


## QUERY

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$L$ SAKNGCEQLMKRFGYSWPEVLRCENFPETSDD

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FHPMVNLEC
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 F K P L M K TK C H P H I H FF I C S VF APMCP DGMP QAVTSCK S VVC WT S L L GVHCHPD TK L F L C S L F T P V C F E P L V $\operatorname{N}$ I K C C S K N L R R F F L C C S V F T P M C T E A M D E P I

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## P K

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| :--- | :--- | :--- |
| $T$ | $V$ | $P$ | RCEPL K M Y Y CR D A Y K REEPLKNYCRSIGYNDTTYPNLLGHTSFEEVQADVDA K GVCLPVIVKFCHQLPYNYT DYPNYVGHFGQRDAQMDLEI FTCEPI KVGTCADAAYNHTSFPTPLEHRSWEAVYMLLGV $K C V P V K$ K C C S

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$K A Q C V T S H L G Y C D S L P$ $\square_{G}^{P}$

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 $K C V Y N T V P M C Q N M G Y N L T L F P N T F K H G T Q E D V S E A L L F$
SATCVDLQLSSCADAAYTQTAFPNLLEQRSREAVESSPEY D GRCLPLTLPVCSHLGVERSWDPNYLHHRDQEELWVAAQA C S SLSLPLCSHLPYNTTSYPNLVGHTSKEVLLRDLVA CEAVVRPMCRHMPWNDTRMPNHLHHSTQENA
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 $L P V C G G K A Y N S T F L P N L L G Q W S A S E V A Q T A A A$ LRTCSDVAYNRTVFPTLLNHRSREAVY ILALSV

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 TCEPLGVELCMGLGYNMTGMPNLGGNDAQQDADYSLKS RCAP $\square S \square R Y C N N \square P Y N V T T Y P N A L Q H R S \square K E V R D N V I S$ $L P Y$ D Q A R F P N A L G L P D Q A VA P F VF T A
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STRCVT $\square P$ NRMCKDVGYSEMR LD NFP G G Q E
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UniRef90_C3XYY8
UniRef90-E2FMT3
UniRef90-T1P8JO
UniRef90_L5JYK2
UniRef90-J9E5Z4
UniRef90-T1KG36
UniRef90-W4WGQ7
UniRef90_C3Y514

A R C
SECQPLKYNTCLGLAYYTHTFYPNLLGEWTPEE

CEPLRYNVCLGLSYGATSTLLAGDSDSQEEAHGKLVL
$\square E \square P M C K D \square G Y N M T R M P N \square M G H E N Q K E A A \square Q L H E$
CENTGTPFCEYDPYGGSQFYSPFGLTRQQTEQYTLQT
CENIGGPFCEYLPYGGSQFYSPFGLTRQQTEQVI

A GCEP LKYNSC LGGLPYRHTA AS LAEDSGSQEEDHHKLLL RCEALTLQTCGQLTYNVTRMPNFLGGUTQKTAMSPEYV.
ACQD $T$ S $\square T M C M G \prod G Y Q N M T \square P N P L D F T S Q V E N S T \prod F S T$ NITHSQCQMLPYHSTPTP LLSVVRNMEMEKFLKF EFSCEPIRLRMCQDLPYNTTFMPNLLNHYDQQTAALAMEV SSPESI QEANV GCQPDRYSRCLGLPYNQTAFPNFFQSMTQDAAIQNWFF SRCLPLTLTLCSRLGDGHFWLPNHDHHTDSVEVEATVQA
 SF
 STCQP $\square$ T VA MC LTYVP WGNASFPSVKKGRTQSKANDEANVV
 Q A

 L G H P R S S SRSPRLAT
TCEP LKYNVC LGLP YALT STVLAE DS STQEEDHDKLLL

 CLPVPSPLCSSKHPRSLTLPNLLVNHTVDEVGAVLAE
$P$ AS L P LCHDMEYTEMRLPNLLGHETMTEVLLQQAAS PRCLPVPSPGCSAKRPQSLTVPNVVNHTSVDQVGAVLKE YQEFHH

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EATCELLADS DTCLGTRLSHTYTSTDLDSSNQEEARDKLAM K GNCEKLQFS TCLGLP YTHTS LDDTI SHSQKDDQERLKNM S Y T C VP MELLE F C Q DVVPYNRTTFPNYL GQQTMMEES DI H A N
 S Y T C $V$ V P M E L

 SYTCVPMELEFCQDVPYNRTTFPNYLGQQTMIEESDIHAN
S QCVPR NLAAFCNNLNYTETVYPNLSGDLSEDDFDRS WAF SAGCYSTMLPMCRGLDYDLT YNNGSSAPRDSISMAA A C Q D I S L T M C K D I E Y Q K V T L P NP L N H T T V E K I L N I F S D

