

## QUERY

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




 IVWGRLRGIAHAGSDGNSDCRIMALHMQPTQLRIADKVARA VMGWLRGLAHAGADGDETAMVTAFRLNPTQLRIAQYI GRA $V M G V L R G I A H A G A A G N E N A I I L A Y R L E P T Q L R I A D K I T R P$ VEGILRGDVHAGSTGNDKAIIIAALRLQPKILAQIANRISRA $\vee L G S L R G Y V H A G V R G N R K A V V A A Y F M Q P Q M L Q V G D V A T R A$ $V$ MGLLRGVVHAGSDGNKEALVAALGLNPTQLRIADIITRP $V W G R L R G V A H A G S E G N S E C R I M A L Q M Q P T Q L R I A D Y V A R A$ VMGAFRGVAHAGAMGKEDAVVAALRLEPSQLRIAGYITRA $V L G S L K G H A H A G V G G N D K A I I A A F S L Q P E L Q Q A N L M T R S$ $V M G S L R G V A H A G A N G N D K S C V A A F Y L D P T Q L R I A D F D T R A$

 I WGRLRGIAHAGAGGNRQCMIMADQMEPTQLRIANALARA MGSLRGVAHAGAGGDETATVAAFKLQPIQLRIANHITRA


 VWGRLRGDAHAGALGNRDCLI MALQMEPTQLARIA DAVARA $V$ FGELKGDCHAGVDGDSEASVMALRLMASQLRIADIVSRA
 $V L G R I R G Q V H A G U N G N T K A D I A A F S L E P E L L Q Q ~ G D I D T D S$ VWGRLRG\|AHAGQDGDTKAKIVALQLRPLQLRIADAVARG
 $V M G G Q L R G V V H A G A T G D E N A V V M A L K L A P T Q L R A G A H I T R P$

 ILGALKGNVYAGAGGNEDSFVVALFMAPDQQ IVGALRGRALAGARGNTAARLACTSEEPELVA





 I WGKLKGTAHAGAQGNRKCRIMALKMEPTQLR VMGALRGVVHAGAGGDENAVIMAFR LQPPTQQR $V Y A S L R G R A L A G V K G N D D A R I F C T C L E P Q L I S$ VWGRLRGLVHAGAEGDRGAVI LA LLQLEPTQLER




 V YGPLRGRALAGVGGNTAARIVCQSQEAEQLR $V M G V L R G D A H A G S K G D E S A F V S A D K L N P D Q L$ $V M G W L R G L A H A G A E G N Q D A V V A A F R L S P T Q I R$


 VMGTLRGIAHAGFTGNKEAVIVASSLRAMQLR $V$ Y S S L RGRADAGISGNRSARI FCHSMEAELVVS





## A D HI SRS

\section*{| A | $N$ | $I$ | $A$ | $R$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $G$ | $I$ | $Y$ | $R$ | $T$ |}

A DI 1 A R A
G D Tll A R S

A GliYR TA $\begin{array}{llllll}A & G & Y & K & T & S \\ A & E & V & S & R & P\end{array}$ A GVVSRP A DLI A R A A GQYK DS A EVIGRA A D CI SRP | $S$ | $G$ | $K$ | $I$ | $\square$ | $\square$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $A$ | $F$ | $R$ | $V$ | $A$ | $R$ | $A$ | A DLVARA A N H T R P G D L L R S $A G Y R T G$ $A$ D A V A R A

 $\begin{array}{lll}A & D V I & S R \\ A & D & R \\ A & R & A\end{array}$ A DYVARA $A G \square Y K \square S$
$A R W I G R A$ A D LVAR S

 \begin{tabular}{ll}
$A$ <br>
$A$ \& $V$ <br>
$A$ \& $Y$ <br>
\hline

 A GYi GRA $\begin{array}{lll}A & D & A \\ G & A & R \\ T & P \\ A & R & C\end{array}$ E D I T T DS 

$A$ \& $D$ \& $I$ \& $I$ \& $T$ \& $R$ \& $F$ <br>
$A$ \& $N$ \& $V$ \& $I$ \& $S$ \& $R$ \& $A$ <br>
$A$ \& \&
\end{tabular} A D A V A R A $\begin{array}{llll}A & G & L & R \\ A & G & V \\ 1 & S & R & P\end{array}$

A N Hi T R A GAHLAQA AT IVS R P A GHYL L S



## UniRef90_M5DY69 UniRef90_UPIOO0423EB98

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KgSZIO Uniref90_K9SIO
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UniRef90 KgYSS? UniRef90-K9YSS2
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UniRef90-UPIO0036BC68E UniRef90-B4WQ15 UniRef90-UPIOOO35F6480 UniRef90-K9TM14 UniRef90-W8T6D8 UniRef90_UPIOOO3635C63
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UniRef90 UniRef90-G8AJM9 UniRef90-E31FX0 UniRef90_UPlooo3697EB8 UniRef90 UPI00047E3119 UniRef90-Q05Q05
UniRef90-UPIO00364D2FD UniRef90-C9R8K1 UniRet90_A0A024PJ76 UniRef90 UPIOOO34B974B
UniRefgo UniRef90-A4BUS5 UniRef90-KOCCD7 UniRef90-A6LQQ4
UniRef90-G4CNP3 UniRef90-V2J2P0 UniRef90-F6B5W8 UniRef90-K9V4L UniRef90-Q0ICQ1 UniRef90-R5EOG8 UniRef90-LOKBH6
UniRef90 A1WID3 UniRef90-UP10002FD907A UniRef90_V9VTW0
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NGHFTLR
SDIVSTS
DIV VYAP RGMADAGARGDVAARAASHMRPQVRAGVISRP VWGRLRGVAHAGAGGNRESLI MALQMEPTQURI IVAPLRGRALAGGVKGKLDAR1 FCTCLEPELI SH: VWGRLRGVVHAGASGNTKCLIVADQMEPTQLRBM VRGTCRGVHAGAYGDRDALIVADHLMPVQLR1 VYAPLRGRAVAGARGNTEARIFSTCMEPQLVSI VMGQLKGMAHAGCKGMTDAFVSAMYMAPVQLR
 VLGSLKGVAHAGATGNREATVSAYHLAPTQLRIADLVTVK IWGRLRGIAHAGVKGDRTCRIMCLQLQPTQLRIADVVARA IVYGPLRGRAMAGVNGNTDARIFCQSMEAELVSI AGYFKTS VWGRLRGNAHAGAKGNRNSSI MALLQMEPKLI RI ADQVARG VLGSIRGHVRAGVGGNRNADIAAFILQPELLQUADLITGA IVMGNLRGI AHAGYKGNQDAVIMASYMHPVQLRI ATLYSRS VMGKLRGUAFAGALGDESAVVVAQQMEPQQURLGRKLABT VYGALRGRALAGDHGDREAGIFCHELDAELLSLAGNYKRL VYGPLRGRALAGVRGNTEARVFCQSLEAELVSIAGHYKVA VYGSLRGRALAGVLGDDNSRI FCSDLQAELIS




 I WGYLRGMAHAGAKGNPECCIMALRMQPTQLR1

 VLGSLKGNIYAGADGNEDAFVVAIDMEPMQLKI VLGHVKGDLVAGVSGNTNAIUAAYKLEPKILKK VMGSLRGMAHAGIEGNVDAL:AASYFSPTQLIR1:


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 ADVVARA ANClSRS A DKVARS A D WVARA A H HVAQA NGQYKMS $\begin{array}{ll}A & D T l A R S \\ A & D \\ A & R \\ A & R\end{array}$ GEAVARP ADYlSRA SQMISRP GDVIARA AHLISRP A NLATLS ADAVARS ad LVARA A GNFMDS A GLYRVS GDVMNRA a DVIS R ADQVARG AGCYRVS ADQLSRS GDFLARA AGHYQVS A NVIVAS
 s S Silacs ADAVARA $A G Q Y K \square N$ ADVIARS



