## QUERY

UniRef90_D4TQF3
UniRef90-K9V6R7
UniRef90-K9WER5 UniRef90-B4VTW5 UniRef90-K9RDX8 UniRef90 K9V151 UniRef90-K9XD46 UniRef90-K99901 UniRef90-D8G479 UniRef90-EOU702 UniRef90-K8GUB3 UniRef90-T2J516 UniRef90-K6E067 UniRef90-B8HL67 UniRef90-K9XRY6
UniRef90_14GTS3 UniRef90-K9W3м3 UniRef90-K9SC33 UniRef90-UPIO0036687A8 UniRef90 K9YIE9 UniRef90-UPIo00346567D UniRef90-UPIo003450E6D UniRef90 AOYWB4 UniRef90_UPIO0036791AC UniRef90_UPIO003F505C4 UniRef90- BoCD48 UniRef90'UPI00034C7273 UniRef90-L8LWE8 UniRef90-K9PZOO UniRef90-K9Z678 UniRee90-UPI0002E998BF UniRef90-UPIO0034BOFDB UniRef90_B1XN52
UniRef90 K9SIX1 UniRef90-W0GZL9 UniRef90-A5GJT6 UniRef90 UPIo004105BD9 UniRef90 Q1PL67 UniRef90_UPIO002FA2268 UniRef90-K9FS81 UniRef90 Q065z0 UniRef90_A3PE14
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UniRef90-L8LLU7
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UniRef90 L8N2C0
UniRef90-H0P453
UniRef90-K9TZ10 UniRet90-A2BXN3
UniR Refo-Q05R79
UniRef90-A9BC08
UniRef90-QTNCQ5
UniRef90-K9YR27
UniRef90-A3Z542 UniRef90-UPI00034C8DF6 UniRef90-UPIO004742525 UniRef90 Q319X0 UniRef90_Q5MZV2 UniRef90-B5ILG6 UniRef90-Q46LL5 UniRef90-UPIO002001624 UniRef90-UP1000200262C UniRef90_UPIo00303F13C UniRef90-B4WPZ8 UniRef90_Q00Z86 UniRef90-A5GSD8 UniRef90-K9P1S9 UniRef90_C1FJC1 UniRef90- A4CXG6 UniRef90_UPIooo348A4D1 UniRef90-C1NOU5 UniRef90 A8J176 UniRef90-K8FCC7 UniRef90-A3YZH6 UniRef90-A4S4F2 UniRef90_UPIo0035F1F49 UniRef90-L1JIJ5 UniRef90-UPIo0046EB67E UniRef90 B8CGK3 UniRef90-E1Z2L3 UniRef90-D8TPS4 UniRef90-R1BKV2 UniRef90_L1IAZ7

## 10

NKFNCLDTAPGKPSEKESVRRALTLITK NLTVAEAKKILNKFNCLDIAPVLKPLEKDLTREAIIL MTK
 Q N Q E A K K L N K F N C V DinA P RV R A S E R E L I C Q A L L AI A N
 Q
 $N \mathrm{~L}$ T V D E A I I K I L
 N L M I ATA A A S L S L Q EA Q $Q \frac{L}{M} S$

 MTNSEAET I L R Q F DCN DPKTV T T
 K S C A

| $R$ | $Q$ | $L$ |
| :--- | :--- | :--- |
| $R$ | N |  |
| N |  |  |




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## ME

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## E



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

D PA TTALA

ELTVDEAQTLLKQ

A E Q
$R L Q Q Y R C Q T$
L
MADGPS L
MADASVSLDSLR



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

ADADRLLARFDADQRKP GEDTR E GAK L RASCRAALAS
$S$ L R D A D VVLL $L A S L L G L R S A P N L D A A Q R Q A L G Q E L K G R L A$

