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UniRef90 G7LSU1 UniRef90-UP10003B64EDA UniRef90-LORTM5 UniRef90 UPIO003B58B0A UniRef90-I3TTD4 UniRef90-B6XDK3 UniRef90 W6TE43 UniRef90-UPIOOO36C3C6F UniRef90-G31RF2 UniRef90_C4S5R8 UniRet90-GOAIQ7 UniRef90-M9WTZ1 UniRef90_C6D9F6
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| UniRef90_D5LGZ4 | RVE F S I T GEY |
| UniRef90_UPI000468ED20 | G GVVEI L L T Y M Y N Q T N T R H N Y VFP P F Y $\square$ N E G T |
| UniRef90-Q5F8P0 | A GKIKLTTLDVTLADGGER |
| UniRef90_UPI00046ED989 | N GEMFVDI T G T L T D T G G T F S L NVP |
| UniRef90_UPI00036C04C4 | PGKLLS I DI E GVYLLE T G R T $\square$ T F |
| UniRef90-E5AT04 | PWTL NID ${ }^{\text {d }}$ A Y R I P L N N T |
| UniRef90 ${ }^{-}$H2IRI7 | D GAMVVNITGNRTDTP |
| UniRef90-H5WPB8 | PSELRVEIVYRLANT GAPGALDVTVQLEG |
| UniRef90-B1JT28 | DGSAVLEL QGERTDGGTAFSMRLP |
| UniRef90_UPI000463A98F | Q G Y IM M N V D Y T LA A N NQRDNLVFPFY |
| UniRef90-A0A013JIA5 | S G GL QL DLE AVVTLLT GQALNLNDPLQMGS S |
| UniRef90-J0ZBR4 |  |
| UniRef90-N9WEN0 |  |
| UniRef90_Q4E960 | E GKVTL L E G S |
| UniRef90_J2LRQ1 | D GS MVV ELT G Q R A D G S P LAMSVP T GVNS G S |
| UniRef90_UPI0002DCDA31 | Q $\square$ GFR I T GT Y S |
| UniRef90-UPI000466768E | G A VT L Q T T G V Y Y P N G H K G D F S V |
| UniRef90_Q1D3V1 | $P A Q V R V E I V Y R L R R T G D V Q Q L G L A M D L G G$ |
| UniRef90_UPI00029A06F1 | GSFVLDLQGQLATS GASRNLSVPLRFH |
| UniRef90-E7G9C5 | QGVLK C Y I Q Y VVVSE GE |
| UniRef90-E6YTW3 | QVSL S FA Gl Y |
| UniRef90-S7UTE7 | P A HVLI R I EFRLLAD |
| UniRef90_X7FM97 |  |
| UniRef90_UPI00035FB4A5 | PGSYLLDI A Y Q R T NQRRRLTIPLRFRPS |
| UniRef90_UPI00035D89FB | $A G Q L V I D I E G Q L V D G P R R L A L S V P L A M G G A A$ |
| UniRef90_UPI0003B5B51A | K F EL HVE |
| UniRef90_K5ZNW7 | P GVLT L D L Y G Q Y L P N G Q Q $\square$ A L |
| UniRef90-S2EWJ2 | QISSLELT GEY |
| UniRef90-A0A037XJ50 | P GKI I I D L S G R Y LP D G |
| UniRef90-B3CP82 | KVTLD L E GL Y LP S G K N |
| UniRef90_UPI000377D734 | VA DVV HINTRYRLR N S Q R P A E L G F T L N L |
| UniRef90_U5SLE5 | G K I T L L DA T D $\square$ E T Q Q R Le |
| UniRef90-UPI0002198847 | G G C A I T L T WRRADNG |
| UniRef90-W3ZZ38 | P A R A TVVSINYTLVATQEHVELAVPVAGGPA A |
| UniRef90-E5E3V5 | A GQQLVDI E G WT DERDEPVSLRVPVLNGVGA |
| UniRef90_J2SRS6 | D GRIT T FELT GQYLGSD |
| UniRef90_E5ALJ9 | $P$ G WL G I EV T Y R L A G Q A Q T R R V S G A LDLQ D G T |
| UniRef90_D4M9N2 | P G V V E L A I L Y R L Q D |
| UniRef90_B3R3K4 |  |
| UniRef90_UPI0004710F60 | K G K F V I GMQA VR K DVP Q |
| UniRef90-B2SVG0 | PGSFVLNLEGDRTDANARSRLTIPLHFRTS |
| UniRef90-S0YMS0 | Q GRAMLSLNCLIVNTMEKLEFSV |
| UniRef90-T9FPW0 | A GRLVATI QANRTDNQTPFN |
| UniRef90- G7LSU1 | GKVEANLT GLITTET |
| UniRef90_UPI0003B64EDA | Q GY L L N I D Y TLLA E T N Q T D N MVFP P F Y M N A |
| UniRef90-L0R7M5 | HMEIIGLEGEY |
| UniRef90-IOKRW6 | PGTFVLDLD GQPTGASSTTRLSVPLRFR |
| UniRef90_UPI0003B58B0A |  |
| UniRef90-I3TTD4 | T GRLLEI A I D A VYR P D GRPLVL |
| UniRef90-B6XDK3 | A G CVV I EIIMGRYRADQTAIITL |
| UniRef90-W6TE43 | E G HII T L I L E G LY LP D GRPITTL |
| UniRef90-UPI00036C3C6F | V V V L D L V GE Y |
| UniRef90_G3IRF2 | G H A L A I F GKYR P |
| UniRef90_C4S5R8 |  |
| UniRef90 G0AIQ7 | Q A L L I D |
| UniRef90-M9WTZ1 | $E G K V N I S L D G \square Y L P N G$ |
| UniRef90-C6D9F6 | A GLLVAVTL Q A QRTDNLA AFSAT $\square$ S L Q |
| UniRef90-R5HI08 | ES TLTVVKVEWTLLK D S N A |
| UniRef90-E7JNH1 |  |
| UniRef90-UPI00039AA1FC | D GRMVADLTGELV S GQSAALSVSL |
| UniRef90-V5ZB88 | D GS MVVELA GQ R S N GAAVSLSV |
| UniRef90-UPI000366AF30 |  |
| UniRef90_Q0QZC9 |  |
| UniRef90-R8AN87 | NGAMAAELTGVLTD GTFASLSVPL |
| UniRef90-F2P5L0 | $P G T V F \square D L E G L Y L P D G K P$ |
| UniRef90-N1ZFS0 | Y T TLIVQ Q Q Y Y E Q $\square$ Q Q WQ T WH Y A F D LT A S |
| UniRef90_B8GS01 | GPVFTI E GVY |
| UniRef90_UPI00036D026A |  |
| UniRef90- I9C1W9 | S GTI T |
| UniRef90-N8V812 | G GLLM\DLEAVHLLS G Q S L N L N $\square$ P L K M G A |
| UniRef90_L3FX80 | G GKAVI T L T G T L T E S |
| UniRef90-UPI000381B701 | A GLVDLEI A A TIIKES GEQFYM |
| UniRef90-UPI00036BB128 |  |
| UniRef90-M9WS40 | E GKMTLVLE GMYLSSEGKF\NI S |
| UniRef90_UPI00035EE940 | A GTVYL DI E GWTSES GTAVSTRDPVAHGSAA |
| UniRef90_W8PUG6 | TV R V K WRVA G |
| UniRef90_V1XLZ7 | LTADI SMMRTDTGENDNF |
| UniRef90-F2LHB8 | D GSQTLDI E GWT DQLDEAVT LRVP |
| UniRef90-X7HNN4 | S G CV L D I E G $\square$ N K E T NLP |
| UniRef90_J3I8N6 | Q $\square \mathrm{NLEEI}$ A GQY |
| UniRef90_UPI00047EE074 | HLTLRVQ WR\A GVEEQQTELV |
| UniRef90-UPI0003195B86 | R VT F QL S GT Y |
| UniRef90-N2IFU2 |  |
| UniRef90-H2IY43 | A GQMIA T K A S R T D T Q S P F T |
| UniRef90-UPI00032F8A19 | H IT L I LE G |
| UniRef90-SOVNS0 | $N G S A V L S M S Y L I V S T M Q S A S I S V$ |
| UniRef90-UPI000395545A | $P G Y A \quad E Y$ QIL G T Y Q P L R L SVPIA WGAS A |
| UniRef90_F6IH58 | $P G A A T V I I D A T R T D T N A L V R L S V P L ~$ |
| UniRef90_D4EA02 |  |
| UniRef90-W5V030 | D GRVDLLLS GVFEGEN |
| UniRef90_A0A024EJ91 | Q $\square$ NLL S A GEY |
| UniRef90_C6BVX9 | D G N I V V I D L E G K Y LP N G E |