 S P K C V D I N L T L C Y GI Q Y S TMMRLPNLL E H ETVVDEVDEAAAP CVPMKVAYCHNVRYSH $\quad$ VT L P NKNDDTS QESI N QQLAE


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| :---: | :---: |
| UniRef90－EOV8W5 |  |
| UniRef90－F6XHF | YK\LQELPCFPVLRPFFCALLVPSCSAEG GVLQPCRSVC |
| UniRef90－E4WT96 | FYPLKMMQCSKYINDFLCSVF |
| UniRef90－UPIO004574755 | WSGLRNPGCWNVIQPLLCA |
| UniRef90－U6IJU2 | WTALLSSKCHPQTMKFICTVYNPVCLHSHQMP |
| UniRet90－C3X | FiR |
| UniRef90＿G30L33 | WSGLRNPRCWAVIQPLLCA |
| UniRet90 H2PQ58 | WVH NKNCHAGQVFCS |
| UniRef90－G5DYN3 | FAPLVETGGCASEMKKLLCCS |
| UniRee90－UPIOOO | 硣 |
| UniRef90－B4 | K |
| UniRef90－UPIO003FOCBC5 | GCHEYIQLFMCS |
| UniRef90 UP10003FOCBC5 |  |
|  |  |
| UniRef90 G7P1U4 |  |
| Uniref9－H2ZGI | VHTSTIYTV |
|  |  |
|  | C |
| UniRef90－Q95LS | C |
| UPI0002A48 |  |
| U6 | S |
|  | D |
| UniRef90 P39061 | GRFLHTNCHPFLAWFFCLL |
| UniRef90－K1 |  |
| UniRef90－008570 | FEGLLXTHCXGDLLFFLCAMYAP自CTXD |
| UniRef90＿C3Z0N1 | LN QASGCHPSFTFLMCTTVFPKCEDD QQI |
| UniRet90＿C3Z0N1 | LN QASGCHPSFTFLMCTTVFPKCED QQIQLCMSVC |
| UniRef90＿C3Z0N1 |  |
| UniRef90＿C3Z0 | N QASGCHPSFTFLMCTTVFPKCEDD |
| UniRef90＿C3Y517 | LQLidgMQCHPEVEFVACSACVPRC |
| UniRef90 E3UKC9 | YELLSEQHCSSSL |
| UniRef90－UPI0002B8E032 | KFFEDFQRCEQQ। |
| UniRef90－Q7PPM7 | Y NA |
| UniRet90－A0A034V |  |
|  |  |
|  | WSGLK K PRCWAV |
| UniRef90－UP10003BD53FC | LACFEPLQRLVCGM |
| UniReforo－E2IJAO | QPVTLUCSNALVHFLCAV |
| UniRef90－K1P7U9 | DFNFQKTKCYKHSEDFGCSVFVPKCSGSPQHTDPPCKSLC |
| niRet90－T11S78 |  |
|  | WA G |
| UniRef90＿C3ZTP7 | FRMLANDGCHPQI RHFVSS |
| UniRef90－G3IIIC6 | FTYLHRDSCYQHILLFGCSLA |
| UniRef90－E2BJ61 | FMPLVHYN |
| ef90－F7EBW1 | WSGLRNPRCWDAI RPLLCAVYMPKC EGGKVELPSQSLC |
| UniRef90＿UPIOOO359697C | KLGKESECSPYI |
| UniRef90－UP10001S | FKPLIKTNCNPHIKFFICSVFAPMCPEHMP |
| UniRef90－Q4RMT0 | WA W |
| UniRef90-H2L | W ${ }^{\text {P }}$ P |
| UniRef90－UPI000298F11A | WA WL A |
| UniRef90－K7FCC1 | IHNLLQGECNPD |
| iRef90－UPIO003D7 | FL ${ }^{\text {L }}$ |
| UniRef90－UP10003B640D4 | WVWLV |
| UniRef90－E2IJA1 | FPHIKRAECSEYALLFLCSYHAP臬CQQGKHYTVSPCKSLC |
| UniRef90－UPIOOO2654421 | ElVSSTSSCHENL |
| UniRef90－UPIO002654421 | E |
| Hej |  |
| Ref90－E3UZJ5 |  |
| UniRef90－UPIO003EC2F5A | WA WLTKAE |
| UniRef90－S71 | WRGTONPDCSRDFRPFLCALYAPDC MEYGRVTLPCRRLC |
| UniRef99－UP10003FOBC19 |  |
| UniRet90－C3ZON2 | $\checkmark$ S |
| UniRef90＿C3ZON2 | $\mathrm{V}$ |
| UniRef90＿C3ZON2 | $1 \mathrm{~V}$ |
| UniRef90 C3ZON2 | VSLLADTACHEYVKF |
|  | V SLLADTACHEYVKF |
| UniRef90－C3ZON2 2 | VSLLADTACHEYVKF |
| UniRet90－C3ZON2 | V SLLADTACHE |
| Ref90 C3ZON2 | VSLLADTACHEYVKFLYCNM |
| UniRef90－UPIOOO454294B UniRef90 E9GMG3 |  |
| ef90 |  |
|  |  |
| UniRet90＿E2FMT3 | W |
| ef90－W4YA |  |
| ef90－T1P8JO | YQLMVNSNCSARSAEF CAIVFEPECRPSHIG\｜LPPCRR\C |
| ef90 LLJYK2 | WGRLLETHCHRFLAWFLCLLLASPCGPGPPPALPPCRQFC |
| niRef90 J9E5Z4 | WIPLHRLNCHPDAQLFLCSLFAPVCLITLDREILPCHSLC |
| T1KG36 | $V \mathrm{C}$ Y SLLPLFLC |
| UniRef90＿W4WGQ7 |  |
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| :---: | :---: |
| UniRef90－V3ZAB7 |  |
| UniRet90－F6XHR8 | VNAEQHCLIAQLHQLGLA WP FNCNLLPPHAQQPDCVI |
| UniRef90－E4WT96 | EKSLSDCSSUQ |
| UniRet90－UPIOOO4574755 | QTr RPCATVQ |
| UniRef90－U61JY2 | YEVRNACISRMHLFGFKWPQQVDCDRFPSE ETSMCDS |
| UniRet90－C3XV83 | VKFSCSSD |
| UniRef90－H2PQ58 | EAVRDSCEPVMQFFGFYWPEMLKCDKFPE |
| Ref90 |  |
| UniRef90－H2Y |  |
| UniRef90 UPIO003／ | ERGTKGCEALMNKFGFQWPERLRCE |
| UniRef90－B4YWDO UniRef90 UPIooo3F | ESVRTVRCHPVLQGFGFPWPPALDCDKFPRENNHETMCME |
| UniRef90－UP10003FOCBC5 | DDVRSACEDTMHFGGLVWP VNCSS |
| UniRef90－W5XJF4 | ERAKSGCAPLMRQYGFAWPERMKCDTLPEYGDKDQLCMDF |
| UniRet90－G7P1U4 | ERARQGCEALMNKFGFQWPDTLKCEKFPVHGAGELCVGQ |
| iRef90＿UP10003C17 | W |
| niRef90－H2ZGI1 | RRSCAKVLLAAALDT WP RFLSCES |
| UniRef90 H2V2K0 | AKAGCAPLMRQYGFPWPDRMRCELLPEQGNQETLICMD |
| UniRef90－O95LS5 | EAAKEGCESVLGMVNYSWPDF LKCSQFTESSDVSRTCFSP |
| UniRef90－UPI0002A48DBE | QSSMTVQRDYGFWC |
| UniRef90－U6HYN3 | ITEVRSACVSRMYLFGFKWPQQVDCDRFPSE EASMC【S |
|  | A CSSRALAVGLLPWNLHTLI |
| UniRef90－P39061 | EDECWNYLA GDRLPVVGCASLPSQEDGYCVFDGP |
| UniRef90－A7S829 | ATRKPCSVVESYR R R WP EFLRCDKLPEGNCNGTL |
| UniRet90－O08570 | ERARQGCEPILIKYRHSWPESLACEELPVYDRG |
| UniRef90－C3ZON1 | EENVMCSPV GLGLP |
| UniRef90＿C3ZON1 | CSPV GLGLP |
| UniRef90＿C3ZON1 | E NVMCSPV GL |
| UniRefol C3YN1 | ELVVRFMCSQSVTQQGLGSPDS |
| UniRef90－C3Y517 | FSCEQSVTQQGHSWPDSLSCQ |
| UniRef90－E3UKC9 | FNCSSLMVHYSYPWPETLSCDKFNWF |
| UniRef90－UPI0002B8E032 | ERCSDLLISGGLDWPVFLDCQEF |
|  | ACS |
| UniRef90 A0A034VE | MGPCRALVAN |
| UniRef90－W5 | PCSIVEQERG WPNFLKCENFPVGCQNEVQK |
| UniRef9－UP10003BD53FC | SSAEQQCSQALDLFSFSWP FNC |
| UniRef90－H9 | QSCDVVRRFDFPWPPELECSEFPEVSD |
| IRet90－E2IJAO | K N C PF We wrall |
| UniRef90－T1IS78 | KAAKKGCEKF TTGSPTLEAVFRCDVFPS |
| UniRef90－T11Sz0 | RITRKRCRIVEVIEN WPEFLKCDK |
| C3ZTP7 | KRIKNSCNDVIRPSMFSKP FWRCSANYPRSSEVPYCVDP |
| UniF | KR】KNSCNDVIRPSMFSKP FWRCSANYPRSSEVPYCVDP |
| UniRef90－G3IIC6 | EGCESVLGMVNFSWPDSLRCSQFTDHTENSKTCFSL |
| UniRef90－E2BJ61 | RDCEPALTVLALSP WP MMLDCDRF |
| UniRet90＇UPIOOO359697C | ETALAESPDD GGHWP VGCHMLPTENCY |
| UniRef90－E9HMLL |  |
| UniRef90 UPI000185F626 |  |
| UniRef90 Q4RMT UniRef90 ${ }^{-}$K7G81 | QTLRDSCWASLEKGRFP |
| UniRef90－H2LWH3 |  |
| UniRef90＿UPIOOO298 |  |
| UniRef90－K7FCC1 | ENLRKTCLPAFDAIDDMWPYFLDCD |
| UniRef90 UPIOOO3B640D4 | HVMQDSCWASLENGRLP |
| UniRef90－W5JLF9 | KSILEPCAHDIASS EADTATFDCDSYPDSDDRN VCEDP |
| UniRef90＿E2IJA1 | NKVYDDCLIPFLTKENITTWPEHLECHNFHSNKSND CFGP |
| UniRef90－UP1000265 | VA TDACQPFEQSLNRPWP |
| UniRef90 H9JZN5 | KMVSGPCRIVFN ${ }^{\text {K }}$ |
| UniRef90－E3UZJ5 | ASVKEQCLPRLK |
| UniRef90－UPIO003EC2F5A | DSCWAFLENGRLP |
| UniRef90－S7 | QRAYSECSKLMEMFGVPWPEDMECSRFPDCDEPYPRLVDL |
| UniRef90－UP10003FOBC19 | S |
| UniRef90－C3ZON2 | RLTLEPCRLYNTSY PEYLKCNHFPSKCNNEVREMK |
| UniRef90－C3ZON2 |  |
| UniRet90＿C3ZON2 |  |
| UniRef90 C3ZON2 |  |
| UniRef90＿C3ZON2 |  |
| UniRef90＿C3ZON2 |  |
| UniRef90－C3ZON2 |  |
| UniRef90－C3Z0N2 UniRef90 UPIOOO454294B | E |
| UniRef90 E9GMG3 | Le V ${ }^{\text {a }}$ |
| UniRef90－B4MZ11 | A |
| UniRef90－C3） | EEVQYSCSKEASWSADPSCR】FNCNNMPSRTTEGELCFDG |
| UniRet90－E2FMT3 | ERTREPCKVVEK |
| UniRef90－W4YAV5 | SVRGPCMGQPD |
| UniRef90－T1P8J0 UniRef90－L5JYK2 |  |
| UniRef90－J9E5Z4 | T AvQQ |
| UniRef90 T1KG36 |  |
| UniRef90＿W4WGC | KMVSGPCRMLMNH TIWPSFAKCDNFPRLCQNDTRELKF |
| UniRef90＿C3Y514 |  |

