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| $P$ S |
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| $P$ S |

FK

EKASLLIWTTTPWTLPGNVAA QDSIVIWTTTPWTLPANLAM
 GTELVI WT TTPWT：

A
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A
 ENAYFLVWTTTPWTLPSNLLLA

SPVAFELVESPFDTKEKVYAVIWTTTPWT YANLGI M PSIYVAFDVKDGKGVLTNGEKIVIWTTTPWTIPANLGIA PSVYVKFKVKDGKGVL

## WK

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D $P$
$\qquad$ D
 PS FAFPMPDARGTDPAS
$\qquad$ A TSIVIWTTTPWTIPANQGIVA
HP SDPSVFIKFKVKKA

$\qquad$ E E DV ロのシロススロ
 TYFVIWTTTPWTLPGNLA：C C
s
FKF VIVPMKKKDEDAYFLVWTTTPWTLLANQAVA S AFKFPLVVQNNEELKDANLLINTTTPWTLPANLAVES PSIFVKFKMDLMPGMAE DPSVFVTFPLEED DPS YVKFPVE
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DPAITVAFSLTBP A DDVKFRI IDDDDFAQK DLSATVKFKVQNS PADDVKFRVADPAAFDDK DPAVIVGFPLTEDA AI DVAFAAVDASADDGV GRE
LiA
DK
AQ
AK
DDK
DGV
SMFAAFPITKASKDTEEKLGVAIWTTTPWTLPGNVALA$\mathrm{D} P$
D
D
D
S Y I KFRLKE EENTYVVI WTTTPWTI PSNMAVA

D P A V


D P SIV V K F RVEE GSDNEYLVIWTTTPWTIVDNEAVA
D P T L T T V K




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PAFGEDDYNVCKREGIPLIMKVDEEGMFMDTPWKGMFVKD
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$P G H G E D D Y V V A Q Q Y G L E T L C P V D D K G Y F T E E A F E G E F Y D N$

PAFGAD DYELSSRKYDLPMLQP V A ARNGCFTAEEYE GMFFK D

P GHGREDYETGGRYGLEI YSPMNDEGRFLDEFFAGLNVFE
P Y F GA D D Y R V C A E Y N I P P I C P V D A S G C F T S E D F A G Q Y V K D
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$P$ GHGEEDYQVGGLKYNLVVLVPVDDYGKFTDEALKGLLI WE

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$P$ GHGGAD D Y T V $A$ A Q Q Y E L
PGHGVDDY LVGQEFGUETIMPVDDDGRFTDPDFAGLDDDE
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P GHGT $\square$ D YEI A QR $\square$ GAPVVSLVDERGFMTE GKYS GLDRRGE

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ANRA $\quad$ L R D L R GRGLLFKEES
ANKEI TQKLEESGALLK

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ANKPI TQKLEEAGALLK
A N K EVVT D L L T E K G A L L K L E
A D P K I I E HL REKGYLVK
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A D P E I I E Y L K E K G Y L VK
A N K P I TEKKLDEVNALLK
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A DPDI DRRLKE E GKLDRKET
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A DKNI I K WL K E N GRLV
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A NPVII KRLKE KGALL
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ADKHI I K HLLKGNGRLVHQST
A N K VI TPD DLK K E N D A L I K L E
ANPKI DE WLKE Q G T L V A H


ANKMVTAKLEEVGALEK
AN $\ \mathrm{M}$ MVTDKLKEKDLL
A N KVVV V K K E A VGAL L K
A D K Nill A A K E K G R L V H $\square$ S T
GNKIV SKWLEEKGALLK
ANDLI I E K L Q EVVDALI YKE
ANDAVVVETLKEKGALLHHHA
A DP LI I QDLKK K G LLLYK E E
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ANPKVV DLLAERGALLHHE
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A N K E I V NDLE ELLGYLVK QE
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ADKNI I K T L KEQDRLL
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A DEQLTADLDARGLLFRH




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A S KVI I NDLK S K N A L F
A D K T I R Q L K E Q D S L FRQD T
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ADKLI I KHLTETGRML

| $C$ | $D$ | $L$ | $D$ | $I$ | $V$ | $K$ | $A$ | $L$ | $S$ | $E$ | $K$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $G$ | $L$ | $L$ | $Y$ | $S$ | $K$ | $E$ |  |  |  |  |  |
| $A$ | $N$ | $P$ | $K$ | $I$ | $V$ | $E$ | $A$ | $L$ | $Q$ | $E$ | $A$ |
| $G$ | $A$ | $L$ | $M H$ | $V$ | $E$ |  |  |  |  |  |  |


VDKEVVK DLKAK GLLV
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ANPNVVAKLEEVGSLLAHET ADKAIMDRLKAEGKLI K


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D P
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 D P A

 GPVSLVI WT T T P WT L P A N RA $\square$ S D
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EADGNENTY

AVAFVAVDGLEQSDAEVATVIWTTTPWTLPANMAGD


 SIYVAMPLTEDLKEKLSGAAVAIWTTTGWTI PANEAVA

 YIKYPVV GEEGRYIVVATTRPETMLGDVAVA
 DLAATVKFAVQ GEARTYFLGWTTTPWTLPANVALA S HLRYPLKD GSGF G GPLSLVIWTTTPWTLPANQAVA HI KYPVKDS $\quad$ NEYIVI ATTRPETMLGDVAVA

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PSIVVSFPAKNG

D
DFKVI A WT T T P
D LT A I A K F K V K K
HF RYP L S D G S G F
HFRYPLAEDPSQ

A $\square \mathrm{DV}$ R F KV VDE EAF GEGP
DLSATAKFKLESGE
H $\backslash R$ Y P V K D S

| $D$ | $P$ | $A$ | $V$ | $I$ | $R$ | $F$ | $P$ | $L$ | $D$ | $D$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $D$ | $E$ | $A$ | $G$ |  |  |  |  |  |  |  |
| $D$ | $P$ | $S$ | $V$ | $Y$ | $V$ | $M$ | $P$ | $L$ | $T$ | $S$ |

                        DRTLLAWT
                        V LTVATTRPETMLDGDTAVAA
    
SVV MK F P L K S P P K L G S S P A S V L V WT WT T TP P WT L P S S N T A V A

DPAVT I GF NV $\quad$ VGQEK T Q
DNAITVMFKLENGMN
DPSVLVRFPRTMGM
DPSVLVRFPLTTGP L LAGRAALLVWTTTPWTLPANVAVA
D P A L TVVGFRAT D GPDVA GS


| S A | $V$ | $R$ | $F$ | $K$ | $V$ | $I$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $A$ | $A$ | $A$ | $F$ | $R$ | $V$ | $K$ |

        GEDAYFLAWTTTPWTLPSNVALC
    
D P A DVVGFPFAE H DK DAA DK G
S SAFYGE HVVD GK GlV LD
SAlVRFKVKD
D Y S $\square$ Y V V T F P L L K K E K K T L G T K H A
V V S F P
HL RYP LK D G S G
HFRYP L S D GS G
$H$ VR Y P L E D GSGD