UniRef90_UPI000407394F UniRef90-A0A014NDW5 UniRef90-E5DIK1 UniRef90-UPIOOO379DC11 UniRef90_F5S5C5 UniRef90-COBXW5
UniRef90 C5A806 UniRef90-C5A8Q6
UniRef90 S4YY UniRef90_V6PKZ9 UniReffo-KgPNLO UniRef90-B5JY65
UniRef90 - V9LZK4 UniRef90-B6IMG9 UniRef90-A0A031HFS5 UniRef90-UPI000372FE13 UniRef90 - X5IA12 UniRef90-W6AZ25 UniRef90-UPIO002D982FC UniRef90_V4PNX9 UniRet90_M4NDX1
UniRef90-U1KRE2
UniRef90 E2SQJ7
UniRef90-K2SIZ3
UniRef90-D8MKJ2 UniRef90-UP100036C5F6F UniRef90-V7HQ73 UniRef90-F9Q9T2 UniRef90-M4QH63 UniRef90-N3U3Q1 UniRef90-UPIo0036197DE UniRef90-E1A290
UniRef90-Q31098
UniRef90-W6VkR6 UniRef90-AOAO31GZS3 UniRef90_UOZR38 UniRef90-K0P6U9 UniRef90-UPIO003812D9E UniRef90-R9TRM1 UniRef90_UPIooo380B4A3 UniRef90_U3U125 UniRef90-C4U1U0 UniRef90-N9R592 UniRef90-D8IV19 UniRef90-A0A017HBW8 UniRef90-A3WV56 UniRef90-W4M0R8 UniRef90-UPIOOO2631720 UniRef90_L7F9F3 UniRef90-D8NSQ3 UniRef90_S5NE01 UniRef90_M4SID6 UniRef90-A0A031G7P6 UniRef90-F3U1Y5 UniRef90-S2WCS4 UniRef90-UPIOOO3828AEA UniRef90-LOW3G3 UniRef90-D3G245 UniRef90-B4SMC0 UniRef90-B7QPZ1 UniRef90-G21X30
UniRef90 E1PAD9 UniRef90-C3X1Y5 UniRef90-Q6HADO UniRef90_B3QT15
UniRef9O_M1U9E0 UniRef90-D8P993 UniRef90_R9AYE6 UniRef90-G8PUM4
UniRef90 DgV8K0 UniRef90-UPI00046F7DBD UniRef90-M5RRM4 UniRef90-UPIO0047B8AE7 UniRef90-E3SLZO UniRef90-T8YN39 UniRef90_M4PLC7
UniRef90 D8NJ03 UniRef90-UPIO002F884C5 UniRef90-UPIOO04636685 UniRef90_V3DJX7 UniRef90-R9NGB3 UniRef90-UPIOOO4752F86
UniRef90 UPIOOO2F984F1 UniRef90_UPIOOO2F984F1
UniRef90_F6B2A4 UniRef90-D916C4 UniRef90 UPIO0037747A7 UniRet90-Q6QIAO UniRef90-H8ZN72 UniRef90-S3HF70 UniRet90_E3SKD2


80
DQPQNDALKLLQVIMAAVVSALLCRWEPRLVLNSIIN|IERGM
 FTDTNPTTLHVLERQVKETLLTQEPRMADVEVQTEFRSE
 DAPTNEAALLQAYAASAMAL DLPVTGGWKGAVQAEVARA






| UniRef90_UPI000407394F | $\text { D G S M T V D D L T } 9 \text { G N } \quad \text { R N D G GPA S L S V V L }$ |
| :---: | :---: |
| UniRef90-A0A014NDW5 | G G |
| UniRef90-E5DIK1 | D Y T L I VeVVQFSVID N P D |
| UniRef90_UPI000379DC11 | TGAMSI ELS GV |
| UniRef90-F5S5C5 |  |
| UniRef90_C0BXW5 | E A CLL Y I Hi R Y T L V Q T GAENS L Til P |
| UniRef90_C5A8Q6 | D GRQYIDIIE G WT DERDELLT TLRVP |
| UniRef90-S4YYQ3 |  |
| UniRef90_V6PKZ9 | D G S MVV |
| UniRef90_K9PNL0 | DS S LRVFLQQYVVKRSGEQRTETF |
| UniRef90-B5JY65 | Q G GVVTLELLDVI RYD T G T P |
| UniRef90-V9LZK4 | ENTYDVSI Q Y HLLKTNFDRLL |
| UniRef90_B6IMG9 | NAR $\square$ T L R V T WRLAAA DAAPQ |
| UniRef90-A0A031HFS5 | PGAFVLDVTCRRVRSNEFTRLTTVPLRYRE |
| UniRef90_UPI000372FE13 | R】EMDL M G L Y Q |
| UniRef90- X5IAI2 |  |
| UniRef90-W6AZ25 | D GRVVT FE\R GR\D G N E E I FEVTV |
| UniRef90_UPI0002D982FC | K S R I E I D L T G N Y L P D G N P I KL |
| UniRef90_V4PNX9 |  |
| UniRef90-M4NDX1 | D A T L RVDLS Y TVRASGDTRSDSF |
| UniRef90-U1KRE2 | S VTLLEI AI NYQLNHTNSRYNLVIP F N L I D G |
| UniRef90_E2SQJ7 | D AVLLL T I T Y V C R Q N G Q S D L Q Y P LPL E |
| UniRef90_K2SIZ3 | QVT F AL K G T Y Q |
| UniRef90_D8MKJ2 | A R T M T I S |
| UniRef90_UPI00036C5F6F |  |
| UniRef90_V7HQ73 | V I E F G LT G D Y |
| UniRef90_F9Q9T2 | NCTIVCRTKD Q N 1 I C |
| UniRef90-M4QH63 | N NAFEANLEFT I IGR Q D T P D S $\square$ N F L L Q |
| UniRef90- N3U3Q1 |  |
| UniRef90-UPI00036197DE |  |
| UniRef90_E1A290 | R NEYIVTI S YRLITT D L |
| UniRef90_Q31Q98 | A G QVEL NLI G Y Y I P E GR R I T |
| UniRef90_W6VKR6 | GAQIRVQVQWRVA D GVA Q L T EV |
| UniRef90-A0A031GZS3 |  |
| UniRef90_U0ZR38 | E S HWRVRVN WQPA GAPSQRQ |
| UniRef90_K0P6U9 |  |
| UniRef90_UPI0003812D9E |  |
| UniRef90_R9TRM1 | NGKAKVEID |
| UniRef90-UPI000380B4A3 | R PVFRV E GE Y Q |
| UniRef90_U3U125 | GERVTL LLR WRLL |
| UniRef90-C4U1U0 | NGQMVVNLT GQHAETGENLLLTLP |
| UniRef90-N9R592 |  |
| UniRef90-D8IV19 | Q LQCSV QWQLA GSLLD GERQLTHLALLGGAA |
| UniRef90_V5UTT0 |  |
| UniRef90_A0A017HBW8 | A $\square \mathrm{T}$ T R V R GEYQ V D T D |
| UniRef90-A3WV56 | D ATLEI TVVYSRRDT GERREDVF |
| UniRef90_W4M0R8 | $R G V L T L D L E G E Y L P D G R T L T L$ |
| UniRef90-UPI0002631720 | PGKATVIVEGTRTDQPRRTRITVVPLASRSG |
| UniRef90_L7F9F3 | D NVVRVHLSYVVRATGTRRDDVF |
| UniRef90-D8NSQ3 | D GKPVIDI E A DRVD GPRRETLSVPL |
| UniRef90-W7PNR7 | GAVEAGLS GALTE S MEQQT |
| UniRef90_S5NE01 | D GRAEAELS GTI TE T M Q P A Q R $\square$ I P L |
| UniRef90_M4SID6 | NKLLNVYVEYRIVG |
| UniRef90-A0A031G7P6 |  |
| UniRef90 F3U1Y5 | S L TLLL S GEVQ |
| UniRef90- S2WCS4 | K G R A T I TVVGNL |
| UniRef90_UPIO003828AEA | DSVLRVELSAYVVLA T G A Q R TEVF |
| UniRef90-LOW3G3 | GAVT A EMS GLLTTES |
| UniRef90-D3G245 | K S VLA M Q S S K N Q P K G S LS LS LG |
| UniRef90-B4SMC0 | $P \mathrm{G} V \mathrm{MIL}$ A VT G 1 H L P D GE |
| UniRef90-B7QPZ1 | A I I L DL S G Y R P |
| UniRef90_G2IX30 | E A HWKI R I T WQP A S G D S Q Q |
| UniRef90-E1PAD9 | HLLT L R V S WK G S D GQ T R |
| UniRef90-C3X1Y5 | K GKAMLQQIDGQ T T D NAVS LSVS F |
| UniRef90_Q6HAD0 | A S R L R A Q I TVYLA G S D |
| UniRef90_B3QTI5 | L SVQVA WRLKKGED T E Y L Y HLG E |
| UniRef90-M1U9E0 | H EL R V DVEYRIV V GQPLVQTIDF L L Q R A |
| UniRef90_D8P993 | DSTLRVTVVQYVVRQTGARVTGSF |
| UniRef90-R9AYE6 |  |
| UniRef90-G8PUM4 | K I L L N L V G Y L P R G |
| UniRef90_D9V8K0 | E S TLLRI EI G Y V L L A T GERREDVI |
| UniRef90_UPI00046F7DBD | ( I Ti D L Y A K D T E S G T S LTI |
| UniRef90-M5RRM4 | D A R L Q V NLQ Y I VT R T GEPR |
| UniRef90_UPI00047B8AE7 | D G RLLAL DI Y G R |
| UniRef90-E3SLZ0 |  |
| UniRef90_T8YN39 | EGSAWLTLVGVNNETQETIRLL |
| UniRef90-M4PLC7 | G N K L S I T I E Y R I V G |
| UniRef90_D8NJ03 | I A L R V Q WKL A D |
| UniRef90_UPI0002F884C5 | HI IV R V Q WRVT G Q R P Q R E V |
| UniRef90-UPI00046366B5 | HV SLT T H W T |
| UniRef90_V3DJX7 | G AV T A ELA G T I T E T M T E T S N T $\square$ R L |
| UniRef90-R9NGB3 | D G AVT T A ELT GII T E T M Q |
| UniRef90-UPI0004752F86 | GRVEMY L S GLL L E T |
| UniRef90-UPI0002F984F1 | HLT L R V Q W Q |
| UniRef90_F6B2A4 |  |
| UniRef90-D9I6C4 |  |
| UniRef90-UPI00037747A7 | PGTARLV T GRRTDTAGP |
| UniRef90-Q6QIA0 | E TII RVVQ WRLLA D GVI R E T EV |
| UniRef90_H8ZN72 | N NK】NITVEYQIVGLPIVES |
| UniRef90_S3HF70 | D S TLE I EII S Y VRI D T G ERR |
| UniRef90_E3SKD2 | RNT F DVTVVEYRIVG |
| UniRef90-A0A009P5N0 |  |



