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D Y K S RLL Q E V VQT T H K V M P T Y QV I GESS GP D H D K T F A V R I T V


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K E Y R T LGEGKSKKEAEQRAAEELIKLLE C D L E A E GVGGK S K K T A E Q D A A R R I L K L L E
 R GI YGEGS GK SKKE A E QKAAKDALSRL NGVLGQGTGRSKKEAEQHAAAMAMKHL $\begin{array}{ll}R & D K W G E G G Q G H S\end{array}$


 D TVVTMGTGKTKKAAE QDAAKKALA ILLN



 D G IV A Q G Q G T S R R K A E Q $\square A A A E M A M L V V A L$
 GERWGS GS GRTK K E A E QQAA A S EA WER L $R G V L G R G T G R T K K E A E Q H A A R E A L$
 $\begin{array}{ll}K & \text { Y E Q T G T G H S } \\ N & \square K \\ N & \text { E A E K K }\end{array}$
 NNVIGKGKGRSKKQAEQEAAKQALQLM $D N L I G K G Q G K S K K L A E Q A A A N N A \mid L E L E M$



 A GVDSEGEGSSKRLAE QSAATAML $N G R R G \square G A G K T K K E S E$ N N WLLAK GVVGSSKKKAEQLAARNALKK
 NGK I G S GEGRTKKEA $N E N L S Q G D G R S K K A A E Q D A A K N A L L A T Q Q$ $P G L E A E G I G G S K R A A E K E A A S A M L A R$
 A G L L E GLLKVS GRGS S R RKA E Q Q A A K Q VL E K A GEY G L GE GRSKKEAE QQAAESAWKA ITK $R G V F G S G E G R T K K R A E Q Q A A Y E A W L K L K$
 GDVMGKG $\square$ GS SKK HAEQEAA KMALLEK GGELGRGEGKSKKEAEQLAARHAIISEL


 GGQYGSGKGRSKKAAEQKAAYQAD GGKEGRGQGRTKKEAEQQAACRALARL
 DE VIKGVGEGHSKKEAE
 A GL NS $\square G R G G K S R R R A E Q R T A K Q A A L E L K$
 NDQLAMGAGKSKKEAEQNAARRGL GLVQGTGTGTSKKKAQQEAAENALSR D GI Y GK G $\square G N S K K K A E Q E A A K E A L L E K$ $N G K L E T G K G R T K K E S E Q N A A K K A L L N$


T DMLLA QAQGSSRRSAEQNAAEQILARLQ DGQSARGEGSSRRRAEQASAEAMLARI NQVLAKGSGHSKKAAEQNAANKALQKL QDII A EGSGGNSRRAAEQEAAEVVLAR L NQVLGKGSGKSKKEAELRAAKEAFEKL NEVI GKGKGHSKKDSEQSAASKALRNL
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 D S K T I L Q E M V Q A R G T E L L S Y E L L K E E G P D H N K T F E V A A L I D H K T NL Q E F L Q Q K G E $\square$ GI D Y Q L V D E $\square$ G P A H Q K A F VV E V

 N Y K GEELLE Y L Q A L G WG MP E Y Q V E E V V G P D H Q K R F T I D AK T QL QE WL QARQQLAPEYNVVETRGKAHNQQ

都

D W
D P

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D F K T T L Q E LTTQAR F GI TP E Y K V M S S R GP D H K K E F E V A V F I



 D S K T R L Q E F L Q A R R L P L P E Y Q V K T I T G E A H Q Q E F T V H C Q V DKTSS QEACAERGYPAPTYE V DAEGPEHARAFHAQVVA D YK GLL QE Q T L S L F GCTPTYRVVVCEEGPAHQKTEHVQL S L


 DAKSALQE WAAKTGRGVPRYELTERSGPDHRPVFTVQVTV PDSLLQEYCTRNGNS PQYELVTTSEGQAHLPCFVYKVVV DAKTALQEDAQARGEPPPGYREDSRHGPDHQPDFTDEVRL DWKTSLQEMAAHHGLGVPRYHLEG TGPDHARSFTAEVHL
 PK S AL Q E WAA ANRRGVPAAYSIVDRS GPGHAPRFTURAAV D Y K TMML QECDQRNKMGNIKYVI YDEKGPSNDKVFYSNVLI


## 品

## D A



 D S



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| :---: | :---: |
| UniRef90＿Q1YEI2 | P DVAADGQGR |
| UniRef90－E7ABX9 | DKLYGTCTAKSKKEAQQLCAQMAYQQ |
| UniRef90－G2TAF9 | DNGSESALLGASKRLAEQAAAQRLLDRL |
| UniRef90－Q97IA4 | NDVKSTGEGYTKKDAEQDAACKALKGLD |
| UniRef90－D4MPM2 | GERESRGAGRTKKAAEQMAAYQAILLKLK |
| UniRef90－F4BPZ6 | EGVLGQGQGKTKKAAEQVAAENALLALQ |
| UniRef90－H1LRL8 | NGEKGVGEGVSKKSAEQAA |
| UniRef90－UPI0003B30E99 | DGRMGTGVGRSKKGAEQRAAEDA WR |
| UniRef90＿R7DP71 | NGLLGRGHASTKKEAEQLAAKDALL |
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| UniRef90－K2L4Q4 | APDSETGRGTSRRKAEQDAATKALA I Q |
| UniRef90－UPI0003FE289F | TNDTVTGTGNSRRRAEQDAAKQALEQ |
| UniRef90－UPI00047B44B9 | GDVHGTGAGLSKKESEQQAAKSA |
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| UniRef90＿G3SQU4 | GNTSCTGQGPSK |
| UniRef90－A3ST68 | NGASAVASAPSKRQAEQAAAKTLLA QLE |
| UniRef90－U2FQ70 | AGDSVEGEGGGRRKAEQDAARRMLEKL |
| UniRef90－UPIOOO2491318 | DNILSKGYGYSKKHAEQM |
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| UniRef90－UPI0003756602 | GGAMGS GVVGT K K E A E Q L A A S T A WKA |
| UniRef90－W0A8W4 | KGGEASAEGSSKQDAETAAARALLEKLQ |
| UniRef90＿H5WZD1 | GGRLGHGEGTTKKEAEQKAAEFA |
| UniRef90－J3VTV5 | VSLPY $\square$ GNGSSRRKAEQAAAEQTLKLLE |
| UniRef90－B9VM95 | GEFAANGSGQ |
| UniRef90－Q8RGX3 | GNYKEKAVARNKKKAEQLSAKALC |
| UniRef90－K2E3C7 | DKKDGEGEGRSKQKAEQAAAENA |
| UniRef90－FOSUF0 | NNFYGKGTGKTKKEAEQHAARLLALELWE |
| UniRef90－K8Z7T2 |  |
| UniRef90－K2CFS8 | DGKYAEGQGKSKQAAQEDAAYHTL |
| UniRef90－D4MYX4 | GEVIGTGSGHSKKSAEQHAAFEAIIKRHK |
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| UniRef90－Q3B6L3 | NGRRGRGTALRKKDAEQLAAEEAMGALE |
| UniRef90－J0Q9J9 | SGFAEDGQGSSKRCAERMAAEK |
| UniRef90－G9ER02 | EKLVTQGEGSNRRKAEQDA AKAM |
| UniRef90－H1FZ04 | EDKYARASGKSKKIAQQESAKQAVELLLK |
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| UniRef90－UPI00047DE5DB | ENLHT】AEGTTKKRAEQRAAEDMM |
| UniRef90－D4J805 | GDV ${ }^{\text {d }}$ KGSGRTKQAAGQEAAYHAILALK |
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| UniRef90－X1N8V3 | KKILGKGSGKNKKTAEQEAAKQALVKI K |
| UniRef90－A4BBJ8 | ESLETVGVGSSRRMAEQEAANAAL |
| UniRef90－Q0FD73 | EGQSAKAQAQSKRAASQDAAADLLGQLE |
| UniRef90－D1BV52 | GPVLGLGHGTAKKHAEQEAAEQAYRALQ |
| UniRef90－W4LYA0 | NRYDC\GTGRSKKAAEQHAARQLLERLQ |
| UniRef90－K2MSM6 | KGYKAHGRGRSKREAEQAAATSMLER |
| UniRef90－B4WL11 | GGKYGRGSGRSKQKAQKLAARST |
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| UniRef90－K2B3Y8 | GDKQGRGNGYSKQTAEQDAAKNSLE |
| UniRef90－R6Y7Z3 |  |
| UniRef90－Q0APC4 | TPLAAVGEGGSKQVAERAAAEELLKR |
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| UniRef90－UPI00046CFA72 | A GEEFEG口GSSKKDAEHQAAQFAWE |
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| UniRef90－E2SAY6 | GEVFAGGAGRSKKEAEQEVAEIAWRTL |
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| UniRef90－D7N644 | NDII GNGYGKTKKSSEQLAA K N ALL |
| UniRef90－U5T7L9 | EQLVGEGSAGNRRQAEQAAAGDLLAKL |
| UniRef90－A0A011T9Z5 | GEASAAGVGGSKKQAEMAAALTLLWRLL |
| UniRef90－G4QG52 | ENTSQlGKGKSRRQAEQNAAKQ |
| UniRef90－A6VLV8 | ENLT FVGVAGSRRKAEQVAAEQILKVLD |
| UniRef90－R5E341 | PGIS LTGVGKSRRQAEQDAAQKALD |
| UniRef90－R6RGP0 | GSHEGRGAGRTKKAAEQLAAYRGLCQLK |
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| UniRef90－D5BR77 | E G Y D S $\square$ A S A S NRKLA E Q Q A A A LMVA Q |
| UniRef90－C0W2S9 | DGQEGEGTGSSKKVAEHDAAEAAYAS |
| UniRef90－14B1T0 | GEKKSEGVARTRKQAEQNAAQAYMEK |
| UniRef90－UPI000421FF97 | GDRHVEARGSSRKRAESDAARRLLDLL |
| UniRef90－R6WP12 | GEERGVGAGRTKKAAEQSAAYES |
| UniRef90－X1AD54 | NKKDAKANGSSKKEAEQKAAQKA |
| UniRef90－UPI00040F94AF | NGEKHEATAGSKRQAEQAAAQGLLSKVE |
| UniRef90＿F6WLD7 | ETYVETGTGASKKQAKESAAEKLLAKL｜ |