## A QERRA $\square R E A C K \square L S$

LS ALHH DQSLSPSTRTSLQSAlVTLVT
VEDA WALLQEFSGLAQTFLDSRDKRQRLRDALLVAAE $L$ K E F R R A A QEPY Y S S A KRERRLREA L K L A F S

QUERY UniRef90_D4TQF3 UniRef90-K9V6R7 UniRef90-K9WER5 UniRef90-B4VTW5 UniRef90-K9RDX8 UniRef90 K9V151 UniRef90-K9XD46 UniRef90-K9T901
UniRef90 D8G479 UniRef90- В7К0А9 UniRef90-EOU702 UniRet90-K8GUB3 UniRef90-T2J516 UniRef90-K6E067 UniRef90-B8HL67 UniRef90-K9XRY6 UniRef90_14GTS3 UniRet90-K9W3M3 UniRef90-K9SC33 UniRef90'UPI00036687A8 UniRef90 K9YIE9 UniRef90-UPIO00346567D UniRef90-UPIO003450E6D UniRef90 AOYWB4 UniRef90_UPIO0036791AC UniRef90-UPIO003F505C4 UniRef90- BoCD48 UniRef90 UPI00034C7273 UniRef90-L8LWE8 UniRef90-K9PZOO UniRef90-K9Z678 UniRef90-UPI0002E998BF UniRef90-UPIO0034B0FDB UniRef90-B1XN52
UniRef90 ${ }^{-}$K9SIX1
UniRef90-W0GZL9
UniRef90-A5GJT6 UniRef90-UPI0004105BD9 UniRef90 Q1PL67 UniRef90_UPIO002FA2268 UniRef90-K9FS81 UniRef90-Q065z0 UniRef90-A3PE14
UniRef90-A2CBN1
UniRet90-L8LLU7
UniRef90-Q7VDC9
UniRef90 L8N2C0
UniRef90-H0P453
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UniR Refo-Q05R79
UniRef90-A9BC08 UniRef90-Q7NCQ5
UniRef90-G4FM23 UniRef90-K9YR27 UniRef90-A3Z542 UniRef90-UPIO0034C8DF6 UniRef90_UPIOOO4742525 UniRef90-Q319X0 UniRef90- ${ }^{-}$5MZV2 UniRef90-B5ILG6 UniRef90-O46LL5 UniRef90-UPIO002001624 UniRef90-UPIO00200262C UniRef90_UPI000303F13C UniRef90-B4WPZ8 UniRef90 ${ }^{-}$Q00Z86 UniRef90-A5GSD8 UniRef90-K9P1S9 UniRef90-C1FJC1 UniRef90-A4CXG6 UniRef90_UPI000348A4D1 UniRef90-C1NOU5 UniRef90 A8J176 UniRef90-K8FCC7 UniRefto A3YZH6 UniRet90 UPIOOO35F1F49 UniRef90-LIJIJ5 UniRef90-UPIOO046EB67E UniRef90-B8CGK3 UniRef90-E1Z2L3 UniReffo-D8TPS4 UniRef90_L1IAZ7


## -

LS DYQTLGTCADTADEGLLAMKTYSHALGYEVPDLPVVEG QSDYQILGI CADNVEQGILAMKTYSHAFGYQAPDLPHPEG
 LADYQI LGCADTAEEGLLAMKTYSLALGYEPPNLPII DG HSDYQL LGU CADTAAQGLSALKSYAEALGYPSDDLQPI EG HSDYQUFG|CANTAAQGLSALKTYAQALGYQPNDLTPUEG LSDYQMLGVCASSTDEGFLALLEAYLKALGGYPNAVTSFAG FSDYQULGUCADTATQGDAALANYAKALGYQPNNLTSVDG LSEYENLGIVCADNAKEGFAALSSYLKALGYDTNSIPPETQG QSDHENLGGICADNLQQGLQALLRSYLKALLNYNFNPFPSEDT VSEYENTGVCANNAQEGLAALFSYLKAFGYEATEKFEEHQ HSDYQULGUCADTANDADATLHAYLTAFGFEFPQPSSTEGG LCETENLGACADNFQEGFTTLESYLKAGGLEKDPTAPRGT
 GSEYQNLGCADNNEEGFKALKSYLQALLYPALPNSLPEDG HSDYQUFGLCAETEAEGHRALYSYAQALGYAAPTPTGPAA