VYGRLRGRAMAGAEGDEDARIFCHSLDAELLAA

|  | 00 |
| :---: | :---: |
| UniRef90_M5DY69 | P D D S D Q AERAF\|I|ENDQ|I I V|EK |
| UniRef90_UPI000423EB98 | ENLD GKPVQVYL R D N S L I E N |
| UniRef90_R5NLC0 | S D DKPETKIA FVENGNI Yi EPL N |
| UniRef90_TOPE55 | PEDPQYPELAKVVKNGSIIVEPYLVNKY |
| UniRef90_Q602J7 | ENLD GRPVQUML R D N A L I I Q D |
| UniRef90_A3Z958 | PEDRPQPEQARLEAGEIVIEAA |
| UniRef90_UPI0003764CC3 | D GHGEQPEYAHI E E G TVVVQS WDDVRL |
| UniRef90-E4U815 | P EDPA GPERARVEE GQIVI EPW |
| UniRef90_R6YGF5 | PDEKTEAKDAFAEEGNI Y I EPLLNR |
| UniRef90_R7BLV5 | G D A A P LPKI A FVVDDNNI YI EKLDKNVL |
| UniRef90_B9E009 | P D K P Q Y P EVA KI R G N I IVVEPY |
| UniRef90-F6CQB7 | PDEQSQPEVAR】K N GVVTI E $\square \mathrm{F}$ ¢ N |
| UniRef90_K9SZI0 | PPKEFEPEVAYMTPQGI R |
| UniRef90_UPI0003650359 |  |
| UniRef90-A0A014MTT4 | K D $\square$ A GKP A Q ARLE GEKLVI EPM |
| UniRef90_UPI00035D6F2B | EKCWKQPAQVFLQDDSI EI A A |
| UniRef90-F9VJ88 | P D N P R Y P EVA K L K N G C I EVVEPYS |
| UniRef90_S3B727 | P DEWGFMEYAYIK D GRMEI DKLN |
| UniRef90-10HVN7 | D D 1 VGK P A Q VRLE GERLVVEPL |
| UniRef90-D4TME4 | P EKSFFPEVAYI T N N GI RIA R A T S F S |
| UniRef90_UPI00034DF49C | P DVQGRSVQVRLVD D K L F F P L |
| UniRef90_G5H266 | P DEPGKA ERAY V K D G Q V I EPIE R |
| UniRef90_K9TXL7 | P P D R F Y P EVA YV T P E GI RI T K |
| UniRef90-C9LXR6 | P EQYEKPERASVVQDGRIVIEPIER |
| UniRef90-F4LW12 | PEEPSFPE I A RLK CNVIVIEPL |
| UniRef90-J1EHY2 | DEVA GRPA QVRLE GEKL FI EPL |
| UniRef90-D3DI73 | S DEPGYPEVAKIENGTIVLEKVK |
| UniRef90_R5AF72 | P E ENKKPEYAFVQDGQI FVVMALS |
| UniRef90_UPI0002EB51BA | DEYESRPVKVSLQNDSLHI EP L T |
| UniRef90_F5Z9M0 | A S CWK Q A Q Y L E E D T L HI E P |
| UniRef90-J7J4Y5 | P D D GRGPEIA KI K D D Q L V V E A |
| UniRef90-K9YSS2 | PHTSPQPEIA Y I S A D GI RIIT R |
| UniRef90- UPI000255A5C7 | E D L WQQP T Q A L R G S R L |
| UniRef90-UPI0003FE503C | PEEQF YPEVA YVDT T GI R\S P AKEVA |
| UniRef90-R6GSA9 |  |
| UniRef90_S0EV07 | PEEEPRPEVARIVDGII QV S P L |
| UniRef90_UPI00037E668D | PD Y S Y MECGYV DQEKI I I DRLQ |
| UniRef90-D3SM33 | SDEPGYPEMAKVEDGTIVLER |
| UniRef90_UPI000382CF68 | ED\DGKAVQVRLNDDQLTIAPL |
| UniRef90-B1XPG3 | A PEQRKPEVAY |
| UniRef90_UPI0003A327E1 | EDLWK Q AVHVSLDGDSLKIAA L |
| UniRef90_G0A4Y9 | D DLS P K PVGQ S L D Q T L I I K D |
| UniRef90_UPI000477B5B2 | P DVP S Q M EFA Y L R N G K M AV D K L L L L |
| UniRef90_E0U6B8 | PSIS P EPEVAFI T P E G IR I D |
| UniRef90-D6TFR8 | PEGQPYPEVAMIRNNQI IVET W |
| UniRef90-UPI00036BC68E | P D S P G P E I A F L K G K Y I I I E Y LR K |
| UniRef90-B4WQ15 | PDNPPQPEVAYi GPDGI Ri |
| UniRef90_UPI00035F6480 | P D TPRDNVQVWL D GEKLRIESSLK |
| UniRef90-K9TMI4 | PEPDFYPEVAYVVSPEGIRIA K |
| UniRef90-W8T6D8 | P D K P D DPEIA FIIK ENYI II E P |
| UniRef90-UPI0003635C63 | PDDTRSPERARVAE GRIVLEPWGK |
| UniRef90_UPI00036229D1 | D P L WGS SVIVSLEEQSL HI K K L |
| UniRef90_R5SDZ9 | P D K P R K K I A F WED G I I Y I E PLL K |
| UniRef90-A4CSC0 | PEEPGQAEQACDRDGDIAI EP |
| UniRef90_B1WRH5 | P G D S P P EVA Y LT T Q GI R L K S |
| UniRef90_UPI00026251EC | EP D WGKPA QVYSRDEQLHITP |
| UniRef90_UPI0003F7045E | P D Y S S M EC GLVVDEDK I I D RLQVLS |
| UniRef90-D3EKQ0 | P DE WEVMEFA YL K D G S MEI D K I S NiS |
| UniRef90_UPI0003449B07 | PS DKP YPEVAYITPHG\RISR |
| UniRef90-R7AZQ4 | K NKTHEPRI A Y V D E G N I Y I EKL |
| UniRef90-W2EH02 | P DEWG】MEFAY I K D GKMEI DKL NHF |
| UniRef90_D9SS13 |  |
| UniRef90-UPI000361356E |  |
| UniRef90_K9XXL3 | PKLSS P K EVA YV T A T G I R L A K |
| UniRef90-L7VL15 | PDTDEQPEI AVVREGRI Y V E P L |
| UniRef90-K9YIS6 | PDDAPEAEVAYV SVDGI RI READSFR |
| UniRef90-F2JU53 | D NVWKESA QVALVDDNLEVAP L |
| UniRef90_A8FFT6 | PDQKNEMECAYLDDGNMII ERLQQLA |
| UniRef90-G8AJM9 | EDFGNKPVQ@IL R D G Y L HMEP |
| UniRef90_E3IFX0 | PDERNEMECAYI DENQIVVDRLQLLA |
| UniRef90_UPI0003697EB8 | T QCWKKPA Q A Y L E D ALLV TELL |
| UniRef90_UPI00047E3119 | P DEWP WMEYAFLLKDGKMAI DKMTSLS |
| UniRef90_Q05Q05 | PEDQGLAEEARMSGGEIVI EPAD |
| UniRef90-UPI000364D2FD |  |
| UniRef90-C9R8K1 | P EPS GQPEVARI R D G MVVI E A |
| UniRef90_A0A024PJ76 | PDYESYMECGYI D DEKI LMDRMQEV |
| UniRef90_UPI00034B974B | P EPP P HPEVAYVS GQGI RIT R |
| UniRef90-A4BUS5 | $E Q D R G R Q V Q 1 / b L Q G D S L Y V A P L$ |
| UniRef90-K0CCD7 | EDLP R K P V Q M S L D G D A M S F A LL |
| UniRef90-A6LQQ4 | P D K P S Y P ELA RI R D GLI I V E P Y L P N K Y |
| UniRef90_G4CNP3 | EQDNHKPVQVYL Q D D RLI I S A I D |
| UniRef90_V2J2P0 | P DVLGK P A Q VRL A DETLI L EPL |
| UniRef90 ${ }^{-}$F6B5W8 | PNDADYPEIA Y L S D GQi I VEA Y N |
| UniRef90-K9V4L3 |  |
| UniRef90_U4TMA4 |  |
| UniRef90_Q0ICQ1 | PEEKPQPEEARIVDGEI AI EPADPRS |
| UniRef90_R5E0G8 | S D S A P K P K I FVEEDGNI Y I E ELTT |
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| UniRef90_A1WID3 | ETDRGKPA QVRLEGEKLII EP L |
| UniRef90_UPI0002FD907A | E QLWQ Q S G I Y L D D K I TVVS S L E |
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UniRef90_J2IUZ1
UniRef90_UPI0002DA0B96 UniRef90_B6EIV8 UniRef90_E1IAA6 UniRef90-A8PNF3 UniRef90_K9Z4R5 UniRef90_U5DL92 UniRef90_D5C402 UniRef90_UPI000299E243 UniRef90_R9IZD3 UniRef90_F7P108
UniRef90 F8M8G1 UniRef90_I2B8M0 UniRef90_UPI00035C6F1F UniRef90_UPI0004780C58
 $V L G A L R G H V H A G F T G N H K A V V A A F Y L Q P S I L Q Q A N V M T R S$

 $V L \operatorname{L} S \mathrm{I}$ $V F G K I R G V V H A G A G G N D K A Q I V A R K L N P T Q L R I A S F I A R S$ $V Y$ A P L R G R A L A G VQQ G D A G A R I F C Q S L E A E LVVSVA G Q Y K $\square S$ $V$ Y A PLRGRALAGAHGAEGARIFSTCFEPELVAIAGVYRTA
 I LG S L R G $\square$ A HA GFNGNKRAVI A AS DMRPTQLIRINHVLNRS




 I M G TLK GNAHA GSQGDRSAA V VAYRMEPEQLGIA GI IARS
 II Y G A L R GRALLA GVK G DVEPRIIFCQSLEAELVVI A GRYRDS
 I MGSLHGDAHAGVNGDQNADI TASYMNPSQLDRIADYISRA I WGRLRGSVHAGVGGNQQA\|VCALELRPTLLIRIADNLART I WG KL L G I A H A G N K G N S K A K I S A L Q L S P P V Q L IV Y G A L R G R ALA GVGGD R S A RI F CHS LEAELVII A GLYRVS $V M G S L R G M V H A G A S G D E K A D I V A Y R L D P T Q L I R I A D D H I T R P$ IVGACRGVVHAGFPSDRSAHI $\begin{array}{ll}V & Y G P M R G R A \\ I & L \\ L & \text { G G H K G G N T K A R }\end{array}$ $\begin{array}{lllllllll}A & D & R & L & M & A & S & Q & 1 \\ i & R \\ C & Q & L & S & A & E & L & V & S\end{array}$ L $V Y G P L R G R A L A G V K G D T N A R V F$
 IV Y A P L R G R A $\quad$ A G A R G N T E A R I F A L T L E A ELL
 $\begin{array}{llllll}\text { V } & Y & A & A & L & R \\ \text { R } & R & A & L & A & G A\end{array}$ H G D A G A R
 $V W G V V R G T V H A G R H G D T D A V I$
 $V$ Y A P L R GKAMA GARGNA QAR I
 I L G T L R GlV AHA GID GNYKA