| UniRef90 A8T9K2 |  |
| :---: | :---: |
| UniRefo-A8TMK2 |  |
| UniRet90-N9LPL1 | PCNEDTQVLLMSTAATSLTRFEPRIKISQI RVNQSA |
| UniRef90- H 6 Bl 140 |  |
| UniRef90-E5EYW | NPLVADTIERNIISAVRTYEPRILQLQVD |
| UniRef90-C6C. | DAPQNAVTRLQLMSAAVITL |
| UniRefofo-b7WUI5 | DQPMTPANTLRLQAATAQA |
| UniRef90_C1DBK2 | PANARLRMQLMAAAHMALTR |
| UniRef90-E5ARQ: |  |
| UniRef90-G7LLQ2 | DD RAVPHVVREAVEAI KRWEPRCKLLAV |
| UniRef90-T0 | R |
| UniRef90-W0HJV5 |  |
| UniRef90 A0A023W5U |  |
| UniRef90-E3SQX7 | PLDAFTADSIKDEINTINQYEPR |
| UniRef90-Q5GQU1 | FEPVDAATAARTGTNLRDTLLNFEPRDSVTELEVIANFDE |
| iRef90-E9XFZ2 |  |
| niRef90-U3T |  |
| UniRef90-AAAO | QRNVLAVYSAAA ${ }^{\text {a }}$ A ARWEPRFRMRGG |
| UniRef90 U3B4D5 | ( ${ }^{\text {a }}$ |
| UniRef90 E3SNK6 | DAFTADAVAEEI RTTINQYEPRVKLTKVNVTPITF E |
| UniRef90-E5FIN8 | - |
| UniRef90-LoLK75 | Y |
| iRef90_R6PM |  |
| H8 | PFIIDTU Q E |
| D5J | NPLTAESIRTS |
| G9 | DWPVDRARPYVREAV DA RQWEKRCQVIR EPVTDGEY |
|  | DQPLNGVTVMRIYAAVAYRLARWEPRIVLSSSV |
| UniRef90-V4V9Q6 | RVVPHLVREAV DAI RQWEPRVTVQQV L |
| UniRef90-F4 | DKPVNQALLLQLSAVCVSALRRWEPRIDIERFMV RVE |
| UniRef90 O6 |  |
|  |  |
| UniRef90-C7BVC | FEPDDYASAAIIKTEITSVLNAYEPRTAVNDVVCIPDDMN |
| UniRef90-E2CJU0 | DRPITPSLDMDIQMEVIDAIERQEPRLGVERVLVDYDPD |
| A4 |  |
|  |  |
|  |  |
| UniRef90 A0A01 | DQPFDIDAVPNMVRAEIFVALDKWEKRVIVQEVQUSGTA |
| UniRet90-K5CUB9 | R |
| UniRef90-F4HC91 | R |
| UniRef90_HOFAR8 | VVQAALQWLGR |
| UniRef90-K9V | PNNSELAVAVQFLVVGGALEQ |
|  | NTEKS A |
| iRef90-BoUTN3 | Kalmbqlatasvialk k |
| UniRef90 AO |  |
| UniRe |  |
| UniRef90-G2 | SLQQWLLG E |
| UniRef90-UPI00045E926A |  |
| UniRef90-S6G | $\begin{aligned} & A \mid V \cap R \\ & A \end{aligned}$ |
| UniRef90-K8QZM0 | A WEPR TVTKVAVEAVDGG |
| UniRef90-R7JS48 | RLDVTRISASRNAA |
| UniRef90-R7MHQ7 | DYPVNDAKANIIRET ${ }^{\text {d }}$ DAISMWETRVQVNSVLICDVECSN |
|  |  |
|  |  |
| UniRef90-C5AGB7 | - |
| ef90_- P1000465 |  |
| UniRef90-R0G526 |  |
| UniRet90-N8QB75 |  |
| ef9 |  |
|  | D |
| UniRef90-UPIOOOO3662491 |  |
| UniRef90-SsSiws |  |
| UniRef90_UP1000262 | (l) |
| UniRef90-E1A1D6 | NTTPLVIDTVRRNIQTAI RNFEPRVYNLQVDSTGN YD |
| et9 |  |
| UniRet90-Q4QK | DRPISHTLLLQLAACAVTAI NRWEPRVQITQFKPELVEGG |
| UniRef90-UP100036BABB2 | DRPLNGKTRLQLDAATADALRTWEPRITVAGMNLADSTTR |
| UniRef90-FJSVK | DTPTNGAAVLQLYAAAATALMLWERRLRVRSLSANVNASR |
| UniRef90-D5GV29 | FEMIDDHITTNSMQTEITRCLKVYEPRIVVQSVDIVSQPEF |
| UniRef90-L1NZA9 |  |
| Ref90-A0 | DADQLTVEPDP 【 |
|  |  |
|  |  |
| UniRef90-F2NI29 | FAPNDPTLATLTQVTVYQALTRWLG SVIEVGAVEVQAL |
| UniRee90 UPIOOO3710D67 |  |
| UniRef90-H8L2K0 | DLPMNEGWKSAV |
|  |  |
| UniRef90-R6J547 | DNPTNGELIANTYSDCVTALYNFEPEFEVVSVTVVS |
| UniRef90_E6RWA9 |  |
| L0GUF9 |  |