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\stackrel{\text { He }}{\underline{t}}
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## \section*{F}




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 QS E A E NF GI CA D D Q A S A EN A L G Q Y L Q G L D Y G M E P GK T I E G
 SAAWFTVGVMAPSSDEALEALRALLERSLQWEAMTLTSETG NADWLTTGIMMASSEVATKVIRELESFFSWSKMNLPNDAG PAEYKMDGVCADAVESAVSALRGYLAAFGYPEPPLPDDER
$P F A W F T V G V M A S S S T E A M R C L R D L E L A M G W P A M D E T D D D S ~$ EADYCNVGVCASSYDEGFSALQNYLKAFDYVLDVSRHEDE HCDYQIFGVCAETAEAATAALHHYTEALEYDPPTLNPDEG
 NADWLTIGI MAPSDTKAIEALKSITESIKFVNLESLHADG


 DSDWDTHGVMAKSDKEAKIALGTVIQKYNFEFEDLKAMGG RASRDMLGICAASAEEGLTSLRSWTTELGMDKDGVPPPQG ACEWFTVGVMAASADDALAALRQLEAALGWDALSLPDPEG
 SASWFTVGVMAPSAAQALLAALRALERSQAWEPMTVTEEQG ESDYQTLGVCAETAAAGYAALVQYLAAFGYDGQDFPQDCG DAGWVLLGVVASDVKFAARAYRDWCEELQLEVVDAMQVRG
 ACDWFTVGVMAPSAQAALAALRSCEAAHGWSPLQAESEEG
 QAHRTMLGFCSANAPEALSGLKSWVTSLGMDVDGVPIPVG AADSVLLGVMASDVRLAVRALRDYCQALG
PAGWVLLGVLASDVSFAVRAYRDWVEELGLPVSNAMQLRG $P G D R \| M L G F C A D D A A S G V A A L K A W V T S G L P K G T L H G M D G$
$M M G C A E S E E G V G A L K A W V S A G M D K D G V M D F G$

QUERY
UniRef90_D4TQF3 UniRef90-K9V6R7 UniRef90-K9WER5 UniRef90-B4VTW5 UniRef90-K9RDX8 UniRef90_K9VI51 UniRef90-K9XD46 UniRef90-K9T901
UniRef90 D8G479 UniRef90-B7K0A9 UniRef90-EOU702 UniRef90-K8GUB3 UniRef90-T2J516 UniRef9-K6E067 UniRef90-K9XRY6 UniRef90-14GTS3 UniRef90-K9W3M3 UniRef90-K9SC33 UniRef90-UPI00036687A8 UniRef90 K9YIE9 UniRef90_UPIO00346567D UniRef90_UPIo003450E6D UniRef90-AOYWB4 UniRef90_UPIO0036791AC UniRef90_UPI0003F505C4 UniRef90-BoCD48 UniRef90'UPI00034C7273 UniRef90-L8LWE8
UniRef90-K9PZOO
UniRef90-K9Z678 UniRef90-UPIO002E998BF UniRef90-UP100034B0FDB UniRef90_B1XN52
UniRef90-K9SIX1
UniRef90-W0GZL9
UniRef90-A5GJT6 UniRef90-UPI0004105BD9 UniRef90-Q1PL67 UniRef90_UPIO002FA2268 UniRef90-K9FS81 UniRef90-Q065zo UniRef90-A3PE14
UniRef90-A2CBN1
UniRef90-L8LLU7 UniRef90-Q7VDC9 UniRef90-L8N2C0 UniRef90-K9TZ10 UniRef90-A2BXN3 UniR Refo-Q05R79 UniRef90-A9BC08 UniRef90-Q7NCQ5
UniRef90 G4FM23 UniRef90-K9YR27 UniRef90-A3Z542 UniRef90-UPIO0034C8DF6 UniRef90-UPIOOO4742525 UniRef90-Q319X0 UniRef90_Q5MZV2 UniRef90-B5ILG6 UniRef90-O46LL5 UniRef90-UPIO002001624 UniRef90-UP1000200262C UniRef90_UPIO00303F13C UniRef90-B4WPZ8 UniRef90_Q00Z86 UniRef90-A5GSD8 UniRef90-K9P1S9 UniRef90-C1FJC1 UniRef90-A4CXG6 UniRef90-UPIO00348A4D1 UniRef90-C1NOU5 UniRef90-A8J176 UniRef90-K8FCC7 UniRef90-A3YZH6 UniRef90-A4S4F2 UniRef90_UPI00035F1F49 UniRef90-L1JIJ5 UniRef90-UPIO0046EB67E UniRet90-B8CGK3 UniRet90-E1Z2L3 UniReffo-D8TPS4 UniRef90_L1IAZ7