D P AVVVSFP
HFRYP EDG
GY L V I A T T R P E TMMFA DV A
HFRYPLTTG
D G Y L V V A T T RPETMLGDTAVA


YI R YP LVEPTE E R K Y LVVATTRPETMLLGDVAVM


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| :---: | :---: |
| UniRef90-UPI00036231AF | VHPNDERYKHLIGSTVILPA |
| UniRef90-U7Q9F5 | L NPEDT Y AVVETDKNAEHPDQFKYSATEDQNDTVKATVKG |
| UniRef90-G5F505 | LHPEASYVAVRVDGRVEDMAEALQERCCRDADGEPWHATG |
| UniRef90-F8NSW6 | V HPDYEYVKI WDEDRDTRFILCEYKDPKKAKFKKVGTFKG |
| UniRef90-G4TAJ1 | VHPDFEYIKI HDPQKDLLNAVYSAKELKKPPFKVIATYKG |
| UniRef90-17LBD3 | VHPDVDYVVVEVADDGLEEFRGEYAKELGEEPTVVARLS G |
| UniRef90_S8ATY8 |  |
| UniRef90_Q73JB2 | ALIE Y D GA H Y I M AVPPRLEAYFAKSGKEEAKEYKLI WTKKG |
| UniRef90-F9WW39 | AHPDYEYNTYIMLEAGLKVLYKDPKKAKDKFKLLPLLCKKG |
| UniRef90-D5WUN4 | VHPDDERYRAWIGKR |
| UniRef90-F6D8U3 | NPEDEYALVHVEFMAEALVKDVMAKCDDEHYRVVAYGRG |
| UniRef90-UPI0004053D14 | V HPEVSYTEFI GQRFLLAENLVAGYAKEFGDYKVISKYVG |
| UniRef90-A0A037UKS4 | VGKDIVYVEVLVEGEKYLFAKALLDQLQWKKVKIVQEVVG |
| UniRef90-X8EYX5 | V HPDVTYVQVRVGDRRLVLAEARLAAYTREEPEVIGSYRG |
| UniRef90_UPI0002625DBB | VHPDVDYVVVEQDGKRFLPRVAAYARELGEEPAVVARYRG |
| UniRef90-A0KG39 | ADLDYALVQVEGEHPERLILAAELVKDVMDRAGIEQFHNL |
| UniRef90_UPI000465A6E5 |  |
| UniRef90-T1PEH1 | VNPNMDYVKVT DVKTGRFYILAECRYKNESEYQ\\|VEKFAG |
| UniRef90-S0EVG7 |  |
| UniRef90-R7NHV1 | VNPDVEYSEVLVGENHFILASALV STLFEDANDVKTYLG |
| UniRef90-A3QBX2 | I D Y DLVEFTKDGSKRAII VAQELVESCI ERYGAELHSVLG |
| UniRef90-Q05QN6 | VNDRLDYALCADNRGRLLIVANDLRDALAAKFETTLETKA |
| UniRef90-Q2L2K5 | V HPEI EYALVRVSPTPVHERVEACLKTWGLEGEVIA |
| UniRef90-UPIOO03655976 | $V N P E V D Y A L V R V G Q Q G A E G F R G A Y A K E L G E D A E V L G T F R G$ |
| UniRef90-I2JWR4 |  |
| UniRef90-E3GIT1 |  |
| UniRef90_G1XLX5 | AHPDFEY |
| UniRef90-A1T | IGADDEYAGAERMILATDMVQGIMARWGVEDYKVLANAAG |
| UniRef90_UPI0003F49D77 |  |
| UniRef90-M1WIE1 |  |
| UniRef90-M0MGM3 | V DEDVTYQQVEVLYLAA DVVEEVLKKGRYEDYEVLDEFDG |
| UniRef90-W0JI79 | V DEEGDYVKEELLYLAEAKHEEVLKEGRYEDYEVVEELT G |
| UniRef90-S0L015 | V H P E D ERYQHLI GKKV |
| UniRef90-R5DHA1 |  |
| UniRef90_UPI0003B54D12 | FNPEFSYVAVELNDE LIL A E GRLSALAAELGLEKVPPII |
| UniRef90-10Z995 | VN ERMNYGAESWAHRRLVVAEELVDSLGAKFGVQLQRLGG |
| UniRef90-H1PW48 | VNPNETYVKVQHEGYTYYMAEALVVPTVLKENYTI LESYKG |
| UniRef90-Q8NNP0 | VNPAVTYALVEVAEDGEAEFVGKYAKELGAEAVIVSEHPG |
| UniRef90_U6B9T4 | V HPELT Y VTVAFKGERFIVAKALVAELFSESVEVVSEQLG |
| UniRef90_UPI0003B62DB3 | V NPNDERYKD |
| UniRef90-K2BHT7 | L NPRTDYVLVACNNERLLIAEPLLNQVMQRYA DQDFQVAK |
| UniRef90-TONOK2 | V NENID Y CDVQFNDETYVVAVNLVKNI F HDNYKILRTFKG |
| UniRef90-I8AMY6 | V NEQLS YVKVLHEGDVY IVSKARVPFLFPETAQIVSEHQG |
| UniRef90-J3JHS2 | VAEEMTYQKVEATKNAEPCVEGALKKGRYDDYEVLDEFEG |
| UniRef90_UPIO003605678 | I HPELEYAMPERLFVAEALVKDTMDRWGFDQYRVLA Y G R G |
| UniRef90-X4ZPW6 | V HPED |
| UniRef90-R7RQP5 | V NPNDERYKHLTGKTLIL |
| UniRef90_R6H9J8 | L HPAAEYVAIVVDGRATIVARDLVEKCCERFGWNEWSMTG |
| UniRef90-F4XUD7 | V NPDDERYQDLI GKTVTL |
| UniRef90-W0DFG8 | VHPEDERYKHLVGKYA |
| UniRef90-M5A161 | VGPD DD YVVAEQDGQRYI DAEALLPNYAAEEAEIVERMKG |
| UniRef90-U3HEV7 | VHPEFNYALVDTGARLLLLAEELVESCLARFGLEGQVIA T |
| UniRef90-G7WPE2 | VHPDFEYSRVRAWKDDPDGAEVLIREGRYKGYEILDRLGG |
| UniRef90_UPI00035FE746 | FNPEENYVFVETFVVAEKRLS DVAKVLEWKNYEVIASKPG |
| UniRef90-A0P7W6 | VHPQLEYGLYELHD QLVIVGKELAAKTFLKYDATI NLIGS |
| UniRef90-B7S131 | HPELEYVLIDAQGRALVVAADLAESCVQRFGLPLLNLLG |
| UniRef90-H7EP69 | MGPEID YVKVLDKESGDFYIPAEARYKDADGYEIVWRRKG |
| UniRef90-U2NI46 | NKAYT YVEVKKEDEVY ILAK D LVGKVLGEEVEVIKEFKG |
| UniRef90-K9TBY3 | V N P N D R Y |
| UniRef90-Q2JP18 | V NPQDERYCHLIGQFDR |
| UniRef90-I3TEQ2 |  |
| UniRef90-R5PV43 | V HPEDERFASLVGKFAVLP |
| UniRef90-UPI00046708A9 | I NPELEYAIVQVNFVAEALLK DVMDK WGFETYRVIA Y GRG |
| UniRef90-UPIO00371751F | $V N P D M T Y V K V K Q D G E V L I L A K N L T E S V L K G E Y E M L S E L K G$ |
| UniRef90-U2STZ2 | V HPEDERYQDLIGK HV |
| UniRef90-W4XYD8 |  |
| UniRef90_UPI000479FAA0 | VHPGVTYVAATNGEQTLVVAEPLFEKNEGEPWQVTQRFLG |
| UniRef90-Q5ZKA2 |  |
| UniRef90-B6BS49 |  |
| UniRef90_GOVFR0 |  |
| UniRef90-R612P1 | VGEDID YAVMEENGEKYILAQALLGRYKKQLEHAAQTLKG |
| UniRef90-UPI000382CCC6 | V HPDVRYVVVTDGEEQLVVAEPLLASALGDGWDLTGEFRG |
| UniRef90-W9ASY7 | $V N P E V T Y V A V D G P D G N R Y V R L A A Y A R E L G E E P V V V G S Y P G$ |
| UniRef90-A1T8S6 | V NPEVTYVVVEADGRRYVLAEARYARELGEEPTVVATYTG |
| UniRef90-R6NRI7 | VNPDETYCKVKAADGYTYYMKFADEENGVKAYEVLDTFPG |
| UniRef90_R6ZGR2 | V NAAEDYVKVESKGETYYLAAALDCTVLGEEYTVLETYKG |
| UniRef90-J2U981 | V HPEFDYALVQTERNGEKDLVESCLQRYGLEGKVIATAKG |
| UniRef90-JOL4H4 | V DKDFDYSVVQPAGDERKFVIATDERFGWEKFETLKTVKG |
| UniRef90_R6EB23 | V NPKEDYAKVKAADGYTYYMACAADGEEKSAYEVLETYKG |
| UniRef90_UPI000465B26D | LS PEVKYVLTSDDFIVAKPLYETLRSEDVVRGD\VKEFDS |
| UniRef90-B5YKF7 | VNPEDKRYKNLIGKVLI |
| UniRef90-H9IWC7 |  |
| UniRef90-R5UYL0 | VNPNDERYQHLVGKTLIL |
| UniRef90-E0XVK8 | VHPEDPRYKDLIGGTVRL |
| UniRef90-C8WXM2 | V HPDDDR |
| UniRef90-K9SF97 | V NPKDDRYQHLIGGQTVTLPDM |
| UniRef90-F0G3B3 | LHPE\\|VYALVDTERGLLI VAEERVAACMEETGR\|LATAPG |
| UniRef90-F7XTT1 |  |
| UniRef90-G4Q919 | VHPEDER |
| UniRef90-J2Z4D4 | V NPDDERYKDLVGREVVLP |
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| UniRef90_F7S039 <br> UniRef90 UPI00036231AF | GFCTGKELVADKHPLLYERQVPVI DGEHVTTESGTGCVHTA |
| :---: | :---: |
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| UniRef90 G5 |  |
| iRef90-F8NS | GWRYEYFTDQFEDKAFRVLVDTYVTDADGTGIVHQA |
| UniRef90-G4TAJ1 | KGWRYVPLFEYFTEKYFKVLVD |
| UniRef90_17LBD3 | LEGLRYEPVFGFFADRKFRVLNA |
| UniRef90-S8ATY8 | MLGWKYKYYYDEFKDHGFRVVNDRYV |
| UniRef90-Q73JB2 | EPLFPYFKQGAFRVLIGDFV |
| UniRef90-F9WW39 | M |
|  |  |
|  |  |
| UniRef90-UP10004053D |  |
| UniRef90-A0AO374 |  |
| UniRef90-X8EYX5 ADLLGIRYLPPFAYFMDSPNAFLAGEFVTTEDGTGIVHMA |  |
| UniRet90-UPIo002625D | ADLAGVKYAPPFPYFNENSHQVLDADFVTTDDGTGLVHMA |
| UniRef90-A0KG39 GYA K GLELLRFNHPFYSFDV |  |
| UniRef90-UP | GALEQMRFRHPFMGFDVPAILGEHVTLDAG |
|  |  |
| UniRef90-SOEVG7 | KFFVT |
| UniRet90 RTNHV1 KDLEYTEYEQLIPILKPDKFFVTCADYVTTEDGTGVVHDA |  |
| UniRef90_005QN6 VVKGAAGLIRYRHPLLERESPVVVGGEYITTESGTGLVHTA |  |
| UniRef90-Q22L2K5 | QALDGLRFAHPLARGYDRTSPIYLGDYVTLDTGTGVVHSA |
| UniRef90-UP1000365 | ADLVGLTYRPDFPHFADKAFRILGADYVTTEDGTGIVHQA |
|  | SELVGLKYNYFYDQFKDRAFHVIGADYVSDESGTGIVHEA |
| UniRef90-E3GIT1 KALENIPYERTMDFVNKKAFFVTCADYVTTEDGTGVVHTA | ENDPYERLMDFVNKKAFFVTCADYVTTEDGTGVVHDA |
| UniRef90-G1 XLX5 |  |
| UniRef90-UPI0003F |  |
|  |  |  |
| UniRet90_M1Wi |  |
| UniRef90-MOMGM3 SEMLGWEYDHPLAEEVPDHADGDGAGQVYHADYTGL |  |
| UniRef90_WOJI79 | LGWSYEHPLAEEVPDHVDVYAGDYVDTHDGTGLL |
| UniRef90-S0L015 $\square V N K E I P V V A D T Y V D M E F G T G V$ | PFLPK ${ }^{\text {P }}$ SRLVLADYVTMDSGTGC |
| UniRef90-UPI0003B54D12 A R DEALEKKHLKHPFLPRKSLIVLADYVTLDAGTGC |  |
| UniRef90-102 |  |
| UniRef90_H1PW48 |  |
| UniRef90-Q8NNP0 |  |
| UniRef90-U6B9T4 |  |
| UniRef90-UP10003B62DB3 | IVVNETPVIADEYVDMEFGTGAVKIT |
|  |  |
|  | 㑑 |
| $\begin{array}{ll}\text { UniRet90-18AMY6 } & \text { S }\end{array}$ |  |
|  |  |  |
| UniRef90 UPIOOO3605678 | ARTVPVILGDHVTTEAG |
|  |  |
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|  |  |
| U3HEV7 AKGEALENTRFRHPFYERLSPVYLAEYVELGAGTGVVHSA |  |
|  | A |
| UniRef90-UP100035FE746 SAFE SERFEHPDYGDKETVGITADYVAMDEGTGTVH\A |  |
|  |  |
| UniRef90-H7EP69 |  |
| UniRef90-U2N146 EELLGLEYEQLLPFVEGKGFYTV |  |
| UniRef90-K9TBY3 KGLDGKMLTLPI MNRE厅 |  |
|  |  |  |
| UniRef90-13TEQ2 EKLVGLKYKHPQKKL S |  |
| UniRef90_R5PV43 |  |
| UniRef90 Uni |  |
| UniRef90-UniRet90 |  |
| UniRet90 |  |
| UniRef90-UPIO00479FAAO S EME M WT Y D R VF DLVE F PE F V VLA |  |
|  |  |  |
| UniRef90_GOVFR0 SDLVGLKYEPLFPYFAEEFFRVISDGYVTSESGTGAVGNA |  |
|  |  |  |
| UniRef90-UP1000382CCC6 KELERWT YRPPFALVDVEGHDVVLASFVTTESGTGLVHQA |  |
|  |  |  |
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|  |  |  |
|  | UniRef90-R2UGR |
| UniRef90-JOL4H4 |  |
|  |  |  |
| UniRef90-UP1000465B26D K ELE G |  |
|  |  |  |
| UniRe90-HIWC7 EKLK G -1. |  |
| UniRef90-R5UYL0 EKLKGUKYTPVFDYVGREDP |  |
| UniRef90-E0XVK8 |  |
| ASFVGK |  |
| UniRef90-F0G3B3 |  |
|  |  |  |
|  |  |
| UniRef90_G4Q919UniRef90 J274D4 |  |
| niRef90-D81H55 |  |

## UniRef90 F7S039

## UniRef90-UP10003 UniRef90-U7Q9F5

 UniRef90-G5F505 UniRef90_F8NSW6 UniRef90-G4TAJ1 UniRef90-17LBD3 UniRef90_S8ATY8 UniRef90-Q73JB2 UniRef90-F9WW39UniRef90 UniRef90-D5WUN4
UniRef90_F6D8U3 UniRef90-UPIOOO4053D14 UniRef90-A0A037UKS4 UniRef90-X8EYX5 UniRef90-UPIO002625DBB UniRef90-A0KG39 UniRef90-UPIO00465A6E5 UniRef90-T1PEH1 UniRef90-SOEVG7 UniRef90-R7NHV1 UniRef90-A3QBX2 UniRef90-O05QN6
UniRet90 O2L2K5 UniRe90-O2LILKO3 UniRef90-12JWR4 UniRef90-E3GIT1 UniRef90-G1XLX5 UniRef90_UPI0003F49D77 UniRef90-M1 WIE1 UniRef90_MOMGM3 UniRef90-W0JI79 UniRef90_SOLO15 UniRef90-R5DHA1 UniRef90-UPI0003B54D12 UniRef90 IOZ995 UniRef90-H1PW48 UniRef90-O8NNPO UniRef90-U6B9T4 UniRef9O-UPIIOOO3B62DB3 UniRef90-K2BHT7 UniRef90-TONOK2
UniRef90 $18 A M Y 6$ UniRef90-J3JHS2 UniRef90-UPIooo3605678 UniRef90-X4ZPW6 UniRef90-R7RQP5 UniRef90-R6H9J8 UniRef90-F4XUD7
UniRef90 ${ }^{-}$WODFG8 UniRet90-M5A161 UniRef90-U3HEV7 UniRef90-G7WPE2 UniRef90-UPIOOO35FE746 UniRef90-AOP7W6 UniRef90-B7S131 UniRef90-H7EP69 UniRef90-U2NI46
UniRef90 K9TBY3 UniRef90-Q2JPI8 UniRef90_13TEQ2 UniRef90-R5PV43
UniRef90-UPIOOO46708A9 UniRef90-UPIooo371751F UniRef90-U2STZ2 UniRef90-W4XYD8 UniRef90-UPIO00479FAAO UniRef90_Q5ZKA2 UniRef90-B6BS49
UniRef90 GOVFRO UniRef90-K612P1 UniRef90-UP1000382CCC6 UniRef90-W9ASY7 UniRef90-A1T8S6 UniRef90_R6NRI7 UniRef90-R6ZGR2 UniRefo- $2 \mathrm{JU981}$ UniRef90_JOL4H4
UniRef90_R6EB23 UniRef90-U6EIO200465B26D UniRef90-B5YKF7 UniRef90-H91WC7 UniRef90-R5UYLO UniRef90-EOXVK8 UniRef90-K9SF97 UniRef90-FOG3B3 UniRef90-F7XTT1 UniRef90-J2Z4D4
UniRef90_D81H55