## UniRef90 T1EDA6 UniRef90-E3B5Z5 UniRef90 R7GFE8 UniRef90-E4UDB4 UniRef90-K0F6C8 UniRef90-UPIO0030C1243 UniRef90-H9GP46 <br> \section*{1}

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UniRef90-K2BTB7
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UniRef90_S5MHZ8

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 WKTSS DFK S Y L Q E Y Y Q S K S Q S KI R Y V V T K E E GP D HE KM F HVNVVV

D WK TS QQELVVQ D SK GQFQQQWALANFVQQNPEYLII DESGPDHAKEFTAEVVV D P K T RLLQE F L Q G R R I P L P T Y EVI A T S GQSHN QEFTVVRCS V K NLL QEYAQKMNFAIPQYE CERYDSESK IISFSCTVDV D A K T T L Q E WV Q GR GAP TP S Y R E V ERRSGP D HAPSSFTVVEV S V DAKTRLQEFLQAHKLPDPEYDVVEVEGEAHAHQFTI ECRV D Y K S RLQEVTQRLFQDRPLYVLTGTR
 D WK TVLQEYCAEHGFDAPRYE IVGG
 K S L L Q E LT QRRYCSDP TYK S T R
 D WK TS L Q E LAAA ER GLLGVPEYR VVEEGPDHAKVFAARVLL D SK T IL Q E K V Q K K GQQDL V Y E L V S E S G P D H D K I F V V E A V I
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D P
D $P$ N P A G V L L




DWKTTLQERLAERNLEMPTYTSTVVTGPEHEQTATAEEVAV DAKS LL QE LL Q S RK I S LPRYLIVNI NGAA HNQRFEDECVI
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$P$ V V




D YKTELQQ Y I Q K N N D NVI EY ULD R S E


D Y RT RLLQEQA QSRFNRTPTYRMVDV

D P KTQLQEYLQKYGNVLPKYELTDTDGLKPRRREFDVQVEV


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 YK S KL Q E LCQ KK A WDL PEYDTTKKQGQDHNPRFEAAVVV DAKTSLQEWLQARKMKVPTYEVAGDEGEAHRQTFLVDCQI


 D PKTA L Q E WA QGQGRPLPTYRVVLDRTGPDHAPVFTVVEVSV





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| UniRef90-R7GFE8 | NGKKAVGTGKSKKLAQMDAAHNAIESL |
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| UniRet90-R5Q0 | N |
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D P K T QL Q E ML Q A Q H L P LPK Y R $\square E K$ Q T G E G NTALA DV S C D L
$K N L L Q E Y A Q K M N Y A M P D Y Q C Q K C E T P G R G \square N F T C T V E I$






D HK TK L Q E V L Q K A G DVI I D Y RI I NE
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D WK TVI QE EVAAS QKLLGEMCYEVT G
KT R L Q E LCHRRKRWNPPEYYSTMR
D PK T R L Q Q
DAK TALLQE WA QA R R R L A P P P R Y R L L A S

YKS QL QUYA QKR GK LLLP SYRPI H
$Y K N L L Q E M A Q K G G L G L P A Y S T S S Q S$
NPK G DL DA R L Q A L G G L G G P P F F D A T A




NFK S KL DE WS QK N K M E V S F E LI I E QF D K





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DNETFEGSGRNKK $\square$ AKARAAQSA $\square A S \square$
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| UniRef90_UPI00047AED1D | D |
| UniRef90_D6WSK5 | N |
| UniRef90_F5L7T2 | D |

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 NPVMMLLNE L
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QLN E Y DAKTRL QE WLQARQRT LPSYEVTSETGDEHAKDF RVR CV L NFIGLVNHYCQKTKRSH SYDLVGRDGPPHKPHFLYK K



L NVYC Q K H N MV L K Y QE LS K T GP P H N L R F K Y QVI I
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 YKSF LQEELAQQEEEICLPRYKTTRA
 D WK T S L Q E LTAAVA G $\square G Q P D Y R V$ T D SKTVLLQ $\begin{array}{llll}\text { Q E G G } \\ L & R & F & N \\ L & R\end{array}$