| UniRef90 A8T9K2 | $\text { A S } L L K\|V\| R\|L\| D Y^{90} Q\|L\| R D S E Q V Y{ }^{100}$ |
| :---: | :---: |
| UniRef90_N3TRB0 | GHAGVTL S G TVM M T M Q NVEL T $\square$ T L |
| UniRef90-N9LPL1 | PGKWDFFILGRILPTGEPFSENF |
| UniRef90-H6BI40 | N NKI NVTVEYRVI G |
| UniRef90-E5EYW4 | DNAI IVEVRFTILDNPD |
| UniRef90-C6C5D7 | GAVAAELSGVITATMQAAS |
| UniRef90-B7WUI5 | R A VLQLE |
| UniRef90-C1DBK2 | RWTCDLSVEY |
| UniRef90-E5ARQ5 |  |
| UniRef90_Q58LM0 | A NAFNVTI DYVIV GQPLVETVSFVL |
| UniRef90-G7LLQ2 | M T L RVS W |
| UniRef90-TOHBX9 | SAVVVLDTRHTGTASNARSRLLVPVSL |
| UniRef90_W0HJV5 | GAVKVELA GII T E T L Q P A |
| UniRef90_A0A023W5U8 | DNSVIVTI RFSILDNPDTL |
| UniRef90-E3SQX7 | GNKLNVTIEYRIVG |
| UniRef90-N6YEB0 | D A RLAVTVQYVVRRDESRQSATF |
| UniRef90_Q5GQU1 |  |
| UniRef90_E9XFZ2 |  |
| UniRef90_U3TXD0 |  |
| UniRef90-A0A021X9K4 | GLAALAI Y GTYYPRG |
| UniRef90-N1GR42 | D GSMVVELTG LRNNGAP |
| UniRef90_U3B4D5 | DARLAVQVQYRILRSNQRREDSF |
| UniRef90-E3SNK6 | GNKLNVSLEYKIVG |
| UniRef90-E5FIN8 | D S S I V TVQ F S IVDDPDTL |
| UniRef90_L0LK75 | G S TLEI F G T Y Y PRG |
| UniRef90_R6PMR3 | I T V K I E WT L NES |
| UniRef90-H8ZMI3 |  |
| UniRef90-D5JFE2 | D NSVTVTI Y Y Sil id DPD |
| UniRef90-G9UVL5 | HMTLRVRWRVDS GAETSTEVV |
| UniRef90_E8YJ21 | A GTQMI DLE GYT T E S GDAVRTS】PL |
| UniRef90_UPI0002DCB69D | AVSVVLQ |
| UniRef90-V4V9Q6 | A S SITTLRVQWSVA |
| UniRef90-F4HB21 | Q NKVVAEL WAVLKGTQQ S LVASLVLRE |
| UniRef90_Q602Z9 | V TLAI T WRFRGVDSKS |
| UniRef90-N9CTC0 |  |
| UniRef90-B8G9A5 | EATLRVTVQYVVQRTQQRR |
| UniRef90_C7BVC1 | NGY DVELLY Y T I I G R D D D P $\backslash$ AVEFFLE |
| UniRef90-E2CJU0 | S G R L A V Q |
| UniRef90-A4YW46 | D A ALRVTVQYLVRRTQQRQSVQF |
| UniRef90_A7XFD8 | DNSIIVSI YFSVIDNPD |
| UniRef90-C4GGH2 | N G SLLAVQUQLS GSLN GNLQ NY! |
| UniRef90_A0A011P705 |  |
| UniRef90-B0U2L3 | TVTLLALTA H Y |
| UniRef90-K5CUB9 | A GCVVVD\T GTNTETGTQVS |
| UniRef90-F4HC91 | HFYFDI RWCLRDDVERQ |
| UniRef90-H0FAR8 | VLQVEVQYVLRQGQQRR |
| UniRef90-K9VX19 | ESKVEVTVQYVVRRNQQRQ |
| UniRef90-D6PHT9 | GHTFDVVI RYNI I G $\square$ D S PQQLS FVLQ |
| UniRef90-E5EPY0 | GNSVIVT! LFSILDNPDTL |
| UniRef90-B0UTN3 | KA QI TANMDFIRKKDNKKINF |
| UniRef90-A0A023SZ21 | HLT L R V Q WRAA D |
| UniRef90-UPI00035C4F58 | DAELWVTLSYVLRSTGAERKETF |
| UniRef90-Q0W3Z4 | P GAVILDVVVAPDGSTVPLNLVFPYFLE |
| UniRef90_G2J3F3 | DARLSVTVQYIVRRDRERQ |
| UniRef90-UPI00045E926A | QT TLRLD GTYLPRGHGDRTPATI |
| UniRef90-S6GUS5 |  |
| UniRef90-K8QZM0 | DGRAVAELTG\ $\quad$ T R SMQPA TVTMTLRESS |
| UniRef90-UPI000369F12E | DS HLLNAAVT WQ |
| UniRef90-R7JS48 | H T VFKI E GTVVGSAEQ $\square$ T $\square$ T |
| UniRef90-R7MHQ7 | 1 K L K V Q WTL N G S S T |
| UniRef90-V4NFX2 | ESKI TATLVARRTDTQKQFEL |
| UniRef90-K9RI08 | D S KLTVTIQY 1 VKR T Q E Q R |
| UniRef90_C5AGB7 | S G |
| UniRef90-UPIO004654844 |  |
| UniRef90_R0G526 | A |
| UniRef90-H0H830 | GVALLD $\mathrm{V}^{\text {P G T Y Y P R G }}$ |
| UniRef90-N8QB75 | NAW DVTLIGTY S Q Y N |
| UniRef90_C8NCA9 | DGK TEDSYTARTLDD |
| UniRef90-E5DRT9 | R NEYIVSIYYSLI T D |
| UniRef90-UPIO003662491 | QGFAVFNIKWTPIDSLVPQNMTY |
| UniRef90_S9SIW5 | ESTIEITVQYLVRRTQRQQ |
| UniRef90_UPI000262BAF1 | PGAALMTI I G D R T DANARTRLVLPLTL |
| UniRef90-B9NP78 | VFTMTLI GSYRPKA |
| UniRef90-E1A1D6 | N NELIVTIRFS\\|IDNPA |
| UniRef90-I3DCJ6 |  |
| UniRef90_Q4QK24 |  |
| UniRef90-UPI00036BABB2 | PGAAGПELD T $\square$ R T T G |
| UniRef90_F7SVK1 | PGAVVLNINGEADTGDR |
| UniRef90-J4KD63 | F HFSVKWCVA E DVAR Q |
| UniRef90-D5GV29 | NRVILSSINYNFTG |
| UniRef90_L1NZA9 | HLTMTVHWRVAD |
| UniRef90_A0A024HGE6 | A GRLLIA 1 G Y K GARLQ F A L Q L R L P L |
| UniRef90_A9KUP9 UniRef90_I4IAC0 |  |
| UniRef90-14IAC0 UniRef90- F2NI29 | D S KVT I LI E YAVLIS QERYRVK F ESTLAVTVRYVIKARMERRDIND |
| UniRef90_F2N129 UniRef90_UPI0003710D67 |  |
| UniRef90-H8L2K0 | $N \mathrm{GT}$ S F TVKGQYLGDN |
| UniRef90-Q64UY5 | RKRVDITVLATLNSTGAPCGFGYKLYMGP |
| UniRef90_R6J547 | RGRIILDLE G Q L L N G E |
| UniRef90-E6RWA9 | D NKLSITL |
| UniRef90-M4SLP2 | ENEI DIAAINYA |
| UniRef90_LoGUF9 | D S T L R V T I A Y AlVR R T G Q V Q T A T F |



UniRef90 L1LS59 UniRef90-K9EV20 UniRef90-A0A011ROJ5 UniRef90-R7UZ90 UniRef90_101A37 UniRef90-C8N768 UniRef90-F9S4C1 UniRef90-UPI000378238A UniRef90-W1L336 UniRet90-O65WH1 UniRef90-J4KTU3 UniRef90_UPIO003B78894 UniRef90-UPIO003604915 UniRef90-B3PD87 UniRef90-V6JL03 UniRef90-Z9JK38 UniRef90-D6TXD1 UniRef90-E8X5D8 UniRef90-UPI000371C1CF UniRef90-E3SIA7
UniRef90-F2BEV9
UniRef90-F2K1R6 UniRef90-H6U8KO
UniRef90 E4ZB45 UniRef90-UPI000362DC7F UniRef90-U1AZ14 UniRef90-V4JFZ4 UniRef90-Q10183 UniRef90-BOUK54 UniRef90-E8U112 UniRef90-E3XRO6 UniRef90-F9H462 UniRef90-UPIO00379B1CD UniRef90-UPIOOOO3450001 UniRef90-UPIO0035E3FF5 UniRef90- X 2 HB 68 UniRef90_UPIO002F4210F UniRef90-DolJ27 UniRef90-NoAM45 UniRef90-J5CMN8 UniRef90-V2YHEO UniRef90-C8PIJ6 UniRef90_UPIO001D2F3F2 UniRef90_M5JTA5
UniRef90 Dol948 UniRef90-A0A037UUA6 UniRef90_UPI0003FE7B24 UniRef90-C7PG65 UniRef90_UP10003625771 UniRef90-A0A023XMK4 UniRef90_UPIO002F4D770 UniRef90-G4CJE8 UniRef90-A4NHX9 UniRef90-E3SIY9
UniRef90 G2DJD9 UniRef90-UPIOOO36EDOF2 UniRef90-UPI000477F80A UniRef90-K5Z3N7 UniRef90-R5P4K2 UniRef90-F3PYM5 UniRef90_L8ME75 UniRef90-A1AQ07 UniRef90-B6JEF1
UniRef90-D1YVC0
 UniRef90-F6DTE8 UniRef90-BOP624 UniRef9-LPC21
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UniRef90-A9IUU5
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## DRPQWE

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FAAVSDAVVENTRSLVAT
GRLLVPKTVLLEITAALAT
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F E


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F A P A SEQMAATAQHLVVQGA
FEPNNSALARESRKRLTH S
F
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F E P N A P A $|$| $L$ | $K$ | $S$ |
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D GQLIPRRVVEIVRE
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T GKLALSI D FIYRPNGE I YS L

A GKLIPVVGVKI K D
ENRLNIRVKGTV $\square \mathrm{QSGENFDE} \mathrm{\square FLDFFGP}$ $D G 1 L K P R V V V Q 1$
DDKAKITI N AVVMVEND TPFNFSTLLY $\square$ S P
RHYITVQVFYEIVGQPRVEQLDF
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N NAlAI SVVFSVINRQELVSM

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D HA I I DS VK F F MRGS
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UniRef90－UPIOOO3AOE183 UniRef90－B1T4E9 UniRef90 ${ }^{-}$W4AKU3 UniRef90－B7RNM3 UniRef90－G8PLA9 niRef90 UPI000370A47B UniRef90－UPIo0035C83BF UniRef90－R9U2U6 UniRef90＿K4F7G4 UniRef90－M8T6W8 UniRef90－Н6хзм9 UniRef90－UPI000368B60E UniRef90＿FOT178 UniRef90－R9LVK5 UniRee90－UPI000469C759 UniRef90 R4JGS8

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TNRVDIFIHASLISTNERCCFHYELFMGP
EAHLLVTVGFTLAADNHTERNTY
EGRLKPVLRDRVKE
HKLVIIRVRAEUAASNRR
ERTVQAEVSWTFIGGEDQPSNLD
ERS｜TALLASWRFIDEDTPDNLV
NGRLLPIIKYR乌AEGGD
PGK II DDLSGRYLPDG
P पKMRFH SGNVEVDGSRFP $\square A F D A D \square S G G G$
R STVDVTLTVLPVG
Y Q QDm RLRYVQLetVEDLS LVF
RAGVTCR
Y VVELQLKYVILNSVETRRMVE
AGRVDLE KAVVVTIGEPLNLVDPVNGGGS
R TAQIFI KY SIINEDAE
HLKAKVVI
GSQVTLRVQWRVAAGVT QLTEV
GNTFKTSFTVSSITLEEAFEFVI
AGVIGFDLYLR
EGVLTPDVKVRLRD
QQLATVTI SATGVETEEPFRFTTQDHGG
A ARLDVDLA YRLRATGASDTLTV
DNELN【VKG IIKNS【IPFNFHTK LN $\square \mathrm{SP}$
P