130
140
150
160
PGHGVDDFNVIGLVYNLLEVYNPVNDHGVYKEDTFAGQHVFK PAHDPADFEI AERHNLPKVLVMDDYGRMVPERFAGLDRFA $P G H G Q D D F V V G Q R Y G L A V L C P V D A D G N F T E E A F A G L N V K D$ P GHGVVDDYNAGMRFGVVVVMPVDDDGRFYVGDWGGMEVNE PAFGDDDHRDADANGVMPPCPVDETGKFTNEDFAGDVVKT PAFGED DHRVALAHGVDRHCPD DDDGRFTNE DFAGMYFK D PAFGEEDMDTCREYGIVPVIPVDMDGKFTSPDYE GQLVFD PAFGEDDYQVAVNHGVDNPNPVDAQGCFTSSDFAGQNVKE P G F G E D D N R I F K D T G V P T V V P P V D A E C K F T H E D Y Q G L F V K D PAFGEDDYTI GWREGIPPPNPLNAGGEYTSEDFEGQHVKA
PAHDPNDFEV GRRHGLPAPAVMNEDGTMNE GDFQGMDRFE
PGHGQDDFIVGLKYDLEVDCPVDGSGTFVEGLFAGDNVLK PAFGED DMI ACEKVGGIVVVIPVDMDGKFTSPDYEGKLVFD
 PAYGEDDKAAGDAAGITPVTPVDAHGRFTVPDYEGQQVFD $P$ GH G Q E DF VVVGQK Y G L E VAN P V G S N G V Y L P E L
G GHGP D D Y T I S Q K Y GLLEIA N P V G P D G TY Y L P G TY Y P G L D V F K
P YFGED DYRVCLAA GLDTICPDDDS GRFTEEDFK GLLYVK E
PA H D L N D F E C GL L H NL PQ V VI DKE GRMTE PD FA GLLD RYE
PAY GADDDFEVAKKYDLP LDNPVGKDGCYTE GPWE GMLVG D
PGHGQDDFVIGQKYGLEVANPVGDNGVYKPEFFAGQHVFK
PGHGVDDFNTGRKHGLPVLCPVDEAGTLTDEAFVGLNVKD
PAYGIDEDFVSCKNHGLDILSPVMMEGKYDAPDFGGLLSI WD
PAFGED DMNTCQAEGVVPMVLPVDMDGKFTSPEYEGQLVFD
PAFGEEDFNACTKSNIHPPNPVDDDGKFTADDFEGVYVKD
PAFGED DY QVGGKYNLDVLQPVGEDGKYTETPWKGRFVVME
PAF GEEDYAVAFEHGVVNPNPVDEAGKFTDEDFAGMYVKD
P DHGMEDFVVGKEYGIGTLNLVKADGTYTDGEFAGVHVYK
PAWGEDDHRVCVAHGVDPPCPIDEAGRFTAEEYQGKHVKE
PAFGEEDYNVAVAAGVPPPDPDNDTGHFTAPDFAGLDVVKE
$P$ GHGQE DFERGQELGLDVFCPVEGDGVYTDEAYAGEFVRD
$P G H G E E D F E R G T E L L G L D I D C P V V G D G V Y T D E A Y E G R F V G D$
PAHDPNDFEVGNRHDLPRVNVMNDDGTMNEGKYAGMDRFE

P GHGQEDY QVGLLKNGLDISSSVDDDGVFTEEAFKGLPVKE

PAFGEDDMNTCNAAGIEPVIPVD DDGKFTVPEYQGQLVFD
PAYGE EDYRVVRENGLSFVNVVDAAGCYTDPPDIGRFVK E
PAHDFNDFEIGNRHGLEPINQMDDWAKDTVEPFKGMDRYE
$P V H G Q D D Y V L G E Q Y H L P L N N P V G N D G C F V A P F L A G M H V R K$
$P A F G S E D F E I G K Q Q N V K V N V N G Q G F E Y E P N G L V K D$
PAHGEDDYRAVKERNL SFVVIVDEKGCYTEEADAGD FAK D
PGHGQEDFERGQELGLDVFSPVAGNGDFTAEAYEGTFVRD
PAHGQEDDEVGKQYD L PVVDCPVDGR GNYVPE VFE GENVLK
PAHDPNDEEVVGQRHNNLPQVVVMDESGTMNAEAYKGQDRSE


PAHDPLDFEDGKSHNLPMVQIMDQFARINE GEFAGLDRYT
PGFGEDDQ AACNEAG』PTLCPMDEHGQYTAEDYVGRHVFD
PAYGEDDFRSCKHYGMDILSPVQSNGVYVQPFFGGQFI WK
$P$ GHGLLED F E L GVVAE GMP IVCPVVGEDGRYTAEAYAGKYVRA
P GHGEEDYSVWEEKGDDFPMMIDDNGRFTDGFMSGMFYED
PAHG DD D Y V V G V K Y DL P V E N P V D D Q GK FK S P F V S G L T V WE
PAHGQDDFVVGAAYDVEVYNPVGSNGVYDPEFFAGQFVMK
PSFGEEDNKVFRGSGVPNVEPIDAECKFTKEDYVGRFVKD
PAYGEEDSLIGRKYNLPFVNLVNGKGEFEPEPWAGKFVKK
PAHDPNDFEMGMRHNLPFITIMNKDGSLNEGPFAGRDRQD
PAHDPNDFEDGKRHQLPFINILNKDGTLNEDPFTGLDRRGV
P GHGFEDFEVAKKSGI DVVSPVNDEGVFTEEAYKGMFVRD

P GH GQEDYAVGGKYDLEVDCPVDGNGNFVAGLFEGENVLK



PAHGMEDYNVASHHQLPTECLVDESGHFTEPELKNKNVEE

PAF GEEDYTLCTREGUNFPNPDDDLGRFTSEDFAGVVVVD

PGFGQDDFEACRAYNFPVVCPVDEAGKFTAEDYE GKQVFE P A F GA D DLLATSRAYGLPMVNPVRSDGRFDLPDVGGVFFKA | $P$ | $A$ | $Y$ | $G$ | $E$ | $D$ | $D$ | $K$ | $A$ | $T$ | $A$ | $D$ | $T$ | $A$ | $D$ | $V$ | $A$ | $V$ | $T$ | $P$ | $V$ | $D$ | $S$ | $K$ | $G$ | $R$ | $F$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $T$ | $V$ | $P$ | $D$ | $Y$ | $A$ | $G$ | $Q$ | $H$ | $V$ | $F$ | $D$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $P$ | $A$ | $G$ | $E$ | $D$ | $D$ | $M$ | $A$ | $T$ | $A$ | $Q$ | $A$ | $G$ | $G$ | $E$ | $A$ | $V$ | $T$ | $P$ | $V$ | $D$ | $A$ | $K$ | $G$ | $R$ | $F$ | $T$ |
| $V$ | $P$ | $D$ | $Y$ | $A$ | $G$ | $Q$ | $H$ | $V$ | $F$ | $D$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

PAFGEDDA QVGRRYELPFVQLVDGKGELTKEPYAGVFVKK
PAFGEDDAKVGRKYGLPLVQLVDGKGQMTSEKWPGVFCKD

PGFGEDDFNVGMQYNLDIVVPVDDKGYDTAEDFEGVFYED
PAFGEDDANVGRKYDLPFVQLLVDEKGNMAESPFAGLEFVKK
P GHGE EDYKVWWLKYGYD IL QPV D S E GKYSSS EFVVGMHIF E
PSHDFNDAEMAQRHNLDYVCVI NEEGRMTE EAYKGELRYD
P YF GED DFRVCLLAA GLEVI CPVDSSGRFTEPDFLGQHVK D
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P A H D F N D Y E V GKKR H D L P Q I NL F T DE A R L N P E A Y R G L D R F D
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|  | V |
| :---: | :---: |
| UniRef90－Q126C1 UniRef90 EONY UNO | VNPNVTYVKLRVYDKVYYLAEALVDSVFDGSWGEREELAK |
| UniRef90－A2BTR4 | VNPDDDRYKEFIGVKVKVP |
| UniRef90－F6B8L3 | VNPEDDRY配LVGKTLI |
| UniRef90－06AM | VHPDDERYAHLGEDG1 |
| UniRef90－Q3K | VNPEDPRYKDLIGQNV |
| UniRef90－B1MX09 | VHPSDERYKDLIGKTV |
| UniRef90＿C7XTE0 |  |
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| B6J |  |
| 084 | VNPSVDYVTVDAGDRKLI IAAA |
| UniRef90－W0V313 | VHPEVSYALVETVRDGAADLVAACLERYKLDGKVIATTSG |
| UniRef90－r5H130 | VNPSDERYQHLVGRKV |
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| UniRef90－W7BIM1 |  |
| V6L |  |
| UniRef90－C2E5V3 UniRef90 UPIO0037AC |  |
| UniRef90－F9VB89 | VNPADERYAKYTGQSV |
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| UniRet90－O8MSW0 | VHPTM |
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| UniRef90－G4C | AGADVVYQLIDTPKGKLVLAKDLVEDAVKRYGFEEGQTQE |
| UniRef90 R7ROP6 | G |
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| UniRef90－E3C7Q0 | GKFDYSVVKPANDDRQFVVATDLLDGVADKDGWEDFEVVK |
| UniRet90－U1KHX3 | VHEALEYALVQVEDEGKVQRKDAMDRFGFNHFHVLGYVKG |
| UniRef90 EORPP5 | LAPEHPLVKEITTPEQREAVVEYVVRQAQLKS |
| UniRef90－W4XX96 | VHPHDDRYSHLIGQSA |
| UniRef90＿B8DJ43 | VHPEDERYTAFIGKMVKL |
| UniRef90－E4KP45 |  |
| UniRef90 N1PRK3 | VHPDYEYILVHDVESTNTY历MKDPKKAKDKFRVLPLKTKG |
| UniRef90－M7 | DKDMEYTIVN |
| iRet90＿C7Z1 | ANPDFEYVKILDEKSGKTYUGTLYKDPKKAKFK！Ler |
| UniRee90－ADAO24HD28 | AGSKLTYCKILRKDCYLLTKNRTESYFDDGSYEVLTELKG |
| UniRef90－R6GKP4 | VHPSDPRYKKLVGKNLILP |
| UniRef90－A6R8Q3 |  |
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| UniRef90－V7PWD3 |  |
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| UniRef90－R9C8 |  |
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| 2JGZ0 | NPEHMVANE |
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| UniRef90－D6SSX1 | VNPEDERYRHL |
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|  | AHPDFEYVKIHDEASGKNYUGTLYKDPKKAKFKIVEK】KG |
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| UniRef90－A2SPV6 | VGe |
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| UniRef90－UP10004793864 | VHPKDERYQHLI |
| UniRet90－D5GAW0 | PDFEY |
| UniRef90－R7ET35 | VAPDDERYADLVGKTLLILPVVAEPRSAAADSYE |
| UniRet90 B9E5K8 | VNPEDERYKHLIGKTALLP |
| UniRef90－W5LHZ7 | FMPKAQYSLVKRADNEQLLLVATERDTS |
| UniRef90－FORMW1 | VNPELTYVVAASHAGPLIVAEDAVERKDQPTLEVLARFKG |
| UniRef90＿X1E2D7 | PKDR |
| UniRef90 B7G888 <br> UniRet9 N1Z | VNPAMEYVQULDKATNHYPUMNNKKKWKPEKAAELYTMPG |
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| UniRet90－12CQT9 | VHPEDPRYQHLVGKTVE |
| UniRef90－W9GK21 |  |
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| UniRef90－13TLV9 | VHPDDERYADLVGKELL |
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| UniRef90－W1NBV1 | VNPEDERYASLVGKFVEL |
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| UniRef90＿11CQX1 | P E D Y Hil |


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| :--- |
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| UniRef90-Q126C1 | A R K S l V V A D |
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V
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## VHPEDERYAHLVGKMLKLPLCRT

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V

## V

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## UniRef90 F4A037

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P GH GE D D Y F V G L K Y D L P M L M PV D D N G C F N P D E F V G K F V F E

P GF GED DFRVVCLEK GVVRIVILDVTFRYTAETFQGRFVK D
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IH P E D E R Y T H LLHGKK A IVVP