REGPPNDRTFITTCKN DPKTRR Q E L L Q S R K Q P L P I Y S VK E V K T D K K H P E A S C Q V T

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| UniRef90 Q3SH50 | AKLSTRGTGK |
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| UniRef90－A7I3P5 | DDKKAAAKGKSK |
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| UniRef90－K1L4G4 | NGILADGKGATKKKAEQDASKNACEKLK |
| UniRef90＿UPI00047AED1D | PELVTEGEGTSR |
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| UniRef90－F5L7T2 | SGKLGMGTGRSKKEAEQRAAAQALKKL |
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| UniRef90－UPI00035119E7 | DNVYGSGSAKSKKEAKELAAKKTWEMIE |
| UniRef90－C3ZTW2 | GDFVAEGEGNGKKVSKKRAA QKVLEQLK |
| UniRef90－U2KH58 | ETVRCEGSGFSKKESQQLASKLTLERLK |
| UniRef90－T1JPR2 | NGVEYRPSCGTKKQAKALAATVALQA |
| UniRef90－UPI00047C54CE | EGAEGTASGASK |
| UniRef90＿LOKAH5 | DE\｜LGVGVG |
| UniRef90－UPI0003BC6A8E | D GKYPKGVGKTKKDAK L K A A EN |
| UniRef90－X1XVX6 |  |
| UniRef90＿Q7NH89 | GRLWGSGEGPSKKLAQQRAARGAYAAL |
| UniRef90－A0A015LPT8 | G GEWGT GVGRTK |
| UniRef90－G7J6L3 | NGLTFTSTFNSSGEAQN |
| UniRef90＿UPI000368243A | PEGLFEASGNSKRQAEDAAAKEALSHLK |
| UniRef90－F2BGL0 | GGFVSTAQAAGRRAAEQ |
| UniRef90－D4YP53 | GETRASGEGTSKKNAELVAAEI |
| UniRef90＿A3JRK0 | DGQQAEAKAPSK |
| UniRef90＿C3Z8S7 | DGRTCEGSGRSKK $\square$ A K $\square$ RAA QAA $\square$ QE $\square$ |
| UniRef90－S6BCF8 | EGLRSQGQGSSR |
| UniRef90－R5NSU4 | GEVMGSGTGASKKEAEQNAAK\｜VIDGL |
| UniRef90－A0A022LQ06 |  |
| UniRef90－UPI000462CEAF | DKIQYQCEGKTKKEAKAHAAVLA WES $\square \mathrm{E}$ |
| UniRef90－UPI00030BDE5F | DQIIGEGTGKS |
| UniRef90－T1P8L9 | RNKRATATGSS $\square$ QQAEM |
| UniRef90－Q9PQT8 |  |
| UniRef90－UPI0003F8261E | D GQTGTGIGKNKRSAEQEAAKNALKNL |
| UniRef90－M1AGS0 | EAEDFHGDGKSKKQA |
| UniRef90－UPI0003B72DEA | KNIYGSGDG |
| UniRef90－B9XI61 | NGVEAHGRGK |
| UniRef90－C7QGZ0 | GGVYGHGSGRSKKHAEALAAKGVL |
| UniRef90－D4LHQ1 | NGKMGTG $\square$ GHTKK |
| UniRef90－UPI0003C45698 | GDQHWEAEG |
| UniRef90－A8PS78 | P DQVFY Y K GA S $\square$ KKAQQSAAETA\L |
| UniRef90－A8X5Q8 | KEVKAEGKGKKKKVAQQEACTQLL |
| UniRef90－U6PLC4 | VGQEVEGVAKTKKASKNDASKEMLA\LE |
| UniRef90－C0N4Q1 | LDKVVVAQGSSHRKAEKKAAERALTLIE |
| UniRef90－UPI000473CA64 | EGLKASAFGKSHKQAETNAARVLI |
| UniRef90－UPI0003A0B2EE | EQIRTQGIA |
| UniRef90－B7TCB0 | N GKAYPGVGKNK |
| UniRef90－E2A715 | GDKVTVGEGSSKKVSKKRAAELMMLEELK |
| UniRef90－Q290Q6 | SGTTARGTGNSKKLAKRSAAQALLELLLE |
| UniRef90－R9JTF4 | DELIGSGVGRTKKAAEQQAAYEALKKLK |
| UniRef90－S8GNR4 | EQIAGNGSGYSKKESQQKAAEDALEKLK |
| UniRef90－M0S858 | EDK】FVIS GDSKRVAENSAAFKML |
| UniRef90－M7ZUP0 | AGNTYTGEAATKKDAEQKAARVAVKS】 |
| UniRef90－UPI000412B231 | D G ILGEGEGHSKK |
| UniRef90－W0ZDD7 | GATAAQGVGS S K |
| UniRef90－Q91550 | DGVKFQGSGSNKKVAKAYAALSALLEKL |
| UniRef90－A0A016UQ41 | VGQEVK G $\square$ A K Q K K A S K N $\square$ A S QKMLE ${ }^{\text {V }}$ L |
| UniRef90－V7B7T9 | $\overline{\mathrm{D}} \mathrm{G}$ I SQSTFSHRKTAEQDAARLDAMECL |
| UniRef90＿B8KFV6 | GDEVAQGIVGES |
| UniRef90－H2N2D8 | DGRFFQGAGLTKKKAKLSAAEQALQSL |
| UniRef90－Q91FI4 |  |
| UniRef90－N1ZIZ0 | NKVLGKGAGKSKKEAEQAAAQNALKKME |
| UniRef90－O12983 | GNQTFPPVANSKKMAKQLAAEAAVREL |
| UniRef90－S8DXJ6 | A G I T FRGEAKNKKQAEKNAADAA WLSLK |
| UniRef90－L5JX02 | NGQAFEGAGPTKKKAK L HAA |
| UniRef90＿V4BGQ1 | GERLDATGEGHS $\square$ QQAEMSAATNAMN |
| UniRef90－J3MSP7 | EDEQFSSASCHRKDAEKDAAKVAYDIL |
| UniRef90－16JTI3 | S G |
| UniRef90－R7TLJ0 | KRHRAVGQGHS\QQAEMNAAQSAL |
| UniRef90－M3XGS0 | GGRWFPASANNKKQAKQEAADAALRVL |
| UniRef90－K9WV92 | GE GK GR S $\mathrm{DK}^{\text {K }}$ |
| UniRef90－H4GJU0 | DGVIGEGTGSSKKHAEMAAAQAA历LKKL |
|  |  |

UniRefigo B4LJX4 UniRef90_D5E4P5 UniRef90-B6FZ65 UniRef90-E8RHD7 UniRef90-W9RGH4 UniRef90_UPI00031772EB UniRef90_UPI00034AAD1A UniRef90_B4NKL6 UniRef90-K5BBP1 UniRef90-IOKY84 UniRef90-UPI0003B3942E UniRef90-UPI0002B49509 UniRef90-W5JWJ4 UniRef90-V9IGI2 UniRef90-K7FJN8 UniRef90-Q918Y2 UniRef90-G2DAC8 UniRef90-IOWJM8 UniRef90_X5DY8 UniRef90_UPI00042A9B4A UniRef90-S4RG62 UniRef90 F8A1M9 UniRef90-A0A034V3E7 UniRef90_C5YP46
D UniRef90-C8S219 UniRef90_UPI0003C815F6 UniRef90-H9L3K3 UniRef90-R7AY23 UniRef90-R7DJY7 UniRef90-I1G6U4
UniRef90-K9YNB1
UniRef90_W7IJE6
UniRef90-B4VZJ1
UniRef90_C1LFF1
UniRef90-H9K9R8 UniRef90_UPI000383B3C3 UniRef90_Q0IFJ1 UniRef90_U6HXR5 UniRef90_UPIO000F1D243 UniRef90-D1W125 UniRef90-M0U2K5
UniRef90_UPIO002739B18
UniRef90-C5CAE4
UniRef90_R5AT48
UniRef90_UPI00035D3A3E
UniRef90_J9JNT8
UniRef90_Q8PZF0
UniRef90_UPIO0047A341E
UniRef90-UPI000265624D
UniRef90_J9LQX6
UniRef90_R6D5L8
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UniRef90_Q01HF5
UniRef90-R7HA92
UniRef90-C3XF94
UniRef90-F6ZVV5
UniRef90-H6L5M0
UniRef90-G6DTP8
UniRef90-K9P854
UniRef90-H3DLT9
UniRef90_V9KKF7
UniRef90_UPIO0042BFFF5
UniRef90-E3EPM3
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UniRef90-F4W6K4
UniRef90-X1GHN3
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UniRef90-I1IZJO
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UniRef90-K7J5F4
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UniRef90-EOVPI2
UniRef90_C6K8G4
UniRef90_V7BBR0
 DYKTQLQEEDQKNGSSNIWYKLLDEDGPDHNKTFIVMVGV
 $\begin{array}{rl}D A K S S L Q & L L Q E R F N E G P E Y M L T G E E G P A H A R L F S V T V\end{array}$

