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UniRef90 F7NHRO
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E GFTVEPDGQGGFVVTGTRPERWIHQTNFDNAEAVGYLA KPFELERSEDGVYVLSGAK TEKLYLMTNDDHDESVQRFS APFETVRDDGTFVYTGKALERLFKMTDFSRDESVKRFS SGFTVEREDEGTYLVRGTKPERWVRQTDFTNDEAVGFLA TRASDASWVLTGKKLERLFKMTNFEHDESTMRFA QEAFNDTRDPDGAFVLSGERDEKLARMTDFNRDESVRRFD EKPFSI SRDDDATWVLSGEKTEKLFVMTNMERDESIMKFA EETFHITRGSDGVFEVSGPKVELLFKMTNFHHDEAVRRFA EEPFRVRRENE LVVV EGARVEKLVKMTNFQYDESIMRRFA DPFDITRADDGVYEVSGAELERVFKMTDFARDESVRRFA DGGFTVEPDEDGAFVVRGPKPERWVRQTNFANDEAVGYLDA
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 DAFEITRDNE VFVVSGEKIEKLVRMTNLNSYDAAQRFA E



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DFEVKRDDGDLWELVGERTERLYAMTNMDHDESLQRFA APFEISHDEEGLWVLTGEKLERLFEMTDLQHDESLMRFA
${ }_{\mathrm{D}}^{\mathrm{D}}$
 $E P$
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 ADFSIDNPEPGLFVLSGDKLE ERQFYITRDPDGSFVLSGEGIEKLFKMTDFSRDESVRRFA DPGFTVRQDGDNVFQVTGEKPERWIRQTDFGNDEAVGYLA

FEVQHTDDGTWLLT

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EDTFTVVRRRENE DT, TV R R R ENE MY V V

## E A

P F E $\quad$| $R$ | $K$ | $E$ | $E$ | $K$ | $N$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $N$ | $K$ | $D$ | $E$ | $E$ | $G$ |
| $V$ | $R$ | $V$ | $L$ |  |  |

$\begin{aligned} & S G \\ = & A\end{aligned}$ EP EAEFTVVP EKPFHTTQD EKPFEI RLA DEKVTVSRNDAGVYEVYGEKLEKLVKMTNFDHYESIKRFS ESGFSVDPQEPGGFIVRGTRPERWVRQTQFDNDEAVGYFA QESFDLDRDPEGVWLVSGPKVERLYAMTNFDHEEAIMRFS
 EGGFAVTRDEDGFRVVGKGI ERLAARLDLENPDALRYFH DETFKITRDDTGAYVVSGPGIERAFDMTDFNRDASVRRFA DSGFEVVRDDQDGFLVRGERPERWVRQTDFNNGEAVGYAA位 SGFRVEPDPPGAFVVSGARPERWVRQTNFDNDEAVGY L G DTGFTVEPDPDDAFIVRGDKPERWVRQTHFDNDEAVGFLA EPGFTIERKQDGNFTVRGEKPERWVMQTNFDNDEAVGYLA EEPYTVTRDSDGTWVISGKEVERGFKMTKFNSEEAAYRFA
DSGFTVTRRDE AFYVGGAKPERWVRQTDFSNDEAVGGYLIA DKGFTVRVEDGVYFVEAPWLGKDLQRTDLDDYESGQYFQ EERFKIHRDEQGVFVVTGKEVERHVAMTDMENEESVARLQ EAPFTVTKSDDGVFEVTGPMVQKFFDDTDFSHDANVKLFA DTGFTVRRVDDNTFQVTGVKPERWIRQTDFTNDEAVGYLA



## UniRef90 R5TJU6

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UniRef90 O043W1 UniRef90-W5Y2B3 UniRet90_UPIo0036FF21F UniRef90-E4KM23
UniRef90-COXRI6 UniRef90-E6U8V3 UniRef90-W7ZWU2 UniRef90-UPIO0031FCDOB UniRef90-C8WAH4 UniRef90-AOLSX1 1 UniRef90-R6UF13 UniRef90-UPIOOO463CDBD UniRef90-UPIO003A2FBAA UniRef90-UPI0003650E18 UniRef90-K8Z8M8 UniRef90_UPIO0047C407B UniRef90-C5C3W7 UniRet90_C4Z9Z9 UniRef90-M7PKQ3 UniRef90-UPIOOO3775605 UniRef90_U2U7J8 UniRef90-JON643
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UniRef90-R7KFP6
UniRet90-G5IGD8
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UniRef90 S 3 XCD 2 UniRef90-U2QJG1 UniRef90-C5CAZ5
UniRe90_CchW5P3