 $V L G A L R G M A H A G V H G N R G A I I A A S V L C P T Q L R I A S V V G R P$ $V L G S \| K G T V F A G S N G N D K A!I A A F S L Q P E I L K I A N R I A M S$ $V$ YGRMRGRAMAGCHGDESARI FCQSQSAEL LAA A G L Y Y R T S


 IV Y G P L R GRALAAG $\square$ NGNREARI FCQQLGAELLISIA GQYKVA $V L G T V R G V V H A G A E G F K K A V V L A F K L L P T Q L R I A D H I T R P$
 $V$ WGRLRGTAHAGSGGDRDRYI MALQMQPTQLRRLADLVARA $V$ WGRLRGDAHAGYPNNPQCLI MALQMEPTQLIRIADRVARA

 I L G T L E G TVYAGSTGNTNAFVIALDDMNPMQIKIADVIARA H G T L R G R A I A G A S G QREA KI I C C N D L Q A E L V





 II W G K I WGNLRGIAHAGANGNKQALI MALKMLPTQLIRIADVVARA VWGRVRGIAHAGAQGDRQCTIAALY LEPTQLRVADLLARP






|  | 90 90 |
| :---: | :---: |
| UniRef90_UPI0003764A9D | PDEESHMEFAYLLQDGTMK\\| |
| UniRef90-S8B2F5 | PEKPQYPEVAKI K S S l l V VEPYLPD K F |
| UniRef90_UPIO003660480 | D D L K S P A QVLLDQDKLVIE |
| UniRef90-R7C9Q0 | S DEKQEPQIAYLQDGAI Yı |
| UniRef90-Q10Z41 | PEKQFYPEVAYVLNQGIRIS |
| UniRef90-L1Q3U1 |  |
| UniRef90-E3DMG0 | PDDDSEAERACVNEGQI M |
| UniRef90-Q2SL84 | EDHWKQAAQTCLLDGEKLTI K A M |
| UniRef90-E6PN61 |  |
| UniRef90-X2H968 | DQLYRHPVQIFLQNDRLVLSAIQ |
| UniRef90-I318F9 | KELFKKPVQVSLQGEKVVVDA |
| UniRef90-Q65GL7 | PDEGNDMECAYLENENMVIDRLQQLA |
| UniRef90-B1Y578 | ENVLGKPA QVRLE G D R LVVEP |
| UniRef90-W4VIG7 | PDSDGEMECGFIEGEQI I M R RIS SLA |
| UniRef90-K2J229 | D DLQQEPTQVWLENEQLAIGP |
| UniRef90-UPI0003B75659 | EDHWKSARRI RLNDQTLDI QP |
| UniRef90-V7IA89 | PHLDHRQAVQI Y L QKerlal A ALSE |
| UniRef90_U1WSC0 | PEKMTRMEFAYI TEGRLAI EKI S QL |
| UniRef90-S9QS57 | ENHRNQPVQVFLEDERLRVE |
| UniRef90-Q2RHC4 | PEQKPYPEIARLVGTRIVID |
| UniRef90-UPI0003797BCE | D S LWK APA QVYL Q D T L |
| UniRef90-Q3AUY0 | P D DL P QPEQASLRNGVIKI D P A EVLS F |
| UniRef90-W6LV98 | PADRGKAMQDHLVEDRLI I EH |
| UniRef90-R5ZSN7 | S D SGTKPKIAYVYDQNI YI EDLEQNAL |
| UniRef90_G8QL73 | EPLTTGKPVQIRLE GEKLVLEA |
| UniRef90-UPI000225BF4E | P D Y ESYMECGLI EKDKI I I DRLQVLA |
| UniRef90-A9B3S1 | PDNHRGPEQASLDGDNIVVVPWD |
| UniRef90-A2C0G8 | PKEKPQAEQARI DSEEI I I S P L E |
| UniRef90-D3ENP0 | PS D T PEPEIA Y L S K Gl HL K S |
| UniRef90-B6IX37 |  |
| UniRef90-Q0AWG8 | PDGEDSPEMARIRSGKVCIEKL |
| UniRef90-UPI00037AA380 | PDEPKQTEMARIENEIVVIAPIEQ |
| UniRef90-S6HSD1 | E D L R R D PVQlSSLS S DML Ni |
| UniRef90-R5K0Z7 | P DKPKKAQI AFVENDNI Y I EPVSK |
| UniRef90-F4GPN6 | ESLLHNQPT I D L L D D T L K I T ALNK |
| UniRef90-Q15XD7 | EKLWKEPAHAFLEGESI QV |
| UniRef90-D4KRE8 | P D K P F S P Q I A Y K K G T I CIE P LT K |
| UniRef90-A1VI57 | PEVTGHPAQVRLVDGRLVMTPMQ |
| UniRef90-R5Y9Q2 |  |
| UniRef90- X0YXJ8 | PEGKPRPEMASVEEGTI IVRS WK |
| UniRef90-UPI00037A5BF6 | EEVAGKSAQVLLEGDTLRFEPL |
| UniRef90-K9Q6L6 | S LKNPQPETAYLTTEGI R L A S ALK F S |
| UniRef90-I3VX77 | PDNDLYPEDALVKKNKIIVKP |
| UniRef90-J6UGX4 | D D L EPKPVQA WLDGETMLI A A |
| UniRef90-B9L226 | PDRGGQPALARVVDGQUVI |
| UniRef90 W8UN14 | PDEWSGMEFAYLKDGAMQI DKMSNT |
| UniRef90-UPI00042573AD | EDMWSTSCSVSLEDQNMVFSSLNKI |
| UniRef90-I4MUV3 | E A L H GKPa QVRL E G D RLV |
| UniRef90-C6D860 | PEEWMSMEFAYLYEGNMQI DKMTQL |
| UniRef90_UPI0002D895AB | GEEWGSAEFAYLEDDKMLVAK |
| UniRef90-M1ZIG0 | PDGDGMPEDARI CDGEVLI EPY LIPRK |
| UniRef90-D1C5P0 | PDEQGGPMLARI QDGEIVVE |
| UniRef90-17ZH48 | D Q $\mathrm{D}_{\text {Q G }}$ A VQA WLEQGKLRI ERL |
| UniRef90-F5LAN1 | PDENKGREFAHVNGDQI AI A K |
| UniRef90-N9XNK2 | PDSEKYPEVAKI K D G M I TVVEPYLA ${ }^{\text {P K Y }}$ |
| UniRef90-D0D6U5 |  |
| UniRef90-X5QCG0 | EEMDGRPVQAFLEDGALCVAPLN |
| UniRef90-V5BGQ9 | EDLHNKPVQTYLDKQTLVIQEI |
| UniRef90-U7G2E5 | EDHRNQPVHLSLQGEAMHFTAL |
| UniRef90-D9QV44 | PDGEDRPEIALIKDGAlLIK |
| UniRef90-UPI0003B2E7A9 | E D L R R DPa Q C L N E EQLEI S |
| UniRef90-Q3AF74 |  |
| UniRef90-M8DH69 | GEEWGGTEFAYLEDGTMLVAKMN |
| UniRef90-UPI0002EB061A | PDGPSLDPVAYVGDGAlRI |
| UniRef90-K9UNI2 | PETPPDPEIAYVTPQGIRI |
| UniRef90-UPI0003752FA0 |  |
| UniRef90-A0YQM6 | PEKPPYPEIAYMTSQGVRISKASDYA |
| UniRef90-Q5N085 | PSSQGYPETAQVIDGQI QI RRADP |
| UniRef90-R5S7C6 | PDKPHKPEDAFLEDENI Y I EPLD K |
| UniRef90-C9P3M4 | DQIDS QKVMLSLNDESLHFEKLT |
| UniRef90-A3YE94 | DGLWKESAQVLLNEENIEVKT F |
| UniRef90_F8GD21 | EDLNKQPVQI YL Q NHAL |
| UniRef90-UPI00046FD8EA | EDKHNQPALVRLNGDTLHI EALKK |
| UniRef90-UPI0002D6E218 | PEDEFYPEI AYI TPSGIRLAR |
| UniRef90-T0IX42 | PDNQVEPEIAHI ANGAVVIEP |
| UniRef90-J2IUZ1 | DK $\square$ EFY GKAARLQNDALTI QP L |
| UniRef90-B8CY00 | PEGESRPEKAYIKGSNI TVEELD |
| UniRef90_UPIO002DA0B96 | PDDRREMECAYIDNDQI I I D RLQV |
| UniRef90-B6EIV8 | D E Y Wh Q NVMVTMVED HIKI D T |
| UniRef90-E1IAA6 | PDKAKGPEIARIEENQI VVEPWEGAK |
| UniRef90_A8PNF3 | EDLQKGSVHISLEQERLHLKP |
| UniRef90-K9Z4R5 |  |
| UniRef90-U5DL92 | PQTPPDPEVAYVSPQGI |
| UniRef90-D4ZT94 | PEEEFYPEVAYMTAKGIRISRATEL |
| UniRef90-D5C402 | D DAEGRPVQIYLQEDHLMI S PL |
| UniRef90-UPI000299E243 |  |
| UniRef90-R9IZD3 | ADKAPEPQVAIVKDGNIYIE |
| UniRef90-F7P108 | DEYWGKSACIGLLQDDKLVLADL |
| UniRef90-E8M8G1 | KEYWQQKVMFSLDNDSLK |
| UniRef90-12B8M0 | EDFSGKAARMCLTDGVLSVQP LD |
| UniRef90 UPI00035C6F1F | PDKTPRPERASIKDGQIVIEPI ER |
| UniRef90-UPI0004780C58 | D S $L$ WGKSACDKMQDDSLVISEL |



