | RL KSIADSFFEVTLEATHHGPVT |  |
| 4B9W1 |  |  |
| UniRet90- V4JAF2 | V |  |
|  |  |  |
|  | A |  |
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UniRef90 R9T8L5 UniRef90-B8D4Z8 UniRef90-C7P647
UniRef90
U6BB888 UniRef90-D8J6W0 UniRef90-M4YM63

UniRef90 D5E961 UniRef90-UPI0003721770 UniRef90-A2STU3 UniRef90-C9RDY2 | UniRef90-B9G2A9 |
| :--- |
| UniRef90 A2BK | UniRef90-F3KMG4 UniRet90-V4HPS8 UniRef90-MOSOE6 UniRef90-A8ABM7 UniRef90-B3T615 UniRef90-UPI00037805C7 UniRef90-O9HM47 UniRef90-E8R9M7 UniRef90-F8AKP9 UniRef90-EOSR16 UniRef90-FOQU46 UniRef90-O2FPX3 UniRef90-B3T544 UniRef90-X0UT85 UniRefofo-A3CSJ1 UniRef90_U3A2S9

UniRef90_M1XK66 UniRef90-UPI00036DAC64 UniRef90-Q6L1F5 UniRef90-TOMTD6 UniRef90-XOZE40
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UniRef90-Q97CM5 UniRe990-K01L02 UniRef90-A0B5C3 UniRef90-X1RTP1 UniRef90-UPI00036B0D99 UniRef90-17KAZ2 UniRef90-LOHDR8 UniRef90-B8GIX8 UniRef90-D9Q297
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UniRef90-KOBCT4 UniRef90-TOZNC3 UniRef90-M8AJZ3 UniRef90-F9CuB9 UniRef90 - X1DDY3 UniRef90 JOSBH4 UniRef90-M0ZP49 UniRef90-B1L713 UniRef90-X1T1T2 UniRef90-P58851 UniRef90-UPI0003EABCAB UniRef90-A8MCV2 UniRef90-×1DDN6 UniRef90-BOR384 UniRef90 Q96YQ2 UniRef90-A1RS86 UniRef90-C7DIA1
UniRef90_MOWXJ1 UniRef90-ToLWC2 UniReftol-L1J3P1 UniRef90-N6VR25 UniRef90-W7KXS2 UniRef90-SOAPK3 UniRef90-O4JCK7
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EWSNTDASA A ${ }^{170}$
EWRNRVNHAVVGDTVLASALFSATENKSYPIAVGIGGGHY E WRNRVNHAVV|GDTVI GF:LRAGGIRDECIPVIGIGGGHY EWVIKEAGEIIAKSIVDTIDQUNTEYAEGDKIIGFGGGHY QWEDDAGARALARSVLDL EGGAHQERQVVAFGGGHY



FEEKEKII GLGGGHY
YWCRQDAAQAlAKVLWKGLGLDEGNTVGEKVLLGFGGGHY EWVRRDTQNAMAETVIRFMERDLVSVECSKVAIGGGDTHY QWTDVS LCNSTASLVHQV MIEK IPSSPVAI CFGGTHY QWDDPAGAAAVARAVLDLPERAAGDPDDPRHLVGRGGGHY WWKQDAAQAMALLLWEGLINWGRENQNKVLLGLGGGHY EWNDVANCNSVGQQIVDVASWEEHRCEAPKAVWVGGOHY EWRNKLAGKDLAKSIIESDTDMNK EWNDPEALSTTVDSVM NPDVRDYDAFVGVGGGHY EWRDEVNHRVVGEAVARLLKEPGGDECN PAIGIGGGHY EWADEKAGEIMAKSVMDSV DSDKRNYENDDKVI GFGGGHY
EWKNE VVQD MARGMMKTLEDMTNINDKPCIAVGFGGPHY
EWNDRTAARAVAQAVLDALLMD
QWVDENACSSVASAILDKTLSMD EPTSSVIPLAGFGGTHY