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## E P

YTVEKEEDGIFVV

EDPRIVREG HVFIVESEELDKLVRMTNFSQYDAVKRFQ
EDGTVSRRSQGGYLVRGGKPERWIRQTDFDNDEAVGYGA
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 QPDFTVTRGDDAAYELHGRRDERLVGMTNFDDDYSVGRFQ ADFTVSRDDGHAFVVTGEKLDRWI IQTDFENDEAVGYGA
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EEPFTIEKEDD CFVIEG
ELPYTVEKNEDGEFVVEGEKVEKLFKMTKFSTEEGMLRFA
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DKQFKVVPLGGGVFRVEGPQVERMVQTDWENEEAVAF DKGFTVTKRTEHAFEVRGAKPERWVRQTDFANDEAVGYLA FEVVRDGAVFEVVGSSMQRLIDSVNFDDEESMSWFH DTDFTVTRGDDASF ISGARI EKLVAMTNLEDEQALRRFQ DEPYTVEVDEDGMYVVEGPRI EKMLGYTNLDSEKGFEFFQ DKPFELHNLGNGNWQTGKKI ERMVAMTSLVSDDSGKRLL EAAVTVTKDGD VYECESEWLFRLVGRVNFEDRDSLAYFQ



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UniRef90- X4QXF5 UniRef90_UPIO003716A32 UniRef90_R5YEY1 UniRef90_F5LNB8
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UniRef90_R7MAY9 UniRef90-L1MEU2 UniRef90_-R5IKZ0 UniRef90_B3DPS4 UniRef90_F214R9 UniRef90_R5VHP3 UniRef90_A4J719
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F 1 K P D N A G G Y V V V G E K P E R WI R Q T D F E N D E A V G Y L G DAPFEVVSLGDNVFRVRGDKPTRWVSQTDFSNDEAVGYLA

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 EPP F Y V GRESD GTFY L Y G DK I E K T F K M A N L E Y DE S AL R FA ESGFTVERREDGGFQVRGAKPERWVRQTQFSNDEAVGY

D
 D A GF T I K V E G S HVVYRI L G A K P E R WV Q Q T D F Q N D E A V G Y LA  DKP

Q P
 - GF K V T , V N D GVY S V E A D WL Y R L L S K T DL D D Y A S L Q Y F Q
 EKRFRIVVQEEP GAFRVVVGRAI ERMVIDQTDWENEEAVIYLQ E LDP Y TVVE K $\quad$ K D G L Y S V E G P R I E R M L G Y T N D D S E K G FM F F Q D E

DDSFTVVKKGDGEWRVR VIK P R WI R Q T D F N N A E AV GYLA
 E E DF T V T R E R D L WRVVRGGRP ER WV R QT DF GNDEA V G Y L A D D $\square$ TI K R D M T G G F VV S G K S L E K L V A M T N F G N D E A I R R F Q



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 I T R E E E PLWHVRGDKPDRWLLQTDFNNEEAVGYLAA
E S K F
E R P
I H I T $\quad$ R
FEI S R D Q D G D WVV R GVVSI ERAA KMTYWE HS G S VVRRFQ
 $F R V C G A K P E R W V R Q T N F D N E E A V G Y L A$
 T GFTI T NPEPGYYMVEAPWFPKVLKG GDVEDYEALQYMQ EKPYTIGK DDDHTWVLSGDKLEKLLMKTRFNSDEAVLRFA D F VI E A D P D N E D G Y IV V R G E K P E R W I L Q T D F E N D E A V G Y L G D EL Q DERYDD LDWV S GK W L Q K L L NDDNFD DYE SRMYFD E F TVERRE LGGFEVRGVK PERWVMQTNFDNDEAVGY LA
 EERFNI KRDIDGNWRVTGKEI ERHVAMTYLEEDQSLERLQ
 E E GWRDYKYG GVWHVEGKEI ERDVAMTMWENDEAVARFBL