GSAR SIVITYQVAGATSTVQAVF
VNRLD N SARLTATSEDITFRDSFFVSP
DATLYVD LYTLDATGE
SGVLKPTVRIAI KED
PLQLRFQVHVTVALGRDNAQTTMDLLN
RSTLELVVVRPLDQSEPLVVNUAVALEG
GGRAHDEVRLRLRSTEERDALVDD
PMNLLRFH1YGSDRVASNKDKLKLDLLL
VAKFADEVEFRPRA
Q tVELAYDRRRDLARRAVRVTF
EGKLAPKVRVRVNG

G G
LHVHVAYEIVG
PGRLLLVSGV
EARLITVSYLLA四ghrerhef
DGKLCPVVRFKL
EDLLSTVVHAQLESTDDPFVFNTLVY $\square$ SP
Y DYLT TV A GR
R－TARFYI YFVPDESQVAEND
HSKVRDALNAKMEETGERFSFSTELFGSP
RSLVVLVTV
RSR S $\|$ SLSMTKADDGET $\square$ S $\square$
DGKDPVVTVER
DEK
DKELN IVVKGSIMESLIPFNFHTKपNDSP
VLALRFQITARITDDD
HGRVDTFYSERFIPSDE

DSEALVTLTYVVSHTQQVVNQTI
N FSCTI NVTPINAEEQVSLV
EGILIPKVKVRNDDH
PLNLRFHITASLNSS
NGDLRLHITATVEFQNVRDVEFSGS
SNDLVVTVGYDLVGTGEKCGFNYTLY $\quad$ RG

EGVVVPRVKVVI
$P G V L V$
PGVLV
DERVR $\square G$ GKGVLISNDKPFHFSTY $\square Y$ VSP
PGALDPDVEVN】ID
NSSLSCEVSFQ
NGTLAVR
KKKVMIYVKGF $\square K E T N N P Y E Y R T H \square F \square A P$ R LRPRVEVE
DNVLIVSIYFSUVDNPD
DSTSRIQVTFQENRTGETHTEDF
AGGVDVALAYSRRE
TLTLRTHVTHSTD

SGTLVVRLAFRRRTDRRPRNL
GEUVPQTVNGLLISNDKPFYFNTY $\quad$ YY $\square S P$
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UniRef90_ITMN2 UniRef90-Q0FZ01 UniRef90-W4BN64 UniRef90-A6EIG3
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UniRef90_F4GSE7 UniRef90-LOLAK7 UniRef90-S7IXV3 UniRef90_UPIO002DB6722 UniRef90- R9CJ66 UniRef90-UPIO003FADEBC UniRef90-10IRP9
UniRef90-L1PSI2
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UniRef90-J2EQK3
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UniRef90_L5MKK0 UniRef90-A0A024B0Z3 UniRef90-J4KTH6 UniRef90-M4QS13 UniRef90-I4N1T0 UniRef90-X5R009 UniRef90_L7TL95 UniRef90-R6J800 UniRef90-UPIO00472E9A4 UniRef90 LTUUDD2 UniRef90_K1MOE6
UniRef90_WOF876 UniRef90-UPI00046EC1B3 UniRef90_UPIo003674C28 UniRef90-G4KQ69 UniRef90-R5BHC5 UniRef90_H1PWB8 UniRef90-D4K5G7
UniRef90 W 5 RAQ UniRef90-UPI00039FCF48 UniRef90 A91N60 UniRef90-UPIO00470C6BB UniRef90-G9J1Z4 UniRef90-A6GIS9 UniRef90-G2ZT34 UniRef90-W7CWX1 UniRet90-C6E6P6 UniRef90-F3VWN7
UniRef90
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UniRef90 Q4Z9D2 UniRef90-W0BUS9 UniRef90-G7H9R7 UniRef90-UPI0002DD2EF9 UniRef90_U3A8K1 UniRef90_E6X1N5 UniRet90_O31HT9 UniRef90-UPIIOOO376CF66 UniRef90- UPIO0047068A3 UniRet90_W5IUD3 UniRef90-UPIOOO3EE13B1 UniRef90-A3Y883 UniRef90_18QJY4 UniRef90-A0A014PYG1 UniRet90_F4YA67 UniRef90-B5FD88 UniRef90-A8ZRG2
UniRef90
B1KGT5 UniRef90-K8WGG0 UniRef90_O5FRLO
UniRef90_R7Z8B8

 ESTRSHVSQLLSTRQGAALIDCDLG LAPDLN GLANLRTALQRRLKTPLGRHPFHPGYGSLLYTHV
ASIKRNIGLLNRVGESQSCPELG


| UniRef90_UPI00035FE005 |
| :---: |
| UniRef90_S2ZJQ6 |
| UniRef90 I1TQN2 |
| UniRef90_Q0FZ01 |
| UniRef90_W4BN64 |
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| UniRef90 N6X865 |
| UniRef90-S3J9M5 |
| UniRef90 S9UAA0 |
| UniRef90_F4GSE7 |
| UniRef90-L0LAK7 |
| UniRef90 S7IXV3 |
| UniRef90_UPI0002DB6722 |
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| UniRef90-L1PSI2 |
| UniRef90_UPI00036F9D93 |
| UniRef90 J2EQK3 |
| UniRef90_S9T8T7 |
| UniRef90-H6WG16 |
| UniRef90 X2GTN4 |
| UniRef90_D7AEH8 |
| UniRef90 L5MKK0 |
| UniRef90-A0A024B0Z3 |
| UniRef90_J4KTH6 |
| UniRef90-M4QS13 |
| UniRef90 ${ }^{-14 N 1 T 0}$ |

50
60
DD D
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R|I D T|V|T|V|NA $\quad$ E V VD


G K GlV S

 D SPA


A
A GS FSTGGTT
Q V D M S
DK P I L Q A E A I L S S E I F R A L
F
D
A
F
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 UniRef90_UPI000472E9A4 UniRef90-L7TL95 UniRef90_R6J8Q0 UniRef90_L7UDD2 UniRef90_K1M0E6

UniRef90-W0F876 UniRef90_UPI00046EC1B3 UniRef90_UPI0003674C28 UniRef90_G4KQ69 UniRef90_R5BHC5 UniRef90_H1PWB8 UniRef90_D4K5G7
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UniRef90_R7Z8B8

