## QUERY

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UniRef90-B9MKY1 UniRef90 R7K4Z2 UniRef90_A0A033UQ31 UniRef90_R5SGC1
UniRef90_F4LVA8 UniRef90-TONBU4 UniRef90-W8THQ9 UniRef90-LTVS41 UniRef90-R6HAG8 UniRef90-R7NK97 UniRefofo-R5GZF5 UniRef90 G4L411 UniRef90-R6HG29 UniRef90-E3PTM7 UniRef90-R5TKFO UniRet90_R6TRZ6 UniRef90-R6V9Y5 UniRef90-C2EU69 UniRef90-X4ZF21
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## 4E6

.



MERGETWLVSLDPTAGHEQQGTRPVLIVTPAAFNRVTRLP |lRRGDIYYADLSPVIGSEQGGVRPVLIVQNDVGNKYSPTV IKRGELYYADLSPVVGSEQGGURPVLVLQNDUGNKYSPTV MRRGDVYLADLSPVTGSEQGGTRPVVII QNDTGNRYSPTV VRRGDIYYADLSPVVGSEQGGVRPVLIVQNDTGNRYSPTV V LK R G D
 $V K R G B$ $\begin{array}{ll}V & K R G B \\ M K R G B & Y\end{array}$ MK R G D $I K R G E$
$F$
$V R R G E$

$V$ | V | R |
| :--- | :--- |
| V | R |
| K |  |

KRGI
MKRGE Y
VKRGDIFADLSPVIG VKRGDVFFADLSPVVGS VKRGDI YYADLSPVIGSE VKRGDVYYADLSPVVGS VKRGDLYYADLSPVVGSE
$V R R G D V V Y D L D T O G S E ~$ 1 1 F
RGDLYYADLT

## 

 VKRGDLVYANFDPVVGS $\frac{1}{\mathrm{~N}}$ | $V$ |
| :---: |
| $M$ |
| $V$ |

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## >>

VRRGDVVIVDLDPTEGS

VRRGDIFFADLSPVVGSE


VKRGDIFYADLSPVVGSE
MKRGDUYYVDSRPVVGSEQ

V | 1 |  |
| :--- | :--- |
| $V$ |  |
| $V K$ |  |
| $V$ |  |
| $V$ |  |


$\begin{array}{lll}D & Y \\ l & Y \\ l & F \\ l & F \\ l & Y \\ l & V \\ l & F \\ l & Y \\ l & \\ l & Y \\ l & Y \\ l & F \\ l & V \\ l & Y \\ l & Y \\ L & Y \\ l & Y\end{array}$ THRGDVYYADLTPVTGS VKRGEVYYADFDPTVGGEQ
MERGDVYYVSRDPGGHEQ MRRGEIVHVDLNPTSGRE
$\qquad$ RRGDLFYADLNP
RGDV










UniRef90 K2F3C8

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UniRef90 H3UMY8 UniRef90_G6Y886 UniRef90-E6PI97
UniRef90-M1Z8U1
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6B2D41

1
$\qquad$ RRGD
DRGDIVVLDFDPQVGHEODKRRPALVLSTDFNRTFGA DMRGDIFYANLNYGIGSEQRGYRPVLIIQNNIGNKYSPTV YHKGDIYTAELGENFGHEQSGTRPVI MQNDVGNYFSPTVI INRGDIVKLDLDPVKGVEQHGFRPALVISNNFFNKVAKLL

$\square$ ERGDLVWTDFDPAAGHEQMGHRPVLVLSPATFNKKILLA MKQGEVWLADLNPVKGSEQAGRRPVVILSGNLMNQYLPVV
 ISRRGVVLCDLNPVVGTEQAGVRPAVVLQTDRANAVSPHT RRGEIWQANLSPTSGREQQGHRPVLIVSREAFNRSGLV
 GEIVLAEDNPTRGS LKRGEVWLADGNPTQGS YKRGElWWVDLQPVVG MRRG

GD:A WVODAD DTAR
$\qquad$
EEPGDLVLVDLGPVRGTFMNRGEVGYADLKOGIGS

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ПKQGSI TKUNLNPKQGH
MRRGDTHLDDLEPARGS
YKRGE WWVDGKPQAGH
MKRGEVWWVEFDPAVGS
RGDIIFTDFHPAAGKEQNLARPAVVVSNDSANRHLARV
MKQGEI WYARLDPVIGS