DWKTSLQELTAALGLGVPEYRVITSTGGPDHNKEFTATVLVGTVAWVVV

 $P V T M L Q E \_C M G K R V P T P T Y Q Y L G E S G P N D K T F Q H K V L T$ VYKVVIDT
NP円S ILMEYGQKSG STCEFQLLSQAGPPHAPKFKYAVGV

 YKS LLI E WAQKEKK TF LDFEVYDDSGNELDKHFAVKLF D NFKSQLI EWSQKNKREDEFETTEETDEKDKQPRFKAVVKI $K L N K Y R Q K H G \quad V T D T Y K E L D P T G P P H D R R F T F Q V I I$ NP DS RLA Q IQQAKKEREPDYTVVSERSLARRREF DMQVKV D WKTSLQELAAALGLGAPSYEVTG
D F K T Q L S VY A Q K L S K V P P P L Y K H I DAKTSLQEWAQARGLPPPAY DELGRDGPAHAPRFNAEVTI

 LVKQTGPDHEPRAKFQAVI NFKSKL DEWGQKNR DDVSFSLIEAFTDKENNPDFQFQAIL | $Y K N D L Q E Y Y Q K N K Y P M P Q Y S T V G V G N G K F V C S L T C T V S H$ |
| :--- |
| $N Y K D A L Q E W T Q R V H K S L P T Y U Q E N K G E E N E R F L A Q V W L K$ |


 NPVSRLDQIQQAKREKEPVYNLIEEKGAPRRKEFVMEVTM SA LQ Q YCAKNKVQPPTYEYI GE E
 $N$ YVSKVQEYCDKNLWPPPTYEFSECSQSLFGGRYQCKVVRLV PVSALMEMCNKKKWPQPEFVMVHHSGPDHRKNF LIFKVVV
 AK S RL M E DCAT NHWRDP LTF E C CK E E GP S H L K M F T Y K V TVV D WK TVVA EAASR H GLDGAVRYA IDEGQGPAHDPRYRATMVV

 D WK T S L TVVKA H S M GLLSDP E Y Y R M S NFKSK TVSYVLVA ITGHAHKP I T TYMCQT NFK S K L I E WS Q K N K F C V E F NL I E Q S D S D Q N P I F E T Q T T V


 NFKS ILLEFCQKDQKSL
NWKSVLQEWSQGQGKGLP L L E Y A K A R GFAA TYHCL $N P V C M L M E Y A Q K S G N T C E F Q L V A$
 D WK TS L TVVKAHEL GLDEPRYRM SVVGGPAYABREFVYQAKV I WA DA GLD $N Y K S Q Q L E H C Q K N G Q R V$ V

YKNLVQEWCDKYGYEKP MYK TYQT D $\square$ K SKLIE WGQKNKVKLEFNLLQHAKDKEGSPTFDF QVVI D $\square$ K S F F HQWCAKNGKE

## P VT Y LT T T C S K RK K WN P P

 NYK SKLLEWS QREGKK DEYSYIEN $\quad$ GG

KK QLIN S K QI QF S AT I F
AK S F L F E LCA A S Y WK P P E F Q L C C I E E G P S H L R R F T Y K V IV $N Y K A A L Q E W T Q G E Y K T L P E Y R V T Q L A S P Q H N Q R F I A E V W L$
 NFKSKLIEWSQKNRVKLD

NK L $\quad$ A $P$ $\mathrm{V} Y \mathrm{~K} \mid \mathrm{V}$ S S N S VGGLQE LALLQRGWHLP DAK T
 D PKT RLQEYQQAQRSSLP