## UniRef90_UPI0004750A9D UniRef90_U4WLP1 UniRef90-A6CTK1

 UniRef90_UPI0004730955 UniRef90_UPI0002882EBF UniRef90_R6RQY1 UniRef90_UPI000476371B UniRef90 F3ZZK1 UniRef90_UPI0003B7B2BF UniRef90_UPI0003026440 UniRef90_UPI0002626C3F UniRef90 UPI000407A241 UniRef90-K0B2Z5 UniRef90_V5C6F5 UniRef90_UPI000363341A UniRef90 D3RN90 UniRef90_UPI0004749A76 UniRef90_G0ADV7 UniRef90_G4E6H3 UniRef90_I2JFW6 UniRef90_R7NB37 UniRef90_UPI0003B76079 UniRef90_A1S6X9 UniRef90-R9CEB6UniRef90-R7MD73 UniRef90_E6RRR8 UniRef90_UPI0002DE03E9 UniRef90_UPI0004748DA2 UniRef90_R1H5Z0 UniRef90_B8E7G0 UniRef90_UPI00039F5CB6 UniRef90-B8IP19 UniRef90_R5HPGR4 UniRef90_F81970 UniRef90_A1STV1 UniRef90_A0A015M3W1 UniRef90_U2TA37 UniRef90_F7YZ57 UniRef90_UPI00046E58CC UniRef90_UPI000475D5F8 UniRef90_F6DUT2 UniRef90_UPI000395B84E UniRef90_UPI00042A4562 UniRef90_J9HBU4 UniRef90-B5IPH3 UniRef90_R7LN16 UniRef90_Q0A747 UniRef90_UPIO00473806D UniRef90_B0TBY2 UniRef90_Q7U4U3
UniRef90_R5H3R0 UniRef90 F5Y2C2 UniRef90_UPI00037AD868 UniRef90_R9LS97 UniRef90-K8GE26 UniRef90-I0JPD8 UniRef90_UPI00047D8729 UniRef90_S0JL89 UniRef90_UPI0003B5F1B8 UniRef90_UPI0002DD526A UniRef90_Q4ZW11 UniRef90-D5WUP6 UniRef90_I3VI35 UniRef90-E3H8I8 UniRef90_E5VL36 UniRef90_E6TYU8 UniRef90_UPI0003B697DD UniRef90_G2GWY1 UniRef90_C7RNL1 UniRef90-W4HKA9 UniRef90-D5QCH2 UniRef90-W7KUN8 UniRef90_U1KYR8 UniRef90_A9HLYO UniRef90_D8FWJ2 UniRef90_UPI00037C3E94 UniRef90_F9ZT40 UniRef90_G9QQ61
UniRef90_V4ISF3 UniRef90_H2FVY6 UniRef90_A3YUV4 UniRef90_M5DUV3
UniRef90 I8TUX7 UniRef90_R9PJ07 UniRef90-D9SEY7
UniRef90_UPI00037FECA4
2
-

C3E94

$\frac{60}{V}$
A A S K MEPT
70
L R|I C E A FSR A $V L G N L R G V A Q A G T N G D K D A V I A S A C L H P T Q L R I A E V I S R P$
 I L G A L K G I A H A GYR GNKTAVI A A S $\square$ M Q P S QL R I A DVI TRP
 VLGCVVK G Y V F A G V D G N D K A F I A A L E M K P M Q I R I G S Y I A R S II L G A L R GMAHA G S E GS E R A IV GASY L E P T Q L R I A E V I S R R P
 I Y A A L R GKA I A GAR GN T E A R I F A Q A M E P E L I I S I A G I Y R T S


 $V Y G P L R G R A L A G M S G N M E A R I F C H D L Q A E L I S I A G H Y R V S$





V




| $L A S H L E$ |
| :--- |
| $A$ |
| A S | I $\begin{aligned} & \text { Y G T } \\ & \text { H G T } \\ & \text { L } \\ & \text { R G R R A } \\ & R\end{aligned}$




 MGNGRGVAHAGYSGRRDAVV
1 MGVLRGRADAGACGQKQARI
I
VGRLRGVAHAGCKGNAKLI VWGRLRGVAHAGCKGNAKCLLI
$V M G N C R G V V H A A A G D L S A R V$
$V Y G P R G R A V A G A R G D K S A R I$ VYGPLRGRAVAGARGDKSAR
I YGALGARALAGAQGEQAR VFGRLDGDAHAGMHGDTTAD VWGRLRGTAHAGCRGDGGAR
VWGLGGIAHAGSEGNGYAR
VWGRLRGVAHAGRDGATSTRI

VWGVLGGlAHAGSDGNTYSR| VYGTLRGRAFAGAWGNRNAR LGGLRGMAHAGFEGNENS
VWGRRGLVHAGAKGNARAL


## 

$\qquad$


## $V$ $V$ $V$ 1 1 1

 VMGCAKGYLSAGCDGDDHAFVVYGA RRGAHAGAYGNREATVA GQYWLR
SHEDERS
GEVFARR
N
SGNYYWU
NGGYFQLS
AG
A

VMGNLRGVAHAGVPNNREAVI
VLGALKGNAYAGANGNEQAFVYGALRGRALAGCHGDRQAGI
IMGALKGDAHAGCHGNNEAVV
SNF INRA
I YGTLRGRAMAGVNGNLDARVWGRLRGRVHAGAGGNAKSVIVYGALRGRAMAGVSGASEAR
IMGSLKGDAHAGCYGNDEAVI
VYGALRGRAVAGARGNEHARVWGRLRGVAHAGCHGDPNARI
$V N G T C R G M V H A G A Y G D L R A T$

LMALQMEPTQLRIANFVARPA A A YMKPTQLR
VHRFEPELASLMKPMQ
VASLMKPSQ

ANHITRE $A D V \vee A R G$ \begin{tabular}{ll|llll}
$G$ \& $D$ \& $F$ \& $A$ \& $R$ \& $R$ <br>
$A$ \& $G$ \& $V$ \& $Y$ \& $R$ \& $T$ <br>
$S$

 D GWYRTA 

$A$ \& $N$ \& $F$ \& $V$ \& $A$ <br>
$A$ \& $R$ \& $P$ <br>
$A$ \& $D$ \& $V$ \& $S$ \& $R$
\end{tabular} A D Y I SRS $G D V M G R S$

$A G F Y R T H$ N DLVNRA | $A$ |  |
| :--- | :--- |
| $A$ | $Q$ |
| $A$ | $V$ |
| $V$ | $S$ | A GRYR $\square P$ GK N $\quad$ AA R N $\begin{array}{lll}\text { G E VI } & \text { ARS } \\ \text { S R S }\end{array}$ A DV I R R P $\begin{array}{lllll}A & G & H & Y & R \\ A & N \\ A & T & Y & W & L \\ A & G & Y & R & F\end{array}$ A GLLY T L D D GYYMTA $N G N Y W L S$