UniRef90 V3ZAB7
UniRef90 E0V8W5
UniRef90-F6XHR8
UniRef90 E4WT96
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UniRef90-C3XV83
UniRef90 G3QL33
UniRef90-H2PQ58
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UniRef90-H2YUB3
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UniRef90 B4YWD0
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UniRef90_U6HYN3
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UniRef90_K1PWX5
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UniRef90 E2IJA0
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UniRef90-T1IS78
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UniRef90_C3ZTP7
UniRef90_G3IIC6
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UniRef90-W4WGQ7
UniRef90 СЗҮ514
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UniRef90-K1QGP8 UniRef90-K1QGP8 UniRef90-K1QGP8 UniRef90-K1QGP8 UniRef90-K1QGP8 UniRef90-K1QGP8 UniRef90-E4WYL4
UniRef90 W4Y1Q7 UniRef90 W4Y1Q7 UniRef90-V3Z3Y5 UniRef90_V3Z3Y5 UniRef90-UPI000350D6CC UniRef90_C3YCR3 UniRef90-E2B9T9
UniRef90 U6CUB5 UniRef90_UPIO00265270F UniRef90-UPI0003F09A23 UniRef90-UPIO003F09A23 UniRef90-UPI00034FA287 UniRef90_T11187 UniRef90-W4ZE69 UniRef90-UPIO00383250E UniRef90_W4XAG8 UniRef90-W4XAG8 UniRef90-W4XAG8 UniRef90_W4XAG8
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1 20