|  | 90100110 |
| :---: | :---: |
| UniRef90_UPI00035FE005 | M T A $\mid$ R\|V|l| S S T A A G T E S Q |
| UniRef90-S2ZJQ6 | $G K L I P I L E V R \\| V G T$ |
| UniRef90-I1TQN2 |  |
| UniRef90 Q0FZ01 |  |
| UniRef90-W4BN64 | R QLIVSFTATGT |
| UniRef90-A6EIG3 |  |
| UniRef90_J0UY07 | $V L S L S F S L E G L V$ S |
| UniRef90-B2ZYIO | PGY R VQi A F Th NLR SNRQ VVNFNLIP |
| UniRef90_UPI0003096C49 | S LR L A F S L Q G WLEVEEG $\square$ K R QVS F T A HLDDGS G |
| UniRef90_UPI0003B4D215 | R L WPVVQI |
| UniRef90-N6X865 | R STVVDVLL R V K P V ${ }^{\text {d }}$ |
| UniRef90_S3J9M5 | R SVLQV T I A V K PV G |
| UniRef90_S9UAA0 | NGKAFPLVD Y N V V E E G |
| UniRef90-F4GSE7 | V L S L A F Sida G TV |
| UniRef90 LOLAK7 |  |
| UniRef90-S7IXV3 |  |
| UniRef90_UPI0002DB6722 | $P \mathrm{~L}$ NLRFQI NASVNLGAMHRNVQ】DLLL |
| UniRef90_R9CJ66 |  |
| UniRef90_UPI0003FADEBC | STRLLQFRVHARLALDGRRDETTLDLL L |
| UniRef90-IOIRP9 | LS S L R I EI S GEI LVNDQRTLI QIP A F V R A |
| UniRef90-L1PSI2 | E E Q V K L I K T KL K S N G K Y C T F Q Y Q L Y L P |
| UniRef90_UPI00036F9D93 | PGKLE F TI T AVIT A T N EP |
| UniRef90-J2EQK3 | QLRLLS F SIID ALLEVT GVKR QVS F |
| UniRef90 S9T8T7 |  |
| UniRef90-H6WG16 | G T A V L L T Y S PE G S E Q |
| UniRef90-X2GTN4 | Q GRLLT P KVQVS ${ }^{\text {L }}$ NES |
| UniRef90-D7AEH8 | V L A L R F A I S ARLGSDG |
| UniRef90-L5MKK0 | R T I El R FQAT D T GEP |
| UniRef90-A0A024B0Z3 | S N T LTVEEMS $\square$ Y T $\square$ T T E E A F T F A V |
| UniRef90_J4KTH6 | N G S I CEIISYT |
| UniRef90-M4QS13 | ENTFNVTVIFD $\mathrm{F}^{\text {I }} \mathrm{G}$ |
| UniRef90-14N1T0 |  |
| UniRef90-X5R009 |  |
| UniRef90_L7TL95 | Y QMN\\|VLQYVVLD TLEEELT\|VF |
| UniRef90_R6J8Q0 | E GVLRAKVKVVINET |
| UniRef90_UPI000472E9A4 | E GRV D $\square \mathrm{K}$ I K G I I R Q T N EP F S Y LE R F Y $\square$ A P |
| UniRef90-L7UDD2 | $P \mathrm{LV}$ L R FEI T A QPA GRGVRGMLRFRTQMSPGG |
| UniRef90-K1M0E6 | HTKVRVAI NAKLLEATGENFSFATELFLLS P |
| UniRef90-W0F876 | K R K L E FVI T A VI S A T N EPDT Y R D GFFid P |
| UniRef90_UPI00046EC1B3 | SRKI T ILVQGTIRKTNEAFSHTEHDYFSP |
| UniRef90_UPI0003674C28 | D GRL Y PVVTLEILKE |
| UniRef90_G4KQ69 | D L NVEI EV N GT |
| UniRef90-R5BHC5 | D G I L R PVL E VA I D G S |
| UniRef90-H1PWB8 | T GKYK I S V K GVIIT D |
| UniRef90-D4K5G7 | Q G V L I P K V |
| UniRef90 W5RAQ7 |  |
| UniRef90_UPI00039FCF48 | $P L N L S F A L E G M V D L D G Q R R P V S F T A R L N G S G$ |
| UniRef90_A9IN60 | $V \mathrm{~L}$ S L A F S I T G M I A V D D Q |
| UniRef90_UPI000470C6BB | K K R V D $\square \mathrm{H}$ L F G T $\square$ Y K T GEA F N F H T N L F LS P |
| UniRef90_G9J1Z4 |  |
| UniRef90-A6GIS9 | P S AVDV |
| UniRef90_G2ZT34 | G G GFAVS $\quad$ K Y H D A A T G Q P VN L N F |
| UniRef90_W7CWX1 | R N L R I D I |
| UniRef90_C6E6P6 | ERGFSAEAVWEFMDEDHQLNLV |
| UniRef90-F3VWN7 | GRA GVT L S G TVMQ T M Q NVELTTITL |
| UniRef90-T0C511 |  |
| UniRef90-UPI00036AEC82 | LA K V L L D |
| UniRef90-D4CBI7 | QLQAEVVIT |
| UniRef90-D6KLH6 | NGALLIPKVMVTV |
| UniRef90-Q58MP5 |  |
| UniRef90-Q0ACN3 | PAALRFKL HAVLTDRGDQRT |
| UniRef90_Q92B40 | R K L F V S I |
| UniRef90_M4K476 | $P \mathrm{LVL} A \mathrm{FS}$ S A A M L V ID GEARAVAFS A H L G G G G |
| UniRef90_Q2C8R0 | PLNI F F HI T A CI N S |
| UniRef90_UPI0004699F45 | GGRLVP II R F ILA E |
| UniRef90-A0A031ME81 |  |
| UniRef90_W8YNL9 | $P$ QKL VP LI R L Q FIGE G E |
| UniRef90-UPI000401BF17 | P LAL NFH H E AQLSSDGERRKVS F |
| UniRef90_V9QZH7 | $P L V L A F A I E A T L L A N G \square R Q P V V F S A L L G G D G G$ |
| UniRef90-L7UCS9 | $P G A, V D V R A R I V A T G D A V E L G L A L D L G G$ |
| UniRef90_Q4Z9D2 |  |
| UniRef90-W0BUS9 | S G W L L T $\square$ D VYQ S S E P VS F T H P VNV I |
| UniRef90-G7H9R7 | GVLVSFEMTCHLK |
| UniRef90_UPI0002DD2EF9 | $P L$ NL R F Q $\quad$ VA SV |
| UniRef90_U3A8K1 | $P L Q L$ GFA I R G QVS H N G G N VP M S $\square$ DVY M G |
| UniRef90_E6X1N5 | K WSLLKVWVE |
| UniRef90_Q31HT9 |  |
| UniRef90-UPI000376CF66 | $\square \mathrm{NS} \mathrm{D} \mathrm{Q} \mathrm{V}$ |
| UniRef90-UPI00047068A3 |  |
| UniRef90-W5IUD3 | LPLLQ PR I H CVLPVNN |
| UniRef90_UPI0003EE13B1 |  |
| UniRef90_A3Y883 | $P L N L R F Q \square E A K \square$ |
| UniRef90-I8QJY4 | $P \mathrm{GTLLGFTAlV} \mathrm{C}$ PLLD GEP |
| UniRef90-Q5ULI2 |  |
| UniRef90-A0A014PYG1 | D GSMVVELTGGQRNDGSPLAMSV |
| UniRef90_F4YA67 | NS V Y E I K Y R VR D T |
| UniRef90_B5FD88 |  |
| UniRef90-A8ZRG2 | GELLTVA Y TVTP |
| UniRef90-B1KGT5 | PFSLR F H I H GKl |
| UniRef90_K8WGG0 | S LSLLQ F Sil N A CIIDLD N Q Q Q Li E F N M Y L |
| UniRef90_Q5FRL0 | G GVCRCDVS YVD A A S G Q Q SLS F S Y |




|  | QGTTGTKTSCOTLATGQ ${ }^{90}$ SEVFDF 110 |
| :---: | :---: |
| UniRef90－A0AO37YM48 | PLDMTFHTTA WVTFNETHEVLEF |
| UniRef90－G1UXN6 | DGQLRPVVTFKLRENNHAL |
| UniRef90－UPIIOOO2F9E15A | P LELHERLDCQVQVNNHAEQLQपELLVNG |
| UniRef90 L8MBV8 |  |
| UniRei90＇A0AO23D1J8 | GGVVSCAISYVDAATQEMQTL |
| UniRefol M M P6 | RLAVKFQ FAKLA |
| UniRef90－S6IR | FRLAFALNGLLEVAGVKRQVSFSAR的AS |
| UniRet90－H3SHJ2 |  |
| UniRet90－E1TH69 |  |
| iRef90＿UP10003 |  |
| UniRet90－V6JgK2 | R D |
| UniRef90－R8UXE5 | P Lextrati VAQVSFHD |
| UniRef90－A0A038GD37 | PQRLSTRLDGILR NDRQQWPVAFILHTS |
| iRet90＿B9D1U1 | DNILDLR GY＇AKG |
|  |  |
| UniRef90－C4L827 | LLALRFRITGTMQKDGLVAPDTVG |
| UniRef90－L4JKM8 | PGELHYVIDAELK |
| UniRei90－UPI00029AA11F | D SKI CVTIV RYRL |
| UniRef90－B6EJ76 |  |
| UniReef90－UPIO0028966F | LVLAFS：E |
| UniRef90＿A0A010SSS2 | NDTLSVT SYT |
| UniRee90－UPI000478E5 | PLEMAFQVTAHVR |
| UniRef90－UP100037B8C4E | PRREVTVNGQ RKTLETFRFQTGLF $\square$ GP |
| UniRef90－FISM10 | V |
| UniRef90－N1ZEV8 | EKKPSLRAKYCYENTDNKVETVEKFAV |
| UniRet90－K4Z9V1 | M Y I SFSA |
| UniRef90－U0FYY8 | PLQLSFG\｜TGEVSHNGGQVPMSINVFMG |
| UniRef90 UPIO00368A467 UniRef90 B5EUK2 | CGR GPQ RIR |
| UniRei90－11YRX7 | EDRVRVWVNGVMVRNDQQFNFNTHLYMSP |
| UniRef90－UPIO003478B3E | VLTLRVRV |
| UniRef90－U02 | $P \mathrm{GWLHLQ}$ |
| UniRet90＿E1V3X6 | Q |
| UniRef90－Q5FN84 | GLFRCDVSTDS |
| UniReego－＇AOAO17T4E9 | SMVLEFESAQUQPDGRRQQL |
| UniRef90－V1GLP3 | D A T T T A V R |
| UniRef90＿AOKJB7 | LEMSFQVTAHVR |
| UniRet90＿S5KJ39 | R KLHVSIK K |
| UniRet90＿E2QQS9 | H |
| UniRef90 WOHHY | DLRL H DVV |
| UniRef90－C1DM93 | RQRLRVRLNGVLRG |
| UniRef90－UP1000465A4C7 | P LEMAFRVTA HVR |
| UniRef90－F9TP83 | PLNTRFSVAATI |
| UniRef90－Q6TKU9 | PVELCFHIVATVDVSETRG VFEFD |
| UniRef90－G1USG4 | TGTLMPR1DYELRD |
| UniRe90－V8DEH3 |  |
| UniRef90－C3JB66 | RKRVDTYLQATIVSSGERLNFHHRDY的GP |
| UniRef90＿C0XG27 | QLKMY T E |
| UniRef90＿UP1000248 | RVDIKVSGT |
| UniRef90 B6VM86 |  |
| UniRee90－UPIO00375BAEF | EAG】TAEAAWQF】DEDHEYNपTF |
| UniRef90 D3PTC1 | D D |
| UniRef90－D3P055 | LSt RFQlisa RLR |
| UniRef90－G8MHV9 | GLQVSFEMICHLKRA |
| UniRet90－W2DD39 | PLELLFRLLCQVR |
| UniRet90 ${ }^{\text {U2FOH1 }}$ | RLNFK |
| UniRef90－C4WG29 | RFVFLLDGIFYPRG |
|  | KRVL KFKA AWNG |
| UniRef90－14HNG7 | R NVL LTT $\frac{1}{\text { L LQPVGES }}$ |
| UniRef90－X2HAU9 | DFIIAYELLCQ |
| UniRet90－R5HOE8 | SGVISPIVEV |
| UniRee90 UPIO0026C7B67 | KQUITCNISAQFNKTFNLLNVYF |
| UniRef90－R5IDA4 | A PPVVEVN |
| UniRef90－A8U3X1 | P LTLAYRURGELVVAESENSDTF |
| UniRef90－LORD77 | $P$ PS $\square$ QFK |
| UniRef90－E1YEL6 |  |
| UniRef90 UPI000474C52F | PGQLLRYAIDDAEL |
|  |  |
| UniRef90－D4BJW9 |  |
| UniRee90－4E952 |  |
| UniRet90 ${ }^{\text {O21／7P5 }}$ | R TFTAT■AATG |
| UniRef90－Q11 | PFMLAFKपSARVRVEDREQPVVFETVLNP |
| UniRefo－UniRefo－E9Z233 | P |