$D G Y Y Q T A$

 F CHSLEAELVA I A Gli Y S T L
 Y C Q Q L M P E L V S I A G H Y QL S




| UniRef90 UPI0004750A9D | EEEEHDMECAYLDEDKIVIER |
| :---: | :---: |
| UniRef90-U4WLP1 | GDEWGTTEFAYLEEDRMVV |
| UniRef90-A6CTK1 | PDHFDKMECAYI DDNQTVIDRLQVL |
| UniRef90_UPI0004730955 | EEEDSEMECAYLDDNQIVIDRVQ |
| UniRef90-UPI0002882EBF | P DKP TYPETAKIKNGNI IVVEPYLVNKY |
| UniRef90-R6RQY1 | S DQDEEAKIAFVEDEN |
| UniRef90_UP1000476371B | PDSETQMEFAYLKDGQMQ! DKMAN】A |
| UniRef90-F3ZZK1 | PDNDSQPEDAYVSGSEIVIEPY LTKAA |
| UniRef90-UPI0003B7B2BF |  |
| UniRef90-UPI0003026440 | EDVWGQAAQVSLEGDKLLVSPLL |
| UniRef90-UPI0002626C3F | PDYETYMECGLI DEDKI TI D RLQVLS |
| UniRef90-UPI000407A241 | PEQEGEMECAYI ENDQI VLDRMLKV |
| UniRef90-K0B2Z5 | PDGEKWPETAKI CEESVVI |
| UniRef90_V5C6F5 |  |
| UniRef90-UPI000363341A | PEPFPSPEVAYLEDEVICISSVS |
| UniRef90-D3RN90 | EELR GVPVQI F L D Q |
| UniRef90_UPI0004749A76 | P DEANLMECAYVENEMI VVDRLQQLT |
| UniRef90-G0ADV7 |  |
| UniRef90-G4E6H3 | E Y $\square$ E D R N M Q V Y L H GESL |
| UniRef90-12.JFW6 | EDHWKTAVQIGRDEQSLC |
| UniRef90-R7NB37 | S DKGVQPKI A Y VFEGNI YVE |
| UniRef90_-UPI0003B76079 |  |
| UniRef90_A1S6X9 | ENLQKHGVCVRLDGDSLTVEA |
| UniRef90-R9CEB6 | SEKTREMECAYVNDSVIKI DRLQVL |
| UniRef90-R7MD73 | PDTEY $\square$ PEEAFTYNGSIVI RK |
| UniRef90_E6RRR8 | D EHWGNAVQI QQKNESLEI SALVK |
| UniRef90-UPI0002DE03E9 | DK\WQKKVMI SMDNDSLTL |
| UniRef90-UPI0004748DA2 | EQI DKSPGCIA LD G DKLTLTK |
| UniRef90_R1H5Z0 | DALPEQPVVI RLD DEQLRI D R |
| UniRef90-B8E7G0 | ENSSDKSGCI RLDGESLMVE |
| UniRef90-UPI00039F5CB6 | PDRRGQPAQI RLDGDAI KVA A |
| UniRef90-B8IP19 | PGLRGKPVQVWLERDAI RMAA |
| UniRef90-R5HPI7 | P DKEKESQI AVARDGNI Y I E P |
| UniRef90-R7HGR4 | SDSAPRPKIAYVDDSNIYIEDLGPDVF |
| UniRef90_F81970 | DESRGEPEQAVVEEGQVVVR |
| UniRef90-A1STV1 | DDLA NKS CMVSLHNEQUVLSKLDQV |
| UniRef90-A0A015M3W1 | PDEWTLMEFAFLQDGQMKI DKL S |
| UniRef90-U2TA37 | PDKAEKAERASVKDGHIII EP |
| UniRef90-F7YZ57 | PDDYGEMECAYI DEDHI I I D KL QVLK |
| UniRef90-UPI00046E58CC | DK $\square \mathrm{PQKPAMVSLNQESLQIDPLTALR}$ |
| UniRef90_UPI000475D5F8 | PETPYFPEVAYVSQGSIRI A |
| UniRef90-F6DUT2 | PQETFYPEVAYLKEGQI I VA |
| UniRef90-UPI000395B84E | ES DWGKAAVVRLEGEKLLI EP |
| UniRef90-UPI00042A4562 | ED ${ }^{\text {l P GKPVQVWLEAGQLRI EA }}$ |
| UniRef90_J9HBU4 | P QLKA TMEYAYLMDNQMMVAEMKQF |
| UniRef90-B5IPH3 |  |
| UniRef90-R7LN16 | PDETFTPEEACI YKKQI |
| UniRef90-Q492M5 |  |
| UniRef90_Q0A747 | DDERGRNVQI Y L EGGDSLKVAPL |
| UniRef90-UPI000473806D |  |
| UniRef90-B0TBY2 | EEGPEHPE I A R R G MVT |
| UniRef90-Q7U4U3 | PEDQP ${ }^{\text {PAEQARLVDGEI VIEPAQP }}$ |
| UniRef90-R5H3R0 |  |
| UniRef90-F5Y2C2 | EEVRSRPTQVRLTEGKLVMDRL |
| UniRef90-UPI00037AD868 | EDMEPSMRQAHLDDNAILVAP |
| UniRef90-R9LS97 |  |
| UniRef90-K8GE26 | PETPPYPEVAYVTQGADRIAR |
| UniRef90-I0JPD8 | PDYETYMECGFI EEGKI RI DRLQEV |
| UniRef90-UPI00047D8729 | PDYETYMECGTI EQEKI II DRLQ\LA |
| UniRef90_S0JL89 | A DKVSEPQVAIVKDGNI YI EPI T K |
| UniRef90_UPI0003B5F1B8 | DTEPGHSVQVYLDAERLVI AP |
| UniRef90-UPI0002DD526A | PDHPNEMECAYIDENQIVIDRVQVL |
| UniRef90-UPI0003694C34 | EDVDGTPVQTGLKEDQLAI EA |
| UniRef90-Q4ZW11 |  |
| UniRef90-D5WUP6 | PEERAYFEYAYI DGDRVRVD |
| UniRef90-13V135 |  |
| UniRef90-E3H818 | PKKEGSLEVAYI K D GKM HI E D F K K $\square$ T $\square$ |
| UniRef90-E5VL36 | ADGEPEAQIAFVEDENT |
| UniRef90-N4WFA7 | PDHDTEMECGYI DKDQI VMDQLARLA |
| UniRef90-E6TYU8 | PEDENLMECAYVDEGEMVLDRLQRLS |
| UniRef90-UPI0003B697DD | EDLDRRSVQIYMRDTALII E |
| UniRef90-G2GWY1 | EDEKGKAVHLHLLGDALKIELLNPN |
| UniRef90-C7RNL1 | DAMAGKPVQVRLTEGRLLVEPLK |
| UniRef90-W4HKA9 | PEARNRCAQI Y L EDEKLLMEA |
| UniRef90-A1HP00 | PDEPQCPERARIVGEAVI ${ }^{\text {P }}$ ( P |
| UniRef90-D5QCH2 | EDMDPQPSQAMLNNDTIVVQP |
| UniRef90-W7KUN8 | PDEKREMECAYI ENDQI TVVDRLQVL |
| UniRef90-U1KYR8 | DESWGNAACISSLENESLKI SAL |
| UniRef90_Q07LX6 | ENDDSRPVQAWL DDETLKI T |
| UniRef90_A9HLY0 | EEIDGQPAQALLEDGTLVVR |
| UniRef90-D8FWJ2 | PETQPYPEVAYVTTQGIRIS R |
| UniRef90-UPI00037C3E94 | DNDAGKAAQIRLDGEKMIME |
| UniRef90-F9ZT40 | DPQWGRPSQVYLDNDALLI |
| UniRef90-G9QQ61 | PDEYSEMECAYINENQIVVDRLQVLK |
| UniRef90-V4ISF3 | ENDPGKCVQVFLD H DVLRIEPL |
| UniRef90-H2FVY6 | DEQWEQPVSISLAGEQLKLDR |
| UniRef90-A3YUV4 | PEDQGFCEQARLVGGVIRID P |
| UniRef90-M5DUV3 | EDHRGQAVAVQLKDDNL |
| UniRef90-18TUX7 | P DHLDDQPEVALI EDGIV |
| UniRef90-R9PJ07 | E EHADSPQCI QI EDQQıVEGNLS |
| UniRef90-D9SEY7 | EDGSAKPARVHLDGSRLVDQPLN |
|  |  |