 EDFT I ERDSND GF IVRGRKPE

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UniRef90 L1PMC8 UniRef90-UPI0003B4A7EE UniRef90-UPIIOOO41BA248 UniRef90-UPIOOO262A116 UniRef90-R7L6K6 UniRef90 ${ }^{-}$R5PW29 UniRef90-UPIO00464C38D Unirefoto-IOZ2Z4 UniRef90-UPIoo02491A37 UniRef90-B1VAF2 UniRef90-l1GRE9 UniRef90-U2T5P6 UniRef90-R614R4 UniRef $90-$ S2YZY2 UniRef90-Q1AVU3 UniRef90_W2EEN3
UniRet90—W1WAK2 UniRef90-R5K4T2 UniRef90-N2B636 UniRet90-W1TLJ8 UniRef90-U5D3D8 UniRef90-DOWNB5 UniRef90-R6R932
UniRet90 R7RS85 UniRef90-G9RQ71 UniRef90_R5JWC3 UniRef90-R5ZKT1 UniRef90_UPI000377CB39
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EPDFAVRAQDDGVFVVTGAKPLRWVRQTDFSNDEAVGFLAA
EGDVEFEVVGKKPERWIQTTNFQNEEAIIGYGG
DDRFTVVKRDGMWNVRGRQPERWVGQTDFANDEAVGYLG

EEGLKVNVDEDGVYVVTGKELRRIMYSVNFDDMESLQYF
DDSFTINVDEDGVYVVTGKELRRMMYSVNFDDMESLQYFQ




S
K E
S E
$D G G$
$D S E$
$E E ~ D$
$\qquad$ Y VTPEGPVYRVRG EEADTVRKENDDVYVV


## EПTFR

 VIRKEKNVYVI EG DA E E E EDAVTVTRNDRADEFVVSEDPFTVSAENEGEFLIV VEHAGETVYQVRGPRIEKMLGYTNDESEKGFMFFQ FEVSRKDDYWFAVTGEKPERWVLQTNFDNDEAVGYLA DGGFR TRDGEPLFQR RGRRPERWVIQTDFGNDEAVGYLA EEPFTITMDGK TYVVNGPAVEKWMKRVNGNDNEAVGYLA DEEDNTVKKEKDVFIVEGEWLRWLMSSI NFDDRESFSYFE DEELNIKMDDDGVYEVTGKALIRRVMYSINFDDMESLQFFQ DSYEIVVGNDTDWEVRGKNIVRLVAMTNFDNDEALYRFQ FKIIRTGEHHFEVTGDEVERLLTMSNDDHQDGIMRFA
 DRQ VVTREERHVWRVS TIEKYDDVWVVEGGWLQRLMSSVNFSDNESMMYFD VERDGEGWLVTGDKVERWVLQTDFENDEAVGYGG EKDFTVRRENDGFVVESESLEKLIRRTNFSSQEGVLRFV
DLPFEVSNEE DDVYVE
DGAFVVE
TGVY QV
 TPDDVYKADEHAFVI EGPRVERWVRQTDFDNDEAVGYLA YTHRRDDDGSYVIEGSFVDRLLLSVNVYDSESHKYFH FEVARADDGAWDI DAPWLENGLEGSDVSDYESLQYFQ