MYRGEVWLVNLDPTVGTEDSKKRPCIVVNDDAIGGLPGK




Ciplop



|  |  |
| :---: | :---: |
| UniRef90_E3R395 | ARECKYVCNVPSEFLDE\LRKLLA |
| UniRef90 U5S9H2 | T REFSFVEKAPQELMEECSAK |
| UniRef90_F4FUL9 | ER HDEFVERAAST DFMQTAK |
| UniRef90_H5XZE5 |  |
| UniRef90_UPI000414BF8B | HRLVKl R G R L S V C K V Q E I N Q S L K V VF |
| UniRef90-14EEN5 | R L L S R WG A I S D P VMR DVVE D R L R I L L |
| UniRef90-C7H6E7 | RI GT LI G K L T K S EL A AV D S AL A I S L |
| UniRef90-W4LNT3 | T R FVVRRLGNLSAEALQRI NQALAVVFS |
| UniRef90_L8N0U0 | TRLI KRLGGQLDS GLI A DLE S S V |
| UniRef90-X5DFP6 | QRII KVFGELQDLEI Q ELK SVL K |
| UniRef90_D8G450 | $S R L I R V L G N L D D I Y M Q E V A K A V C A D L$ |
| UniRef90_B5INF9 |  |
| UniRef90_E8XXC8 | HRQAKFIA VAESGVFNDVLA R I DP L |
| UniRef90-A3IS41 | T R L R R K L G K L S L N T $\square \mathrm{NQLEESIV}$ |
| UniRef90-K2EIF4 |  |
| UniRef90-UPI00047E2A01 | T RFEQRI GEI S L K DVEEII KK TL N D I L |
| UniRef90_UPI000413864A | A R L I E KI GEI S K E ELAVALE T L K D |
| UniRef90_C3R491 | SRLSKRKI G DLNFSEIKRLREVFQQMF |
| UniRef90-Q07PJ8 | VRGCR IVGKLP DEVMADVRGRLA A L L |
| UniRef90_S0S014 |  |
| UniRef90-N0E4H0 | SRLGGPPDS R L S G L L M A L L D A L R L H L A |
| UniRef90_UPI0003F5F8DD |  |
| UniRef90-D6TQM1 | S RLLRRRGVI T NEEMQRVDYALTLLSLS |
| UniRef90-C7BI90 | D R QV K F IE K A P Q D I I D K V T E L T K V I I S |
| UniRef90-J0L8C2 | QRLTEKI GEVSESEMEKVKEALKKVF |
| UniRef90-X0PIY6 | ARGVNVI D Q V S K Q E L Q EI DY L Y K L L F S |
| UniRef90-Q9PHH8 | VRLK C T CLGMLS K A E MLA V EKAVKV HLA |
| UniRef90-J3AIT2 | ARDI Q K I GRL D T T S F Q KVVQLCS Y |
| UniRef90-UPI0003760778 | RFVSKLGRLSEEAMKAV TLLALALLVIA |
| UniRef90-R8ZVI6 | D R Fil S K A S L K T K N M K I E D GILKLVL S |
| UniRef90_UPI000381B04A | A R NLR LI I K A P Q El I EKV TERARLIV |
| UniRef90-G9ZG30 | ERNAEFVEKADQUAVETMTMLLQALLS |
| UniRef90-T1C9Q0 | ARGARRVEKVPPHILNEVLDI I A T |
| UniRef90-S0G6T0 |  |
| UniRef90_C2KU20 | Y RHATKAGQL GDEALER |
| UniRef90-K9XZL1 |  |
| UniRef90-P33647 | A RLA K Ri GLata DEVVEEALLRLQAVV |
| UniRef90 K0N8L2 | QRLKKKI DKL S N T K S A Q L R K L I T D M |
| UniRef90_UPI00037704F1 | ERVGRRCGKL D LE Y L R Q L $\quad$ K AL R L H L |
| UniRef90_A5HZ79 | A RLGR HVA T L S DKFMQLLD S K I Kid L |
| UniRef90-W2CC27 | S RLKEKI GMLDESEDS DL R SVFNQMF |
| UniRef90-K2AT05 | T R L G K KI G TI S K A K I A EVER A L S Va L |
| UniRef90-UPI00045EB240 | SRIVRRVLGKLSADEIVLCKRVLQE |
| UniRef90-E6PD97 | ERLQEKLSVLASTELRALEDGLRE\\|L |
| UniRef90-UPI00020D9B36 |  |
| UniRef90_B2J3Y1 | QRLI R K L G T L S P N Y L L M L KVALD Y T L |
| UniRef90_UPI00047BE913 | ARNPEKI GRLA D T DLD KI T GMI DA C F |
| UniRef90_G5F5F7 | R R GY ELL GVVPPEATMTRVMSHVRSIF |
| UniRef90_E1VLV8 | ELLLTEKISKL N A Q H L N AVNE GL R L V L |
| UniRef90_D6S517 | HRQWQFVEMLPMD I F D EVRKKARLV I |
| UniRef90_L2HM48 | SRGFQFVVEAVPKEILEEECIEKIKLIF |
| UniRef90_D8G514 |  |
| UniRef90-E1YCP8 | S RLI QKFGVI S Q S A Q I Ki l N CLQ EL F A |
| UniRef90_U2UBU1 | DRII R R D G HL D PRDIS GII E E A M R NHF |
| UniRef90-W2V9X0 |  |
| UniRef90-UPI000346A083 | A RQTTFVEESPSFLI DEVLAKLQTLVA |
| UniRef90_H1LFP3 |  |
| UniRef90-F8I0B2 | SRSWK TVVEMP T D KFNEI Q M L L Q A T |
| UniRef90-R9GUL7 | ERLIDK K L G Y I D G S IL N E I K E AL K K V L |
| UniRef90-J2JQ75 | RLD GDPVGKL S T R TL A A L EEAL R L H L |
| UniRef90_S4NKF5 | ARPFRFHESITPDLLDMVLDNIHQTL |
| UniRef90_G4CN42 | A R K A A L K K V P D Y V V Q DVLSRI A A I L |
| UniRef90_G3J1E7 | SRLVKKLGIINAKTQKMISSTLVDMF |
| UniRef90-B9DIB5 | T R HYRVVDSVSHEVMHKI DDII TNTL |
| UniRef90-B0NDF3 |  |
| UniRef90-A0A033NU40 | ARSYKHFDTLTTEKVMEVKDILKNLL S |
| UniRef90_J8FDE9 | A R R I R L R S HE D DEl D E CLLAKI A T FL T |
| UniRef90_E4TP37 | DRFVNKLGEVFPECMEQMKKTLGDVL |
| UniRef90-M2ZC51 | ARPILLPVGQVPSSVLDEVRAKLAALI |
| UniRef90-R4Z4K6 | ERVGSLI G TV T GVQLA ALDEAL R L H L A |
| UniRef90_B4VM61 | $R F P K Q P A G L L S E E V M A R V E A T T R Y C L$ |
| UniRef90_14BZ95 | ERLVRVRGELEEDVMSKI DEALKVVE |
| UniRef90_UPI000424013E | RLI Q KL G R L T T H QVDELKRNI AI VL |
| UniRef90_J7TD49 |  |
| UniRef90_UPI00035E534C | KRNGQVEATLK P E El Q Li T SRI RQFF |
| UniRef90_E0URS7 | TRLVKKLG DV C K K T A Q EI SKMLVRMF |
| UniRef90_IOV361 | ERLLGR R I G R L T P P L S R A L D D A L RLL |
| UniRef90-W7D653 | AREARYVEKADPLTWVHVLDVTK DIS |
| UniRef90_D6DF57 | TELDNFVGR\T D D K I SEI K R GL K |
| UniRef90_UPI0003B58901 | RVGA AVGRVPTPLMVDLE D A L R V H L A |
| UniRef90_Q1NMF5 | VRLAKVRGELE G G D M G Ki d D A L K I V F |
| UniRef90_UPI0003769A03 | QRNVRFVEKATMAELGEVAQDI D MVF |
| UniRef90_A0A022KQY9 | ER\GSSSIGRVPPRLMAAVDESLRLHL |
| UniRef90-C9A6C2 | ASACVFLEKAHEHLVDEL L M K V R T V F |
| UniRef90-F4A7T3 |  |
| UniRef90-K9VYQ5 | SFLTERISSSLPVSLQEEVDAGLRTVL |
| UniRef90_UPI000372BBC8 | QRNARPH G TVTLEALDQ ACEILN Q |
| UniRef90_D4YU79 | KR\GS L K G K L T D E EMQNlK SVLQQ F F |
| UniRef90_G5J893 | $R L L S D P \square G R L S E E R \ K E I D A G I K L V L$ |
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| UniRef90_UPI00030940F4 |  |
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UniRef90_I3YW98