30 SCEPVPFEFCSYID YNVIRFPNPFNHTSQLDAEFRDFS

 | $S$ | $C$ | $E$ | $P$ | $V$ | $P$ | $F$ | $E$ | $F$ | $C$ | $S$ | $Y$ | $I$ | $D$ | $Y$ | $N$ | $V$ | $I$ | $R$ | $F$ | $P$ | $N$ | $P$ | $F$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | S GSClP LTSKFCLNLTFDHTSLS LANDSNTLEEVYEK KKL




DSNCHS PQLPMCRG $\square$ P WD $\square T S \square P S \square P G \square S$ TMES L REAMPY N AVL A $\square E Q$


NSAMQSNATFNL NSAMQSNATFNL NSAMQSNATFNL NSAMQSNATFNL NSAMQSNATFNL E S MREA LQQASS
 AKCEELS F K T C L GLIP Y TS T S L D LTTDS YS QGQTVEKLLYS

LPMCWGDGYQNMTDPNPDDHTTVEQVQNSFST

K A


| $P$ | $M$ | $C$ | $C$ |
| :--- | :--- | :--- | :--- |


$\begin{array}{lll}R & R \\ D & L \\ D & V \\ F & D \\ Y & D \\ Y & R \\ Y & D & R \\ Y & D \\ Y & D \\ Y & T \\ Y & A\end{array}$

| $R$ | 1 |
| :--- | :--- |
| $L$ | $T$ |
| $V$ | $T$ |
| $V$ | $T$ |
| $V$ | $T$ |
| $R$ | $T$ |
| $R$ | $T$ |
| $R$ | $T$ |
| $R$ | $T$ |
| $Q$ |  |
| Q T |  |

$\begin{array}{llllllllll} & T & L & P & N & P & L & N & Y \\ T & & & & N & I & R & D & G \\ T & S & L & P & S & V & Y & E & G \\ T & S & L & P & S & V & Y & E & G \\ T & S & L & P & S & V & Y & E & G \\ T & Y & F & P & N & P & T & A \\ T & Y & F & P & N & P & T & A \\ T & Y & F & P & N & P & T & A \\ T & Y & F & P & N & P & T & A \\ M & V & Y & P & N & F & L & D & Q \\ T & A & L & V & L & A & S & D & S\end{array}$
$\begin{array}{lllll}Y & N & T & L & D \\ G & E & E \\ G & A & P & R & D \\ G & D & D & l & P \\ G & C \\ G & D & I & P & C \\ G & D & I & P & C \\ V & D & R & D & S \\ V & D & R & D & S \\ V & D & R & D & S \\ V & D & R & D & S \\ Q & K & S & R & E \\ S & V \\ S & S & Q & H & D\end{array}$

| A |
| :--- |
| $L$ |
| $L$ |
| $L$ |
| $L$ |
| $A$ |
| $A$ |
| $A$ |
| A |
| D A |




| F | E |
| :---: | :---: |
| F | F |
| F |  |
| I |  |
| I |  |
| I |  |
| I |  |
| I |  |
| I |  |
| I |  |



A CQD $\$ S LT TCRGLEWSKMTDPNPLDHTTDDMVTNSFTD AKC $\square$ SLHKTTCMGLLPYTHTTLDLIPEHVTQNUVEERLYL
$P R C E P \square K E S S C L G L P Y N Q T Y Y P S S L A D \square N Q T L A D E S F S V$