UnRe90 Aolit


UniRef90_C4GB70 UniRef90_UPI00041F0314 UniRef90-R6N4L6 UniRef90_UPIO003B36BC4 UniRef90-FOSVHO UniRef90_R4KJ41 UniRef90-MOU173 UniRef90_D4M6Y1 UniRef90_R6AFZ5 UniRef90_E1IEQ4 UniRef90-E3GLP6 UniRef90_KOYNS9 UniRef90-UPI00016BFDC1 UniRef90_R6VB13 UniRef90-F3ZYF8
UniRef90
R9KG80 UniRef90_U7UFK4 UniRef90-D9S2A6 UniRef90-NODZ47 UniRef90-UPI0003B35714 UniRef90-R6D5J2 UniRef90_UPI0003B52D54 UniRef90_A9NF57 UniRef90_UPIO002192CC0 UniRef90-R5AX28 UniRef90-UPI00020D9CD7 UniRef90-V2Y6E7 UniRef90-D1BA25 UniRef90-R7MK54 UniRef90_14BW39 UniRef90-B1HOI4 UniRef90-J3MNX8
UniRef90 C2KVY8 UniRef90-Q6AFY1 UniRef90-G9YR25 UniRef90_UPI00037E4E6D UniRef90-C5VRM5 UniRef90-K0YJ85 UniRef90-C0EG27 UniRef90_UPI0003B636AE UniRef90_Q892N8 UniRef90-R7QDJ9
UniRef90 $75 K V 52$ UniRef90-R6X9Y3 UniRef90-R6XJD8 UniRef90-P0C1E7 UniRef90-D4YL95 UniRef90_R7PTT7 UniRef90_N2AKL2
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UniRef90_D1PMX2 UniRef90-F9MW51 UniRef90_UPI0003B37C91 UniRef90-R5E8N0 UniRef90-B1C9T0 UniRef90-B1I5V8 UniRef90_UPIO003C7E43E UniRef90-D1CD78 UniRef90_UPI00047EFE37 UniRef90_UPI0002F650CA UniRef90_R5CEB7 UniRef90-A0A037ZCF5 UniRef90_G2FX06 UniRef90_C5J789 UniRef90_UPI000360ABDD UniRef90_UPI000471145B UniRef90_Q98QK8 UniRef90_DOWFK4 UniRef90-R5TQM5 UniRef90_UPIO003737FC3 UniRef90-EONP36 UniRef90-R5PQ13 UniRef90-D3F9M5 UniRef90_UPIO004791DF2
UniRef90_G5GF48 UniRef90-G5GF48 UniRef90-E3PRI7 UniRef90-F2NTT4 UniRef90-W3AT42
UniRef90_D1Y1T7
 DPGFVVRPVQDRVYFVVESEWLLQVMKSVNFDDYES$L L Q Y F Q$
 EFEIVYDSSNTWHVDGAGLERFVQMTNWQYLEASLRRFQ
 EDDFTVEREGGGRWRVRGVKVERLVAMTNFDQPEAVDRVQ EEPFTVHKEGD VYVVEGD FERLTNSVNFEDFDSIGYFN $V Q M D G E E V F Q V R G D K P E R W V R Q T D F A N D E A G G Y D A$ ESFTVSEDESGYFAVSGVGVEKMIGYTSDDSEKGFAFFQ SKVTITHH DGIYFVEAKWLFNLMKSVNFDDYESLQYFQ
 EDEI RVERVGD VF QVVGKVI ERLVVMTDLDNESAVKR RQ $D Q G F T 1$ KREEGETFRIVVGDRPTRWVRQTDFSNDEAVGYGA

VEIDPDDPHTFIVEGPKDDKMLGYTNLDSEKGFQFFQ E Q P F T 1 I T R D N D G $\quad$ I Y VVV K G K E ERAWHVRRDAT GAWLVEGRSLERLVQRTDLNNPDAVERLQ

 DFTIEWDEDSAWVVGGAEVEKLFLMTNDQRDATDMRFG

 | $S$ | $K$ | $V$ | $K$ | $I$ |
| :---: | :---: | :---: | :---: | :---: |
| $P$ | $E$ |  |  |  |
| $P$ | $E$ | $F$ | $K$ | $I$ |
| S |  |  |  |  |
| E | F | $E$ | $I$ | $F$ | G D GF VVKVE GGVYRV EPDELITHEDD TWLVEGPWLQRLMANVNFGDYESRNWFD E P R $\underset{\sim}{F} \underset{\text { L }}{1}$ D R S Y T VR R E D GVVYV E G S FVVDRLLDDSVNVNDPD S L R Y FH D R S Y T V RKL S D GI F RVEGALGERMVVQTDWENEEALAF LQQ D Q S F D I KVVENE I Y Y I D A P WL E K V L A GVNMD D Y E S L Q Y F Q SEFSVVKKQGDGVWRVRGEKPERWVRQTDFSNAEAVGFBA YEILLREDDGTFVVEGSFVDRLLGSVNVNEPDGLRYFY


 F Q D A GFDIVLEE
D D F K V E

## F T DERV

 ENRFTIRRER ERRTIRREGD LVVVEGDEIEKHAKMSFFDSEASVYRF Q E E F T V
EPYSVENEKDNEYVVEGPRIEKMMGQ円NFGDYESLNFG Q
 EAS L NVYK E $T N H V Y \vee V$
$\vee \mathrm{V} \| \mathrm{T} \quad \mathrm{D}$ Q G GVY FV K

E E DFVVTK L E K E Y K

$\qquad$ | $D P H D F$ | $\square$ | $E$ |
| :--- | :--- | :--- |
| $E N G T Y Y V$ | $E$ |  |
| $E G N T Y$ | $V$ | $E$ |

D A DFT I VRE Y Q $A R$ R $\quad$ G A P Q WUV R 1 VRK
EKPFEI
DK N G K WQ L D K K F T T I R K E D N D K R F E I S K E E D L F IV S G K E I E K HVV K M T F FFE S E A G V Y R L Q
 ENDFTI RVE G GTWRI LGRKPERWVA QTDFANDEAVGY LA
 DKRFSV HRLSE G $\square F R V E$
 D S GFMVYKEKK TFTVAGGRI