EWRDTKASFVVAKTISEVIGK FRENKYAEVAIGGUGGPHY
EWADPAAGRAVAESILAA
EWADDAGADAVARAILDL
QWRDPAAAEAVARAILGLRGV
$\qquad$ EPQE
WRDPAAAEAVARAILGLRGV ardiviafgaghy EWNSDETASLVVNKILEADD LKTWFEYEPVVGFGGPHY DWHNDKILEIMARSVIE KNVKRFRS G|
DWNDPEALLNALSSAVMETTEN
EWG IDAGESVATTVINTDENYDKKKGFPDYI GIGGGHY
EWG IIDAGESVATTVINTIYNYLIKKKGDQEDCI GFGGTHY
EWA:DEAGE:MANALIDT:CSMEKSYKKDDKVIAFGGGHY
QWQIDDAAEIITNSLIDTLNSINSEYEKKEKIIGIGGGHY QWQMKDPARIIANALDDTLNILLKNEQKPKKAI GLGGGHY EWVDPVAGRAVAEAVLGAN NPAGAVPLIGGIGGTHY

EWGDDAKKTAVDAVI
QWGDRNAAGVICETLLGLLDR GDERCNKVGI ALGGTHY HWDDPAAGAAVARALELES YEAHADETVLLGLGGGHY EWIDDEAGELVANAIVNSDFKYFKEDKNQQVGLGFGGTHY EYVDEHAGELVAEAIMNA SPLKDKSYCGDGGPHY EWADPVAGRAVAESMLSAV
 EWNDELAGKAMANAVADVLQSSNAAQGCSPVVGGLGGTHY DWGREDAAHVWADVLDKNLGLSATEANGVRVIVGAGGGHY YWKRQDAAQVIALLI WEAVGSWNSETGKRKVLLG円GGGHY QWKDTKAAEVVAHAAVATIS
EWKQPGDADLMVKS\IEGEKKDFGNFVGVGGG GNS EKVLLGTGGGHY QWNDKGLCGAVAELVRET AEEQDEKTPFVI CVGGTHY QWNDESLCSSVASLVHQVLSQP TKEH AVIT DRDRDDLIKKLEKGVYSYGNTPSYDKVAVGIGGMHY ELSNHLRKEMLLELGWGSKPHFWLCRSGEKVLLGLGGGHY QWTDVTLCNSVATLVHQVMSGHDKA
EWSDKEAGELVANAIVNAVFKYFKEEKTG A WRDERALLALAETLYETIISQERGCECQQVGLGFGGTHY EWNDPAAAEA
YWRRPDAAQVVAQLVWE
A WRDERGLRAAAE SVLEA TESWKDG KFVAAVAFGGPH YWTNERIVRTLVDSTLKGUDKVDETDCRDYIS GFGGPHY DDRPKVLLGIGGGYY
EWNKKEPATIIAQSLLELLEKYEDFPNDVPVLVGVGGGHY RWTDEEAGEACARAILAAVD PPPDVKAVVGYGGGHY YWGRQDAADTVAMLLWKGLGDGEEESVGNKVLLG\|GGGHY EWRDPKAQEFLASLVFDGLNNTDKINDGKDAAVSUGDLHY EWNDQEAGKVVANAVIKTIEKWDVKRENPMDGLGFGGTHY
EWQDDAGARAVARAVRDLRGV Y WENKELVKTLDEATLRG!DKYKD DECENK DVGFGGTHY EWKDRKAVETLAQAVEEVLNSQDKPN TPAMADGDDHY AVNSPRRLDVVAKAISEAVT GSATECKKVAlGIIGGSHY YWGRQDAAQAI ALVLWKGLGLEEGNAVGEKVLLGUGGGHY NWKDVDALRTL FLGVRDATPKNYPNYVGAGGGHY EWTRQDAAMHWADVLVEELGEQLSAEDKA VVVGLGGGHY EWKDERLGKDMADAIVKTVEQIESGDYDEKI AVGYGGNHY YWTNQELVRKLAEAVLRGVENYENVTCDKVVLGLGGPHY EWKQEGI AALMARAIMEGVEKDYGNYVGVGGG$G G G H Y$ QWRNESVCGYLVRAILEGISS EWKDKELQKLMAEAVYDAYMLLKEDRPDCEKAIGFGGGHY QWTADAPARAVARAILSLRGADRQAAAQRRTVVGFGGGHY
A YWKRQDAAQA TALV
YWNNEKLVKNLVDAVLRGTERDEETTCDN VILAFGGPHY EWSDRRALEALADAVIEAISV ETPGSCRPAI GLGSTHY MWNNEKLVGKLVEAVLKGI ERMEETDCQNTTLI YGGPHY YWNNEKLVRKFVEAVLRGI DNVDFVECNDVVTI FGGPHY