 SVCEPVQVEMCLGLGYNATSFPNILADDDQEGAAEVLQD



 CHD\NVNACDSLP CHDINVNACDSLPYNRTM
$\stackrel{P}{P}$
$V$ NAVEAMNTNVG


F Y C E N I G I
 $H L G L$
$V P G H$

$K L A C E P P V$ C Y L
PQ

NSPVCNTLGYNTASSPN PIAPT THEKAEAE GNA
SRCLDMNHS LC LGLPYTSTSTDLVPDAETPEEAQERLHY QTGCVDLGNTTCSDLPYSQTSFELVTDADTLAGVKEKLLL VCLDI I VAFCK
A K CI PLDKS Y CMSLP Y S S T T LDDLIP GGVT RDVIKDK
A K CVV Diver
UniRef90 C3Y514 UniRef90_C3Y514 UniRef90_C3Y514 UniRef90_C3Y514 UniRef90_C3Y514 UniRef90_C3Y514
UniRef90 C3Y514 UniRef90_H3ATE6 UniRef90_UPIO00359E619 UniRef90_T1KSW4 UniRef90_UPI0002651E8E UniRef90_UPI0002651E8E UniRef90_G3VB73 UniRef90_UPI000392E22F UniRef90_T1I722 UniRef90 H0Z5E0 UniRef90_A0A023FXG1 UniRef90_A7SA89 UniRef90_A7SA89 UniRef90_A7SA89 UniRef90_A7SA89 UniRef90_A7SA89 UniRef90-S4S1F0 UniRef90_UPI000392DA99 UniRef90_U5EP59 UniRef90_L5KDP5 UniRef90_Q4H3F8 UniRef90_C3YR51 UniRef90_UPI000333DE99 UniRef90_C3YCR5 UniRef90_B3MKC UniRef90_UPI0003598534 UniRef90_UPI0003598534 UniRef90_UPI0003598534 UniRef90_UPI0002654184 UniRef90_UPI0002654184 UniRef90_UPIO002654184 UniRef90_UPI0002654184
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UniRef90_W4ZE69
UniRef90_UPI000383250E
UniRef90_W4XAG8 UniRef90-W4XAG8 UniRef90-W4XAG8 UniRef90-W4XAG8 UniRef90_W4XAG8 UniRef90_W4XAG8
UniRef90_W4XAG8
UniRef90_E4YI92 UniRef90_K7IPU4 UniRef90_UPI0002658C0B UniRef90_D4AHS0 UniRef90_UPI0003F07761 UniRef90_UPI0003F07761
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UniRef90_UPI0003F0CF35 UniRef90_UPI0003F0CF35 UniRef90_S7MDI3 UniRef90_V8N2H2
UniRef90 N6SS79 UniRef90-A4F3R7 UniRef90_U6DPI1 UniRef90-J9JQY5 UniRef90_Q4H2S9 UniRef90_H9KRJ8 UniRef90-A0A026VTV1
UniRef90_H0ZJ71
 70 G K

 | $S$ | $Q$ | $V$ | $F$ | $L$ | $C$ | $R$ | $S$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $C$ |  |  |  |  |  |  |  |
| $S$ | $Q$ | $V$ | $F$ | $L$ | $C$ | $R$ | $S$ | $V$ |
| $C$ | $C$ |  |  |  |  |  |  |  |
| $S$ | $Q$ | $V$ | $F$ | $L$ | $C$ | $R$ | $S$ | $V$ |
| $C$ | $C$ |  |  |  |  |  |  |  |
| $S$ | $Q$ | $V$ | $F$ | $L$ | $C$ | $R$ | $S$ | $V$ |
| $C$ | $C$ |  |  |  |  |  |  |  |
| $S$ | $Q$ | $V$ | $F$ | $L$ | $C$ | $R$ | $S$ | $V$ |
| $C$ | $C$ |  |  |  |  |  |  |  |
| $R$ | $V$ | $F$ | $L$ | $C$ | $R$ | $S$ | $V$ | $C$ |
| $R$ | $V$ | $T$ | $L$ | $P$ | $C$ | $R$ | $R$ | $L$ |
| $R$ | $V$ | $E$ | $L$ | $P$ | $S$ | $Q$ | $E$ | $L$ |
| $R$ | $C$ | $C$ | $P$ | $P$ | $C$ | $K$ | $K$ | $F$ |
| $C$ |  |  |  |  |  |  |  |  | GPEP L LPCRELC YNY I A K SKCNRRI K QLL CTMFLEPPCVVEG


 WGPLLAKQCHTDTQLFLC SLEAPVC FELLI DS GCSQRARQFLCTLLEPECQPDGSSVTPPCRNTC YEELVATGCSPVLPFFLCAMYAPDCTDE

 Y Q A L Y VP K C WSVVI QP F L C A V Y A P K C $\quad$ N GRD MVF L P S LEMC

 WR GLL L T H C H P F L A WF F C L L L A P P C S P G P P L P L P P C R Q F C

 FANDS HS GCMQDMTFFCLYTFPGCNVDYYNPIWPCREAC

| $T$ |
| :--- |
| $T$ |
| $T$ |
| $W$ |

TS S IL L E E C H E N FlLL L L

R P ll


Y K
NQSCSASSMYYLCNMLFPKCDPA

YK

TSTLINTKCHAS
$V$ V NGCPQGNN LR R A C G I N P S C S P D R $V V N G C P Q G N N \quad L R Q L A C N M L F P E C P H \quad F G$



 LSA AATTCHTDASLFLCAVLFPECDHDGPTA RPC QTTC




EEASI L E ECHAD YLLL FCSSMLEADCPHGGPS RRPCKAL





 LLLNIVVRGCHPDI DVYL CAMAIP ECPPGGYRPRSLCPAFC L L L F S Y L N RLDS C Y Q HI M L F GC S L A L P E C I S D
D N L T D I D G C H A H I E L F M C S L L S P ECGGIN GTY R QPCKTEC