 EPFTV K KEE D DFVVD $G F T V E E L D E G R F K V I G D G V D$

| $R$ | $E$ | $D$ | $D$ | $G$ | $F$ | $F$ | $S$ | $I$ | $E$ | $G$ | $P$ | $R$ | $V$ | $E$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $E$ | $V$ | $V$ | $D$ | $G$ | $V$ | $Y$ | $V$ | $I$ | $D$ | $G$ | $P$ | $S$ | $I$ |
| $V$ | $E$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $V$ | $K$ | $E$ | $N$ | $D$ | $I$ | $F$ | $I$ | $V$ | $E$ | $G$ | $N$ | $R$ | $L$ | $E$ |

FTVERES DNAFRVRGTLVVERLLYSVDFEDMESDRYFQ


UniRef90_GOHCB5 UniRef90-R5JGQ9
UniRet90_R7FX84 UniRef90-UPIO003822C7C UniRef90 R7EXT5 UniRef90-R6LKU3 UniRef90_UPIO0028880BF UniRef90-B7C876 UniRef90-UP10003077E23 UniRef90-R1AT40 UniRef90_UPIO00477B450 UniRef90-UPI000467AD5B UniRef90-A1SMB4 UniRef90-R6HRV4 UniRef90-A0A010NPT8 UniRef90-R6CQU9 UniRef90-A0AO22KVC5 UniRef90-H1CZ12 UniRef90-F4XAA5 UniRef90-K4KZJ2 UniRef90-UPIO003B6073C UniRef90-B8FUR9 UniRef90-R6K460 UniRef90 UPI000462F732 UniRef90-Q97JL4
UniRef90 ${ }^{-}$W8YQD4 UniRef90-E1R015 UniRef90-UP10003B5D7A0 UniRef90-G4D4E3 UniRef90-C1E000 UniRef90-UPIOOO3761623 UniRef90_Q04EZ8 UniRef90-D4JEMO UniRef90-K6VMC4 UniReffo-LORWZ1 UniRef90-I2CRTO
UniRef90-D8U7J3 UniRef90-D8GNW3 UniRet90 W5IH68 UniRef90-D7BBA4 UniRef90-COVZF4
UniRef90-E6K2Z5 UniRef90_R6GCS8 UniRef90-LOFCQ3 UniRef9-UPCOO22B4AC8B UniRef $90-K 4 A \times 01$ UniRef90-R6Y×02 UniRef90-R6WE27
UniRef90-D6GSC6 UniRef90-D6GSC6
UniRef90_K0B236 UniRef90-UPI0003B71585 UniRef90-S8D236 UniRef90-K1E932 UniRef90-R6Z7K1 UniRef90-V9H506 UniRef90-D4KBV2
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UniRet90 O2RKZ8 UniRef90-COW2U0 UniRef90-Q03YT6 UniRef90-A9AXD9 UniRef90-E8NE65 UniRef90-G9PENO UniRef90-UPIO0047CD230 UniRef90_UPIO0047854B0 UniRef90 R6H259 UniRef90-D5EEJ3 UniRef90-E2SB77 UniRef90-UP10003B49DA3 UniRef90-Q8L7LO UniRef90-R7P732 UniRet90_D4XV24 UniRef90-R7KB08
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UniRef90 F5XNY8 UniRef90-R5FWR6 UniRef9OO UPLIOOO219473A
UniRef90_A7NRU6

DKHFTTIRKEGD
E EPFRVYREND YYVVESE
DRAVNI RMESTG $\quad$ WWRVG
D G GF LVV R V E G G N I Y
E D G I K V Y TEND E F IVVDGP Y ID K L L R S TN FEDR D S L R Y F Q
S DFEIV V D P Y A FYV K GAAI ERFFVQMTN WDYFESFKRFA

$E \square E V T Q V E D H V W Q V T G T K D E R A F N D N K L N T E E D F Y L F A$
 S Y QI DT D P P GQF RVVQGK QI E K I CA M T N WD Y Y E A V E R F Q
EKKFTV IR KEENTF IVVEGSFVDRLLGSSVNVNDPDELMRYY


 S IVVKMEEPGV FELTREGD SF TV D $Y$ Y $\square$ D D S GSWHV GQE ERHVKMTMTETED GLGYRF Q D D Y E I I N D S G S WHVVGSGGLQRFVVQMTNWRYTESSERRFR S S F E $\square \mathrm{EK}$ K D D