NDHFTRVELFTRFADGHAARKDAEWVDGEMVKQAVSRNGE SKLDFTKLADES CI GHVISKYVDKLDDKVI DQAIANSVN VP WRMDNVRKDG $W W V G H L L S G Y S L P M E E P V I N D A F E T S R G$
APRFTDVVFEKNAAFG
APAHTDAALSNKDAYGHDVPDYAHDYDRDQFREVVDKT P
 SPKFKKLI INTNDA A HICPKYVQEDNEEMIKQMUDKT IE TPRATRLADTDWPVGHVAADWSLNAHRGVVDAMFTAS TPYFSLLAEKS CVVGHI DSKYYLNASNEVI LATVNNTDE
 APRHMDIVM
APKFSSYVLKENVNVGH!ISKFMDEDGKDETLMAVEKT APRHGDVARKDGVFLGHILDSYTDDFSKSTVLEAGIDSSAS APKFTKLCLEGKYYFSYLIPKYAVNVENVLKKIVKS





 $\square L L L A T T E D K A S V N M L Q A L L A R G G W E E T T P V D A S S R V W H$ $\square A \square A \square S R$ D P VARGVAR LL

 VVPEKDPVASHVLNALKAECTLFPTGAEDDGRPVLD

K DEVAP LVFEKSSELLKLSETDMEVDGYPVLE






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|  | UniRef90-K8YN91 |
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|  | UniRef90-UPI000370B808 |
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|  | UniRef90-R6Q3C2 |
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|  | UniRef90-E3D0F2 |
|  | UniRef90-FOQ0N9 |
|  | UniRef90-U5FPS6 |
|  | UniRef90-T1CAW6 |
|  | UniRef90_D6PBT0 |



YGNDIYYVRTGTVICMDYRYDP LLNANFADCDDAVMVNWH YGNTFYFAPTQTAICLDYNYLPDMNKYFADCDVVGMVTWH YSNEFYFVKTKVVICADYSYLPTDNEYFEDFDIAAMVNWH SGAVRYSLLQLDNVFSHDYRRPLANSVFADADAIVIVNWH YGDQFLFCRQNALI SYEFEYLPTLRECFVDADVAIEVNWH CRDAWGHTHRFLLVSYDYAYLPVLRERFAGADLAGEVTWH AGETRCHLLQEDVLSHDYLYAPLVNERFGDADAVVVVNWH


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| UniRef90_A0A031LK47 |  |
| UniRef90_Q8ZVE0 | EMSNPRPLFTVHTPGSW PDVSVANPRLASAL |
| UniRef90-A3MWS2 | EMANPKPFLTV HTPGAW PDVSVSNPRLVSSL |
| UniRef90-F4G3G3 | ESSTLRPALTLHHPGNPGKNTMGGRPETLGIANPRLLTSI |
| UniRef90-B1Y9H2 | EMANPRPMFTVHTPGSW PDVSVANPPLATA |
| UniRef90-TOLJD0 | K SMKNVRSLTVHAAGNFDTNDLGGEKNKMAPYDARYARGV |
| UniRef90-G7VHD2 | EMANPRPLFTVHTPGGW PDVSVAHPHLVSSLIL |
| UniRef90-A4WL31 |  |
| UniRef90-T1A6T7 | RSERGVAALTVHPLGNPGSNDVGGEPHHLNPTAPRLMTAA |
| UniRef90-Q6K4F8 |  |
| UniRef90-X1G459 | T ARPAFLIHSTGNWSNNDFGGKPRDLSKTSAL |
| UniRef90-R5XSF4 |  |
| UniRef90_D8LBU1 | VAKSGVPALCVHPTGVPSSKEAGGKPGRCPPPSPRLLRE |
| UniRef90-UPIO0042B | VAS SNRPALTIHPI GTPHV |
| UniRef90-K8YN91 | A A A G RPSLTIHPIGNPGQPAHGG $\square$ P GRCVPPSPRMAPLF |
| UniRef90-F4BUIO | A A LP WFGGHFTGWLEVGE GKSR LSAAAPAGLRSF |
| UniRef90_G4RPJ6 | ( R PMLT A T P PGV PPSLSVAYAELKTWL |
| UniRef90_C9XK73 |  |
| UniRef90-UPIO00370B808 | GGEKAPKILTVHSTGDVVGGDY |
| UniRef90-T1A | V S K NVA SFTVHSEGNWSKAELGGNPFSLSMASPVEMLNV |
| UniRef90-X1DEB3 | RAASGTPALLIHPTGNWNQ $\square$ TLDGREKELSYTSATALK F G |
| UniRef90-F2L2Y1 | EMARPRPMLTAHTPGV APSLSVAHASLKSWL |
| UniRef90-UPI000477B3DD | EGANAPNAFTVQT T G DLASGTF SPVDPR\\|KRG[L |
| UniRef90-X0XZM5 |  |
| UniRef90-W1WL72 |  |
| UniRef90-J3KVD6 |  |
| UniRef90 B9IE15 |  |
| UniRef90_W8T2J8 |  |
| UniRef90-R6Q3C2 | EGEAPEKVLTVHSLGDLPS GVFG A A M P RLMRNL |
| UniRef90-E3PV95 | GGQNAPKVLCIHTVGDLASARYSPSNPVPSTNLAKALEHH |
| UniRef90_A4JPB8 | GKNAPRI F TI Q T T G M E S GTF SPVDPAVTRGLFLAVEH |
| UniRef90_G7V6Z0 |  |
| UniRef90-E3D0F2 | NAPRVLTAHTIGDVPS GVF |
| UniRef90-FOQ0N9 |  |
| UniRef90-U5FPS6 | A A S S R P ALTVHPIGTPHISEAGGKPGWAAPPNPRIGPWL |
| UniRef90-T1CAW6 | RSERGLPALTVHPIGNLGEARLGGLPRHLTPVPARLLTEA |