 A MY A P DC T L E L H D P I K P C K S V C C
WQ GLK K PK C WA A I Q P L L CA L Y MPNCENSSSLLH
WS GI R A VP CWDAI QPL L C SVVFFPECGENK\|QLI D R KVC



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UniRef90-UPI000383250E
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| UniRef90 C3Y514 | Q |
| :---: | :---: |
| UniRef90-C3Y514 | Q |
| UniRef90-C3Y514 | Q |
| UniRef90-C3Y514 | Q |
| UniRef90-C3Y514 | Q |
| UniRef90-C3Y514 | Q |
| UniRef90-C3Y514 | Q |
| UniRef90-H3ATE6 |  |
| UniRef90_UPI000359E619 |  |
| UniRef90-T1KSW4 |  |
| UniRef90_UPI0002651E8E | E |
| UniRef90-UPI0002651E8E | E |
| UniRef90-G3VB73 | D |
| UniRef90_UPIO00392E22F |  |
| UniRef90-T11722 |  |
| UniRef90-H0Z5E0 |  |
| UniRef90-A0A023FXG1 | Q |
| UniRef90-A7SA89 |  |
| UniRef90-A7SA89 |  |
| UniRef90-A7SA89 |  |
| UniRef90_A7SA89 |  |
| UniRef90-A7SA89 |  |
| UniRef90-S4S1F0 |  |
| UniRef90_UPI000392DA99 |  |
| UniRef90-U5EP59 | N |
| UniRef90-L5KDP5 | Q K |
| UniRef90-Q4H3F8 | N R |
| UniRef90-C3YR51 |  |
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| UniRef90-C3YCR5 |  |
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| UniRef90-UPI0003598534 |  |
| UniRef90-UPI0003598534 |  |
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| UniRef90-E4WYL4 |  |
| UniRef90-W4Y1Q7 | N |
| UniRef90-W4Y1Q7 |  |
| UniRef90-V3Z3Y5 | P K |
| UniRef90_V3Z3Y5 | P K |
| UniRef90-UPI000350D6CC |  |
| UniRef90-C3YCR3 |  |
| UniRef90-E2B9T9 |  |
| UniRef90_U6CUB5 | E |
| UniRef90-UPI000265270F |  |
| UniRef90_UPI0003F09A23 |  |
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| UniRef90-UPI00046BF16B |  |
| UniRef90-UPI0003F0802A |  |
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| UniRef90-UPI0002658E73 | N |
| UniRef90_UPI0003F0CF35 |  |
| UniRef90-S7MDI3 |  |
| UniRef90-V8N2H2 |  |
| UniRef90-N6SS79 |  |
| UniRef90 A4F3R7 |  |
| UniRef90-U6DPI1 | E |
| UniRef90-J9JQY5 |  |
| UniRef90-Q4H2S9 |  |
| UniRef90-H9KRJ8 | Q |
| UniRef90-A0A026VTV1 | N |
| UniRef90- H0ZJ71 |  |

## UniRef90_S4PKFO

UniRef90 B4KL30 UniRef90 UPI0002ADA5F3 UniRef90-UPI0003F0A7C3 UniRef90-B7Q4R2 UniRef90 G6DN60 UniRef90 Q70LH3 UniRef90-B4R7H8 UniRef90-B4NRY1 UniRef90 E3UKD0 UniRef90_UPI0003F07463 UniRef90-W4Y5H1 UniRef90-F7FTS4 UniRef90-UPI0003F06691 UniRef90-C3YFM5 UniRef90-B4MWJ5 UniRef90-H2E866 UniRef90-W5L4U8 UniRef90-C3ZHM5 UniRef90-UPI0003ADF099 UniRef90 E4XC75 UniRef90_UPI0002652303 UniRef90_B4QEC6 UniRef90_UPI0003F0736F UniRef90-UPI0003F0736F UniRef90_UPI0003F0736F UniRef90_P91682 UniRef90_C3YBB3 UniRef90-R7U0G2 UniRef90-W4YS85 UniRef90_W4YS85 UniRef90-F1QCT7 UniRef90-I3KIQ1 UniRef90-S9XYH5 UniRef90 K7FZB0 UniRef90-W4Z7A4 UniRef90-W4ZAF1 UniRef90 W4ZAF1 UniRef90 C3YF21 UniRef90-C3YFM6 UniRef90_J9KVA0 UniRef90-B7PGM9 UniRef90-E5T391 UniRef90_UPI0002653662 UniRef90_UPI0004422E90 UniRef90 G1MU09 UniRef90_UPI0003F161A6 UniRef90-E9J273 UniRef90 A7T2T5 UniRef90 C3ZG23 UniRef90_UPI0001CBA59E UniRef90_F2DYS9 UniRef90 A7SUE7 UniRef90-A7RSX2 UniRef90-W4Y7R4 UniRef90_D6WXL7 UniRef90-UPI0003F1B215 UniRef90-B4DHN8 UniRef90_T1H063 UniRef90 C3Y5D9 UniRef90-F1MMN8 UniRef90-UPI0003F09D05 UniRef90_H9J2A9 UniRef90 UPI0002658793 UniRef90-UPIO004421A6A UniRef90-K1QJ36 UniRef90 S9Y7Z3 UniRef90_D3YYF7 UniRef90-W4XI18 UniRef90_E2IJ98