EFVIAQEGT GTWHVSGAR
 DEFTVRKEDDMFII EGKAI NRLMGRDNDDDNESMYYFQ

 $K E F T I T K$ Q D GIVYIVDAPFMVPVVLSMVNMEDYESSLQYFQ

 K D F R VV DSFEIVVVNDDGSFEVVVADWLLDILARTANMDDYSSLQYFQ

 QHPSEGVYQVRGDKPERWVRQTDFTNNEAVGYLAA D F T V E W
 H P QE GKVYQVRGHKPERWVLQTDFTNNEAVGYLA
$\qquad$ VK
F T E E DGGF R IV K GRAA D RLMGRVNDE DNESMYY LQ

 R
 DPDFKVFSPYKGYFEVSGRKVEELYNKDPDNSYDNLLMRNN

 D E F TVVGRENE L WRVR GVKRE
SYEIDRMDDGTFVVS



|  |  |
| :---: | :---: |
| UniRef90-N9V464 | NKLKNLGVWDDLIDKGGQQGDTVR |
| UniRef90 A6LQR9 | KVLRNKG1FDELREMGVKDGDMVRL |
| UniRef90-R7BU92 | KVLKDRGV A |
| UniRef90-H0E8L2 |  |
| UniRef90-D6TNY | RTLEKMGVTKALETMGVQVGD |
| Q0TNI5 | G |
| UniRef90-M1VBG4 | RVLRALGVTEALSQSGlRAGDV |
| UniRef90-HOUK98 | RLLRSYRVEEALENAGAQ |
| UniRef90 UPIIO00417E3B2 | RQLRTLGVED |
| UniRef90-F9UK94 | QKLKNLGVWDELLAKG\\|E |
| UniRef90-B9L101 | RLLARWGSRRLLA ${ }^{\text {L }}$ GIQPGD |
| UniRet90-UPI00046347B0 | DRLATLGVEKELFKKGAKAKD |
| UniRef90 R5DRX0 | NDMKGMGVFEELAKKGIKDGD |
| UniRet90-R7XZQ6 | DRLT RLGI EAQLAKLIGAEEGDPVLI GAV |
| UniRef90-F2BV4 | RSWHFMGLDKLLIKEGVKEGDTVDLYGFEFTFSENT |
| UniRee90-UPIO003456B2F | DRLQKDGI EDGLVKAGAVAGSTVVIGGVIFDWEPTV |
| UniRef90-K8F142 |  |
| UniRef90-R6XA | E ELGVN |
| UniRef90-F9QC | NLLKK\GVWEQLIKLDD KPGD |
| x8k4 |  |
| - | ENLRKNK WEKLEELGAHDGCSFGGEYEFEFFE |
| UniRet90-_P10004 | M LKKSGVWDDKKKGOQRGD |
| UniRet90 F6BHB6 <br> UniRt90 | MMLKKSGVNDMLKEKGKKDGDA |
| UniRet90-W7YZH4 | RTMRYMGID |
| UniRef90 IOROVO | ERLQKIGI EDELVRKGAKRGSTVIGGG |
| UniRef90-D1C1Q0 | RVLEASGl SAKLEELGAQPGDVVHVAD |
| UniRef90 R6NSX3 | RALLKRGGVEDLLNMG KEGE |
|  | KMLKNAGVYDRLEQMGVEEGSLVVIGEMEFEYYE |
| UniRef90-K7SIP9 | DRLNGLGI EEELLTLGAQAGDAVAVGGVID DFAPQV |
|  |  |
|  | MLLRKSGVIDALKEKGFKSGD |
| UniRef90-UP1000404E946 | RRLHRMGVI RALEAHGFEPGDDV |
| UniRe990-R5G |  |
| R6 | A S M Y A K A M K G V |
| UniRef90_G7VA35 |  |
| UniRef90-Q602A7 | AKVKKTGLLWDELTKKGIKPGD |
| UniR | SKLKNI GL WDELINKQGIR |
| UniRef90-A4RU19 | GD |
| ei90 R5H6F0 |  |
| UniRef90-UP10003B4 | VAAGGDSALRAAGVMEGDTVVI GDLEFEYVES |
|  | TKIKNGGL Wo |
| 5 | M |
|  | G TVRFGSHEFEYUPEV |
| UniRef90-E3DOR3 | L L R Y RVEELLVAAGAEEGDTVFIGPTSFDFSPD |
| UniRef90 - B1R130 | VLRNKGVFDV REMG KD |
| UniRef9-UPIOO247E8CB4 | KVLKNKGVIAELUSMGUQDNDFVRLN |
| UniRef90 ${ }^{\text {AOP }}$ | R |
| AOA | KKLQD |
| UniRef90_U7VCD6 UniRef90 R6Q453 | HMLRNLGLEDALKDAGVEDGDTVRIADTEFDFVE |
| UniRef90- ${ }^{\text {U6OL43 }}$ | N |
| UniRef90-W6RVE5 | KVLMKKGIMTELREMGIKDGDMVR |
| UniRef90-R7FVIO | KTLKDYGVLDALRKLGVKDGDTVC |
| niRef90_A8S | T |
| UniRet90_D9SRz9 | VLKNKGVM |
| UniRef90 UPIOOO47BB79F | RMLRDSGLFDRLEEMGLQDGE |
| UniRet90_KOS | RQLAALG |
|  | QVL |
| UniRef90-R5SE52 | NILKSMGVFEELHKHGLKNGDTV |
| UniRef90 R9LP81 | NKMRYMGIIDRMLREAGV |
|  | D |
| UniRef90-U7J | RLGVEEELLVQGALAGDAVA GGVIJFDFAPQ |
| UniRef90 C2BDE9 |  |
| UniRef90- F7YVP4 | ELLEKNHLSERLKQMGAKDGDTVYIYGYAFE |
| UniRef90-R6AIT3 | RMLKAEG DDALREAGAGNES |
| UniRef90-R5MU99 | KGMGVEEAL LNAGATL |
| UniRet90-X1JT | RQFTRLGVSKALEKAGVKPGDKVRCGNLEWEW |
| UniRe990-S2VU83 | D R S in il |
|  | RRLERLGAEO |
| UniRef90-G2lGH3 | GVIDELKSMGVQEGDMV |
| UniRet90-M5A1R6 | YRLERLGVPKMLNRAGAREGDII WIGEFSFEY |
| UniRef90-R5BBQ3 |  |
| UniRef90 B8CXZO | RVLQHHDLNELLRDKGVKNGDTVKIGPMEFE |
| UniRef90 B9E021 | KGVMKQLIDMGIKDGDVVRLNDFEFDYD |
| UniRef90-R5VDIO | AYNGVEEKLKEAGIODGDTVKVVEYEFEYFETL |
| UniRef90-A9BK05 |  |
| UniRei90- R6ER40 | KYI EKNGANCRLKNMGLEEGDII RIGEDYDMEYWDE |
| UniRef90-H6LK25 | RVLKDKGVFEELERMGI QDEDVVQLEEDEFEYF |
| UniRet90-X81RP8 | G |
|  |  |
| UniRef90_UPIo0047023BC |  |