$V$ G P E
VNP E DPRYKKDLI
V N P E DP R Y K D L I
I N P N DPK N T WL K G K HVIVP
V H P D DVR Y K P FH
IN P A DERYSHLKGKK V I VP
FS P R Y I I V RKNHENDGMI ICADLLEALQKEFNCELKVVSN

I NTNDDRFSHLVKGKKAMVP

$V$ D A GF D Y A V V QP K G E T R K F VVVA E Q E T L G WE DVV T L Q T L K G
L A P E H E L I K KVITT T R D Q Q K A V R D Y Q E K A A R K S DLLE R T DLLA K
$\vee$ H P K D E RYK HL H GK F V
$V$ HPEDERYQALIGGKEVILP



V H P E DE RYTHLIGK QLI LP

$\checkmark$ HPEDE RY
$V$ NARD R R F NPEG $\square$ KK $\square \mathrm{F}$
$V N P D D E R Y Q S L D G K E V L L \quad R R F N P E G \square K K \square F$



$V$ S P N DE R F K H LI GKE I R L P

L N P E E E Y I L T T T G Y IVVAK KL L S S L N E S K L L S G D I A Q T F K A
V H P K D E R Y K HL
$V$ HPEDERFKDLDGQFDMLP



V H P N DERYKHLHGKSV
$V$ N P N D E R Y T H L H GK S S V R I P
$\checkmark$ V H P E D E R Y A H V $\underset{1}{ }$ GK T V R L P L L C D R D
LAAEHPLVPKLI A GKPQATAVNAFVETVRNMDRDVRSAED



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


| $V$ | $H$ | $P$ | $E$ | $D$ | $E$ | $R$ | $Y$ | $R$ | $D$ | $L$ | $I$ | $G$ | $K$ | $F$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $R$ | $L$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $V$ | $H$ | $P$ | $E$ | $D$ | $E$ | $R$ | $Y$ | $K$ | $H$ | $L$ | $I$ | $G$ | $K$ | $T$ | $I$ |
| $T$ | $L$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

$V$ GA D F D Y VVVK P E N DERKK VIAA A DERF D WENP QVLAT YR G


$V$ H T Q Q D S R $\quad$ Y K
$V$ NPKDERFGHLVGKTVVLP




V $\operatorname{L}$ N P K K D P R R Y G H L

$\checkmark$ V P T D P R Y Q

| $V$ | $H$ | $P$ | $T$ | $D$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $R$ | $Y$ | $Q$ |  |  |
| $H$ | $P$ | $D$ | $D$ | $E$ | $R$ |










-


$\begin{array}{lllllllll}V & H & P & D & D & E & R & Y & R \\ D & D \\ I & A & A & E & H & P & L & A & L \\ R\end{array}$
I A A E H P LAA LR L A K DK PE LQAF DDECRKGSVSEADMATMEK


V HE S L R Y T IVE S D T C GY L L I A Q S R L E Y LQ N S V IVP S L LG S
FHPEDDRY

A


V G K F VT
V N P D D ERYQSLIGGRTVRLP
$V$ S P T E T Y V K V K Q N D E I Y Y L S K T L A P S VLK S D Y E VL E E M K G

| $V$ | $S$ | $P$ | $T$ | $E$ | $T$ | $Y$ | $K$ | $K$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $P$ | $D$ | $D$ | $E$ | $R$ | $Y$ | $H$ |  |

$\begin{array}{lll}V \\ V & P Q \\ A & V_{1} \\ V\end{array}$
$A N F D Y A V V Q P E G E S R K F V V A N E L L S S V S E K F G W T N D K T \square K$

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110<br>LV 100

F G MVVKTT


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 GKF $\square M L P L V N R L I P V V G D E H A D M E K G T G C V K \prod T$



$S K L A G L N Y E P \square F P Y L$ AQLEKMTAHHPY TENAFRVVVA LIKMTAHHPY YDRDLLVMNGNFVTLDAGTGLVVTA

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 E E L V G K D Y E P L Y S C Q R K R A H F

 S E M E GWVY D G P F D E L EVVQA HQVV I L W D DVG D S E G T G IVV H A A EKTGGVFTGAYATNPANGKPDPI YLAD YVLDMGYGT GAIMAV


 T D L V G R R Y H P $\quad$ F G Y F D P N G WT I I S G D Y V T T E D G T G L V H I A KEFENLL $\square G K T A D H P F I E G R K D P I I A A D E Y V D M E F G T G A V K L T$ E K T G VF T G A Y A $\square$ N P V $V$ N G K E V P P Wi S D Y V L A S Y G T G A


LE K E GFTGAYCDNP AT GK Q I P P I Y

 EKTGVFTGSYAINPDNGRKVPIVVGDYVLATYGTGAVMAV $P$ P L T G R L I

A EFNH IVTEHPWDEEVDELV

VDELVI L GE HVVTLDS G T GIV H TA
 L V
 $A G V V G R A V R$ VP L I

EKTGVFTGSYVENPV
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$N D K$ G K F V V H P F C G R R R VGT TLPHPFDE GRSMVVIAAD DYVDPE F GTGMVMI T
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K V VGRE P I I ADEF
 $P L V G R R \square P \| V G D E H A D M E K G T G C V K D T$ $E L A D R T T Y R P L F K G Q D A Q P Q P M I A A D F V T A D S G S G L V H C A$


 K R F A K L V $\operatorname{G}$ K N V V L P


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PAHDPNDYQI GLDHRLPFi NIMTPDGKINEGHFQGLSMTE
PAFGEDDMFVCMEAGIEPVLPVDDGGAFTSEDYEGVQVFD
PGHGEDDYRI GLVYDLEVVMPVDETGCYNAEDF LGGRHIFK
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PAHDFNDFEVGRRHNLDMI NILDDMNAKLNPQAYQGDDRFDV
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PAHDPNDFEMGQRHNLESIMIMNDDGTMNEKAYNGMTRED
PGHGHEDY I G DQNFLEIFSPVDHEGRYNVEEDKGRKVLD
PAHDHNDYDI GKRHDLVFLTMIDDNGNDTDGQFAGMKRFS


PAHDQRDFDFATKYGLP VPVIKPEDDINSGPFNGLSNQE



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PAHD DNDYEVGKRHHLPSVVVFDSRGULNEGEFQGQERDK
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$P G H G M E D Y E A C L S R G I P A F A P V D D N G K F T A K A L S G K S V L D$
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PAHDPNDFE G G L RHNLPMPTIMDERAR DTGTQFDGMDRFE
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PAHDPNDYALGLRHNLDMPTIMDATGHITGTMFDGMDRFE
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PAHDPNDFEMGQRNDLEIVKVI DDQAKMTAEAYEGMDRYE
PTHDQRDFEFARKYDLPLQVVI QPEGEVNSGTFDGLRSDE
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TFGDTRDDMIVNEDKLPDRIVVDEAGRDKEGRYAGLTVRE
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PGFGEDDFWVSKEYGLDDVVPVDDKGVMTAEDFEGVFYED
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| UniRef90_UPI00046A6496 | $\text { AR K A\|I V\|K D\|L\|QD D D D M\|I K } \mid \text { E } \mathrm{E}^{180}$ |
| :---: | :---: |
| UniRef90-Q11SC3 | VRKQLSAELEEK GF LTK T D N |
| UniRef90-Q5CEK3 | SDKII K Q ${ }^{\text {L K K K S R L L }}$ |
| UniRef90-10WH24 | VR K M I A K ELE E K GFLVK T E N |
| UniRef90_UPI0003186B | AHEPVWAAMESMGTLAAKGS |
| UniRef90_UPI00037AEEDC | SNALI DK HLKEK G QVFS HES |
| UniRef90_UPI0004718DBF | A A EPVC |
| UniRef90_D4GIR6 | ARKAIVAAVDALGLLEE |
| UniRef90-R6E109 | VRK Q A K DL E A A GL MEKVED |
| UniRef90_G0TXA6 | CRREI VKRLDEMGLL |
| UniRef90_G8R413 | VRKEIVFKELEEK DLLAKVED |
| UniRef90_UPI0002657765 | GSAEVVKRLQAQNSLVHV |
| UniRef90-E7MN52 | A $\square$ D K M I E WL E S N |
| UniRef90_UPI00040D54EC | A RKE IVKELESLGVLDK TET |
| UniRef90_K2EIJ1 |  |
| UniRef90-UPI0002FEC6C | A ${ }^{\text {a }}$ |
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| UniRef90-Q17D48 | A RKA I L VAL Q A K G |
| UniRef90-S7T6V3 |  |
| UniRef90-A1D919 | G T A AVLEYI ESQGYLLAKH |
| UniRef90-UPI000464360F | T NKEIVQRLDANQKLLK |
| UniRef90-W0J0A8 | VKKRI I A D L |
| UniRef90-V9HBH2 | ARKQIVADLDEAGLLVKTE |
| UniRef90_U2UTP9 | A DPAVLKDLSERKLL |
| UniRef90_R7IVC4 | A RKLLVKKLEEDGALVKTED |
| UniRef90_I6TU88 | A R K AV V S RLK L I G L F V E K K |
| UniRef90-F7NSM7 | ARKAIVAAFDAAGLLDKVED |
| UniRef90_V4F9G8 | VAPHVFKALEENGRMYKVEN |
| UniRef90-A0A023X7M3 | AKAEMIRHLEET G |
| UniRef90-D1PL22 | A NKVILEHI K E T G |
| UniRef90-A0A017PKU5 | A REKI I LELDALGLFVKKE |
| UniRef90-UPI0003C11C88 | ARKKVVEAFEALGGLRGGE |
| UniRef90_Q6MAM1 | A R H AVVSEMKEKGLLEKVE |
| UniRef90-UPI0003B4074E | A NKQI I M D L R D |
| UniRef90_Q30SH2 | SNEDL I T L M G |
| UniRef90_F9F236 | VR Y A I Q D DLK A K G L Y VD K K D |
| UniRef90_G2T9U2 |  |
| UniRef90_R6UST6 | A $\square$ D T M I A WLE E H |
| UniRef90_G0VP05 | C R K A V V A DLKELLGLLD H $\square \mathrm{E}$ |
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| UniRef90-UPI0003F0E0C4 | A RKSVLEALKEKG |
| UniRef90-J0LIM2 | ARRNIVKLLQEAGLLVK\E |
| UniRef90-H0PS19 | AREVIVQDLEALGGLLAEIK |
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| UniRef90-D0L018 | ARDRII HDFKELDLLEKIDD |
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| UniRef90_UPI00036283D7 | A REKAAELLREMGVMEKEE |
| UniRef90-E4KNA6 | A I L T M ${ }^{\text {L }} \mathrm{W}$ L E E K GV |
| UniRef90-M1LS62 | A RKIVI E DI $\square$ K S NSLVKEE |
| UniRef90_V9KU33 | ARKAVLDAL K E K G L F R E $\square \mathrm{K}$ D |
| UniRef90-G0HCA3 | A R E Q I RLA L E E G RVLK |
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| UniRef90-A6DSK8 | ARTAII A KLKEENII FKQED |
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| UniRef90-G7XZW4 | G NAAVLEYVESKGLL |
| UniRef90-K2F9G4 | T DVEII I K WLA H N D KL F T K E |
| UniRef90-UPI0003803FC8 | ARQKLLDELQAKGLLV |
| UniRef90-K5BAZ0 | A RVKVREALA A Q GRIV E EK |
| UniRef90_D8QE79 | GSEAMVELLRERGQLVK |
| UniRef90_UPI0002D9AFA5 | $\mathrm{G} \\| \mathrm{R}$ K A I E WFET N G K G T K K |
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| UniRef90_F4NXC9 | A RAAVLAA L K E K NLYVGTES |
| UniRef90-E0DGP8 | A RVKI REELAKQGRIVAEK |
| UniRef90-R5E783 | A R D AVAK D L A L G L |
| UniRef90-D9QUZ9 | CREQLVEDLKET G QL IE $\square \mathrm{E}$ |
| UniRef90_Q39T99 | AKEKI ADYLAKEG |
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| UniRef90-A0A017SDG7 | G NVAVLEYVKS Q G Q L L A H |
| UniRef90_A3MWP9 | ARAKIVEDLKREGLLVKQE |
| UniRef90-Q4FM20 | ARKRI I KELLKEKEFFVKEEN |
| UniRef90-U5T5U2 | ARDRI VA DFEAAGLL |
| UniRef90-E0QHQ6 | LQ VD I I K Y LA TENKI Y S K E |
| UniRef90-D6Z8E0 | ARKAI RLELAEQGRVVAE |
| UniRef90-K2FC85 |  |
| UniRef90_G8PCV1 | A N Q |
| UniRef90-E3BNW2 | ARKA IVAEFDELGGLLDEVKD |
| UniRef90 UPI00035CF4F1 |  |