| UniRef90＿B4LJX4 | $\text { GEEEYSADGFK }{ }^{50} \text { KKKAQHDA ASK }$ |
| :---: | :---: |
| UniRef90－D5E4P5 |  |
| UniRef90－B6FZ65 | EDELGVGKGKS |
| UniRef90－D7DJV6 | QDIRTVGEGT |
| UniRef90－E8RHD7 | GEELGSGRASSK |
| UniRef90－W9RGH4 |  |
| UniRef90－UPI00031772EB | QGRTAEGKGDTKRAAE |
| UniRef90－UPI00034AAD1A | N GVY GVGT G R |
| UniRef90－B4NKL6 | NGQKYTPSCNSKKEAKLNAAKLCLQA $\square$ |
| UniRef90＿K5BBP1 | T DVY GK GVVGR |
| UniRef90－10KY84 | GNRYGGAEGRSK |
| UniRef90－UPI0003B3942E |  |
| UniRef90－UPI0002B49509 | D GKQFCSPTPSKKQAQND |
| UniRef90－W5JWJ4 | MGQEAMGLGGRSKQDSKHEAAWQMIRLL |
| UniRef90－V9IGI2 | DGQTYEGKGRTKKMAKHAAAELALLRNI |
| UniRef90－K7FJN8 | GEKTFPAVANSKKGAKQMAAEVAVK\L |
| UniRef90－Q918Y2 | GERLLFEASAPSKKAARQLAAEEAVKEL |
| UniRef90－G2DAC8 | EEQESDGSGSSRRRAEQAAAAAMLQRLE |
| UniRef90－10WJM8 | DGK】AKARATSKKKAEERAAKRAYFKL Q |
| UniRef90－X5DY81 | D NKKGEGVGTSKKEAHQKAAHETLKKLD |
| UniRef90－UPI00042A9B4A | DKKEFKAEGKSKQEAKNAAARLAVNILN |
| UniRef90－S4RG62 | GDDCATGTGPSKK■AKRNAAETLLLQL |
| UniRef90－F8A1M9 | G GVHGTGTGPAK |
| UniRef90－A0A034V3E7 | GTIVTEGEGNGKK】SKKRAAEKMLEEL |
| UniRef90＿C5YP46 | D G Q |
| UniRef90＿C8S219 | E N |
| UniRef90－UPI0003C815F6 |  |
| UniRef90＿H9L3K3 | NGRPFPAEAGSKKLAKQEAAANAMR |
| UniRef90－R7AY23 | NNVIGTGTGRSKKEAEQMAAKEALL |
| UniRef90＿R7DJY7 |  |
| UniRef90＿1GG6U4 | GSRQVTFKGTTKKLAEQSAAETACLAL |
| UniRef90－K9YNB1 | D Q MLLGEGRGATKKASHQAAA |
| UniRef90－W7IJE6 | NGQYGNGDGR |
| UniRef90－B4VZJ1 | K GVY GVGT G R R K |
| UniRef90＿C1LFF1 | WKWTHTGFGNSKKSAKRRAA $\square$ G L L D $\square$ |
| UniRef90－H9K9R8 | GQHSAQG |
| UniRef90－W8C6Q4 | MDTEAVGI GRSKRDAKHNAAGVVIKRL |
| UniRef90＿UPI000383B3C3 | GTHTFTASAPSKKAAKQMAAEEAMKALQ |
| UniRef90－Q0IFJ1 | PSEAYVGAGNSKKDAERNAARDFVNYL |
| UniRef90－U6HXR5 | WRWEFLGFGSSKKEAKRKAATEFL |
| UniRef90＿UPI0000F1D243 | NGYQPQSASPNKKHAKAMAATVALQA |
| UniRef90－D1W125 | EGIEGS GEGFSKKESQQLASKLTLEQLK |
| UniRef90－M0U2K5 | EVEHESSVCPQKKAAQDHAAEGALWYL |
| UniRef90＿UPI0002739B18 | GDREFEGKGKSKKEAKNVAARMALLILE |
| UniRef90－C5CAE4 | GEEYGSAVASSKKQAERDAAAASWPALE |
| UniRef90－R5AT48 | DGA $\square$ GS GKGGNKQSAGQAAAADADERL |
| UniRef90＿UPI00035D3A3E | E GVDGS G G G Y SKKESQQLA S K LTL EKL |
| UniRef90－J9JNT8 | K SVRSQATGHS $\square$ QRAEMNAANSA |
| UniRef90－Q8PZF0 | GSSTSTGQAGKKQRAKRLAARAMIYTL |
| UniRef90＿UPI00047A341E | GELLGKGTGTSKRKAQLAAARVAWKTLD |
| UniRef90＿UPI000265624D | NGSAYQPSSPNKKHAKATAATVV |
| UniRef90－J9LQX6 | HNMKADGEGKSKKEAKQNAAAQMCEKL |
| UniRef90＿R6D5L8 | ENIDAGTGKGYSKKESQQEAAHATLTKIK |
| UniRef90－A4APK9 | GDVVAKARATSKKKAEERASKRAFFALQ |
| UniRef90－Q01HF5 | E I KGASATGKQKKAAQEHAAQGALWCLK |
| UniRef90－R7HA92 | GDLVVKGTGHTKKAAQQQAAYNALLHLK |
| UniRef90＿C3XF94 | NKIYASANG |
| UniRef90－F6ZVV5 |  |
| UniRef90－H6L5M0 | DEKLAEATGPNKKTAEQNASK C A |
| UniRef90－G6DTP8 | P PHSATGLLGPNKKTAKRRAAHNVLLAME |
| UniRef90－K9P854 | A DLS GEGRGRS |
| UniRef90＿H3DLT9 | GGRWFPPVASNKKQGKQEAADAALRVL |
| UniRef90＿V9KKF7 | GDDTFPA |
| UniRef90－UPI00042BFFF5 | GGRWFPAVAHSKKQGKQEAADAADRVL |
| UniRef90－E3EPM3 | D D 1 DGKGTGTSKRKAQLAAAEMA WHELD |
| UniRef90＿UPI00041 | A GKEGRGSA |
| UniRef90＿UPI000478166D |  |
| UniRef90－R7G4V1 | NEVKGEGRGYNGKTAEKRAAEVVFLQLE |
| UniRef90－UPIO004208B59 | EGISGQGHGYSKKESQQEAAKITLQRL |
| UniRef90－F4W6K4 | PGFDYVGAGNSKKDAQGNAARDYVNYL |
| UniRef90－X1GHN3 | KK円YGTGTGENKKEAEQDAAQDTLKKLK |
| UniRef90＿T1G364 | NGVEYLSPNSSKK】AKMEAATLCLQKL |
| UniRef90－H3FGL5 | NGFEFLGVCASKKEAKTECARVALEKI |
| UniRef90－UPI00027FACDE | GAQTFPSSAPSKKVAKQMAAEEAMKAL |
| UniRef90＿C5CGL9 | N GKJLAVGYGKTKK |
| UniRef90＿UPI0004101BC7 | D DLIA QGNGENKKSAEQDGARRVCELLE |
| UniRef90－I1IZJ0 | Q $\square$ R GP SKKAAQEHAAQGALLWYLK |
| UniRef90＿U615T7 | GKVS A C GK GP SKKKAKHLAA Y Y VL |
| UniRef90－K9RCB4 | HDKKGEGKGRS |
| UniRef90－X1VIT8 | ENQKGSGKGMSKKEAEQNAAEQALIR\K |
| UniRef90－G1LYN3 | GGREFPAEAGSKKVAKQDAALKAMTIL |
| UniRef90＿D7LT99 | A GKVFTGEAKTKKLAEMSAAKIAFMSIK |
| UniRef90－C9PW77 | E G E GKGRGYSKKESQQLASKLTLERLK |
| UniRef90＿A0A023EZS4 | D GT】F S G S A A AKKLA KQRAAEAALLTL |
| UniRef90＿E4XR68 | GGEKYEGSGTS $\square$ KKAQHSAAKKA $\square$ E |
| UniRef90－I3JPJ1 | ESLSEKGVGNS |
| UniRef90－Q0K8N3 | P EVRVFGTGASR |
| UniRef90－K7J5F4 | NGVEYKPASPNKKLAKAEAA QVCLLQ $\square$ |
| UniRef90＿M5DQA5 | P EQAVVA $\square$ GGS R R |
| UniRef90－E0VPI2 | $N G V R Y \mathrm{I}$ GRGKNKKLAKHNAAEAALS G $\square \mathrm{Q}$ |
| UniRef90＿C6K8G4 | DGQKYLGQGRSKKVAR】EAAATAL |
| UniRef90＿V7BBR0 | $R \triangle L Q M S G Y E K S R K D A Q N T A A S \square M L M A L$ |

UniRef90 Q03963 UniRef90-UP10002D90910 UniRef90-E3D743 UniRef90-UPI0003C14B27 UniRef90 F4KYM8 UniRef90-UPIOOO34F5E04 UniRef90-F7EAG4 UniRef90-E4YMN6 UniRef90-Q2Q0J3 UniRef90_UPIo002B4289A UniRef90-KgS4Y3 UniRef90-B9MRF6 UniRef90_UPIOOO3FOEOE3 UniRef90-D8G7J2 UniRef90-A0A022RAR6 UniRef90-ROGNR5 UniRef90-AOYQT1 UniRef90-H3DRT8 UniRef90-J3LJE2 UniRef90-F5XRD7
UniRef90
W4Z4Z6 UniRef90-BODDR5 UniRef90 Q6YPW7 UniRef90-H9GFN5 UniRef90-N9VCH4 UniRef90-K9X883 UniRef90-B9S192 UniRef90-M5ENY4 UniRef90-H8XS18 UniRef90-UPI0003F09DD4 UniRef90-UPIO0039584EF UniRef90-UPI00041DB5FC UniRef90-A8Q5T1 UniRef90_UPI00042B915E UniRef90-E2BQA7 UniRef90-K7Y657 UniRef90-UPIo00441F9B8 UniRef90-L7RCP4 UniRef90_H3CRD2 UniRef90-A4FMJ8 UniRef90-H3DH46 UniRef90-S4RH26
UniRef90 W8C9N9 UniRef90-R5GZH4 UniRef90-UPIOOO478E284 UniRef90-T2M471 UniRef90-F812H7 UniRef90-UPIO0024846FC UniRef90-H1HAS6 UniRef90-F1QZW7 UniRef90-R6ZPY7 UniRef90_W9EGR1 UniRef90-UPIIOOO3508E01 UniRef90-F7KLL3 UniRef90_S3XYF1 UniRef90-I3J7U8 UniRef90-O96SI9