## 1 $\square \mathrm{M}$ M M Y I E Q D N N D E

KRGEI Y|LV|N|ISSS|L|GSVQYGVRPVLVIQNNKGNKYSPTV
 YEQGDLVWINFSPTEGHEQRGRRPALVESDADTQK DGVM
 NRGDI NQGDI FWI DFRAPNGSEPGYRHPHLVLQNNLFNRRDNMV

 DRGDI FNLQFKPQSGREQV YRPAFII SPAAYNKVSTLI
 MKRGEIYFANLNPTIGAETKKTRPVLVVSNNANNNVADTV
 WLLADL
1 S Q G T LI
VRQGTLIYIDFEPSKGSEIKKRRPAIVIVSREYNLASNLLV VRRGEVYWVNLDPTVGTEIRKTRPALVVSPDDMNASLPRV DKGDIFHLNFDPSSGKE $\quad$ KGGGRFALALSPKAFNRATGLV
 MKRGDVYDASLDPTEGSEQARVRPVIIVSRNSINDSSSVV MRRGDVHMIDLEPARGSEANKTRPAVIVSNNGANQRRGVV FQRGDLDRVSLNPVVGREQQGDRPALVLSPREFNALGMV MKKGDI YQAFLDPVIGSEQGGNRPVIIISGNTLNTLANVV KRGDIWLTNFDPTVGAEDKKVRPAIIVSSDGV GKLPI K
 MRRGEVWTANLNPNKGGEDGKTRPAVI LQDDAMDSGLPTM
 LQQGD $\square \mathrm{FLDFDSTKGH}$
 RRGDVYLADLSPSSNTEKPDLQPGVVLSNDGSNRMSSMV $\square K R G D T Y \square Y D F G D N E G S \Pi$ KRGEVWTCQLGENDGS QRNDIVWLDFEPTKGK
MLRGNIVMAQLHPTKDS YQRGDVVMAQLAPDQDS位 RRGAVVWAESDPTHGREQAGRRPALVVAGDLYLEQADTA DEQFEIWIIADLNPKDGTEPGKTRPVLVLQTNLLNQULDPS MKRGEI YMADLGEPVGHEQGLRRPVLLVNAQPWLEANPVV $M K Q G E I W L L V N F D G V G H E F K K E R P A L I I E S D V Q I S K S N I V$ MDRGEVWWANFDPSVVGEDRKVRPAVVVSVDUNNGPGGLV
 YKRGDIYLADLGTPAGSVQGGVRPMINI QNNTGSFFGPTL VQRGMIVDVNLELTRGSETGKVRPCVIVTNDIYNARVPIV INRFEVWSIRGNPTEGSEQRGVRPCVVIS M