FAYPLEDGAGE Y K KP KTG IT
G Y SYPLVGEAGA VKFGVENKPE
VYLRF
YFKYKTQEN
TKFPIK
ISFALDYP
TRFPVT
DFA
$\qquad$ VEGSDEKVVI AT

GOVFTRPDTLYGATFMS GSDKTIPVFTTRPDTMYGATYFL GVEEKEIRVFTTRPDTAFGVTFMV AAYVK AMYAKFRLVDSGKEFLDNLCLLAIWTTTPWTIPANAAVA YIKYKIEGEKKF
HIRYPVADAEG LTVATTRPETILADTAIC ESIVVATTRPETMLGDTAVA VTFKVKDYE

AN EVFTTRPDTVFGVSFMT TLDVGFKSAEPDKLLAKDAFAVI WTTTAWTlPANQALN VDFRLKD TVTVAFELLESPKFDTKTYKLLVWTTTPWTVCNLALA URYNLVDSES K $\square$ DGHAEQ $\square V F T T R P D T L F G S T Y V V$ KVDGEEQEVVIATTRPETMLGDTAVA EDAYFI AWTTTPWTLDSNJA A UniRef90-R7D5M2 UniRef90_U2LOM5 UniRef90 D8P8S1 UniRef90_S7UL11
UniRef90-Q114V5 UniRef90- I3EJB3 UniRet90_Q83VA2 UniRef90-B3PRC2 UniRef90_TOIUG1 UniRef90 A3Z6T6 UniRef90_W5LEU6
UniRef90_H2ZWJ3

KKGD

HhRYPLSEPVN
DFPLEACEDV VDFPLAD

AYLEFPIV

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| :--- | UniRef90_H2ZWJ3

50
60
70
I A P E HE QVVCALT T DA Q RAEVERY DEETKRRSERERMADT K II H S K DERYKKYH GWSVR
LA P E H D L VKE E VA GTEYEEAVEKF $\square$ T K MYTMTEDERTSSD
V N P NDERYKNLI GRKVVLP
I NPKDERFTHLKGKKA K K C
V H P D D E R Y A HLL
$V$
$V$
N P P E D P R
H
V HP D D E R Y K N IV GK E VTVDPTTEYKVR
V H P E F D Y A L V EL A L K D G GT RLLVLAS ALVDSALQRYQLAG

| $V$ | $H$ | $P$ | $D$ | $D$ | $P$ | $R$ | $S H$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $I$ | $N$ | $P$ | $N$ | $D$ | $P$ | $K$ | $N$ |


$V$ H P E D E R Y R H L DGKK A R $\square P$
$V$ H P Q D ERYK HL
LA P E H P LVLDARARADSDLAAFVEDCKHVAVSEATVETQEK
LAPEHPLLTTVVSEAQRKDAEEYKELSSRKSDLERTELQQK

VHP E D E R Y R H L $\square G Q M \square R L P$
I NPNDERYQHL K GKTI LVP
1 HPDDTRY
Y S HK DA Y GLYR VT A APENNWEDVFK SAKVESFERDRDVPA VHPEFD Y V H D K NDP P L L L I L A F NL VK S CLLK KF GF K GN I DG V H P D DARYK HL VGKTLI L P
V H P D L E Y VI A R S K T H G NL L I A Q S R VE Y L K G MLLK E DL T IV E $V$ N E K L T Y SVV VEVVLLN ND D S S L G G K K S T K A E D K WNVVQLV V V H P K D P R Y K D I
I S P E H P Y I D K YK D R $\square$ T N WDAK Y R E EAA HK S D FER G E L NK E LA P E H P MVVED TT T DEQRDADVAQYQK QVGTKS DLERTELAK V HPDDERYQHLIGKEVIVP V H P D D ARFRHLVGKKARIP


 I A P E H P Q M G A L V S E D RKE E VA A Y V H A S Q NK S ERER $\square$ S E S R V HPEDXRYAHLVGRSVLLPLCDRP
I S EN D $\quad$ K Y CM M I F A E G YL K I F Q E H CK K N K VE Y QL Y S K N $\square$ S


 L A P E H K L V D Q DT T S E Q K E TVVEA Y K K QVVSLK S DLER T DLDA K II N P K D P K N R WL S G K K VR V P

VH P D D ERYR

I S P E H P Y $\square E K W A D R D G N L D R A Y Q Q E S A K K S D F E R T E L V K D$
FDNERKETWVIAEALVEAVIKLAKKQNNDKSYNDVKKVKG V H P D D P R Y A HLLH G K HV
V N P K D K R Y
$V$ H P S D K K Y S E L $\square$ G K T VM $\square$ P
LAPEHELVASSLTTPQQKES $\square$ DNY $\square$ AETQKRSELDRMS DVR

 | $L$ | $A$ | $P$ | $E$ | $H$ | $P$ | $L$ | $V$ | $T$ | $C$ | $A$ | $R$ | $A$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $V$ | $H$ | $D$ |  |  |  |  |  |  |  |  |  |  |

LS P E H P L V D E I I K D S P CK D E V Q NFK K K V S K E S A I R V S GVL
 LAAP E H P L V T QQi S K T E Y E Q QQVND F V Y K M Q F V N EVVDRTS A D L

 I NPKDKRYF
V H P EDERYK A LVGRFVVL
LA P E H P L V E E E T T P D D Q





V
$V$ N P D E E Y A K V K C VD G N T Y Y M D E K V N P D GK P A Y E VL E T Y K G
V H P E D E R Y $\quad$ A P E N K L V D E T T A E N K E A VEN Y K E E A A K Q S D $\square E R Q S S S K$
I H P D D A R Y K H L
V N P N D D R F K H L $\square$ GK T A $\square$ VP $\square \mathrm{C}$
V S P K D P E
K
I S P EHPY LEKYHDRDENMEEDHAYQKCAEKKSDFERTEMN

L A A E H P $V$ NPEME YV $\quad L M Q D K T P D A Y V I V G K F F A K K A K P V E V F K G$
V H P D DERYQHLI GQKVVVP
$Y S S R D A Y G L Y E V T A A E N D F G P R P G E K L I F A D Y K R L A D V T A$ VHPDDPRYRDVI
L V A P D H P P L V V A A L L T S E A Q R D A VT A F R D L M E T L S Q DERT A E D Q VV $\underset{V}{H} \operatorname{P}$ D D T R R Y A

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UniRef90_l3EJB3
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GGQKFAHPFIVGRII PIIEDEYVEMEFGTGCLKVT
 TKGAALEH $\operatorname{LEFRHPLYDRPSPVYLADYVG\square DAGTGLVHSS}$ LHGRQLRHPLTGQLLPLITDTAVQPHEGTGAVKVTV


VGKNAVHPFVKDRLMPVVADDYVDKDFGTGAVKIT A GRPLGDSVRHPLTGETLPVWAANFVLMGYGEGAVMAV EKTGVFSGCYARNPANGNAIPVWVADYVLGSYGTGAIMAV KY LIE GLVC GHPMYFERTVGMISSDHTNTSKGTGUVHIAA



 SSDQGATYRHDIKDTNSAPQPIDSADFVTADSGSGLVHCA
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 DKS GVFTGAYGUNPMTGKEVPIWIGDYVLESYGTGAIMAV RGTGVFTGTYATHPDTGES L ITNLENLHYKPLFEYFDDNAFKILTADFVVEGEGTGDVGUA


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 $T V S G A F T G S Y C D N P F N G E K V P M W A D E Y V D A G Y G T G A V M G V$ GKRVVTPLCDVVPVLEHPYAD EKEGDFTGSYCLNPVTGERMPDYVANFVLMEYGTGAVMAV EKRGCFTGKYVINPDNDDEIPI WVANYILMDYGTGAVMAV


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T $\square$ S GAFTGAYAEHPFTKEPDPMVADGYVDASYGTGAVMAV KMLKFMHPFYDVDTGYQRFSPVFLADYATADDGTGUVHSS KDKTGLGGLSAVNPVNGKE 1 PVVWISDYVLMSYGTGAIMAV
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160
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PA H DL L D Y E L GQ K H N L E V I D I L N D D G T L N GKA LI GED R F $\square$
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$\qquad$ $k 1$ Q I EVFT T

## AY乌EFP $\square$ I

HTRYQ SLNDDEPHVVVA

## HRYPYADGLG

 SFTFDFSVDSLQKDGNGKYITVATTRPETMFGDVAVA VAFDEDGTPTEFEDRDYIVVATTRPETMLGDTAVA VKYEDVEGESMDDSEPHIVVATTRDETMLADTAIA YLRYPLANGIKTAGGKNYIVVATTRPETMFGATGVAY)RYPLADNSDF

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## DFKLLT $N$ PK KA

DTSAVAQFKRKANPKFA

| $\square V A Q F K$ |
| :---: |
| $H V K$ |



GEK
GSEKIT1

## D

$\begin{array}{ll}\mathrm{K} \\ \mathrm{D} & \mathrm{L} \\ \mathrm{L} & \mathrm{D} \\ \mathrm{A}\end{array}$
D
DNTYFLAWT GKEYI EI

K S GLT
ATVRFDVPSASSGHDG Y VRYYFKDS
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VELAFGLKEA DAGQERIVVYTTRPDTLFGVTYVS RFGLHEPPGDTDLSVAVFTRPDTLGMSFLA PS $\square Y \succeq A F P M K E T D L F K N T A L I I W T T T P W T \square P A N M A D A V N$

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FDETSAKKAG】DG

| F | E | F |
| :--- | :--- | :--- |
| F | F | T |

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D T AFELVGDDAPRDE VE Y DARDTKLNF L NFDQL
$S \square W F A Y P \square E G G G E$
AHVNFRI EAADSRPDHEV

TAALVRFPLADKPLVDVTSLSAVIWTTTPWTLPANAA IAA

$$
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\text { F } \\
\mathrm{P} & \mathrm{P} & \mathrm{~V} \\
\mathrm{P} & \mathrm{P} \text { N GE }
\end{array}
$$



AY $\square$ S F P LK Q GGE $\quad$ LIATTRPELLAATQA V F T TRPD TL F GATYMV
 AFVDFKLS GKDDSFRI YTTRPDTLEGVTFMV Y I R Y P F

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I A A GHP LAATKAAANNPALAAFDDECKNTKVAEAEDATMEK

LA P E HELVVKEIIT T S E Q K EAAVS A Y DE K S A K R S E R ERMMA DVG

V H P E D K R Y T H L H
LAPE HP L VEHLDE YEKA DEVRAFVER $\square R N M D R L D R Q S D L L$ V H P E D P RYK H L H G K Y V
$V A$ V D S P L A D E L C T A D QREAF D A Y R Q QVAMA T E I E R L A T D R
L A P E H P L A M E L V Q G T A K E L Y D E Y Y L K R I S L K S E I D R
L S P D H PVVSLKL AESDPRDIRDFDEDCRRIGTSAEADETAEK $V$ N K E D E RY K K Y V G K N V V L
$V$ A A D A P LAA E E LV T EA QRAE LDD S YREK LKKSVSEDERQSADR IV N P D D D E R Y K A L I G K N DR LIP
 - V H P E D E R YK SL H GK F V L

L A P E H E E V S S L T T O L A P E H E L V
$\frac{L}{\mathrm{Y}}$
LA P E H P L LT P QVVT T S D R K E A VE A F $\square$ K E V V N E S E $\square E R T$ A E D K


| 1 |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| $V$ | $N$ | $P$ | $N$ | $D$ |
| $H$ | $P$ | $E$ | $D$ |  |



$\begin{array}{lllllllll}V & H & P & E & D & D & R & Y & R \\ L & A \\ L & P & E & H & P & L & A & L & Q\end{array}$
L
I NPSDIRYRD DGNAFLDKVKKTDK】KRTAEDF
$V$ S K N D KRY T HL I G K L L K L P L C N R Y $\square P \square I D E N E Y \square D K T F$


 V N P E E D E R Y K H L I G K K A I V P


 V H P D DERYA HLTTE Q DVLILDPIVGRK
$L A P P E H D D V Q Q L T T Y P A Q K E A I D D A Y Y D E E T A K R S E R E R M A E V K$ $V R A D A P Y G L Y B T P G A L I V V A Q P L A D A L F A S L G V D H A L C A$ YHPDDVRYKHLADKSA