90
100
110
120
PVYTK $\square N G K N G \square C Y \square D S Y A G H H R G V L V S C Q S Y Y E G G T N E M$ PVYIKLNGKNGLCYLDSYVGHHRGVLVSCQSNYPGGVNEM PVY KLNGKNGLCYLDSYAGHHRGVLVSCQSRVQGGINEM PVYIKLNGKNGOCHLDSYSGHHRGVLVSCQSYSHSGI NEM SVY KFNPKTGLCYLDSYTGDHRGVLVSCQSAYEDGI NEM
 SVYIKKFNTKKGSYYVDGYPGTYRGVLIVCOSSSEDGVSGT AVYIKFNPVTSLCYYLNPYSGEHRGVLVSCHSPESGMINEM AIVYLKFNTQKMSYYLDSYTGSYRGVLVSCQSENDTLVVGT AVYLKFNPKTGLCCYLEPYOGSYRGGVISCQSAYEGDINAT PVYVKFNGRSVSYHISPYLEKYRGVLVSCQSDEENGVNGT SVYLKFNTQKMSYYVDRYTGEYRGVLISCQGEQENGI GT TVY KFNLKNGSSYUNSYEGSHRGVLVSCQSLYEGGINEM

 AVYIKFNPKTGGCYMDSYAGTYRGVLVSCQSSGDGG:NEM PVYLKFSTERKSYNDSDYEGKYRGVLI TGFADFNDKITGT PI YIKYNGQKQSCLTDGYEGKYRGVLVSFQA EDERVCGT SVYLKFNGRSQNFYUSPYREKYRGVLISFQSTEENGINGV SVYIKFNPNRNLFHASSYSGEYKGVLVSYQSEYEEVGNAT SVY KKNPNRNSFHASSYSGEYKGVEVSYQSDYSDGHNAT

$\stackrel{\text { A }}{\mathrm{P}}$

## P

PVYIKFNARNSTYYQERYTGAYRGVLISCLSDQHEQUNG
P
CVFLK NTOTMNHYFDEYVGDYRGVLV AVYVKGQNGNWY A I Y L K K F N TLLK GA WY L L $P V F L K A N Q R G G T V R V R D E H G L G S G I L I S G H G D D D T Q P A T T$ CVFLKKANKTGNVFMRSENGLGEGILITCQYNEDAKPSDT
 PVFLKANQNTGDVHIRVEYGLGEGVLLSCQYNKDQKIANT GI YLKYNPRSRRYHSDNYKGLYRGVLLSFHADFTDGYSGT PVYLKCQSQSDRFY LDSYDGDYRGVLISCQA EDDTLAGT PVYI K F N GQRQTYYLDSYTGTYRGVLVSYHSLVEESVNGT SVFLKGNQKTGNVYI RPENGLGEGILLTCQYDEDSEESST
 GVYLKFNPKTGSCYVSPYTGSERGVIVSCFSPGSEEYNET GVFLKANQSTGF 1 RI REEAGLGEGVLI SGHQSEDAQVGST
 SVYVK Y N P Y T G L CYY N S Y T G SERGVLVSCQS SYDDGDRD