| UniRef90_UPI0003663895 | V Y A PMRGRALAGARGNTQAR | $\mid \mathrm{F} \mathrm{~V} \text { Q G MQAE } \mathrm{L} V \mid S$ | $G / V$ A L P |
| :---: | :---: | :---: | :---: |
| UniRef90-A0A0591Q | $V Y G R L R G R A M A G A Y G D A R A R$ | F CAKLEAELLAV | A GlL Y R T S |
| UniRef90-M1LUX8 | $V Y G P L R G K A M A G A Q G N T E A$ | F T T Q L A Q L $L$ A | A GVVYR |
| UniRef90_N0AYK8 | VMGTLK G $\square$ A HA GCFGDDQAV | T A S 1 M K P S Q L | - ${ }^{\text {ct }}$ |
| UniRef90-Q11LK2 | I Y GALRGRALLA GSMGDSSARI | F CRKLEA E LL A | D G L Y K T A |
| UniRef90-I3BQK8 | V Y G SLRGRVLA GVQGDTSARI | F CQKLEAELVA |  |
| UniRef90-F5R913 | 1 Y A P L R GRALA GATGDAEAR | F T T C F E A ELV S |  |
| UniRef90-UPI0003F | $V L G A L N G M A H G G C T G N R Q A V$ | A A S L M P P S L R | A |
| UniRef90-A3QF02 | 1 Y GS L R GKAMA GANGDKN | ID A E LV ${ }^{\text {L }}$ |  |
| UniRef90_U2ZR06 | $V Y G P L R G R A L A G V K G D T K A R$ | F CQQMGAEML S | A GQ Y K TA |
| UniRef90_Q2LRX1 | $V Y G P L R G R A I A G V H G Y S E A R$ | FCRYFDAELVA | A G Q Y M L ${ }^{\text {N }}$ |
| UniRef90_UPI0002DEB4A4 | HGTCRGRAIA GANGQQGAK | QDLQAELV S | A G N Y Y L S |
| UniRef90-UPI0003737507 | VWGRLR G M I HA GS G G N D R | M A L R L E P P Q V R | A D K V ${ }^{\text {R R L }}$ |
| UniRef90_Q7N522 | I Y GMMRGRALA GAS GDQEC | F CTHLNAELI S | A G Q Y W 1 P |
| UniRef90-W1N9L0 | $V Y G A D R G R A L A G \square H G D H K A G$ | F CREL HAELLS | A G S Y K RLL |
| Ref90_W1SJX8 | I M GVLK G $\square$ AHAGCFGNDQAVI | A A S S MKP A Q L R | S D Y L N R E |
| UniRef90_UPI000379232B | $V Y G P L R G K A M A G A R G D T S A R 1$ | F T T Q L P P ELLA | A GVYRVI |
| UniRef90_Q7VDL2 | I WGRL LG I A HAGKYGNNQAK I | T A L Q L R P VQL R | A NKIA R G |
| UniRef90_K9S082 | $V W G R 1 / R G V V H A G A G G N L S A R I$ | $M G L Y$ A A TQL R | S |
| UniRef90-E1V986 |  | -CR | A G N Y K R L |
| UniRef90-O67034 |  | VALLKMEP QL L Q | M |
| UniRef90_UPI000465081B | I Y GHMRGRALLA GASGDKDAQ | FCTHLAA ELV ${ }^{\text {C }}$ | G GEY WL S |
| UniRef90_L0GVH2 | $V Y \mathrm{GPLR} \mathrm{L}$ GRAMAGMNGNVVEARI | F CQDLQAELVS | A G H Y RV S |
| UniRef90_T1BAR2 | 1 Y G SLRGRALA G A G G NEQAR | YCQTFHAELVS |  |
| UniRef90_A0A059KLU9 | $V Y$ A P L R GKAlA GATGD $\square$ S A R | F S T C M P P L I S | A G |
| UniRef90_R71011 | GNLK G SVFA GAGGNKEAF | LA L G M P P I Q I R | G D F $\square$ A R A |
| UniRef90_B1KRJ1 | 1 YGNLRGKAMAGASGDKHA | I A R S L E A ELV S | $A G Q Y W L^{\prime} A$ |
| UniRef90_UPI000477CF43 | I YGRLS GRALA GAQGDASAR | YCMDFQAELI S | A GRYRV F |
| UniRef90-UPI0003493BEB | I WGSLRGDAHA GYMGNRQAS | M A L K L E A T QL R | A D LVA TVV |
| UniRef90_UPI0004265A18 | $V M G N L R G \\| A H A G V N G N R S A$ | A A SYMKPSQL R | A DYI SRA |
| UniRef90-A2BUV2 | $V W G K L L G T A F A G E N G N K N A S$ | A S L W L N P $\square$ Q L R | $C E \square A D G$ |
| UniRef90_UPI0003753710 | Q GVCRG V HAGAFGDSN | M M A MQI R | A |
| UniRef90_W6M5M9 | V Y GALR G R ALA GVKKGDTEA WI | F CHSLEAELI S |  |
| UniRef90-UPI00047D6366 | V Y GTLRGRAI A G STGNGRARI | F C R K L E A EL L A | A |
| UniRef90-K2QVP1 | I Y GAL R GRALA GCVGNADARI | F CRKFESELVA | M T |
| UniRef90_D8MT15 | Y GMMRGRALA GASGDRDCQI | F CTSLSAELVS |  |
| UniRef90_F7K5I8 | 1 LG S LK GNAHAGAT GDSGCF | F A L E MKP I Q L Q | GEY $\square$ A K S |
| UniRef90_UPI000345 | $1 \mathrm{~V} Y \mathrm{GAL} \mathrm{R}$ GRALLAG\HGNPDAGI | F CRELKAELL S | A GNYK |
| UniRef90-K9P5S7 | $V W G R L R G V A B A G V C G N R E T R$ | V A L Q L R P L Q L R | A DVVAR G |
| UniRef90-B1ZC42 | V Y G A L R GRA $\quad$ A GAVGDPA A R | LA RKFEPELI A | D GLLYKTA |
| UniRef90-H8Z4E8 | I Y GPLR GRVFA G I K G D TRAR | FCQDLQAELVA | A GHYRVS |
| UniRef90-X6ESQ4 |  | FCRKNEAEL | D GWYTTA |
| UniRef90-A5GR35 | I WGRRLR G $\square$ AHAGCHGARNA | $V A L Q L R P L Q L R$ | A D AVA R G |
| UniRef90_K4ZL53 | $V \mathrm{~L}$ G A L R G TV V A GVEGELS AV | A A SLLFAP TQLL | GE I I S R P |
| UniRef90-H4F2Y1 | 1 YGALRGRALA GCLLGNGEAR | F C R KFES ELI A | $D G V Y A M T$ |
| UniRef90_D4F4E9 | V Y G M M R GRALA GA G G N S A S Q | F CTHLLA A L L V S | P |
| UniRef90-R6FVH9 | $V L G C L K G T V H A G Y P E D N S A F$ | A A LMMEPMQI Q | S |
| UniRef90-R6Q836 | V WG】LGG $\square$ A HA GYK G N T K A K | $R A L N L N A \square Q L R$ | R |
| UniRef90_S9SG84 | $V Y G P L R G R A L A G M S G D K S A R I I$ | F CRALDAEL | A GL Y MVS |
| UniRef90-F7YU87 | VFGHVK G I L R A GLNE GEQA | A V L S MQP TLI Q | A GHILRE |
| UniRef90-W3AE49 | $V \mathrm{~L}$ GRLK GIIAHAGANGNRDAVI | A ASWLE A T HLQ | D D M L E $\mathrm{E}^{\text {M }}$ |
| UniRef90-UPI0003466A81 | $V$ WGRLR GIA HA GAQGNRQSRI | A A LQMEFTQLR | A DVVA R P |
| UniRef90_UPI0001E89963 | $V L G A L R G S A Y A G L Q G K K D A V I$ | A A S L M K P T L L S | D NTINRA |
| UniRef90_UPI0004765A03 | $V \mathrm{Y}$ G TLR R R A $\square$ A GLL L G D T NARI | FCHKLEADLI S | A G Q YR $\mathrm{D}^{\text {P }}$ |
| UniRef90-Q3AC97 | $V$ WGSLRG口A HA GYPNNEKAQ | $\square A \square N \mathrm{~L}$ V A Q I R | GKFVT R A |
| UniRef90-M5J3K6 | V Y GPLRGKAMAGARGDAKA | F T TEL DPELI A | A GVY |
| UniRef90-A4C461 |  | F CQKL EAELVS | NGNYWLS |
| UniRef90_Q6LT86 | V Y GNLRGRA I A GASGQHQAQI | FCQNI QSELI S | A G N Y WL S |
| UniRef90_K9SQY7 | I WGKLK GVA HA GAKGNA Q A VI | M A L $\quad \mathrm{HLD} \mathrm{A} \mathrm{T} \mathrm{Q} \mathrm{L} \mathrm{R}$ | $R$ S |
| UniRef90_UPI0003690439 | V H G A L R G R A $\square$ A GAKLNP HAR | MQAELLIS |  |
| UniRef90-X7ECG9 | $V Y G R L R G R A M A G A H G D E S A R$ | FCQ A L E A E L V A | A GHYRTS |
| UniRef90-UPI00036618F2 | I M GALK G $\square$ A HA GYFGRNEAVV | V A S F M T P A Q L R | S D C $\square$ S R A |
| UniRef90_UPI0003B6F360 | I Y A PLR GRALA GVKGDASAR | FCQSLEAELI S | $A G R Y R \ A$ |
| UniRef90-J3CMS4 | $V Y$ APLRGRALAGASGDTTARI | F AQSLEAELVS | $A G \nabla Y R T F$ |
| UniRef90-K2BMC8 | $V Y G \square L R G R A L A G V S G D K S A R$ | F CRSL S A ELV S | A G Y Y WV |
| UniRef90-13CJ43 | $V Y G A L R G R A L A G V N G D T D A R$ | F CQLLDAE | A GHYQIN |
| UniRef90_UPI00035DB370 |  | F A HAFA GEMLV | A GFYRAF |
| UniRef90_UPI000369C1A0 | I $\square$ GALR G $\square$ A HA GYYGDAEAVI | A A SVMNPMQLR | S DVT T R A |
| UniRef90-H0HMG | $V Y \mathrm{GT}$ T R G R A LA G SVGNS S A R | F C S KL E A ELLA | D GLL Y K T A |
| UniRef90-UPI000379C933 | $V Y G P L R G R A I A G A R G N T A A R$ | F T S HL D A ELVA | A Gli Y R L S |
|  | V Y A PLRGKAI A GARGNTEARI | F S TCMEA QL V A | T P |
| UniRef90_R7UAG4 | V Y GPLRGRALA GVNGNTDARI | F CLLQ F E A ELI S |  |
| UniRef90_U6Q1X7 | I Y A PLRGRALA GASGDRKARII | F VQS MQA ELV S |  |
| UniRef90_Q55901 | I WGCLRGMAHAGAKGNDQAVI | $M \\| L R$ A A CQI R | G D R L A R D |
| UniRef90_UPI000378CB59 | V Y GAL R GRA $\square$ A G S A G D GKAR | F CRKLDAELLA | D GVYMT T |
| UniRef90_V6SVX9 | I M GALK GLA HA GTEGNDEAVI | A A S VMKP S QLR | S D CINRA |
| UniRef90-V8QNT4 | V Y GPLRGKAlla GARGNASARI | F T S HLD A E L L A | A G $\square$ Y R $\square^{\text {a }}$ |
| UniRef90-Q2NTB4 | Y GMMRGRALA GASGDGECQ। | F CTHLS PELI S | A GQY WL S |
| UniRef90_A0A031GPP1 | $V Y$ S SLYGRALAGASGNAQARII | F A L A M E P ELV S | A G V Y R T F |
| UniRef90_A0A011P9X5 | I YAPLRGRALA GASGATEAR | LCTRFDAELV S | A GLLYRT F |
| UniRef90_Q3AMC6 | $V$ WGRLR GVAHA GCEGSTSAK | $V A L Q L R P L Q L R$ | A DVVARG |
| UniRef90_UPIO | I Y GALR GRA $\square$ A GAK G $\square \mathrm{K}$ Q A K | FCQDL Q A ELV S | A G TYLLN |
| UniRef90_UPI00020013CD | VWGRLR G $\square$ A HA GQA GNTA | $V A L Q L R P L Q L R$ | A H A VARG |
| UniRef90_K9SEE2 | V WGKLK GKAHAGIKGDSKSVI | M A L H M A T Q L R | $1 \text { ART }$ |
| UniRef90-K7T, |  | F A SRMEAELLA | , |
| UniRef90_UPI00036C | CYGPLRGRALAGARGNTEARI | FCSDLQAELV | Y |
| UniRef90-E8N3J3 |  | CALLEL |  |
| UniRef90-B8HMM3 | 1 WGRLRGFAHAGARGNTQCRI | M AL $L$ M E A T L L R | A D Q VARE |
| UniRef90-Q6D4M2 | Y GMMRGRALA G V S G DVQ S Q I |  |  |
| UniRef90_UPI000466CA39 | $V F G K V M G K V F A G S S G M T D A R$ | F A K Q L N PELV |  |
| UniRef90-UPI00046E5524 |  | F T R S L A A L V A | DGFYATA |
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| :---: | :---: |
| UniRef90_UPI0003663895 |  |
| UniRef90-A0A0591Q34 | DSLEGQGVQAFLDGNKLCVEAL |
| UniRef90-M1LUX8 | D D I C NKPALVKKL L N K L I I D K |
| UniRef90-N0AYK8 | PDEERLLECAFIIDDNQIVVDRI QVL |
| UniRef90-Q11LK2 | D D I EPQAVVQLWL E G D SI MAEAL |
| UniRef90-I3BQK8 | D DI EG S P A M V WL E D E K L K $\square$ AP M |