UniRef90 UPI0003F87C13 UniRef90_UPIooo37E9E5C UniRef90-B2KAW2 UniRef90_UPIO003B618B0 UniRef90-D2Z3C5 UniRef90-C7GYS1
UniRef90 - xoZH07
UniRef90-X0ZHO7
UniRef90 E6MF17
UniRef90-WoGQJ2
UniRef90_UPIO003760477 UniRef90-E3HAl1
UniRef90-UPI0003B475C0 UniRef90-UPIO004646CDE UniRef90_UPIO0047EB031 UniRef90-Q6FOU3 UniRef90-D8S3N7 UniRef90-LOKA59 UniRef90-R6FEE9 UniRef90-K2B3K6
UniRef90-D1ALA9 UniRef90-V5RI14 UniRef90-l3DKP1 UniRef90-B3QZT1 UniRef90-A9RD72 UniRef90-B2A6B7 UniRef90-R4YYE5 UniRef90-G2RZB2 UniRef90-A6LJZ0 UniRef90-UPIOOO3B6613E UniRef90 H2J3W9 UniRef90-W4TVJ9 UniRef90-E7MQ83 UniRef90-AOAO24HWK3 UniRef90-R4U3S3 UniRef90-F5WT87 UniRef90-17J603 UniRef90-N9WE18 UniRef90-S4HG69 UniRef90_UPIO004676C84 UniRef90-EOTL23 UniRef90-XOT9E9 UniRef90-C9RATO UniRef90-K2CJ44 UniRef90-R7LS85
UniRef90 D2MP65 UniRef90-R5TAC8 UniRef90_D7CWS6 UniRef90-Q47MV6 UniRef90 W6A9A5
UniRef90 F2NNL1 UniRef90-G9PX08 UniRefofo-G6Y578 UniRef90-U2JXX8 UniRef90-R5KXE7
UniRef90 R6A807 UniRef90_UP100039F3119 UniRef90-B3PMC1 UniRef90-B1AJA2 UniRef90-LOAXJ8 UniRef90-E8ZJW1 UniRef90-H3NMV4 UniRef90-Q4N915 UniRef90-C7NB21
UniRef90-E3DMF2 UniRef90-K2AQ18 UniRef90-R6TXF3 UniRef90_C5C197 UniRef90 N9SRO8
UniRef90
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UniRet90 E8U3Q6 UniRef90-E8U3Q6
UniRef90- $\mathrm{B5} 5805$ UniRef90_UPI0003620B5E UniRef90-J4C7C7 UniRef90_Q7RT40 UniRef90-A0A016QN01 UniRef90-DIJTS5 UniRef90-R6RIIS9 UniRef90-R4PW37
UniRef90- X1M7M0 UniRef90-B3LAP9 UniRef90-UP10004768E22 UniRef90-K9ZZ87 UniRef90_D1AWX0 UniRef90_H5SP70