1
Y 10 20 30 NFMDKLNKYRQMHG VAITYKELSTSGPPHDRRFTFQVLI
 DVKNFLYAWC GKKKVTPNYD TRAAGNKNRQKFMCEVRV NYKSQLLEWCQKSGKNV TYKLLARYKFEKRDRFKVAVMI PKMLLLDYARSHGFAAPEFKLVDQSGPPHEPKFVYQAKV $P$ VRLAQUQQAAKEREPIYQVISEKSVQRKKEFIMQCIV SALQEFCAKTKNTPPLYEFIDGE
NYK
NYKAALQEWTQARYQCRPEYQVQE
DYKTKLQEFVQKKGQKKIVYKDYEII NYKAFLYSWC GKKKVVPQYEF RSAGSKHRQRFMCEVRV YKILLQELADKEGFFPPKYTTTKEPRDSRIQTFSSTVEV KGKLFEICAKNKWSNPVFSVEEQKGPKNEPRFVCSVKI NYKAALQEWTQSHYKVLPEY TVTESGPMGDERYTAQVWF DWKTSLQDEVGLRRQWPMPQYRCVNEGGPAHAKRFVYAVRVV F VNQLNNKCQHYRKEMPIYE EKRSGPAHAEVWNIIVTI DFKTQLQEVVQSEKKMTVQYKIVQEQGPAHSKNFVAEVYL PKNVLQEHFQQSSTSNVVYTTEKLPNNTFRATVMFEWV NYKAALQEWTQAHYKILPEYRVQEIHHHSNHDRFTAQVWL YKNLLQSYAQKRGLPLPMYSCGERGPPHASLEKCKVTCI YKSLI DEWCQKEKKS FKFDVYEDNGKEGMKFFGVKLYI NYKNILQEHCQKNRFDTPKYESTKIQDNPFTTVLTYKTLG
 DPKRVLSSTCKKYGKPAPQSRMLAETGRSTHPVFVVGVYS AKSELHEVCATNNWKLPDYECCKEEGLSHMKLFTFKVVV DAVGTL LD $\square C V Q R N W P \| A D F E E M Q A Y G E P H R P R F T I V C S L$ AKNKLQEYFQKNKL DWKTSLQELTAAAAB RPGLIYYSTSI HPGLQY KYY
DWKT SLELAAKMGDPDPLY
DWKTSIQEI AAAQRMGVPIDYQVTS
NPVTYLTQLIQLLRKEPPVTYTMKA

FKSKLIEWSQKNKFEV
DHKTELQEAlQQINGPVA!

NYVGLLNRFSQKYRL LI NYEYLGEEGP
DSKTVLAQEMIDQTMPEAEFVYY KNPVMELNEKRRGA
PKMFLDEWSRKEKRPGLQQY
DYKTLLQEMAHEKLKLSPRYRVVSEAGPEASKVSTVTVAQ
YK SLV VE WCQKEKK $\square F Y Y D I$ YED DGDDGTRFF GVKLS
D WKTSLQEAVAAAELGPPSY
LNKYHQKNGVKVSY NSKNQLQTFDNRARHGLPTYKTQQLRNN
 KS FLYSLLGKKKL TPDYD I RNSGPKHRQRFLCEVRV
 all
 ARSRLYELCAAYCWK LPP

LINFCMQRNFPTVNO
D WK TSITVKAHKLGLGEPRYTM A V NSKSSKQEYVLLNPIFVPQYEVVKK KQKLQELCQKNSYPLPKYQTTHE DPKKALLEMVKKFDREKPKSRLLKETGRDHNPLVSSTVTV NHKDRLAKHCRRLSLGGRPEFVIQFERGGANS LVFIVGVVG PVSVVMEDCAKRKWPLPTF LISESGBPNAREFKCTAIV NYKAALQQWTQAVYQQLPEYRVQETSPPSQDPRFTAEVWL NAKGRLHQYFQQN KDNPEYK YSQVGPDHNRSYDAELTV
 YKSLFIE WCQKEKKS FHYETYDDNAAGNVKYFAVKL HL NYKDALQEDTQVRYK LLPEYRVFEDHREHHPERFTAEVWL
 IL HEYVQHADRKQPTYEFKELENAA
DYKSTF $\square 1$ RMQKEGTPY LGDY LGETEGAPGEVTH HVAGRV

|  |  |
| :---: | :---: |
| iRef90-UPIO0022D90910 | NGEMASATDYSKKNAEK |
| UniRef90-E3D743 | DELLGGEADGSSKRKAQLAAADKAW |
| UniRef90-UPI0003C14B27 | DGYNY ${ }^{\text {damGNSKKDAQSNAARDFLN }}$ |
| UniRef90-F4KYM8 | NNKRATADDFNKKSAEQMASEKA |
| UniRef90-UP | GGRWFPAVAHSKKQGKQEAADAA |
| UniRef90-F7EA | DEMQYTLWD |
| UniRee90 E4YM | NDKVSQGL |
| ef90-Q200J3 | MEVEAYGNG |
| UP10002 | NGK |
| Ref90_K9S4Y3 |  |
| iRef90_B9N | GKK |
| UniRef90-UPIO | QDYDYDGVGTSKKDAQANCARDFVNY■ |
| UniRef90 D8G7 |  |
| UniRef90 A0AO22RAR6 |  |
| ROGN |  |
| AOYQ |  |
| UniRef90_-H3DRT8 |  |
| UniRef90-J3LJE2 |  |
| UniRet90_F5XRL | GDQYGPGTGRNK |
| UniRef90-W4Z42 | GEFNTESEGPSKKDAKRKAAELMLPKLK |
| UniRef90 Bodv 5 | E |
| Q6YP |  |
| niRef90-H9GFN | EK S |
| Ret90_N9VC |  |
| UniRef90_K9x883 |  |
| UniRef90 B9SI92 | VATGDGHSOKEAQKAAAHGMLMLDE |
| UniRe90-H8KS14 |  |
|  | NTVKYSSEGSNKKESEQSAAKVACDGDD |
| UniRef90 UPIOOOO395 | NDEYGRGTGKS |
| UniRef90-UPI00041DB5FC | DQ ${ }_{\text {daKARATSKKKAEEDASKRAFYAFQ }}$ |
| UniRef90-A8Q5T | GAlLGEGTGSSILRMEFRA |
| P100 | EMQKTSTTQPKKKM |
|  | D |
| UniRef90_KYY657 | $D \vee \vee Q$ |
| UniReef90 UPl00044 | DGUTYEASGPSKKTAKLHVAVKVQ |
| 7RCP4 |  |
| UniRef90-H3CRD2 |  |
| UniRef90-A4FMJ8 |  |
| UniRef90 H3D | GNTYQATGNSKRTAKLQVALKALLQ |
| UniRef90 -S4RH UniRef90 W8C9 | EGKEYTADGPSK |
| 隹 | GDVIGVGTGSSKRKAOLAAAEMGWKALD |
|  | $\begin{aligned} & \mathrm{Q} \\ & \hline \end{aligned}$ |
| niRef90-UP1000478 | GSGRSKKEAEQEAAAASWKLLQ |
| UniRet90-T2M471 | TNFKSVGCGHSK |
| UniRef90-F812H7 | N |
| UniRe |  |
| UniRe990-F107 | Q |
| UniRef90-R6ZPY7 | ENVAGRGKGYSKKESQQEAAHQTMGMI |
| UniRet90_W9EGR1 |  |
| UniRet90_UPIO003508E01 | - |
| niRef90_F7KLL3 |  |
|  | GELIGTGEGTSKKGAEMEAARRA |
| UniRef90-13J74 UniRef90 O96 | DGQKFRGAGPN |
| UniRei90-UPIO003EC6604 | KKYRSS |
| UniRef90-L7U990 |  |
| UniRet90_UPIO0036B200D | DGVI AKARATSKKKAEEKASQRTYFALDQ |
| Ret90_UP1000 |  |
| G5BZ8 | DGRTFEGKGRSKQDA |
| UniRef90-UPIIO0032A80D6 | NGLDFVGQCNSKKLAEKSAAAEAMLWLK |
|  | PTYSRGAKSKKQAEQNAARMFFQ |
| UniRef90 - ${ }^{\text {ariod }}$ | SYVGVGTSKKDSQLNAAKDFLLMFL |
| UniRei90 UPIOOO3287F1C |  |
| UniRef90 ${ }^{\text {-K9Wk }}$ | N |
| UniRef90-W1 |  |
| UniRef90-A0AO23GD25 | DKKVAEAWDKTKKEAKHQAAELAFRKL |
| RR ef9- UP |  |
| UniRef90-UP100032A | G |
| UniRef90 K7YL12 | GGSSCDAKGAT |
| UniRef90-K41MA8 | EDVIGKGRASSKRKAQLAAAAQGWKRLD |
| UniRef90-K0K | NGLLGVSESRS |
| UniRet90-G7K. | K |
| UniRef90-BOCUK9 | GDQLGEGFGSS |
| UniRef90-M1HFG6 | DGKFAEGSGTTRKDAEQDACNKAL |
| UniRef90-B0CB99 |  |
| UniRef90- ${ }^{\text {H2YB32 }}$ | RSLHAREHGSNKKNASQSCAL |
| UniRef90-Hozos | RRIFSREHGSN |
| UniR | EGVAGRGAGRS |
| UniRef90- UPIO00393E700 | DGSTFEASAPSKKTAKLHVA |
| UniRef90-K9TG55 | GQGTGRSK |
| iRef90-UPI0002A4B42C |  |
| UniRef90-27QCC2 |  |
| Un | GTASS |
|  |  |
|  |  |