| UniRef90 U2PRR9 |  |
| :---: | :---: |
| UniRef90 K9VE84 | QRFVRQLGTLSET\MEEI AEALTIVL |
| UniRef90_K813V7 | ER F I ERVVGKLK S S K I N EVVEVGL K |
| UniRef90_G8PBF2 |  |
| UniRef90_C0GG70 | $N R L G E Q C G K V A S A K L Q A I R E A L A K F$ |
| UniRef90_G5KZL2 | ARNASK■T QLD T WT F Q K V VQL Y N Y I |
| UniRef90-E6QS38 | LR A A K P H GKL NDAFFA QVIERLN Q |
| UniRef90_H8Z0G3 | ARHARFKEAVPEFVVSEVLARIEA |
| UniRef90_UPI000462B490 | S DLS E K I G TL S K D RIIF QV LQ Gl K |
| UniRef90_W3V1F3 | D RKA QFI TKAEAGULNEVLLRLL |
| UniRef90-D3R | A R N AVKI G S L R Q K D M T V T S M |
| UniRef90_UPI000160 | DRLIRRRLGAV |
| UniRef90_UPI0002484CFA | SRGAIFVERSPDDVIDEVLAKLETLV |
| UniRef90_R2SSK1 | ARDVRFI EKATLKELGETAQUVNMIFF |
| UniRef90-K2DU40 | $R \mathrm{~V}$ S S AVGDINKETMEKVEHAIMLHL |
| UniRef90_C9R3B5 | ER HIIKFIK QAEPHDY DEVLKRV |
| UniRef90_R1W906 | T R NI EKI E Q CDLL T W $\square$ EVVVEVI G |
| UniRef90-W4M5B3 | A R LVRVRGELEKELMAKI D D AL K I L F |
| iRef90-Q7NMY4 | QRLTTEKWGAVRNETLLAVEDRLIILLL |
| UniRef90_UPI000377B75E | ERNIQ I I G R V T N K EL L M I |
| UniRef90_UPI00047552EB | $R \mathrm{R}$ L GT TLLGFI EPEYW |
| UniRef90_K8XVX0 | ERFL NKAGKLK T NKLNEVGEGLRLV |
| UniRef90-E6MUI4 |  |
| UniRef90_UPI0003730003 |  |
| UniRef90-T2 | $R$ RFI R KLG L L S T S D L E |
| UniRef90_UPI0003076 | T RFL R L R G TV S DLT L Q Q L |
| UniRef90_J1ZTY2 | ERVRQRVGSVPPRQRMVEIDV |
| UniRef90_UPI0002DB8878 | GRSA Q F I ERAPGEVITDALARL Q |
| UniRef90_L7W6J7 | ERLKKKRI G S VEPEVLK Q I Y N S L T Di F |
| UniRef90_UPI0003496 | QRL $\square$ RKI GECSSEIVMEEI A A AI A V V V |
| UniRef90-B7KMB4 | RV K GLL GVLE Q D Y We A I E T SLDIVL |
| UniRef90-R0GCL6 | S R NVE FLC K CPK】T F E K V D R L F D Q I |
| UniRef90-UPI000370 | RFGEGPLATVTAEEMAAVEKSLRGVL |
| UniRef90-X1AMC9 |  |
| UniRef90_A7AY51 | R I N N F V GKA S EKEMEQ I D |
| UniRef90_R2QET7 | T RTFKFI EKAP TEELVSECILKL K |
| UniRef90_D4KB92 | S R VQR F L G R LT Q E EMQE I EKGVV |
| UniRef90-B7J977 | ARKAHPHGNLPESLLF |
| UniRef90-H1LDJ4 | ARGVDDVEHISNQELEEI DY RYKLLF |
| UniRef90-T2JC82 | RFSSAPVGKLSEEKMQEI ETA I R M CL |
| UniRef90_K8WQQ6 | DRSMKFGVVADE GVLDSVLARLDPLI |
| UniRef90-UPI000348E | S RVLS LVVGVLEEEYWE MI R T AL DVVL |
| UniRef90-N2A8H3 | K R I C S DL DKL T LDEDK KI RQII S QFF |
| UniRef90_A0A024DF | MRNAQKI T R M T T C F Q K V VQLYQ I F |
| UniRef90-M2C3J6 |  |
| UniRef90-E0UT73 | RLQSEVI TS L S Q Q ELLEI E Q R V Qli I L |
| UniRef90-R2SUI5 | ERNVQVI GHLQTKEFLN |
| UniRef90-F4KS24 | R L L K KL G NLP G H L K D K V K D NLR\\|VM |
| UniRef90_UPI0003F5BE3D | DLL T K V D S L D F R EL R A V E K A L K I S M |
| UniRef90_F8GK59 | S RI G K K Q G K L E S Q Y I D T I K D A L T I V F |
| UniRef90-A0A024BF32 | S HLKKRIA HLP S EKMEEVNDALLI QF |
| UniRef90_UPI000475E035 | A RKVVFVEKVEQDLMEEVQARI E T L I |
| UniRef90-R5DSD1 | E LVNYVGHID D NVLRKI HNGL |
| UniRef90-F0KD35 |  |
| UniRef90-K6RAV4 | QR HMQY I EQAP $\square$ S V L S D ALQ TVND |
| UniRef90_UPI000373854A | DRKCKFI AKAEKGVFKEVILRILPLLI |
| UniRef90_UPI0001C37CC9 |  |
| UniRef90-H1CER2 | E DWK YVCTLPPQDMSHID T A L R N A F |
| UniRef90_D0WLM8 | ERIVDVAGVVDARTMAEVDMWLRDFL |
| UniRef90-X1JS92 |  |
| UniRef90-UPI0004626A92 | A R R WKRTTTCP IE V L E QVQEIV AVA |
| UniRef90_UPI000476D348 | FERRFGQVD DVVLF K I E K V L R R M L |
| UniRef90_K9SP33 | R F LDQ P VGML SPEKMEEI E T TVVKYCL |
| UniRef90-K2ENL2 | T R F L K K M G K V K V D L L E V K D Y L R L H F |
| UniRef90-K6WVV2 | QRLS GR\GMLE PVAMATVDQALRFVL |
| UniRef90-K9RSS9 | LRIITN F I G CLS EPDMTRTGHAMMIHL |
| UniRef90_C3JNM9 | RLLDPEPVGGKVGMET FAALEDALRRLHL |
| UniRef90_UPI00034AD713 | QRLVR QLGRIS D T A MQEI T R A L A I VL |
| UniRef90_R5CGG4 | T QVI KY L GKTD Q A HMRKI D D CLL RIS |
| UniRef90-B8HY82 | SRMLRVRGMLES Q S LD RI NQALRIVVF |
| UniRef90-R7GUH2 |  |
| UniRef90-U4TGU2 |  |
| UniRef90_C6HXV5 | RFSEGPLTILH Q E EMAEVEKSLKAVL |
| UniRef90_UPI00024924BB | ARHGEVVDHLNKALKTKALEA |
| UniRef90-B9M284 |  |
| UniRef90_S4E5Q3 | QRNVKYVDTLDEELEFD I A Q R |
| UniRef90-B6VMG5 | A R Q A R KI E EAP T SVVNEI LAAMVFSIL |
| UniRef90_B7JY77 | $R \bigvee L G G L G Q L E E N Y W Q L I Q R A L Q L V L$ |
| UniRef90-S6MNG8 | A RQAKKVGRV |
| UniRef90_C3CTL4 | $G R L H K Y K G T L S K P G L G E L Q$ |
| UniRef90_A3HZY0 | $R \mathrm{~F}$ LEK $\mathrm{L} G \mathrm{~K}$ I S K E K A L E L Q EKLK ALLM |
| UniRef90_J1H7A4 | NRLSNRIDVI D T K T WEQVMEAI K I EL |
| UniRef90_L8MTW0 |  |
| UniRef90_UPI00037F7781 | ARLL R F I EPTPANFVTLVRSYVGRLL |
| UniRef90-D7CV99 | $R F A P A P K G V L P E R Y L Q A L G E A L K L H L$ |
| UniRef90_A0A022N | ARKLIKDEQCD L L R R D V REVLDMF |
| UniRef90_UPI0003B79077 | A A L EVRVGALPAWT LVQVDA GLRRA |
| UniRef90_W6WYW3 | ARRGEFRERIA QPELDAI R R S L K A F L |
| UniRef90-Q7NI95 | S RVLLERIGVLEA Q Y WP AV R S AL DLVLL |
| UniRef90-UPI00016C0C6A | RII T T P L A Si K S EKMFEI E K C |
| UniRef90-C5D546 | A RLG G Y V T T L T S E M D DVNEKI LVS L |
|  |  |