 SVFLK GNQKTGNVFI RSETGIGGEGILLT | $P$ | $C$ | $K$ |
| :--- | :--- | :--- |

 $P \vee F L K A N Q N N G R F L V R R E T G L G Q G V L I$ $N V F L K A N Q K T G E V Y I G R S E Y G L G E G I L L T C B$ AVFLKFNTLKNAWYLDSYSGDARGVLVTY AVFI KYNSLSGDAYISGYGGTFRGVLITP

 P V F L K A N Q N G G S DR I R DE Q G L G E GI LIT GH GDDESHPSTT

AVF KYNSKTKLCYVSRYDGKDRGVLI T $P$ QVFLKGNQRTGRFLLRAESGLGEGLLDGGQSDSNDGVFRQ
 NVFI K GNQKTGEVYI RTEYGLGEGILLTCQYNDLSRNSST PVHLAGNSKAGRVHIIMPYPAMDRG TVITP YVFLKGNQKTGNVFVRSENGDGEGDLITCQ AVYVKYSTRPGDALLEMYDGDFRGVYLNV RVYVKYNSASGLCYATRYEGRDRGVLV GVYLKYNSKTQLCYVSRYDGRDR SVYIKYSSHSGTAILSGYGGDFRGVYFNPQ AVYUKYSSSAGDATLNGYDGSYRGVYFNP