## UniRef90 M1A463

 UniRef90-W4LDY6 UniRef90-V5RDT8 UniRef90-A0A037Z7H3 UniRef90_G5EBF5 UniRef90_R7TK97 UniRef90-L1MIM7 UniRef90-HOZEN8 UniRef90-X2BQ53UniRef90-H2YFU7 UniRef90_UPIO0033303C7 UniRef90 R6XD96 UniRef90_UPIOOO4415667 UniRef90_Q8Z023 UniRef90-BOWDG0 UniRef90_UPI000273DB15 UniRef90_V4BB11 UniRef90_J9JRK4 UniRef90_UPIO003B56023 UniRef90_U5FQZ3 UniRef90_UPI000444A211 UniRef90-D8Q0G8 UniRef90-K9Z957 UniRef90_UPIO003990456 UniRef90-M4EWV8 UniRef90-Q8GY53 UniRef90_-V9IBD0 UniRef90-F6U1R9 UniRef90-AOZBP7
UniRef90 U2C812 UniRef90-T1L3L1 UniRef90-R6R4K6 UniRef90-F8JSN5 UniRef90_B0DD71 UniRef90-S8A7U1 UniRef90-TORSK9
UniRef90 UPI0002657E75 UniRef90-K7MTG8 UniRef90-T1GLX8 UniRef90_G0WAQ8 UniRef90-X1VNJ9
UniRef90 F4XLE3 UniRef90-F4XLE3
UniRef90-UPI0001925FA0 UniRef90-M7X7P4 UniRef90-P84634 UniRef90-E9GKI4 UniRef90-H2SI23 UniRef90-K4ASN7
UniRef90 A7SFZ3 UniRef90-M1B4A2 UniRef90-M4CW51 UniRef90-T1GW90 UniRef90-K1Q4T3 UniRef90_V9Z273 UniRef90_S6V053 UniRef90_A0A023F3D3 UniRef90_UPIO004409084 UniRef90-A7TMC7 UniRef90_G6D369 UniRef90-M4ZUA9 UniRef90 UPIO002C45231 UniRef90_UPI0004621B98 UniRef90_B9V257
UniRef90_E4SKB4
UniRef90_UPI00047D499A UniRef90-UPI0003318EF1 UniRef90-D8IAZ4 UniRef90-M5FV43 UniRef90-T1FV84 UniRef90-UPIO003870348 UniRef90-F1KQM1 UniRef90-F7CM70 UniRef90-T113N7 UniRef90-T1JEC5 UniRef90-D5GBG9 UniRef90_J7FAL7 UniRef90-D2H084 UniRef90-UPI0003F11FB9 UniRef90- X5JIT0 UniRef90-Q7S6N0 UniRef90-E4WQH7 UniRef90-K1R6W2 UniRef90-10YZK6 UniRef90-M5W9S4 UniRef90_UPIO0032A6473 UniRef90-F8PA15 UniRef90_UPI0002B8D8B0
$K N V K Q \square \square^{20} Q$
T $\mathrm{V} N$
30
40
R K R AKVLV Y K G K L HE Y C QK H K I Q L D D Y K DVV K V D G P P H D R V F T V M V V I
 NWVGKLQEKSQKSK LQAPIY DSKNERTERFLVICCTM



PKSLLDEWTRNNRMKEPDYTT $\qquad$ SCRDSDRRFSSVVQV NFKSKK NFKSKLIE WCQKNKVKL DFK LEQSREGNSPGFKYQVLG



 ILLHEYLQQALDKTQPWYEYKE LQE

LQE G GRRCRSKVEFK SVVVT S
 NPKWALLQLVRKFDRERPVSRLLKETGRSNSPVYLVGBVF

 NSKS QLQT L T R A GYTVPMYKT K QL K N N
 DSKNRFQEWVQAKF GTLPKY DTER』GGQDHAPEY LAQVFV YK S L MVE WA Q K Y HK TIA FVVEEDTTYQGSTKHFQAKVMI
 D WK T SL QELLTATEALGVP E Y E LLE P DY DK DDKEYCEKRRYKPQYALTVVGGTHQPDWTCAA S DAKS RLQELTMKLYKSTHVYKETQKKE DPK S KLQQCCMSNGQP DPLYKVIDSS $D \square K S F \stackrel{L}{F} \mathrm{H}_{\mathrm{W}} \mathrm{W}$ GR NSKGELAE ILQQNK LGKVEYKTLNKKSP NYKDALQEWTQAHYKLLPKYHLTENQVHGANNRFTAAQV L D Y T S LLQ IVCCQKVKWNLPEYK ECTSSLGGFGYQCRVGL $N Y$ VGQLMEWSMKK GCPSVQFS QS QRS GNPRNPSWVVECTI

 NPKSLL QTL LMRAGHSPPKYKTKHLKTN
NP $\square \mathrm{S}$ LL TESAQKSKK T $\square$ NF QE L Q S T N
 AK S L L HEMCISSKRWKP PVVYDCCNVVDGCHMRLGTYKVVV
 NPVSALNEFHQAGHLSRPDYRPPTPTPTGFAATVTAVLRG


 NY IGGRVNMYA QK K K L S V NYEFVNEDRESEVVKRFHYTCRQI SLFN QHLQQQQLKS I EVVYSDSAGEGTRTTPDWVVRAMV



 NPVSABLHQFAQMHHAQL ELDKETGMAGNDIDCYFAACAVI




 WQNKLA DACQSY QMPLPVYHVVSDR RGGRTAWSCRVVV
 PKMMLLEWCQQQQKRPTPRYRSSAADGAVAAKCKVVIVVF $R$ L Y E I C A A N Y WE P P L F E C C N E E GP S H L K L F T F K V V V
 NPDSVINEYAQS