UniRef90 UPIO0036A996E UniRef90_G6XMB9
UniRef90-B1JAL8
UniRef90 Q30VW2
UniRef90_F0ECZ6 UniRef90-G1URE9 UniRef90_M7C9X0 UniRef90 ${ }^{-}$X7HK63 UniRef90_UPI0004679CB7 UniRef90_UPI0004674D08 UniRef90_UPI00046680F4 UniRef90_S0ZAY7 UniRef90_K5ZHM7
UniRef90_S5M8F4
UniRef90_A6GCE4
UniRef90_K4Z9C5
UniRef90_U2NX24
UniRef90 E1TC39
UniRef90 UPI000349E93D UniRef90_F4XF94
UniRef90_D6SPQ1
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UniRef90_UPIO0047C6B3E UniRef90_G8PG00 UniRef90_A8AST6 UniRef90_C6M5G4 UniRef90_F9RUJ8
UniRef90_W5Y9D9 UniRef90-W6WPJ5 UniRef90_W9B1A8 UniRef90_UPI00030A93C9 UniRef90_J3DJG1
UniRef90_F7MEQ2
UniRef90_L1M5M3
UniRef90_T7RB12
UniRef90_U2S7C1 UniRef90_R5BL55
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UniRef90_B1HTM4
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1 VIT A G|L 10 A 20
T A GILD NF A Q A L |RHR|L|FTPDDSYDPHPDYGCADTAM|L $L E L V S D V E Q V R Q G L L R R L L T D P G Q Y$ I WQP DYGAGLAA MV $T D G A D T G V Q D I W L A I Y T Y$ V $G T L F Y D T E F G S R$ AEK】AA I KRHL
$G \square S W A S G N D$ Q S $R$ V 1 D MVD GL K K Q S V Y C I L N T E $\square D$ D S A N A VY L R L MT P L G S WWA AP SL G S L L H T L Q

 SI K Q HL NEVLNSRPGAC QSAA GL SVQANI RRILNTRAGAL $G \boxtimes Q S$

A S QVA
$G \square A$

| $L$ | $D$ | $G$ | $A$ |
| :--- | :--- | :--- | :--- |
| $S$ | $Q$ |  |  |
| $T$ | $E$ | $R$ | $V^{Q}$ |
| $R$ |  |  |  | CI AV H



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GRA
$\mathrm{G} L \mathrm{~A} V \mathrm{~V} G \mathrm{D}$
Q E


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

$V R S V L D N I Q R I L N S R S G S L K H L P D Y G \square P D L S M V$


$\square$ D S V V H T E

VA L L ${ }^{\text {L }}$


$K A$

VE SI K R H LVRLLNAHPGNSSSAP DLG LLDDFN

EEKLRQELSMLLS

M R A L LD

 AT $\square S G V D L I V E S L L R R$ L $N$

$E R \square A$ LA NACYLRLS

S LA E

A S L A E $S V K R Q L E R V L N T R C G S C R S A P D L G$
 LVWIKEEE
$\square R$ D I K N N V
$S L E V V N E E A$ SI A N NLL S R I F $\begin{array}{lllll}S & L & L & N \\ \text { A } & \text { S } & A & A & H\end{array}$ GK ML
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LA |  | $L$ | $K$ | $N$ | $L$ | $H$ | $T$ | $L$ | $F$ | $A$ |
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| $S$ | $V$ | $R$ | $D$ | $N$ | $I$ | $Q$ | $R$ | $I$ | $L$ |
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V

V Q

DLLDSVHAELGRLFNTRRGPRPSVIDYGIADWSAL


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 GHATSSD LLKQVSADIRRTI QRFEPRVHVRALKAMPACHA DLTLDSRALILLETCRAVKKCIQRYEPRLTVDVEVS DATATADFRASGETSI RECILRYEPRISDVAVEGVDDEHN D N Y

 REKDTPRVRKLARQYAEQALQPMLDDGRADSIDDTAERYQ $G Q P$ AA LSLMAGLVRAQMQREP QVMQSTVSMSMAD GTVRTDEWRVKMS DEVART MAK KDARVLDVANIKVEPD HDF PAAAQIMQRSIRATVAKYEPRLRNVSVRLVPNE

 RDGKPSARSAQARQYTVQALES EENLTVTDVQWTQLEGS MDDMNYHLSAKMAEQVKENVERYEPRLRIVSVEPTESEGN DAASGQELRNQDCQEI REVVALYEPRVQVLDVRADTTSEQ G GENLGAEDVVMRAYSAMVTAVVSQEPAVRFKQVAPQLVDGR GQPVREGDI QADILAQLQQESAVDQSQATVAGTDQG A GSFVTGETSQMDENITRMVARYEPRLKSPRIVMGEDAQE
 A GGLTAGSTGDIEEEI RRMVLKYEPRIKSPRVVMSRESTS GK LASEE EMRNELTRALLQEER EESVDDVTF IVDRA

 YKNL PSSAHDL RYFMRKTLLKYEPRLRNLDI HLTESKDN
 GARMLD A AS A R A L VLQQMQA

 DWTAVQRLRARQAREVRAAVEHFEPRAGQLAEVMEVEPDPGN Y R H L P A S A H KL Q N E I E E A T L L Q Y E P R $\quad$ L Q S I E I E I I N E P E D A T L T H D L L
 $D Y P Q E N A Q V L L V A E Y V R K T B R Y E P R A K V A R V V E T G G K A Q$