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[^2]|  | UniRef90_A0A031LK47 |
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|  | UniRef90_Q8ZVE0 |
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|  | UniRef90-R6Q3C2 |
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|  | UniRef90-U5FPS6 |
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 D WTS R RAA A
 YWRRQDAAQAIALLVWEGLGDWGRNGGSNKILLGIGGGHY
 SYNNPVAASVIAFALMDAFASEEKA A WACPDAADVLARALLTV GER】ARPA I S
 A WENPRAQEALARSLLEAL SLR R RPRMVHLLCLGGGVHF A WS DPAAADVLARALVALCASGWGEAA

lupas_2
lupas 14
lupas 28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


|  | UniRef90_A0A031LK47 |
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|  | UniRef90-G7V6Z0 |
|  | UniRef90-E3D0F2 |
|  | UniRef90-FOQ0N9 |
|  | UniRef90-U5FPS6 |
|  | UniRef90-T1CAW6 |
|  | UniRef90_D6PBT0 |



 VGDWSR K K G V V WA GLLLPGYSLLMERETDKVAFET TEG
$\nabla$ VRQTELIFNSRDAFGHMFSSYQVP D $\square$ DDLEAVE DARESS SM VT QMALD GLANVGHIIHKDVAATRDLVAQAFNKHVK

 A YRFRKHVLLDE
S LLTSEVLNGAMDVGHIIHKDVATADLADKALAKHVV

E

 APRHMDVVTKDGVWVGHLLSGYSGPMEEPMWKHSURVSYE



 EPGFTQPLREEGLALSHVLPNHAHGYDAEDMLACARSUAG $\checkmark \mathrm{V} \cdot \mathrm{P}$
APRANALAALDNVWLGHMLASYALPF $\square$ K GTWKQA $\square$ NDA $\square$ T

[^3]

UniRef90_A0A031LK47
UniRef90_Q8ZVE0 UniRef90 A3MWS2 UniRef90-F4G3G3 UniRef90-B1Y9H2 UniRef90 TOLJDO UniRef90 G7VHD2 UniRef90-A4WL31 UniRef90_T1A6T7 UniRef90 Q6K4F8 UniRef90-X1G459 UniRef90-R5XSF4 UniRef90_D8LBU1 UniRef90-UPI00042B6BBC
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UniRef90 X1DEB3
UniRef90-F2L2Y1
UniRef90-X1RSQ4
UniRef90 UPI000477B3DD
UniRef90 ${ }^{-}$X0XZM5
UniRef90-W1WL72
UniRef90 J3KVD6 UniRef90 B9IE15 UniRef90-W8T2J8 UniRef90-R6Q3C2 UniRef90 E3PV95 UniRef90-A4JPB8 UniRef90-G7V6Z0 UniRef90-E3D0F2 UniRef90 FOQON9 UniRef90-U5FPS6 UniRef90-T1CAW6 UniRef90-D6PBT0


APKKVVIYRKS $\square R G P \square R R D V I D A \backslash R E L D \square R$


STRKAFMDKKAFKGWQRQAVREHLEVLRVPLL

[^4]
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    jpssm

[^1]:    lupas_21
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[^4]:    lupas_21
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    lupas_28
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    conf
    sol25
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    jpssm