1
EKKFTYTRVEEGTYYVVGSFFVDRLLDSAVNVIHDADSLLIVYFH EKPYT EEEVPGRFSVYGPLI RKNFNIDKLNTDEDFYNFA
 TEREGRVYVLSGEKLYKMFDSTNFNDMGSVRYMY
SFDI QPDVQI NLGNGLWKVEGESVFKAYHKTPDSTYDNLLLEN DERFELITRTD RFVVRGEEPRRAVLMTDMENDQALVLDH
EDYVITQDEEGVYVVDGRIVEDVLNKYVITMEESUNNFL
QEDDQVINKGNGRWETAGETIFKLYQKTPTYTQDNLLLFN VERTVDG YRVFGAGI MRLLSRHDLENEEALEYVE EED TQI INKGNGRWEVAGDTIYKIYQKFPITTDDNLLLFN EFKVDVDPEDLWHIYGAGVERFTQMTNWEYFESLQRFE GKKGKIEKMLGYTNLDSEKGFTFFQ SIVKVNVLSPNEYQUVSEQFEADVKRVNFKADDALYYFR KDVKVKNLGNGKWMI EGEDVYKIYQKTPISTHDNLLLFN DDFEITQDEEGVYHIEGRDVDGVLAKYVIGDDESIVNFL DFVIKKDNQGFFVVKGEKI EKFFYKTDFNNEEATKKFA YE! SDKRRTWEVKGAGLDRFTQMTNWEYFESVRRFQ

VGKEGDTFVVKAEKLEKVNEGVDVGTEKGRHYFQ


FETIKWDEGVY
FSI KRQGDGEWRVTG D P
DF E

KKIVKLGPGRFKV
VOVINQNNGLWEVVTG
SD
DYT EQNQRWR GDITDRQLRQYEFDTEESAVQFG
DY' HKVAEGVYRLYGKYLERKVGMMNLDQYESVLWLN

VVSREGDTFVVS
GFSIERKKEGAFRVT
EVHKVNKNTYVVD

E DPFQViPGGNNVFRVVG
ПQ TITHGGGYRVM

DFEIKKDRFGRYVITGDRVIRTYHLDNDTEEQGMMKLL $V V T K E D G Y F S I Q G P F A E N L L Y K T N F E D Y E S R D Y F Q$
PFTVVKKSDNYY EDFEITRDENNITHVGGRDVDDVLAKYVIGDDESLVNFL DKA R RKLSENVYE ESKKVLNVVEKIPVSSLDNLWRDN FKVTKIGEGEFTVESPYLERKDAMMRFEQPETLDRLR

ISREDNFWNVEHPSLRYWVRKDP LDTYDN ARLL KKFTVTCESDGAFRIS

IKRNDEHVFEVVD
FKAKGKRLEQVVNMTDFDKEAGLRRVY
SEFF VEKKNDTYYV
PP

FKVK

EYQIHKYN
KP $\square Q \square K K \rrbracket D$
KYEVVTGPETYELFGDDIDNDYNKIPVISLDNLWRFN KEYEVVRTGPHAYQ RGEKI ERTYSLINLSTDEGASKLL

TEKNNNEYVKNKKLERLLVAMDLENEEALDYLK
SQFEDYKYKENVFIVKGKYIENQANDFNFSKSDTSKIFA
RASNGVFVVESEMMERLTAMADTRDQRVLLQLDW
VTEKEERVWVVKGGGFEERLARFERHLDDAAEYLT
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lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