 $T L P D G K F R Q$

| QUERY | $Y G H \backslash P \backslash D \backslash \frac{130}{L}$ |
| :---: | :---: |
| UniRef90 D4TQF3 | Y G HLPLDLFV |
| UniRef90-K9V6R7 | Y G HLPLDL |
| UniRef90-X5JN73 | F G H L PLDLEV |
| UniRef90_K9WER5 | Y G HLPL P L |
| UniRef90-B4VTW5 | Y G HLPLDL F |
| UniRef90-K9RDX8 | Y G HLPLDL |
| UniRef90-K9VI51 | Y G H L P L DLEV |
| UniRef90-K9XD46 | Y G HLPL DL |
| UniRef90-K9T901 | Y G H FPL ${ }^{\text {d }}$ |
| UniRef90-D8G479 | Y G H L P L NLEV |
| UniRef90-B7K0A9 | Y G HFPLDL |
| UniRef90-E0U702 | Y G HFPLDLFM |
| UniRef90-K8GUB3 | F G H LP L D |
| UniRef90-T2J516 | Y G HFPLNLF |
| UniRef90-K6E067 | Y G HFPLDL |
| UniRef90-B8HL67 | Y G H LPL DL |
| UniRef90_K9XRY6 | Y G Y F PL DL |
| UniRef90-14GTS3 | Y G HFPLDL |
| UniRef90-K9W3M3 | Y G H L P L D L F M |
| UniRef90-K9SC33 | F G HLPLDL F A |
| UniRef90-UPI00036687A8 | F G HLPLDL F A |
| UniRef90-K9YIE9 | Y G HLPLDL |
| UniRef90_UPI000346567D | Y G HLPLDL |
| UniRef90-UPI0003450E6D | Y G HLPLDL |
| UniRef90-AOYWB4 | Y G HFPLDL |
| UniRef90-UPI00036791AC | Y G H $\square$ P L DL F A |
| UniRef90-UPI0003F505C4 | Y G H F P L DLFA |
| UniRef90-B0CD48 | Y G HFPLDL |
| UniRef90_UPI00034C7273 | Y G HFPLD |
| UniRef90-L8LWE8 | Y G H P L D |
| UniRef90-K9PZ00 | Y G HFPLDLFA |
| UniRef90_K9Z678 | YGHFPL ${ }^{\text {NL }}$ |
| UniRef90-UPI0002E998BF | Y G H L P L DL |
| UniRef90-UPI00034B0FDB | Y G H F PL DL |
| UniRef90-B1XN52 | Y G HFPLDLFA |
| UniRef90-K9SIX1 | Y G H L P L ALF M |
| UniRef90-W0GZL9 | WGPLPLD |
| UniRef90-A5GJT6 | WGPLPLDF |
| UniRef90_UPI0004105BD9 | Y G HFPLDLFA |
| UniRef90-Q1PL67 | F G P L P L D |
| UniRef90-UPI0002FA2268 | YGPFPFDL |
| UniRef90-K9FS81 | Y GPFPLDL |
| UniRef90-Q065Z0 | WGPFPLD |
| UniRef90-A3PE14 | FGP吅 ${ }^{\text {L }}$ DFFM |
| UniRef90-A2CBN1 | LGPFPLDF |
| UniRef90-L8LLU7 | Y G Y F PL N |
| UniRef90-Q7VDC9 | F GPFPLNI |
| UniRef90-L8N2C0 | HGHFPLDL |
| UniRef90-H0P453 | Y G Y FPL DL F A |
| UniRef90-K9TZ10 | Y G Y L PL DL |
| UniRef90-A2BXN3 | F GPLPLDF |
| UniRef90_Q05R79 | WGPLPLDFFA |
| UniRef90-A9BC08 | F GPFPLDF |
| UniRef90-Q7NCQ5 | Y A H LPLEL |
| UniRef90-G4FM23 | WGPLPLDL |
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| UniRef90-A3Z542 | WGPLPLDCFA |
| UniRef90_UPI00034C8DF6 | Y G HLPLDL |
| UniRef90-UPI0004742525 | F GPLPLDFF |
| UniRef90-Q319X0 | F GPLPLDF |
| UniRef90-Q5MZV2 | Y G HFPLDLFA |
| UniRef90-B5ILG6 | WGP吅L Q C |
| UniRef90-Q46LL5 | \GPFPPLDF |
| UniRef90_UPIO002001624 | WGPLPLALL A |
| UniRef90-UPI000200262C | WGPLPLDLI A |
| UniRef90-UPI000303F13C | Y GPFPL |
| UniRef90 B4WPZ8 | Y G Y FPLDL |
| UniRef90_Q00Z86 | F G Y LP L DV $\mathrm{L}^{\text {T }}$ |
| UniRef90-A5GSD8 | WGPLPLDFFA |
| UniRef90-K9P1S9 | WGPLPLDLFA |
| UniRef90_C1FJC1 | Y G Y L PLDL |
| UniRef90-A4CXG6 | WGPLPLN |
| UniRef90-UPI000348A4D1 | Y G Y P ${ }^{\text {L }} \mathrm{NL}$ |
| UniRef90-C1N0U5 | YGYLPLDL |
| UniRef90-A8J176 | LGHFPLGF |
| UniRef90 ${ }^{-K 8 F C C 7}$ | FGY LDL S LF |
| UniRef90-A3YZH6 | WGPLPLD |
| UniRef90-A4S4F2 | Y G Y L P L D |
| UniRef90-UPI00035F1F49 | Y G P FP |
| UniRef90-L1JIJ5 | Y G E I P L N |
| UniRef90-UPI00046EB67E | F GPL |
| UniRef90-B8CGK3 | FGVLPTDLFM |
| UniRef90-E1Z2L3 | LGHLPLLGL |
| UniRef90-D8TPS4 | LGHFPL G |
| UniRef90-R1BKV2 | YAVLPLSHF |
| UniRef90_LIIAZ7 | Y AVLPLDL |