UniRef90_UPI0002D2D867 UniRef90 K9P864 UniRef90_UPI0003B2F224 UniRef90_F4L1B5 UniRef90_UPI0003630636 UniRef90_UPI0003B424B5 UniRef90-F2IHI7
UniRef90_L8M791
UniRef90_FOPCY3
UniRef90 F7UVA1 UniRef90_G9WIY3 UniRef90_A0A022FZW1 UniRef90-J0UWQ2 UniRef90_Q93M89 UniRef90_UPI0003735324 UniRef90_A7C0V9 UniRef90_D0LDZ4
UniRef90 C2CZD7 UniRef90_UPI0004780486 UniRef90_F4FR35 UniRef90-Q118K2 UniRef90_UPI000474BD73 UniRef90_S0JGT3 UniRef90_X1GW59 UniRef90_UPI000402A514 UniRef90_K9TG63 UniRef90_T1D0Y3 UniRef90_Q9RWK4 UniRef90_UPI0004684BF3 UniRef90_UPI00045E98E9 UniRef90_A8YN76 UniRef90_V4J713 UniRef90_G8MCZ2 UniRef90_F8B1H6 UniRef90_UPI00047759FC UniRef90_UPI00034AB839 UniRef90_R0CJS4 UniRef90_B0JQN8 UniRef90_D6YWQ3 UniRef90_LODIJ5 UniRef90_D5Q495 UniRef90_Q1RIH6
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UniRef90_Q7D0B1
UniRef90_UPIO0047A3FAA
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UniRef90-T0Z6W8
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UniRef90-I6WWG5
UniRef90_B9M5J2
UniRef90-B8GLF8
UniRef90_W0DVG4
UniRef90_C2ELP2
UniRef90_A0A022L380
UniRef90_R5SXJ5
UniRef90_R9J5V9
UniRef90_E1RJG7
UniRef90_R9RDI3
UniRef90_UPI000381AFD0
UniRef90_UPI00045EAD70
UniRef90_G8MCM0
UniRef90_UPI0004747648
UniRef90-K2BWY4
UniRef90-X0PKK3
UniRef90_R5KQE2