 VAAEHPLATAAAENNPELQAFDAECKAGSVAEADMATMEK V A P E H P SLLA E DVP DA WP E GTDPRWRMAS TKS DVERQA DA K V $V$ H P G D E A H A Y AV G R E V I VP M T G
 $V$ V A P E H A LA Q HAARNNPA LQEFDAECKMGSVDEADMATMEK $V$ H P S D E R Y K D L V G K E V I L P
I N P D D S R F S H L L K G K K V L V P



 LAP E H P L VD E LTTPSEWPEGVDERWRKQASRKS ELLDR QESR V H P D DERYASLVGK FVDLP


 L A P E H Q L V V S E I T D T E H K K A A V V E Y Y I S Q S A K K S S D L E R T D L A K I S P E H P CI E K WN D K DK N I E DVVY QVEAAAK K S D F ER T E L V K E $|$| $V$ | $H$ | $P$ | $D$ | $D$ | $E$ | $E$ | $N$ | $Q$ | $D$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

L A P E S D L LA A E LI I T E D QRET A E A Y $\square$ QVAK NRSERERMS DVK $V$ V V P D D A R
 L S P E HP LVEKLTTTREQATAADKAYQEEAAAAKSEDDRTAAEGR

 $L A P E H P L V A Q V T$ TPDRKAEVEGFDKQVTAESEMERTAEDK $\vee \mathrm{V}$ ค N D E R Y T

 I A A EHP LAATHLAEGRPDLLQAFIEECKHGGVAEADMATMEK

 V N P N D K R Y Q K F $\square$

| I A A E H R L A K A S A E R H P G V A R F VVD E C R N S K T A E A D M A T M E K |
| :--- |
| $I$ |

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UniRef90-K2EJ73
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UniRef90 O2NUU7 UniRef90-D2QBD6 UniRef90-C5MI64 UniRef90-BEYJT1 1 UniRef90-A1S8S8 UniRef90-UPIOOO3771128 UniRef90-UPIO003942FF5 UniRef90 R9GVN9 UniRef90-D1J715 UniRef90_UPIo0047EA3E9 UniRef90-A5CY09 UniRef90-UPI0002D3B0BA UniRef90-C7GZ25 UniRef90-D1BMN8 UniRef90 UPIO003799EBC UniRef90_Q8YGX8 UniRef90-U2PVZ1
UniRef90-UPI0003B4COF1
UniRef90 W71NR2
UniRef90-K0PA68
UniRef90-UUV1J2
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1

FSFDLVDGEGVQMEE NDTVFTTRHDTDFGASFCA VKYPLDGSDSLFVHPGFLEVATTRPETMFADVALA HFRYPVEGVENPEDPSTYITVATTRPETMLGDTGVA AYLEFPIV GDDEKVSVYTTRPDTVYGVSYLV SFESGDEFVYVATTRPETLGGDVAVAB DNTVTVGLR पETGE咅

ALVWTTTPWTLPYNLALA
EDVVVATTRPELLRACKALV I AYPLVDPCND
$F \underset{F}{I} K Y$ Y RLLADS GQDLVVATTRPELLPACAALA T $\square$ RFALRDDSRAGLPDDNVQVYTTRPDTMLGDTY YARVLTKDVDGLGADAEKLEVYTRPDTLFGATYLV PSVYARVLTKDVPQFNGKK VYG|VWTTTPWTLPSNQAVC YIKFKIRET

ND
$\square W V R F P L R A V K Q D G A G$
AYVKFA TEGREEP PVIWVKFPVAEYTGDEDEHAS FPSADESTYAD
Y $\square K Y$ YFRDAP N V $\mathrm{V} A D$
YFlVATTRPETMLGDVAVA
NLDNGKGSLRVYT
VEDDFKRADNGESFTVYTT
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GEDNTY LLAWTTTPWTपPSNSALA FIEVATTRPETMFGDMAVA VEDDFELAGMEDKLRVYTRPDTLGASYV (IWVKFPVKELTPENLVGASVVIWTTTPWTIPGNRAIS FSLHEPPGLDTNLNAVEVFTTRPDTLFGMSFLAA FDGEDGKK


UniRef90 Q1Q5P9
UniRef90 K2EJ73 UniRef90-W1U0C4 UniRef90_U4K850 UniRef90 Q6LX78 UniRef90-A6CEN3 UniRef90-Q2NUU7 UniRef90-D2QBD6 UniRef90-C5M164 UniRef90-B5YJT1 UniRef90-F1ZBNO UniRef90 A1S8S8 UniRef90-UPIO003771128 UniRef90-UPI0003942FF5 UniRef90 R9GVN9 UniRef90-D1J715 UniRef90_UPIO0047EA3E9 UniRef90-A5CY09 UniRet90 UPI0002D3BOBA UniRef90 C7GZ25 UniRef90-D1BMN8 UniRef90_UPI0003799EBC UniRef90 - Q8YGX8 UniRef90-U2PVZ1 UniRef90-UPIOOO3B4COF1 UniRef90 W7INR UniRef90-K0PA68 UniRef90-U4V1J2 UniRef90 D6TG58 UniRef90 UPI00037D819D UniRef90-H2M4G5 UniRef90-F3YXW1 UniRef90 A0A017HEC1 UniRef90-14AHS5 UniRef90-H0E4T9 UniRef90_F7P0D5 UniRef90_Q98LB1 UniRef90-F9UKH5 UniRet90-E5SLA9 UniRef90 UPI00041FFFB6 UniRef90 ${ }^{-}$N9VDM9 UniRef90-UPIOOO23768D2 UniRef90-UPI00028A318D UniRef90 ToLLK6 UniRef90- EOTF97 UniRef90-UPIooo35FA157 UniRef90-K9WAU6 UniRef90-UPIO0036B8039 UniRef90-V4RJ09 UniRef90-A0A016TUP7
 UniRef90-K9PRV9 UniRef90-Q7NUM8 UniRet90_R4T4X1 UniRef90_W1TP97 UniRef90-R5D2T9 UniRef90-13TDR4 UniRet90 MTNQ96 UniRef90_D9Q056 UniRef90-11LDV5 UniRef90_G9ZDX3 UniRef90_A4RYC7 UniRef90-UPI0001DD0BF2 UniRe990 10A2F7 UniRef90- UPIO004759D77 UniRef90-UPI000464B897 UniRet90_R5B191 UniRef90 UPI0003B7B62F UniRef90-A0A059FC93 UniRef90-×5GWX6 UniRef90 V2VRG1 UniRef90- 131 MC 2 UniRef90-10DX32 UniRet90_A9BF22 UniRef90 L8D929 UniRef90-J2HEB5 UniRef90-UPI0003EABF75 UniRef90_E8ZKF8 UniRef90 S3MR68 UniRef90_UPIO003A384F9 UniRef90-X0Z5E6

VNPKDDRYKDFTGKTLLLIP
ISTDHPFVENLAKGFPALQAFMAECHATGTSQKEDDTTEK LAPEHPLVEKV DEGKKEADAVRQFVEEMRNVNELDRTSED $V A A G H P I A$
$V N P E F D Y A W I V A E N N E A V A A F V E E C K N T K V A E A D M A T M$
$V$
$V$ VHPSDERYTHLVGKLVRIP
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I AAGHPDAEKAALNNPEDAFVEECKQSGTSEAEDATMEK VHPEDERYKALVGRKLRLP
I AAGHPGAA AAQNSPEIEQFDEACKNNKVAEAEDATMEK I APEHELVSALTTPAQKADПDDYПAKTKKKSELDRMSDDK | NPQDSRANQLI
LAPEHELVAQUTSPGQKAAVEAYDEKTAKRSERERMADVK
I SFEHPLALESGKNNYQVQSFDEKCKTDQTSEILNEDMDK
V HPSDERYKALVGKMVTIPRAREYRDNALKMSETDRGDDK IAPEHELFDMLVKSSATEKEAREYRDNALKMSEDDRGDDK YNPNDEYGLYECVSLEEDLPFTPWESVFKAAKAAEWKKVR VNPKDERYHALVGNDVILP
I SPEHPYLQQWKDQDQNWDAVY DEEAARKSDFERGEDNKE IVAAQHPLA LEAAARDATVAAFVEEASRGDVTEAAMETM LAPEHALVDTITTAQWPEGTDERWRRAASTKSELERQENR YHPDDLRYQHLAHTHA
YGSD\|SYGLYEVTGRPGECWAS TGDRY乌LADNLAADVMGK VHPSDARYAGLVGTHASLASASFSSRERIEA VNPNDERYQHLIGEFVEL VHPDDPRYQAFHGKQVR
LAAEHPLVKRGAEGTSEQDKTKEFVHKVVS吅DTQRAADD YHPDISYGVYEITGAPEDNWVKTGDKLLLADKLAEGCLAK VAPELEVIDELTTKEQKTAVEEYVKVAKNRSERERGTEVKK VHPDLEYVRARVGGRPRDGERDGTPVPNGTTVEDLETGTG VHPDDERYRHLVGKNVVLP
YNPKDERY
FGKKLVY\LAKDKSEYYDFAMDADDRDRNDEDEVKSTFQG LAPE HDLVAKDTTPAQKQAVEAY DEATAKRSERERMADVK LNPTDKRYNE
VAPEHPLAAHAARTCPADAAFDEECRTGGTTEAELATQEK VAAAHPLAKAAAEGNAELAAFCECAQGGTSEAELAT K VNPKDNRFANLVGKEVKLP
VAPDHP LAAHFAETDGALAAFTAECQAAGTSEEATETAEK VAADHPVAQALAADNADAAAFIEHCKQGGTTAAELETQEK

VSPDHP पAKD पGARNEE $\square$ AQFRRDCAA $\square G T S E E A \square E R A E K$ VNPADERYSQ
VHPEDERYT
LAPEHPDTKRVTTKEQQGlVDVFSEVANQTELERTAEDK II APDDERYLHLVGK QLELP
VAPEHPLVDELTAATWPEGVDASWRAAASRKSELDRQENK VVGPDTYVTVQVDPDLLESPVAGEYVKELGEDPQIVAEYPG LSPEHEHVWQNMDENADEVNAYVAEAAKKSDFERSELNKE YKPGDERY
VNPND TRF पN पH
YNPQDNRY
VHPNDDRYSHFHGKYA
VAAEHPLATAAATNSPTGAAFDNECKAGSVAEADVATMEK VAPEHPMLDALSGGAQKDQVAEYVLAASRKSDLERTELSK YNNS SYCIIKKPEEEEKDLYYIUADLLEAFC STVNCNYQ YGPEVDYVHIEELDDMAEPTGRRFARDLYDGFRARQRAQG YHPSDPRYS
YDTEMDFMPWTRPGDKLIVADNDWEDVFVKGWRRपSDVNP VAAEHP ADFAAENNPALSTFVTECKNTKTAEADMATMEK ISPEHPLLKQWQPHDANWDAVYQEEAAHKSDFERGEDNKE VAPDGALASEIVSDAARPAFEEYDEKTKRASETERQSTDR FNPNVDYVMAAAKVKSFRKVIELTAEENLNHZKLHHPFVR CNPSDERYRCLNGKYA
 VNPKD
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TGENDDYVKVKTFNPYTHEPEDYKAGDKLIPYEVISEFKG VNPNDDRYKSLDGRDVTDPDANRKVK
LAPEHPLVEKVTTPEQKQAVEAFTKEVSQQSEMDRTAENQ VSPEHPLAEKLATADNLKEVKAYISRAKLKTELERTGLQK FSSR\|AYGLYEVTAAPEGNWAKKGDRYDLADKLAADVMKA IAPDHPDAQWVAEQNPQAADFVAECRRLGTSVEAVETAEK VHPDDERYNDLEGKMVEVP VHPDD
LAPEHPLVDQLAADVWPQDTDPRWRRS DAAKSDLERQENK VA A A HPLATLAAENNPALAAFDQEAKNTKVAEADUATMEK