LGYE QVS LP NDFGHHQ LS DSDVMLK S


 ARCYPTSTNTCSKLCYELSSLDLTDFHTEKELNDKLNDY NFMTFPNLIGHVSSSSASPEFNV
 AASSCEH A HGLP L S PTCQPVPSVCSSRLAWTTTVFPNARYH TESDADQGYAD PNCRKFNHRQCARLDYKRSYFPNAMVTTHRKGKREYRIV PNCRKFNHRQCARLDYKRSYFPNAMVTTHRKGKREYRIV
 AACRPRQLSLCDDLPYNSTLLPNLVGDRDRDSDNRELA V P FCTD FGWQKTCYPNHLGYRNKYEVLASLSF


SATCVDLQLQTCSDAAYNQTAFPSPLEHRSREADYVLLSV
QCSPFSAELAK LCGYNATAKFKNNEHYSMASRA $\square D A \square T$
CKGLNFDWVTFPNFYGHESDQDVTSRQWE
A A CEPPLTVSLCSHVVDNTTVFPNEYANSSQSVAESRISS TCRPMEFEGCMSSGYNTTFPPNLSGRAKSFVKYF $\_N Y F$

## AKCQLLNYTTCMG $\quad$ PP YSTTLELTDLTTQEKVQEK LHH

C S H

 LS Y S S T S LELVDDVENLLSVDEKLEQ

QGTCAPYNGTVCKQVLGNEVILLNALEQDSQVNELMQGVL ACMNDTHSQCQMLSPYHTLTP LLSSVKNMEMEKFLKF SATCVDLHLRTCADAAYNHTSFPTPLEHRSWEAVYMLLGV

NTS $\square$ YPNQVINETTE $\|$ VT LVNTL

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| :---: | :---: |
| UniRef90_S4PKFO | YRELLINPKCWAVVQPLL $\$ CATFMPNCEHGQDMVYYLP  \hline UniRef90 B4KL30 & YEQLGANCSARAVEFVCAALEPPCRPLLIMGQPPCRRDC  \hline UniRef90-UP10002ADA5F3 & WLPL LAKRCHSDTQVFLC M FAFCPSCLDRP YPLLTKLC  \hline UniRef90-UP10003FOA7C3 UniRef90-B7Q4R2 & MHNLTQLDDCYPYTDLLCCALYYDHPCDDNGNRTLLPCKGFC  \hline UniRef90-G6D & DEYLVSTNCSERVRHF  \hline UniRefoto-670LH3 & F  \hline \multicolumn{2}{\|l|}{UniRef90-B4R7H8 ${ }^{\text {a }}$} |
| UniRef90-E3UKD0 Y |  |
|  |  |
| UniRef90-UP10003F07463UniRe90-W4Y51F |  |
|  |  |
|  |  |
|  | Q PNSACAKDIT FFLCGWYFRPCQSIVADPPLLPCRGFC |
| UniRef90-C3YFM5 NMKTVNTS CHPHLRLFICSLLMPRCVQFVPKQQVPCQSLC |  |
| UniRef90-H2E866 |  |
|  |  |
| W5 |  |
|  |  |
|  | G |
| SLEKVDCDQEVKMFLCFYYLPYCHDSVMKSVPPCRQWC |  |
| iR |  |
| UniRef90-UP10003F0736F MLS N Y V R G C P P D |  |
|  |  |
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|  |  |
| UniRet90-R7U0G2 |  |
|  |  |
| 2ef90-W4YS85 $\quad$ L LP P ${ }^{\text {R }}$ |  |
| iRef90-I3K1Q1 |  |
|  |  |
| K7 |  |
| UniRef90-W4Z7A4 |  |
|  |  |
| 90-W4Z |  |
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| UniRef90_UPIO002653662 |  |
|  |  |
| UniRef90_UP10004422E90 |  |
| UniRef90-UP10003F161A6 DH HLLEGQCNPD |  |
| UniRe | CSRH |
| UniRef90-A7T2T5 |  |
|  |  |
|  |  |
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| UniRef90-A7SUE7 |  |
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|  |  |
| UniRef90-C3Y5D9UniRef9_-F1MM |  |
|  |  |
| UniRef90-UPIO003F09D05UniReigo H9, ${ }^{\text {a }}$ ( |  |
|  |  |
| UniRef90-UP10002658793 WKTAR\\|PRCWRLVQPLLCSLYRPPCTNG SVPLPSY\|LC |  |
| Ref90-UP10004421A6A ${ }^{\text {a }}$ CWDVIQPLLCAVYMPKCEDG KVELPSQTLCC |  |
|  |  |
| UniRef90-D3YYF7 |  |
| UniRef90_W4XI18UniRef90_E2IJ98 | CSMENLLSLCTLMFPECTHNGPAQR VICYSDC |
|  |  |

[^1]
 UniRef90-E4XC75 UniRef90_UPI0002652303 UniRef90-B4QEC6 UniRef90-UPI0003F0736F UniRef90-UPI0003F0736F UniRef90_UPI0003F0736F UniRef90_P91682 UniRef90_C3YBB3 UniRef90-R7U0G2 UniRef90-W4YS85 UniRef90-W4YS85 UniRef90-F1QCT7 UniRef90-I3KIQ1 UniRef90_S9XYH5 UniRef90 K7FZB0 UniRef90-W4Z7A4 UniRef90-W4ZAF1 UniRef90 ${ }^{-}$W4ZAF1 UniRef90_C3YF21 UniRef90_C3YFM6 UniRef90_J9KVA0 UniRef90-B7PGM9 UniRef90 E5T391 UniRef90_UPI0002653662 UniRef90_UPI0004422E90 UniRef90 G1MU09 UniRef90_UPI0003F161A6 UniRef90_E9J273 UniRef90 A7T2T5 UniRef90 C3ZG23 UniRef90-UPI0001CBA59E UniRef90_F2DYS9 UniRef90 A7SUE7 UniRef90-A7RSX2 UniRef90-W4Y7R4 UniRef90-D6WXL7 UniRef90-UPI0003F1B215 UniRef90-B4DHN8 UniRef90_T1H063 UniRef90 C3Y5D9 UniRef90-F1MMN8 UniRef90_UPI0003F09D05 UniRef90_H9J2A9 UniRef90-UPI0002658793 UniRef90-UPI0004421A6A UniRef90_K1QJ36 UniRef90 S9Y7Z3 UniRef90_D3YYF7 UniRef90-W4XI18
 KAILEACSIVIANSDQQSELFDCSQYPDAHETHK CEDP A QCEMEHSADGL