NQQD I WVELD L

YADLS
NQQD $\quad Y \square D F N P T V G A$ NQQDIIY DFNPSVGHE $\square$ RKRRPALVL $\square$ NQ GDI FWI ELGEPSGSKTSYRHPHVVISNQGYSRMTHLV LRRGMVVWADLD PVRGREQSGRRPVLVIASNRYLQRAMDTV
 $M L \begin{array}{lll}R G G Q & W L Y R A D P T V G G D E\end{array}$
K QF E I WL V N L N P S K GVE
L RQGEVWWADLDGDP WGSE
MTPGEVVRVN NPAGE

KRGDI WLVQLDPTRGQEDQKTRPALIV
RGDLFYDFGTRTGSVQSGTRPVLVIQADDYNKNAPTI

I N R GDVFWIEPDDSRGPTPNYRHPHVVV

F

DRGEI WH L QFDPSTGREMDGD HFCLVESKREFNEM G L A
$\square R R G E L C W V D F G E P K G S A P A K R R P A V I V Q S D R Y N S R D S T V$


K K GEI WYIDP DP T K GKELRSPHYFIVITT

MARGDVLLI K L P VT D GKE Q S GRRPA V A V Q
EVVWA ELD P

V
RWGD YYCDSGNMKGSVQCVKRPVIVVQTNKLNATSPTV
K R G DVYWI DPNPVAGREMKNRHRYVVITPREINALGVSM
KRGEVIRI NLNPTQGREQMGERPCLVLSHTQFNQSRNGI




$\frac{1}{F}$
RQGEIVMCELGENI GYEDCKRRPVLII SDDRYSKY GHV
K R G DV YL V DL N P VV G S E I K DEHRCVVVITPREIINAVCLVV

MKK GEVWYV DVVDPAQGNEQKKNRPCVVVSNDDYNRYFNTV
DE R G D I Y WV D L G A P E G S R P A K R R P V L V V Q A D S F N Q S T T L V




VHQGDIIMVDAEPHAGHEMGGRRRFLVVSRYQYIRKSGLV


RNGDI YI T R L D QPEGSLQA G $\square R$ P VIVI SNDMANKFSPVV

V




F K Q G D I I FID A A P P H A G H E T G G H R P L I V L S NTGYNQFT GMV
$F K K G Q I W L A N L N P N K G A E P G K T R P V L I L Q D Q D V V H P T T V I$
$K Q G D L D F D D A B P H A G R E E G G R R P V V V L S N D A Y N Q Q V G M M$