|  |  |
| :---: | :---: |
| UniRef90_M1A463 | D GYQ S K S T Y P T K K E A E Q A VA K $\square$ A |
| UniRef90-W4LDY6 | D T LE T P P F Q A T R K VA E Q A A A S ALY Q Q L |
| UniRef90_V5RDT8 | NGKEY |
| UniRef90_A0A037Z7H3 | E D L G K G E G |
| UniRef90_G5EBF5 | CNQKT R G $\square$ R S K K K D A K N L A A WLM WK A L E |
| UniRef90_R7TK97 | GDRTFPVQCSNKKDGRKEAAEIALLRQL |
| UniRef90-L1MIM7 | $E \mathrm{G} \square \mathrm{D}$ GE GKGFSKKESHQAAAKDALT Q M |
| UniRef90-H0ZEN8 | N G K Y G T G T G K S |
| UniRef90-X2BQ53 | D GR $\square \mathrm{FEGGSGRSKKQAKRQAAVCALQAL}$ |
| UniRef90_H2YFU7 | NGKKY T NWERNKRLAEQGCAIVVCLRSL |
| UniRef90_UPIO0033303C7 | DERTFEAE GRTKQEAKNAAAKIA V D V L N |
| UniRef90_R6XD96 | GLE G G VGE G Y S K K E S Q Q LA S K I T L Q QL K |
| UniRef90_UPI0004415667 | EDVYA TGMGRTK Q E A R DVAA WKALLK |
| UniRef90_Q8Z023 | GEKY G E G $\square$ G |
| UniRef90_B0WDG0 | D GVD Y P A |
| UniRef90_UPI000273DB15 | E GYNYTG |
| UniRef90_V4BB11 | GKFE Q I G T R S |
| UniRef90_J9JRK4 | N DVY GVGLL N S K K Q A K L N A A Q A T L D L |
| UniRef90_UPI0003B56023 | P GYRCEAEATSKK Q A K K EA A Y K ML M Y |
| UniRef90_U5FQZ3 | GEK $\quad$ GVGMGK TRKD A Q Q Q A A E N AL R S L |
| UniRef90_UPI000444A211 | GDKLGEGFGSSLKMAEYRACEDALHRL |
| UniRef90_D8Q0G8 | GEQI GEGFGSSLLKMAEYRAAEDALLR |
| UniRef90_K9Z957 | D K L L G T G K G G T |
| UniRef90_UPI0003990456 | NGNEYRPT F A S |
| UniRef90_M4EWV8 | N G WT DE C $\square$ GP S $V$ K K A K D S A A |
| UniRef90_Q8GY53 | NETQ $\square$ MGQCSNKKSAEKDAA A E A I Q WLK |
| UniRef90_V9IBD0 | $D G K T Y V G Q G L S K P L A R Q N A A E N A L K A L$ |
| UniRef90_F6U1R9 | GKYQAIGHGGKNKQEAKQRAAKVVYEQMK |
| UniRef90_A0ZBP7 | G EVVY G Y G K A |
| UniRef90-U2C812 | NEVYAKA HDTSKKKAEERAAKRAF |
| UniRef90-T1L3L1 | NDMYGVGYGSSKK Q A K A EAARATMLELL |
| UniRef90_R6R4K6 | D GYEFYGYGSNQKECKRDAAYDFL |
| UniRef90-F8JSN5 | G GVTY G T G T R S K K |
| UniRef90_B0DD71 |  |
| UniRef90_S8A7U1 | DGGESTDWGNTKKEARAQASKVAL NFL |
| UniRef90_T0RSK9 | ENKMVVKEAPSKK Q G Q R E A A R $\\|$ CLL |
| UniRef90_UPI0002657E75 | R G K R A T S S G H S $\square \mathrm{K}$ |
| UniRef90-K7MTG8 | GEK $\square$ GVGMART RK D A Q Q Q A A E N A L R S L |
| UniRef90_T1GLX8 | A SFSYVGAGNSKKDAEKNAAKDFVNFL |
| UniRef90_G0WAQ8 |  |
| UniRef90_X1VNJ9 | GERHFSAWGSNKKEAEQKAAFNALVELL |
| UniRef90_F4XLE3 | NR QLG E G T G R S K |
| UniRef90_UPI0001925FA0 | K WYESKEFNSTKK D A K H N A A K W A L L L LD |
| UniRef90_M7X7P4 |  |
| UniRef90_P84634 | ET LEC C G E A R TKK |
| UniRef90-E9GKI4 | G S DLA $\square$ G K G N T VK $\square$ A K N VA A A Q M H K T L |
| UniRef90-H2SI23 | N GVDY Q P Q A P K K |
| UniRef90_K4ASN7 | K G MQF VGK P K N K A L A E K D A A $\square E A$ A L A WL |
| UniRef90_A7SFZ3 | Q DK LA TGEASNKKDAKRNAAENALLDVLK |
| UniRef90-M1B4A2 |  |
| UniRef90-M4CW51 | E $\square$ R D S S G T |
| UniRef90-T1GW90 | N DKEAMGS GR S |
| UniRef90-K1Q4T3 | NE\Y GTGFA GSKRAAKMEAAKATLS |
| UniRef90_V9Z273 | QKLT GEGTGPSKRQARAEAADRLLKAVQ |
| UniRef90_S6V053 | N NEKS R G Q G V S R R $\square$ A E Q |
| UniRef90_A0A023F3D3 | NGKKYTSSFKNKRWAEQGAA 1 V C C L |
| UniRef90_UPI0004409084 | DGEYGTGSACTRRSADKEAA Y Q T M R MLE |
| UniRef90_A7TMC7 | NEK LGEGFGSSLLKEAKARAATDALLMK |
| UniRef90_G6D369 | K DKRFE GYGSS KK LA K LAAAARVALLGEL |
| UniRef90-M4ZUA9 | S G $\square$ Q TK G $\square$ G S S K K K S E EMA A K EA Y |
| UniRef90_UPI0002C45231 | GQKYG $\mathrm{C}^{\text {G T G S T K Q E A K Q R A A K L A Y D E I }}$ |
| UniRef90_UPI0004621B98 | DGELLGRGRGSTKKAARNEAAKEGLDAKL |
| UniRef90_B9V257 | GQKYG $\square$ G T GS T K Q E A K Q M A A K LA Y LQ |
| UniRef90_E4SKB4 | NDEKTRGEGHNK |
| UniRef90_UPI00047D499A | N EK |
| UniRef90_UPI0003318EF1 | N G |
| UniRef90_D8IAZ4 | K K K Y A S G $\square \mathrm{G}$ |
| UniRef90_M5FV43 |  |
| UniRef90-T1FV84 | NGCYTRVI A HSKKEARA GAA YVA WREI |
| UniRef90_UPI0003870348 |  |
| UniRef90_F1KQM1 | RKFTAHAQGSSKKVAESSCALSLI R Q L |
| UniRef90_F7CM70 |  |
| UniRef90-T1I3N7 |  |
| UniRef90-T1JEC5 | A NLKATGKGCTKRAAKQAA】VHLLKAL |
| UniRef90-D5GBG9 |  |
| UniRef90_J7FAL7 | DGRVFK A D GKSKRDAKNNAAKLAVVKL |
| UniRef90_D2H084 | GQKYAVGGGATKQDAKQMAAKFAYDQIQQ |
| UniRef90_UPI0003F11FB9 | GQKYGlA S G T K Q E A R Q F A A K LA Y D K I |
| UniRef90_X5JIT0 | NGKQ GEGRG |
| UniRef90-Q7S6N0 | GGELIDQARGKNLENAKE D A A E L A L S R L |
| UniRef90_E4WQH7 | AKLESFGMCSSKKQAKREACRHMLEKLE |
| UniRef90_K1R6W2 | GDLICQAEGPNKKEAQTKAADKALR |
| UniRef90-10YZK6 | LGSEHQAE GTLPDEAEQRAAVTALLHR |
| UniRef90-M5W9S4 |  |

$G \square L Q M S G D E R S R K D A D N S A A S F M \square R A L Q$ K GlY GRGEGRSKDA GKEDAAKDALVNLQQ GD DVFP G $\square G S N K K E S K V K S A E I V L V Q L K$