 DLVLASCSDKI QQLGLDPDTDLLNCDRYPSTGCVDT ETVRAECMNAPPELMELWPSFLNCDGLP QPEKHELCMQ

 EDVGARCVKDRSFNDTWNR $\square$ CRTLIPESKSDEVC
ERTLETCNGLNKEYFLQVTNGSGCGLLPS
EEVKSACPSAFANGTLQ STDCSGLNGTDCDN R TVLEPCRVLYNTTFF PKFMRCNGFPTKCNNDAREMKF TVOCRIVELERG WPHFLQCELMPTE CSEP

QNFKNSCFRRFNQYNPKWPSEDQCDGLPEFSEN




 S E FLLKRCVGDDDF FY LE Y Y Y A S S CTLLLPNATADSGKCFEP
 QLTLKPCKMFYNSS $\quad$ FF PKFLNCDRIFSSNCKNDVCMEP EALQASCAP $\square$ MACYGYPWPA ILHCGRFPA GHSLCV QEAEHQCQS GLA LLGTPWPAFNCNRDPEAADLEAC NETMHRCGFFFDVFGLSDPEYDTCKIFKDSDDTNDCDGM REIVDTNQDCPKMDTKAKAMFLDCDGLPNMDCFHS QRAHSECDKLMELFGVAWPEDMECSQFPVWSTGEKC】I QEISKDCG
KA\|VDNCDGLDPR DLSPAFNCQQYFKNNC
DRARTACR I AATRGDQWPHFLSCER
QATRGPCT IVERERG WPDFLRCDRFPE GCPNEV $\square A V K E L C F D Q W N E L G A S L P \quad D C N N \square A S K S D N G S Q C \square D$

VA TT EACEPFEQS LNRPWP FDCSRLTDDYAGEGLCF EKIRQDCSNNLPFLXSTVSWDFNCTRYMEPNSPCDQP

[^2]

| UniRef90 S4PKF0 |  |
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| UniRef90-UPI0002ADA5F3 |  |
| UniRef90-UPI0003F0A7C3 | Q |
| UniRef90-B7Q4R2 |  |
| UniRef90-G6DN60 |  |
| UniRef90-Q70LH3 |  |
| UniRef90-B4R7H8 |  |
| UniRef90-B4NRY1 | T R |
| UniRef90-E3UKD0 |  |
| UniRef90-UPI0003F07463 | Q |
| UniRef90-W4Y5H1 |  |
| UniRef90-F7FTS4 |  |
| UniRef90-UPI0003F06691 |  |
| UniRef90-C3YFM5 |  |
| UniRef90-B4MWJ5 | N |
| UniRef90-H2E866 | N |
| UniRef90-W5L4U8 |  |
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| UniRef90-E4XC75 |  |
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| UniRef90-B4QEC6 |  |
| UniRef90-UPI0003F0736F | N |
| UniRef90-UPI0003F0736F | N |
| UniRef90-UPI0003F0736F | N |
| UniRef90-P91682 | N |
| UniRef90-C3YBB3 |  |
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| UniRef90-F1QCT7 |  |
| UniRef90-I3KIQ1 |  |
| UniRef90-S9XYH5 | D |
| UniRef90-K7FZB0 |  |
| UniRef90-W4Z7A4 |  |
| UniRef90-W4ZAF1 | E |
| UniRef90-W4ZAF1 | E |
| UniRef90-C3YF21 |  |
| UniRef90-C3YFM6 |  |
| UniRef90-J9KVA0 |  |
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| UniRef90-G1MU09 |  |
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| UniRef90-E9J273 |  |
| UniRef90-A7T2T5 | N |
| UniRef90-C3ZG23 |  |
| UniRef90 ${ }^{\text {U }}$ UPI0001CBA59E |  |
| UniRef90-F2DYS9 |  |
| UniRef90-A7SUE7 | Q |
| UniRef90-A7RSX2 |  |
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| UniRef90-D6WXL7 |  |
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| UniRef90-B4DHN8 |  |
| UniRef90-T1H063 | Q |
| UniRef90-C3Y5D9 |  |
| UniRef90-F1MMN8 |  |
| UniRef90 UPI0003F09D05 |  |
| UniRef90-H9J2A9 |  |
| UniRef90-UPI0002658793 |  |
| UniRef90 UPI0004421A6A |  |
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| UniRef90- S9Y7Z3 |  |
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| UniRef90-W4XI18 |  |
| UniRef90-E2IJ98 | $\square \mathrm{R}$ |
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| lupas_14 |  |
| lupas_28 |  |
| jnet |  |
| conf | 99 |
| sol25 |  |
| sol5 |  |
| sol0 |  |
| jhmm |  |
| jpssm |  |


[^0]:    
    $\square$

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    lupas_28
    jnet
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    sol5
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    jpssm

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    lupas_14
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    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