UniRef90＿UPIooo37E917A UniRef90－D4JMT7 UniRef90－13E399 UniRef90＿UPIOO03078E1D UniRef90－M1VDN2 UniRef90－W7CSP1 UniRef90－F7UZE2 UniRef90＿A0A017RRG1 UniRef90－E3ED27 UniRef90－B4V4T4 UniRef90－R7EQ59 UniRef90＿AOZK77 UniRef90－R9IZB5 UniRef90－I0EKI1 UniRef90－Q9FCV0 UniRef90－E6X1V0 UniRef90－K9TVK6 UniRef90－X1BXC3 UniRef90－H6RM51
UniRef90－UPIO00468042E UniRef90－C3WQW4 UniRef90－F9PJP6 UniRef90－UPIO0035C6EC5 UniRef90－X8BLA2 UniRef90＿F5YL64 UniRef90＿UPI00036D7300 UniRef90＿UPI000364BC89 UniRef90－Q332J9 UniRef90－W9UQR9 UniRef90－G2H1V4 UniRef90－W4LEC7 UniRef90－W7BKN4 UniRef90－UPI000477CE63 UniRef90－M1LLC6 UniRef90＿UPI0003B50BAD UniRef90＿UPI000360F1FD UniRef90－B9JW05 UniRef90－M2BPX9 UniRef90－F4HFA1 UniRef90＿UPI0003683B9B UniRef90－X1R5U2 UniRef90－F8KGC7 UniRef90＿G0JTR8 UniRef90－D2TLE0
UniRef90 B9MNF9 UniRef90－R0B1A1 UniRef90－UPI00036E07CD UniRef90－K9VAC4 UniRef90－N2AW63 UniRef90＿D4JJ17 UniRef90－F5LMG0
UniRef90-L8A3E2
UniRef90_G9ZRB1
UniRef90-E8PPI4
UniRef90-K1 YQ31
UniRef90-R9KNQ5
UniRef90-F6DAT7
UniRef90_S3AY98
UniRef90_UPI0004672E73
UniRef90_D4JGA4
UniRef90-B1Z7Z2
UniRef90-C7NLH2
UniRef90-N1NL41
UniRef90_S3LBJ9
UniRef90_G2H370
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UniRef90- X1MKIO
UniRef90-A1AKU8
UniRef90_UPIO0036DFFDD
UniRef90-U5QF65
UniRef90-H6RTY6
UniRef90-P0CL62
UniRef90-Q2FRA1
UniRef90-E6WYJ3
UniRef90_UPIO00476D053
UniRef90_D7ARK2
UniRef90-K9EXG2
UniRef90-R7XP15
UniRef90_Q1YL.J9
UniRef90 E1IIM1
UniRef90_E1IIM1
UniRef90_B3T819
UniRef90_N1ZZ51
UniRef90-FORP56
UniRef90-K1 XYB8
UniRef90-C6LKH9
UniRef90_D4IGS3
UniRef90_M5J783
 RGAADDWVDF DPTA GRE QR GT R P A V V V S S D Y LAA SVVRDDA


 MKRGEI WTLRREEYA

SKARPVI IV Q SDPGEFFNSVI E R GE I DYVVNHSPHA GK EMPGVHPL LVGSS QAFNERTGUV
$\qquad$ $R G D V Y R L R A P N T R G H E Q R G R R Y$
$\square K R G D V W I V D \square P K E A R E Q \square G L R P C I I I S G E G N N R H A N I V$ GDVI RLY G P S K GNE QD GYRAVVVLTPVD DNE LT GRV L QQRGDV FWAELALLAT GSAPAGRR LR S GQI DMLNLSPTS GH

RGDLYRLRADRVQEHEQRGPRYCVELQ

S

R Q EI WWAHIP FTGGHE QA GERPALIVQSDAADAVLPTV
M

YK Q GDI DY LD F S P A DD TEMEG IM P AV I I
VKRGEVVWVN VGGTERKTRPALIVS
FKRGD I VLVN F GYNVGTEKNKIR WA I V I


| $Y R$ |
| :--- |
| $F$ | GQI WTVNLSDPVVGSEQAGHRP I R R G DI WMVD F G V P E D H KLLH G I R P V V I V L R R G EVV K C NLGK GDG S E E E K E R P CII L Q NDVGNKHSGNT 1 IR G A I F T C E L G E NIG T E Q N G E R P V L V L S N D WI N R T S G NV QQ G D L

LW W
 M Q R G DVVV CVLT G DCG LQ A GGRPVLV I IR R GEVY LVNNFGK QYNSEFGKVRPALI I QNDLLANRVLERV






 FKRGGIVPVNLAHHGTGLQESCPCLVVSNNDSNEYSSVV，



$K$ Q GEVVWMVRFYP QVGS D DS K L R P A I I S H DT
K R A DVF L A KLLN HLMHDEEWVGPVVVI QNNTGNLHSPTV
 L R K G D I VLVVTLP E Q SMHE Q Q GMRPALIVVGDPPGETREFLLA $\begin{array}{ll}L K R G Q Q \\ M & R G D V V L V \\ R\end{array}$
 F N K Y DVV IF GE FP D N D G S $⿴ 囗 ⿰ 丿 ㇄$