| UniRef90_F5R913 | E ELLRR P A Q V R L E E |
| UniRef90_UPI0003F4D6CE | PDHYDEMECAY D DER V VIERLS |
| UniRef90-A3QF02 | ENLQAHASII RLD G D SLTVVEALS |
| UniRef90_U2ZR06 | E ELRRRDPVQI SLS G DVLNI T RLL |
| UniRef90-Q2LRX1 | E DFEGKPV HI F L E N D R L K I Q P FE |
| UniRef90_UPI0002DEB4A4 |  |
| UniRef90_UPI0003737507 | P ETPPQPEVAYVTP T GI R |
| UniRef90-Q7N522 | TELA GKAAKLSLVNNELTI EP L |
| UniRef90-W1N9L0 | E DID P Q S V Q Val ED D QL Si Q S L |
| UniRef90-W1SJX8 | P NEKQEMECAYI DENQI VI DRLQVL |
| UniRef90_UPI000379232B | EEKHGKPALVWLQ Q E T K KI EAL |
| UniRef90-Q7VDL2 | PKEKPEAEEAT』QEEVIVIKP |
| UniRef90_K9S082 | PTPPKYPEVAYATPNGI QI A P VGG L L |
| UniRef90-E1V986 | ED\DPRA】QVR\SEAQLSITTPLD |
| UniRef90-O67034 | SESPGYPEVAKI EGEDIVLEPI E |
| UniRef90_UPI000465081B | D Q IP DKA A RLKL V D G VLTVVEPL |
| UniRef90-L0GVH2 | ENIP GVVAVQIFL D G Q A L R I E P L |
| UniRef90-T1BAR2 | D DLE GRAVQCWL E GEKLRI A R L D R |
| UniRef90-A0A059KLU9 | DEVVRGKA A Q VRL D G D T L VI EAI K |
| UniRef90_R71011 | P DKENKPK@AFVVEGETILI EPLLSK |
| UniRef90_B1KRJ1 | ENIQHKS G CVRL E GESLTI E A L |
| UniRef90_UPI000477CF43 | EDLP GKPVQA WL D GEKLLI EALVPP |
| UniRef90_UPI0003493BEB | PDNTPDMEVAY GKEGI KI Q S AQNF |
| UniRef90_UPI0004265A18 | PDEGDYMECGYV DQEKI LI DRLQQLLS |
| UniRef90-A2BUV2 | P K EKP Y P E $\square$ A $\square$ L E A K K I I I K P Y E P I R |
| UniRef90-UPI0003753710 | PDKTKCTERAFI R D EMI VI EPVHRL |
| UniRef90-W6M5M9 | E Q IE S K AVQ ITHLNQERLI I EHL |
| UniRef90-UPI00047D6366 | D DMEPKAVQVWL D G D A MVLA ALLD |
| UniRef90-K2QVP1 | D D M D P EPV QL WL E G D A I M TERMT |
| UniRef90-D8MT15 | A EFFGKASRLCLLRDGALTIQTLN |
| UniRef90_F7K518 | P DKEKSPQlATAKEGTI CI EPVVTRGRL |
| UniRef90-UPI0003450B31 | ED D D P Q L H A SVERQQLEI K PL |
| UniRef90_K9P5S7 | P EPPGLAE Q A RLVEGEI R I D |
| UniRef90-B1ZC42 | D DLWGQSVQARLEGDAIVLVPLD |
| UniRef90-H8Z4E8 |  |
| UniRef90-X6ESQ4 | E EMEGKAVQQAFLE G D MLAVVPLN |
| UniRef90-A5GR35 | P EEEGVT EQARLE GDEIAI |
| UniRef90_K4ZL53 | P DEWGHMEFAYVHDNVMQI D K $\square$ S QL |
| UniRef90-H4F2Y1 | P D L R G K P VQLWWL E G D A I Q V E K M |
| UniRef90-D4F4E9 | ENYYGQAARLSLS D GTLTI Q S L |
| UniRef90-R6FVH9 | PDQELLA K LAFVEENDSI FI ETI T R |
| UniRef90_R6Q836 | PD D T FTPEEARNI NGSSIVIL L KI N |
| UniRef90_S9SG84 | EQLDDGKPA Q DCVDDGEALVQQA |
| UniRef90-F7YU87 | VGS S D E PVVA Y V K D N RVVID K V K DVK F |
| UniRef90-W3AE49 | TDEQPEMECAYLKKSGSIII DRLQELRF |
| UniRef90-UPI0003466A81 | P K LR P S P ELAFMT TE GI RL |
| UniRef90_UPI0001E89963 | PDLSEQMECAY I NDDQIVI DRLQLLS |
| UniRef90_UPI0004765A03 |  |
| UniRef90-Q3AC97 | P G NR P Y P EKARVED GQVI I EKY |
| UniRef90-M5J3K6 | EQLR NKPVVVTL E E D T L RFDPLS |
| UniRef90_A4C461 |  |
| UniRef90_Q6LT86 | DEFWGK GVVISSLAENNLNIE HLLT |
| UniRef90-K9SQY7 | P T T S S P El A HV |
| UniRef90-UPI0003690439 | D D L W Q A A A VELND GK I L I A L |
| UniRef90-X7ECG9 | D DVRGARVQVSLED D T H M |
| UniRef90_UPI00036618F2 | P D EQHQMECAYI D N HQI I I D R L Q V L K |
| UniRef90_UPI0003B6F360 | EEEWGRPIQVILQEDVL NLLAL |
| UniRef90_J3CMS4 |  |
| UniRef90-K2BMC8 | E DL D R E GlV Q i Y L K E D R L Q L G A L |
| UniRef90-I3CJ43 |  |
| UniRef90_UPI00035DB370 | E E A Q G A L Q A WL E GERLLI A PI DSFT |
| UniRef90_UPI000369C1A0 | PEEKEGAECAYI ENNHIVVDRI QLLT |
| UniRef90-H0HMG3 | E D L G G AVQLWL E G D A V V A T L N |
| UniRef90-UPI000379C933 | P ETHKKAAII ELEHESLLF |
| UniRef90-T1 X2S1 |  |
| UniRef90-R7UAG4 |  |
| UniRef90_U6Q1X7 | EQKHKQPVR\E LQ D D R L A T S |
| UniRef90_Q55901 | AVDRREPEIA Y I T S EGI RLT PVVRQF |
| UniRef90_UPI000378CB59 | DELD GKPVRAQLD GE\\|LRVHALD |
| UniRef90_V6SVX9 | $P D E S R V M E C A Y I S D Q Q V V D R L V L$ |
| UniRef90-V8QNT4 | P A L N K K P V I VELDNDTL R F IP |
| UniRef90-Q2NTB4 | D QIP GKA A RLCL Q D G L T I HP L |
| UniRef90-A0A031GPP1 | EDMARGPAQI R L A G D R I DI H S VNPVT |
| UniRef90-A0A011P9X5 | DELAAGRPVQVRLD A NQL IV E T L N |
| UniRef90_Q3AMC6 | PEDLP QA EQAKLLKD GVI AI EP |
| UniRef90_UPI000407188D | E ESLARASLVHIEQDKLVI R S L |
| UniRef90_UPI00020013CD | P E DL P P P EEALLLDDGAI A I R P A EPL |
| UniRef90-K9SEE2 | PATNFQPE $\mathrm{P}^{\text {P }}$ YVV |
| UniRef90_K7TAB9 | ED\D GQPA Q ALL DEDRVRVLPL |
| UniRef90_UPI00036C61B1 | E DL R GVPVVQVYL D Q K I L R I EKI |
| UniRef90-E8N3J3 | P PRKGKPEMVRME E G R A IV ETWK |
| UniRef90_B8HMM3 | PPNPPYPEVAY IT T A G I R L S K |
| UniRef90_Q6D4M2 | D Q VP GQPARINL NDNVLTIMKPLD |
| UniRef90_UPI000466CA39 | EDMKKGFVVVVLEDDKLVFKPLDE |
| UniRef90-UPI00046E5524 | EEMDDKPTQVLLT GETLAFKPL |
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| UniRef90_W9AXB9 |  |
| :---: | :---: |
| UniRef90-R6NGH7 | S DKTLE P QVAVVMDDSILI E P I |
| UniRef90-Q89M12 |  |
| UniRef90-X7F8Y2 | P EL R K S SVTVFL D GERLLVERLL |
| UniRef90-J3TZ47 | D Q IP GKA ARL YL E S N IL TII HPL |
| UniRef90-L1NQN9 | EQKDRHPVQIYYLHEDRLVIA A |
| UniRef90-R5ELJ7 | S DKKKEPMIA MI R N H Qi CMEPVTK |
| UniRef90_U5T509 |  |
| UniRef90_W8X0F9 | D TLLLNRPALVELDGDTLRI R T L Q |
| UniRef90-K2AEM5 | E D M Q A LP EQl Y L EQEQVRIEETIS |
| UniRef90-D3PLI4 | PAGERNPERARVVNGQIVLEAW |
| UniRef90-UPI0003709CF7 | PDRYDESECAFI NEDQLVIDRLQVLK Y |
| UniRef90_UPI0003B3FBDA | K N L H G K PVQl WL E N E Q L RIE E L |
| UniRef90-A6GSZ7 | E ENRSKPTLI HL D H G T L R L E A I N |
| UniRef90-S9ZIE3 | ES LA GRAA QVRLS GNTLNIEPLQ |
| UniRef90_UPI000365D7B4 | P EHPSEPEIAHIAPQGIQI |
| UniRef90_E0SD98 | D Q IP ENYK A A R K D HVLLTI Q P LD |
| UniRef90_B4EVV7 | D Q 1 P GK SVQLLSLQENELTI ENL |
| UniRef90_UPI0004702191 | $P$ GEYGQPEQAVQRNGQIVI EA |
| UniRef90-Q7VQZ1 | PEF LGK SARFYLQNHTLI I Q H |
| UniRef90_G7V8R8 | QPDTGKPVKVVVDQGKIVVSELS |
| UniRef90_UPI000465D6CE | E D L E G Q AV Q I WL E GETI R |
| UniRef90_K6ZJK5 | EKHWGS PVY C ( QLT GAELTSSKL |
| UniRef90_UPI00025588C2 |  |
| UniRef90_G7Z3S4 | E DI Y K K A V Q V F L R D GVL S M ELL K |
| UniRef90_Q9JX17 |  |
| UniRef90_C6LCB4 | A $\square$ A K R S P KI A Y I K D N HI HVK N L VR S T L |
| UniRef90_UPI0003140E99 | ENALP K D V L G KV D G D KL LI T A L Q |
| UniRef90-L0B997 | D D M Y NKKLLFAKL Q N EKI TI K L L |
| UniRef90-UPI000411153E | P EEQS GMECAYVDNGQI I I D RLLQ L K |
| UniRef90_V8G3D9 | P DTHKK P TM ${ }^{\text {L }}$ S L Q N D TL |
| UniRef90_UPI00047ACF3D | E ELAS R PVQVRADAE G |
| UniRef90-J7QHA0 | DEIQQSQSIQ A WLENETVK\ARLD |
| UniRef90_UPI00022609C4 | EEMSGKPSQAVLVDEVLTLK |
| UniRef90_UPI00047CD181 | DE\R GRAVVHARL E D E TI K I T K L D |
| UniRef90_UPI0003B51163 | ENLEEAARQ@FLENEKL R M E |
| UniRef90_UPI00047544EE | EEI D GQA A Q ALL A N D HI TVRS L H |
| UniRef90_UPI00036080B5 | E DID D Q F K EVRLENDKLVFNP |
| UniRef90_U2FUZ4 | D A I E S R A V S VRL D N D NL S $\square \mathrm{E}$ |
| UniRef90-R8ANU9 | E EVVWKKATRVVLRDNNI HFEAL |
| UniRef90-B7RI07 |  |
| UniRef90-R5SD97 | NDNEFTPEEAQVEDGKIVI YKKLR |
| UniRef90-UPI0004783407 | DEEDVIMECAYI Q S N Q I ELERVQKLA |
| UniRef90_UPI000472D1DF | EDID P EMVVQAHMVE DQLD $\dagger$ S A F E |
| UniRef90_UPI00036BA412 | E DLD P K PVVIIWLD D |
| UniRef90-UPI000467E5A3 | $D D I P G K A V Q V W L D N G Q L K L A A L D$ |
| UniRef90-A4G415 | EDRKQQATQVRLDGNRIDMLPI K A A A |
| UniRef90_C1DQM4 | EDLRRDPVGI HL A G DVL N I T RL |
| UniRef90_B0JPY4 | PALNSEPEIACI SE G Gi Ril |
| UniRef90-G4QC81 | D D ALD K P AVVSLL G E T L Q F P P L |
| UniRef90-T0DCA8 | P T L HEQPEFAYL DNGHLAV |
| UniRef90-R4YKU7 | ESNDQQPSLIQLDDGRLNIHSL |
| UniRef90-Q1LT29 | D Q $\square$ P G K A GRI Y L H C D A L S I Q P L |
| UniRef90_UPI0003B4440D | P D A E G P EVAY I E N G i I V |
| UniRef90-E2CRP0 | D DFDNEPAHIR CEKEALIFEKL |
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$T G M Y H$
$T G Q$
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| UniRef90－B114F7 | GESEASPQQALLKDEGIVFVPF |
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| UniRef90－A0A011QF10 | DELAD K PVQl R L E A S L IVEAL |
| UniRef90－W7C4S0 | D K EES R M SVA Y L K E N Ni Al E EL S K Y S |
| UniRef90＿UPI0002555D09 | D D DE PK K V L V S L E N K L K F |
| UniRef90－R5XNV7 |  |
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| UniRef90－R5QJC2 | K S K K D K P Q i A Y L KENE IR F EDLD |
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VDKVIRNGQEEHDQGDVLFLGTVHEGGKLFVGGNIF
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VVDHTVRSGQVVRYKGDIVILGNVNPDGVVESESDVY PALVYRGSLDPGERLETEESIVIIGDVPQEAVVVSQSDIV
 STLC $\square R R T \square R S G E E \square V A S G D V T \square F G R \square N S G A \square I R A E G N V Q$