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| UniRef90_B1JAL8 | P GHLDYALDVVIKGGG |
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| UniRef90_X7HK63 |  |
| UniRef90_UPI0004679CB7 | G N K V V VD |
| UniRef90_UPI0004674D08 | P L C F F S I D A L L D T Q GRRMNLS V |
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| UniRef90-S0ZAY7 | P G WLL L L L T V T S A GV S P Q T WK Y P |
| UniRef90 K5ZHM7 | D GTVNATVS YVDAATGQTASLS F |
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| UniRef90-A6GCE4 | $P L I L T F E \ A G R L V G D R R R$ |
| UniRef90-K4Z9C5 | SGRMEPLVKFVL A E |
| UniRef90_U2NX24 | P L L L S F Hi SA Q V |
| UniRef90_E1TC39 | GLLVS F IMICHLR R S G |
| UniRef90_UPI000349E93D | $P L V L A F V I D A L L T F N G T T Q P V A F R A Q L G E A G$ |
| UniRef90_F4XF94 | $R$ GHL Q V Y L EWQ |
| UniRef90-D6SPQ1 | P L H S FVLVCELLRDKS Q K L K V VF |
| UniRef90_V5T233 | P L GL C F RL HCQV |
| UniRef90-UPI000462E96E | PLQL S F QV N A T L |
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| UniRef90-UPI0003D33F97 | S G Q Y L CVIQ Y VDK Q T Q T V Q L S F |
| UniRef90_S2JVU3 | V L S L S F SLLS GVV |
| UniRef90_W0MUK5 |  |
| UniRef90_UPI000471E6D2 | $P \square M \square R F N \square V A T V N S$ |
| UniRef90-J2KFW0 | VLS I R F A L E G R L |
| UniRef90_UPI0002D9319D | R LLTVT F K A T G T N |
| UniRef90_UPI00046EE1CC | $D N T F T V Q V R F C F K G N D Q G Y S M T T S L$ |
| UniRef90_U2SGA9 | $P G A V D V R A H \quad V L A V T G D A V E L G L A L D L G$ |
| UniRef90-W0H4A4 | P R QLD I R L S G TLL R H D R Q |
| UniRef90-UPI00047C6B3E |  |
| UniRef90 G8PG00 | P L E L R F |
| UniRef90-A8AST6 | E GKFL VTITE |
| UniRef90-C6M5G4 | $\square \mathrm{MVLCY}$ CLECEDE NVGAVVID T Y F MPEGT |
| UniRef90-F9RUJ8 | PLMMLRFNI VAEI N S |
| UniRef90-W5Y9D9 | T GA YLLA $\downarrow$ G Y T D A A T G TVQELT |
| UniRef90-W6WPJ5 |  |
| UniRef90-W9B1A8 | P L N TF F H TT A C T N S A LHESSVR\DLLL |
| UniRef90_UPI00030A93C9 | $P L A L S F T I D A A L I V D G V L Q S V V F$ |
| UniRef90-J3DJG1 | $P$ QQLC $\quad$ RLL GELRSGQQ |
| UniRef90-F7MEQ2 | A K I K I V V I G DVVK |
| UniRef90-L1M5M3 | PRRLLILLVSGMLLRQGGQQWPVAFVLD K Q D S A |
| UniRef90-T7RB12 |  |
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| UniRef90-R5BL55 | HLR P I L T I |
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| UniRef90_S5NYE9 | R S I T L K L T G NVGET |
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| UniRef90_UPI0003FA789B | VLMFMFSI K A F L EVDGANKEVVF |
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| UniRef90_C7HAR4 | DA VVLHCSFRFAEEDERREL |
| UniRef90_U2STW9 | S GRPCLVVHCRLRASREPLSIT |
| UniRef90-E6XAM8 | S E Y L N ITTVT G TLL L T N EPYY F S G D Y Y L A P |
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| UniRef90-K8GN81 | F TDI DVVI N Y R I L S E Q E LR A L S $\square$ T L |
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| UniRef90-Q0F1S5 |  |
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| UniRef90_UPI000467C545 | ALS L A F R IT G |
| UniRef90-UPI00046CF19C | V P G M T F RVVAS V R |
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| UniRef90_C5EX11 | P WR LT F LLR F TMRDDNQECNLE\\| I F |
| UniRef90_H7E581 | $P$ L E L R F Hiva Y V |
| UniRef90_UPI0004667E33 | $P Q Q L G \cap R L L G V L R G D P$ |
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| UniRef90_C9QIY8 | P L S LQ F R I T A Q NSSD |
| UniRef90_S9XWY6 | $P$ GEL R Y A I D VEL R G $\quad$ G |
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| UniRef90_G4KPI5 | A G KVVK V |
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| UniRef90-D8PEP7 | D A AL HFRII D A L L R LD P A P E P VT F D A A LQ LG T |
| UniRef90_L1M437 | P L G L C F R L HCQ। |
| UniRef90_C3WVQ9 | $\square$ A K M K I K I T G E V K D |
| UniRef90_J31143 | PQRMSI R L L E L R S G Q Q |
| UniRef90-B1HTM4 | G A KVQVSVNG |
| UniRef90-R9NRK0 | G WLL L L S I TVTS A G G DVLT F R H P |

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STEE $\begin{array}{r}11 \\ V C S G D \\ \hline\end{array}$

R SVLQ DI RLEEAIT QPGELFYDPEWGWG

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$T$ E R I
V S E E
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Sato



 MSMTDLTASIQREITRLLDSRDGGTVMEPDFG DIH VEEVLQNVSTIINTQUGTVPYARKLGVN SSLV STIN TDRGFE
 GLARAEGNDALLQRVWKLTLRRGSFPFLPDLGSRLYLL SVLDN: QRLLNTRAGTLAHLPDYGAPDMSRI
 ■ATVSGLENVKQQAYDRLLTALGESEMRPNFGSTHLSEVR DTLANAVYIRLMTPLGSWWADPSGGSKLHLL ID HLGNAVYVRLETPLGSWWGNPNLGSRLHELKK
 DGVEELAQAVRSLLTTPKGTALNEDELGMDMSFLV $\square A L V S G Q D$

T R $\square \mathrm{N}$
DS $\lfloor$ A NAVY $\square R \square M T P \square G S W W A D P T \square G S L L H T \square R$ SVMDNIRRILNSRAGTTDHLPDYGPDMSKLI SVQQNVQRILNTRAGALKHLTDYGLPDMTNI
MESVQDSHGRELRRLFNTRSPLSAEDYAQGSGMPDFV ELEHVLRNLEAVLNTKAGYGFFRRDFG LGEYT SVLDNMQRLLNCRAGTLSHLPDYGLPDMSKI
$\qquad$
AKGNGSPEQCVYKLLMTPLGSYYWAD
S पREAS
DLLT
GVAVVTG
METVSGQEELTQCLRTRLSNGLGAYDWA
IKVVQGLDAKKQSILLRLS $\square R R G S$
F QVSEEDQHVLDNLQRILNSRAGALAHLPDYGLPDMGQI, SVLDNMQRIVNCRAGTLAHLPDYGLPDMTKI HLGNAVYLRLQTPRGSWWADPSLGSRLHELA
VRGRE ELLQR LVSGLECFLQDILI RELVQRGEFFYDETWGWSLLDEM CDDVEALKQAI FLLLNTERYEHIYSRNYGVELNDLI TERURA!KRQLEWILNSRHGSSLSSP GGLGRDLN LANAVYVRLMTPLGTWWKDPNLGSRLHELR VSDGENLARALARRYITPRGALWYAPGYGLDLRRYL GVVLAD 1 KANIRRDLENLLNTRDYRQLSLVNYGIKDFSHV DDIVQSVCLRLGVHRGKYWADPNLGSRLYYLK LLMASEGESIKSNVSNLLNARSGEALSSPDLGMDFNDAK ITLVNDKYCLDQDIINRLKTAKGSHFRHPDYGDDLYKYL ALLAEGMEVLRQDLLARLVSPRGSHWAFPDEGSDLDDYV S GHNLQNINTRSGSCHGSPELG ADLN VVSAGTRSQQRVIRRLLTNPPPDYPLHPTYGAGLARYV



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N IKLD LVIDGEQKTT
D VLKILARFQFVGSEETQS
HLGGLK F Q I T G R
INRRISFA TATTAGLPQREAVSFDAVLQPSS
PLGLRFRLHCLVRDSPER
PGHLRYD I NAELKGVG
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AATLHFSLDALLV
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PGWVLLHID
$K T L V Q A S V K G E \| I D D$
NS I L LC E I R G Q
RHSLI AFAIE
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D G
NGTLVLH $\square R$ VQTAQAAFDYNHRDP
EDRYVGNYRATLQSTREQFEFVV
RCVVRMEDSGLLAD
I GLLKKVELY
F GTLRYALEAELHEDG
GAGLCFS
PGHLRYDI NAELKD I G
PGHLE YA LALQLKD
KGSLVLKI
PGWLLLLVTVMSSTNDSQTWKYP
$D G R C L L Q E V D B A S R R R L F K H P Q V G$



D T TTVHVSFSFQNTDRLYQL
A GRLDLNVT VIDGTG RAWSYPF
EGRI I Y I R T TLIK A T N GQVNLVFPFEME
P GMLL
PGWAILHDTVDIDAREKHSFNHPVRV
$P G H L E Y S L E V Q L R G$

KGWMLLH LVTSASGTPQTWKFP
FGTLRYALDVEL
HEVALVR $\square$ GAQARA
PGWLELAVE

PGHLEYGDDAELKE
PQRLG $\quad$ RRLA G HLR S
$P$ LT TL Y FLV K A Y V
HALLWI EI
AGHFVIGVD
PGTYLCTI TYSGRDGSDRQTFTF
D GKMV P Hi
TGACLLA SYTDARSGAVQEL

KKRMKVTVYF
PGVLLFEI RGTLWS $\quad$ PP HP LDEFV
PGHLEYSLDALLKSGQQ
A GKLRYGLDAELRG■G
NGRCLLHV
$R A R \triangle V A E L S$
EDVVA $\square R$ SS FRFVDSDQTVQL
$P G Q L E Y S L D L R L K S G E Q$



PLEELACQQQADVNSN
EAVLSTIKLVETVNYDSPTNLVVTL
MRTEVIKLIVETVNYDSPTNLVVTM

PLE L R F Hi VA RV
$P S T I S V Y$ RTLA GTGAPVT LS F
KNKVVIEI



[^1]UniRef90_W1A7F5 UniRef90-E6WE56 UniRef90-A6VUJ8 UniRef90_M9MUB7 UniRef90-A4JDE6 UniRef90-G9ZDG8 UniRef90 Y1IOG2
UniRef90-F2JVZ2
UniRef90-M4TJA8 UniRef90_UPI0002D2E07F

 $\frac{L}{K} V \operatorname{EVVRV}$
KGWLVLLVE VYDATGNVQHFQHP
RGWLLLLI
$P G E L R Y A I D A G L K G$
$S G V V S \square R \mid T G$
$P G E L R Y A I D A E L K G V G$
$R G R L R L D \| A A B V D A S G R S L N L I H E V R \square$

```
lupas_21
```

lupas_21
lupas_14
lupas_14
lupas_28
lupas_28
jnet
jnet
conf
conf
conf
conf
sol5
sol5
sol0
sol0
jhmm

```
jhmm
```




```
jpssm
```

```
jpssm
```


[^0]:    5

[^1]:    lupas 21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