UniRef90 Q1Q5P9
UniRef90 K2EJ73 UniRef90-W1U0C4 UniRef90_U4K850 UniRef90_Q6LX78 UniRef90-A6CEN3 UniRef90_Q2NUU7 UniRef90-D2QBD6 UniRef90_C5MI64 UniRef90-B5YJT11 UniRef90-A1S8S8 UniRef90_UPI0003771128 UniRef90_UPI0003942FF5 UniRef90-R9GVN9 UniRef90-D1J715
UniRef90_UPI00047EA3E9 UniRef90-A5CY09 UniRef90 UPI0002D3B0BA UniRef90_C7GZ25 UniRef90-D1BMN8 UniRef90-UPI0003799EBC UniRef90_Q8YGX8 UniRef90-U2PVZ1 UniRef90-UPI0003B4C0F1 UniRef90 W7INR2 UniRef90-K0PA68 UniRef90-U4V1J2 UniRef90 D6TG58 UniRef90_UPIO0037D819D UniRef90-H2M4G5 UniRef90-F3YXW1 UniRef90 A0A017HEC1 UniRef90-14AHS5 UniRef90-H0E4T9 UniRef90-F7P0D5 UniRef90_Q98LB1 UniRef90-F9UKH5 UniRef90-E5SLA9 UniRef90-N9VDM9 UniRef90-UPI00023768D2 UniRef90-UPI00028A318D UniRef90 TOLLK6 UniRef90-E0TF97 UniRef90_UPIO0035FA157 UniRef90_K9WAU6 UniRef90-UPI00036B8039 UniRef90_V4RJ09 UniRef90_A0A016TUP7 UniRef90-UPI00046496B8 UniRef90-K9PRV9 UniRef90_Q7NUM8 UniRef90-R4T4X1 UniRef90_W1TP97
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KGF NTGLSVQHPF LiL VEKVGLTGGYAMPPLK
 DSLIGLKY $\operatorname{LIHQEFAKIENVHTIVPGDHVTLEGGTGLVHTA}$
 QHLEGIEYEQLMPYVQPDKFRVILGDFVTTEDGTGVVHTS KDLVGLKYKPLFNYFYEEFFKVIPADYVTNDSGTGIVHQA
 $K \quad G V A T G \square Y A \square H P L T G E E V P V W A A N F V L M N Y G T G A V M S V$
 TVSGAFTGTYALNPLNGEKI PVWIADYVLAGYGTGAVMAV


 A P K E GMTGS YAVVNPMS GE QV P V WIA N Y V L V D Y G T G A V M G S
 KTGVRLEGTEAVNPASGKHVPLFVSDYVLMGYGTGIVMGV EKRGVALGIDVI HPLTGDHVPVYAANFVLMSYGSGAVMAV EKTGVFTGAHAVNPINGESIDVFDADYVLAGYGTGAIMAV

 | $D$ |
| :--- |
| $P$ |
| $P$ |


LE K E GF T G R Y CLLNPVT GA RMP IVVANFVLMGYGTGAVMAV ARVDGWER DGDAPSEWDQPRDFRAAPFVTDEDGTGFV HCA
 A

## $S F L S$ <br> NK G L <br> $K L$ $L$ $L$ LK DKLAVVHPL K E 

 $P K L G F D T G L T A A H P L G A G E L P V V I A N F V L M E Y G T G A V F G V$ $P K R G \square P T G G K A D N P F T G E E I D P I \quad W I A D Y V L V E Y G T G A V M G V$

PKRGVPTGGKA, NP
K TGVFTGSYAVNPADG
S K T G

| $G V$ | $E$ | $I$ | $K$ | $G$ | $I$ | $K$ | $G$ | $I$ |
| ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $N$ | $P$ | $V$ | $N$ |  |  |  |  |  |
| $E$ | $R$ | $K$ | $G$ | $L$ | $H$ | $A$ | $V$ | $A$ |

$K G L A G K R A$
K GMPTGRYVI NPDLSG
 $L L G V$
$R P D Q$

GLE GK T A I S P $\square Y E$
$E$
$K$
$K$
$K$ TGGIATGFYAIIHPLTNERIPVWIANFVLMEYGTGAVMAV EK T G V D E G SGPD G G F D D H WA K E F W S E L R P P L L A G E H V T D D A G T G F V



 C A H P L A Q F AP D P V G GY GY D V P L L P G E H V T D D A G T G F V H T A


 K V LI G K R Y E P LIF N Y V K N N D C Y F V V D A D F V S L K E G T G I V H I A $K$ D ML G WE Y E QLLF P IDPA N P A F T V V


 RGFD TGLRVNHPFMDKSFP WUANFVLMDYGTGAAGGC K R Y K N L V G K K A I V P L $\quad$ Y K R N V V


## UniRef90 Q1Q5P9 UniRef90-K2EJ73 UniRef90-W1U0C4 UniRef90_U4K850 UniRef90_Q6LX78 UniRef90-A6CEN3 UniRef90_Q2NUU7 UniRef90_D2QBD6 UniRef90_C5MI64 UniRef90-B5YJT1 UniRef90 F1ZBNO UniRef90-A1S8S8

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UniRef90_UPI0003799EBC
UniRef90-Q8YGX8
UniRef90_U2PVZ1
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UniRef90-I3IMC2
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UniRef90_R4V1Y6
UniRef90_B8F5H7

## P

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140
150
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PAHDFNDFEVGKRHGLRLDNIDDAQARITVAADDGHDRFA
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PSSDERDFRFATHFDLEVKVVKEEGEVINSDFNGMSIKD

A HAE DD DEVI Q K HNLEVNETVDQDGKINNSQFHGLTRQE
FAHGFEDFAVAVEHGEEVKCFVDEDGRYRREDLGGLQVQE
SAHADED DE IIKANKLEVIECIDDEGKMNSNQFEGMDRFE
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PGHDQRDWEFATKYGLPIEAVI DESGQI NSGEFDGLDFDA
S VGDKADLKM DYKHSLPFLKSIDEQGKLTDGKYAGLTIKE
PAHDQRDLDFARKYDLPDHAPTGDDGRINSDFLDGKTI E A
$P A H D Q R D F E F A T K Y R L P D R R V F D D D A A Y T G P E L D G M N V E D$
$P A H D T R D F Q F A T E Q K L P D V Y T E P G V V N S D L F N G M E S P H$
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$P$ Y GEDDMULLTANGUNAVTPVDDAGLFTAEDYQGMQIFD
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SFGDHVDVKMFRDLGQQPEII DDKEGKMTEGFLAGLDVEE
SYGDEDDVRLFRELNL K PKVIIDDQDGRMTEEALAGLLKVEE
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$P D H G E D D F Y L C R E N G D D P V F A V D D G G V Y R ~ D D W P W L G G D D$
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TFGDEMD DKWWQQYDDPLREVVDRYGK D DADGQRKVED
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| UniRef90-F1ZBN0 | ARTKIVAAMKDGGF |
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| UniRef90_UPI0002D3B0BA | A REAVVAA MEELGFFEGKED |
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| UniRef90-D1BMN8 | ARKNITAALNERG |
| UniRef90_UPI0003799EBC | A NKAVMDKLIEAGNL |
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| UniRef90_U2PVZ1 | A $\square$ P T MKK WV |
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| UniRef90-W7INR2 | AKKAAI GWL E EHG |
| UniRef90-K0PA68 | AREKII QULKEQALLVKQ |
| UniRef90_U4V1J2 | A NKTVI EKLIEVGGGL |
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| UniRef90-H2M4G5 | A R QLVID ALVEK |
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| UniRef90-F0TC39 | CKAAlI DDLGSEGCLVKQE |
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 $V$ R WKL $L$ D P A T A P E GE T E L E I Y T T R P D T I F G A S F M A
 HFRYPLADGSGA
 V Q G H D A A L
 VEFEVAGKDGNGSGK YLVVYTTRADTEFGCTYMV
 F P I K NKK T VE F P V

FGAE $\square E Y K \square D A S K D S L I T F S T R P D T \prod F G V S F D A$ VDFPV

GSEGDAITVFTTRQDTLFGATYMV
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 DLE N H G D K I R V Y T T R VD T I F GV S Y V V
 $Y \vee R W K V K E T G G E E I V I A T T R P E I G I G T V A V V$
 Y L R Y PVVG G
 HVV GME DT I $\mathrm{P} V \mathrm{Y}$ T T R V D T V Y G V T Y I V
 F GT D A G D I EVV F T T R P D T L F G A T Y L
VLFE $L S K G S V A A A G T S A V K V Y T T R P D T L F G A S F L A$ VD FAY K V Q G S F E E

V S F NV KN H DEV IDD



## A H V V I WT T TP WT LP GNRA $\square$ S

$V T$ FA Y P $\square$ Q G S S D T $\quad \square$ S VA T T R $\square$ T T M L G D T G $\square$ A
 $D \mathrm{~V}$ E F T I F T T R A D T I F GlV T F M V
ATIKFPVKDSSD
$T \vee W V K F K V V G T E G$ D $\frac{\square}{R}$
RDNE

$H$| $l$ | $D$ | $F$ | $I$ | $L$ | $A$ | $D$ | $T$ | $D$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $Y$ | $P$ | $L$ | $A$ | $D$ | $G$ | $S$ | $G$ |  |

V $Y$ I DTSITAQFKVKD

Y 1

$\left.\begin{array}{lllllllllllll}Y & D & Q & A & T & R & P & E & T & L & A & D & M\end{array}\right) V A$
 VD FPI
DTTC

VF F NVEDSEK Q
A Y I T F PVPD T P
S G
DADD\CDK
V


ATVTFEVPEAKAAGASQASLDVYTTRPDTLFGATBMV KVPVVVD GYD D GLLA GS SVVVI WT TTP WTLP GNRAIS K F S F K F A D N A P A G F D G L E V V Y T T T R P D T $V$ K F P F K K N K E G F

 FKFDLSKESRAKLERAFTK
VK F DLENSNETLDD
YFKYPVMMRDTLYKLNTYLE
GGGKFS $\mathrm{G}_{\mathrm{F}} \mathrm{T}$ TCDETVYGDTFFV
DFK $\square D G S S D T \square K V Y T T R P D T L Y G A T F M V$
P S $\square$ F VA F E $\square$ K K A A K T $\square$ S K G D Y I VI WT T T P WT L $\quad$ IA NA GAA

|  | O |
| :---: | :---: |
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| UniRef90_UPI000345C57F | LAPEHPLT QRVTTP ENQAAVEAFVKEVSNQSELERTAE DK |
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| UniRef90-X5GWJ6 | I S $\square$ D H P V VRELD L VK Q EK】EELDRTLF N |
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| UniRef90_E1VI15 |  |
| UniRef90_G2IMN7 | $V$ NPDDERYRMWVGKYVKL |
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| UniRef90_J4UYH1 |  |
| UniRef90_UPIO004294919 | V N P S DERYA HLVGK T $\square$ TL |
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| UniRef90_R5QJ66 |  |



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 NK T G $V F$ T G S Y G $\square D$ $K G \square D \quad T G V K V V H P$ $\mathrm{L} D \mathrm{D} S$
$\mathrm{P} L \mathrm{~L} G$
$\mathrm{P} \mathrm{F} \mathrm{G} N$
K E K T G $\square E G \square K A \square N$ EKK GMFTNLKAI HPDNGII QI WTADYVMMSYGTGAIMAV EKTGVFTGSYAI NPLSGAKTP WMV $L G \square D \quad L H G R R L Q R B$ EK T GVVFT GAYVATN AKLLT F K K L R A M QP E E E Y K GFD T G L R VLHPP DT GRLIP VAD DYVEKDF GTGCVK T EGGQDLTEAK YLLHP T E K E G LT GAYC $\square$ NPYS G


TEKEGLT GAYC【NPYSGEK
K G VD T G L R VR HP F DENWLL $K T G \square F T G A Y A Q \square$ VY GY FV ${ }_{P}^{P}$
 $T P K L G M T G S Y A V V H P L T G E R V P I D W I N Y V V L Y E Y G T G A V M A V$
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 $R G Y D \quad T G L R V V H P L D P E D T L P V F A A N F V L M D Y G T G A V F G C$

 A A MVCA HPLNGFAGGYGFDVPLLEGDHVTDDTGTGFVHTA HPFCARKLPDIVDDFVELDFGTGVVKIT



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PAHDPNDFEVGKRHNLPMIRVLTYDGHMTGGKYAGMTAME
PAHDERDFEFA GKYKL P IKTVI LTPEGTVNSGEYDGLKNVE


P A H D QR D Y D F A V K F N L P D K QV I D G K M E T N E V Q L D G K S Y K D

PGHDFNDFEVGKRHDLPMPSILDEAAALWLDELEGMDRLE

$P$ QGDQR DWDFAK KYNL P VKVVVCEDGELNSSEFDGQLSAE
P GH G F D D Y NVA H N H K V E V V S PVV A A G R F K L E E L T G L P R L S