KVFDRPDRSGEETNEDLPVVVFGRDNSGAKLFCTQSVS MVPGTVRTGFTI RAKGDIEINGVVEGATLDAGGNIV RQQLRNGEELF $\square D K E T L F L G T V N P G S Y V Y C Y D N V Y$ TVVIRGNVLSGFRIRASGDIRVIGGVE GAELEAEGSIE
 TVVI RGNVLTGFKVKAAGDI RI TGGVEAGALEAGGSIV



|  | 90100 |
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| UniRef90_UPI00046AE68D | D H K K N Q |
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| UniRef90_R5KKP4 | KRQTKDAVIA Y CENDQLI FQPLS Q A S L |
| UniRef90_T0CNK9 |  |
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| UniRef90_UPI0003B46DEF | ERNEKFLNFRLIKNDK】KVLAMERSK |
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| UniRef90_C0B315 | D Q $\square$ P G K SVVQL S L Q E E L T IE NL |
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| UniRef90_E8U9F7 | P EDS GQA EV ARLQD GA V I E |
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| UniRef90_UPI000474102D | P K D K P Y P EVAVIID K Q M I I K P |
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| UniRef90_W9ECV7 | A DEAT A VATDEQTVI YVS DLH NTA Y |
| UniRef90_G9ZSP7 | D D K $\square$ S E NTVVY VN D L HVKVVE S L K Q I |
| UniRef90_C1EHK8 |  |
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| UniRef90_R5EHB3 | D D M E |
| UniRef90_R9KKC5 | P Q R T S LP K I A Y T C N GEVVLMES $\square$ T K |
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| UniRef90_B1C107 | Y T S F ELT MLLY Y K D S Elf LD K |
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| UniRef90_K8E9G4 | P E H |
| UniRef90_UPI0004788B05 |  |
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| UniRef90_R5QZ69 | YTSYEL T MLLYYKDNE』GFLD K |
| UniRef90_E8LMH4 E D M D Q |  |
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|  | D D DPK K PVVI Y L N E Q ELEFEALLE |
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| UniRef90_K8D9F9 | $D Q \\| P N K A A R L R L S A D G A L T V Q P L N$ |
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| UniRef90_UPI000472FAC1 | E E ID D Q S A A L L N E D RVTVVTK L |
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sol25
sol25
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solo
jpssm
jpssm



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