PAHDQRDDDFARKYGLTVTPVYDGEGTLYNSQFDGLLS I A D
PAHDRYDYDMAKKHRLQLVEVIDDSKGAILEDFFSKLLPRYE

PSHDARDYDFWDKFGLEVELVYRPKQGDNA GKYAGLLTVPE
PCGDERDYAFANFFKGTNGMPEDKDQDISEEAFNGLLGYKE


PSHGRED F DVVWTANNTTDPYTVVENGAYTEQAKTGKRVGD
PAHDPNDYEVGKRHNLPFITIFDDEGNIAGDYRGMKRFH

P A H D S R D Y A F A K H F G L P I I P L I E K K G K M D S S D D L N G L E V K E


PS GDKRDFDFAKKY DLP IV PIIDEEGTDIYEELKG

PAHGHEDYLLALANNISFNCVVNECGKYTAE

PTFGADDDRVARAAGIA PLFMVDKAGK
P A HDERDFAFAKKYGI P I K QVI EVEGCDHS GVLDGLGHKA
PGHDQRDFDFAQAYDLPVKRVIDPAGESLEEAAD G
V $\operatorname{P}$ Y G E D D $\square$ N T L N A H R I R T L D Y L D E H A R F L D P E Y A GVQVF E

P V H D E R D H A F A V K Y G V P I L QV I A P D G Hil N S GE F T G M T T D A


PSHGREDFEAWMENGIDSIPFPVDDAGYYTADAGAGRVIDD
P A Y G D L L V G K K H GL P TLLFSVVDLN GMVMPEFFAGKFFK Q
P A H D DRDWEFARKYALE DI RTIGGSHNLDESAFDGLAKDE
P GHGREDFD DWMHNGI S SADPYDENGALLTDHAFVGKKRVGD
PAHDQRDLD FARKYDLD VTEVTGPGT ILFNS DF LD GLDDIGA
PAHDERDFAFAKKYNLPIRVVIAPPG
P A H NL L D LIE FAR $\square \mathrm{FK}$ KINYISVINNENLLIDNSAEFNGKNSEK
PGHDERDFEFANKYGLPVKQVQTWYGDINS GEFDGUDFQA
PAHDERDFDFARKYQVPVVAVIQPDGDFNS GEFNGLLPTQE
PGQDARDWDFAQAFDLPTPEHPDDQAFVGDGDLNGMGVAQ
PAHDQRDFEFAKKYNLPDKQVYTAE GRLDESEFTGVVNDE







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| :---: | :---: |
| UniRef90-K41U83 |  |
| UniRef90-V5L710 | GFNAIADALL |
| UniRef90-UPI0003A2E941 | ADEKAlEKLEDLGL |
| UniRef90-UPI0003B39BED | APKP\\|CTDLREVGALLA |
| UniRef90-UPIO003445C57F | AKQAMVEYAEKQGF |
| UniRef90 UPIOOO463D39D | A FEEVASRLE |
| UniRef90 - 5 GWJJ6 | ARKR1I ${ }^{\text {A P }}$ |
| Uniref90-L2GU15 | AR QAIVAELLEKKGAI |
| UniRef90-G21MN7 | ARWHVLAMMEEAGLLERTED |
| 88 | ARQAM |
| UniRef90 JuUYH1 | ASKEIT QELIDNG |
| UniRef90 UPIOOO4294919 | A RVKMVAQAQEEGWLDS $\square$ ED |
| UniRet90-Q8UBV2 | AFEAVVQKLSAQSL |
| UniRef90-B216K9 | ARKQLLADLDAQGLLVA |
| UniRef90_R5JA13 |  |
| UniRet90_S3EGU5 |  |
| UniRef90-R5QJ66 UniRef90 UPIOOO3288923 | LKKEAPHILEERGF |
| UniRef90-Q61VQ9 | GSKKILEELI |
| UniRef90-S3ZZ19 | AKARVTEWLE |
| UniRef90-O2ND90 | A R ELVVKRLKE |
| UniRef90 J1K061 UniRefo- A0A017 | ANKSVIEALIVRNHLI A |
| UniRef90-UPI | AK】AA\AELEKSG |
| UniRef90-D1PK53 |  |
| UniRef90-B8FUR3 | A WEKMCDKAEADGFGERK |
| UniRet90-X1XXT0 | ARERLLDYLSKLSL |
| UniRet90_B8EQP4 | AQEEVARRLEEH |
| UniRef90_GOECY8 | A REEMARLLEEKGLLVKKQ |
| UniRef90 BoSAB8 | A FQTMVVWA |
| UniRei90-V8AAP1 | ARKK SM |
| UniRef90- M5E743 | GNFRVLGLLA |
| UniRet90-C9LLMO | ARTNI |
| UniRef90-C5DXW0 | TAKVILDM |
| UniRet90-R4PYG9 UniRef90 G8RLE3 | ARKKVLSAL VAdgr |
| UniRef90-A8IMK0 | AKEQVARRLEAD |
| UniRet90-Q16HA3 | ARGKIMDYLTRNNL |
| UniRef90 COR5Q9 | ARKRMIEELS |
| UniRef90-C4QYR3 | GTKKAIKEALE |
| UniRef90-M2SF67 | ALAAVIEKAE |
| UniRef90_UPIO | A\EEVIKRL |
| UniRef90-UP10002EFE9FE UniRef90-HOZWA7 | AKAEVVARAEGAG |
| UniRef90-W3RP10 | ANEAVIKALVEKGM |
| UniRet90-N6STM4 | ARKKITEELTKLGLYMETKD |
| UniRet90_R7TCM8 | ARYAVTKAL |
| UniRef90-UP10003B3C872 | AKEA】TDKLVKMGVARKT |
| UniRef90 B2V7G6 | AKOEDTKYLEEK |
| UniRef90-A9EAQ9 | ANSATIDKLVEVGG |
| UniRef90-L0FTE6 | VGEYLLAKMKEHEDTAHKE |
| C8 |  |
| UniRef90 ${ }^{\text {O7 }}$ | ARKIVIVARLK DEGFLV |
| UniRer90-A0AO23FOR7 UniRef90-UPIOOO4784373 | D |
| UniRef90-M3FSY4 | AKARDTEWLERSG |
| UniRef90-R7JQ37 |  |
| UniRef90-H0E208 | AVDKVAELLGTKGLGEKKTT |
| UniRef90-UPIooo3622B3E | ANMP $\square$ T R पRA |
| UniRef90-K9J |  |
| UniRef90-X1GT66 | A EEEMQ ${ }^{\text {a }}$ |
| UniRef90-J1JS663 | AVEEAAERLEKO |
| UniRef90-Q015C5 | TFNGTADKLEKDGV |
| UniRet90-A6GTU1 | AVDKVAELLASNNLGEK |
| UniRef90-C3MGU5 | ANDRVIKALI |
| UniRet90-E11F72 UniRef90 N6X2S2 | ADPDITRNLRERGLLLK |
| UniRef90-Q219H9 | ANEAVIKALIDAGMLLA |
| UniRet90-V4P6K3 |  |
| UniRef90-X16N8 |  |
| UniRef90 N9SI26 | NLIFEKL |
| UniRef90-G4CKL8 | A GAKL |
| UniRef90-D5EE41 | RMLDWGE |
| UniRef90-K6WKL3 UniRet90 A8ERV3 | AKAAMI EYYL |
| UniRef90-11A5U2 |  |
| UniRef90-A0A059EXR6 | ERTNVTK\LKEKE |
| UniRef90-T1BD 15 | ARKA LADL DAQGLLVATK |
| UniRef90_R6H2P6 | AKKALTKKLESEG |
| UniRef90_G5GHN9 |  |
| Uni | LI_K E D |
| UniRefag-C9KNX4 UniRef90-XoxSY | A |




VKFFDEDQED $\quad$ K V G N E Y
VFIRWALKSTGVVDEACEALVCYSTRPDTLFGASFLA
HLRYP I E K GEKDRFIVTVATTRPETMLGDTAVA
DTTAVAQFAIKNPKATGWGKPYFIAWTTTPWTLPSNTALC SVTVFKVPVAADSREGLPEEFVQVYTTRPDTLMGATYVA IKK $\quad$ QVLNS K D

 DTTAVAQFKANEKSLPDEGDGYFLAWTTTPWTLDSNTADT





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VAA DHPLLAUAAGERDSALRDFQAECRKDGTSALUAETADK VHPKDKRYKKFIWRKVILP LAPEHPLVAKLTSAEQKASVDAYVAEADRKTEVERQSTDK LAPEHDLVDDLVASSWPEGTEERWRAGUAAKSDLERQENK VAAEHPLATAAAENNPELQAFDDECKAGSVAEADMATMEK I SPNH WDAEELANQNPADKTFDENFAAREKQKNN VAAGHPLAQQAAATNPALSDFDDECRNTKVAEADMATMEK VAAEHPLAKKAGAGNAELAAFLAEASRSGVAEAELETQEK V HPDDERYQKLVGRNVMLP LAPESELVDQLTTKDQRDAVDHY $\square$ AETKKRTERERDAEVK VAA QHPLALEAAKNNPTLAAFCKKCKNVKLAEAEDATMAK VAAEHPLATHAAQNNPALQAAFDEKCKQGSVMEADMATM
 I SPPEHPLVGGKLTAPDRKKEVEAYQHQAAHKSDLERTDDAK LSVDHP IVANALAAKDKALEAFIENCRCGGTTTVALEKAEK $V$ HPEDERYRDLDGKFVVL
VGPK DDYVAVQSFNPYTGEP DDYKEGDKLIPFKVVADYKG VAAEHPLAAAAAEREPGLQKFDAECKAGSVAEADMATMEK V SPEHPMLEHVPQSWPEGVDPAWTGGYATPSEAVRVADNG LAAENPLVEKICENNPKAEDKKACDDKVRNQSEMERTSSES L S DD HEVVKQKADKDQNVQKY VN SVNSDKEYERNKDEA LAPEHPLVLQQATEEQRAEVEAYDAATAKRSERDRMADTK

VAAEHPLADHAAQSNPAL AAFNAECKLGSVIEADMATM VGPK $\operatorname{G}$ DYVLVETYNQYTFEPIDDYKSGDK K IDPYFVVKEFKG LAPEHELVRWTFGQATPAEAVKAYRASDAAKSDLERQENK LAPEHPLVKELVAGTEYEKEVNAFDDKMKGLDELARTSNE I APEHTLV SRRLTTAAQKAAVDAYVDAAAKKSDLERTDLAKK




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180
$\begin{array}{lllll}A & K D V V A T R D E K R A L \\ A R E N I V E L L K S K G N L L K K E ~\end{array}$
 AKEAVINWLEAEQL AKAAMTHRLVSDGR AFDAl GNKLQSLNA ARAHI HFDLKNEGKAFK $\square$ KD GFNAI ADAL
AFDAI ADRFEKAG
ARKRUVERDESFGFVER】E A $\square$ AKTKDY RKMNV AFDAVETKLVAENK

AREVI AKY LE DNGFLVKKE AREKIFDDLSTQNLI A $\square$ ATMLSWLEKNKL
AKATA IEKI ESGGL AFEAAAKRLEGQ ARKQlV
A DVEI CMLLKKNGQTLKDE AFDAI AAKL QAA A $\square$ A AVTTWLEEA
AMSGI TDEAEAQGF ATETI I KYLEKN A VAKVLVALEAKGA

ARKAVIADワTAEGLADMVD
AVDAVAADLAELGLGEKKTT APERS!DKLKEENKAFKVE A I A QVI E WL VDK
ALGKMRDKAERDGFGEHK
AKAAVVEWLAGQGL AEET AKEGIV
A RDLVVQTLKNKNLFDEKK A $\square$ ATVTEWLVAHGHGEATTT ARNKVLELL AFEEAAKRLE
lupas_21
lupas_21
lupas_14
lupas_14
lupas_28
lupas_28
jnet
jnet
conf
conf
sol25
sol25
sol5
sol5
solo
solo
jhmm
jhmm


[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    ol0
    jhmm
    jpssm

[^1]:    lupas_21
    lupas_14
    lupas_28
    jnet conf sol25 sol5 sol0 jhmm
    jhmm
    jpssm

[^2]:    lupas 21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    jhmm
    jpssm

[^3]:    lupas_21
    lupas_14
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    sol25
    sol5
    sol0
    jhmm
    jpssm