UniRef90 UPI00037E917A UniRef90_D4JMT7 UniRef90-I3E399 UniRef90_UPI0003078E1D UniRef90-M1VDN2 UniRef90_W7CSP1 UniRef90_F7UZE2 UniRef90-A0A017RRG1 UniRef90-E3ED27 UniRef90_B4V4T4 UniRef90_A0ZK77 UniRef90_R9IZB5 UniRef90-I0EKI1 UniRef90_Q9FCV0 UniRef90_E6X1V0 UniRef90_K9TVK6 UniRef90_X1BXC3 UniRef90_H6RM51 UniRef90_UPI000468042E UniRef90_C3WQW4 UniRef90_F9PJP6 UniRef90_UPIO0035C6EC5 UniRef90-X8BLA2 UniRef90-F5YL64 UniRef90_UPI00036D7300 UniRef90_UPI000364BC89 UniRef90_Q332J9 UniRef90_W9UQR9 UniRef90_G2H1V4 UniRef90-W4LEC7 UniRef90_W7BKN4
UniRef90_UPIO00477CE63 UniRef90_M1LLC6 UniRef90_UPI0003B50BAD UniRef90_UPI000360F1FD UniRef90-B9JW05 UniRef90-F4HFA1 UniRef90_UPI0003683B9B UniRef90-X1R5U2
UniRef90- F8KGC7 UniRef90_G0JTR8 UniRef90_D2TLE0
UniRef90_B9MNF9 UniRef90_R0B1A1 UniRef90-UPI00036E07CD UniRef90-K9VAC4 UniRef90_N2AW63 UniRef90_D4JJ17 UniRef90-F5LMG0 UniRef90_L8A3E2
UniRef90 K6VY57 UniRef90_G9ZRB1 UniRef90_E8PPI4
UniRef90-K1YQ31 UniRef90_R9KNQ5 UniRef90_F6DAT7
UniRef90 S3AY98 UniRef90_UPI0004672E73 UniRef90_D4JGA4 UniRef90_B1Z7Z2
UniRef90 C7NLH2 UniRef90_N1NL41 UniRef90_S3LBJ9 UniRef90_G2H370 UniRef90_W2EQ19 UniRef90_R5HD44
UniRef90-X1MKIO UniRef90_A1AKU8 UniRef90_UPI00036DFFDD UniRef90-U5QF65 UniRef90_H6RTY6 UniRef90_P0CL62 UniRef90_Q2FRA1 UniRef90-E6WYJ3 UniRef90_E5YPH8 UniRef90_UPI000476D053 UniRef90_D7ARK2 UniRef90-K9EXG2 UniRef90_R7XP15 UniRef90_Q1YLJ9
UniRef90-E1IIM1 UniRef90_E1IIM1 UniRef90_N1ZZ51 UniRef90-F0RP56
UniRef90-K1 XYB8 UniRef90_C6LKH9 UniRef90_D4IGS3
UniRef90_M5J783
$L \square C P \| T N Q K K G \square S F E V A L T$ D GM|I T S G VV ${ }^{70}$ T S G/VVL|AD QMK S L D WK T A V A M S T K T WK K P T H C P I P A A K V K V D S M A L C E Q I V S I DVN





 Ti L P i T S Ni N RYS FEVLLLNPGCVRMKSV


 TVVLPI T S K TE K Y P F E V V F L E E DH L P K D S K V K C





 $\bar{V} G L P D T S T V R \quad G W E T E I P D A S L A R P G V A L V D Q Q V N L S F K$
















 IVAA S S QI QKAKLPTHV






 I I V P G T S Q I E R F P L R RVA LGGK P GLLA Y E T DL L I D Q V R A V S N R






| UniRef90_UPI00037E917A |  |
| :---: | :---: |
| UniRef90_D4JMT7 | $V \mathrm{Q}$ I E RVVVA S I S D E L L D K I T E C V K I |
| UniRef90_I3E399 | $\square R \\| D R K L G N V E P K V L Q K I L T C I N$ |
| UniRef90_K9UKX1 | QRFIIR K L G S L T P E EIIN S I V I A V T V I |
| UniRef90_UPI0003078E1D | K L S V K F F E |
| UniRef90-M1VDN2 | A R N A CKS T Q L D |
| UniRef90-W7CSP1 | A R K Y N Y VE TVP A S L LT K L LE T VKVIF |
| UniRef90_F7UZE2 | $H \mathrm{GVLRHIGALDDDDTMERVMGMIA}$ |
| UniRef90_A0A017RRG1 | D R L T G K C G Y I D N DVCKEIIK V VI R L Y L |
| UniRef90_E3ED27 | QRLT D K IT HLD E ETMRKVS D S L Q I S L |
| UniRef90_B4V4T4 | FV H G D PVVHYLD R Y E L A QVEQAV T L Y L |
| UniRef90_R7EQ59 |  |
| UniRef90_A0ZK77 |  |
| UniRef90_R9IZB5 | T K LGE K IG K $\square$ T D S LM D A TTVVALQ |
| UniRef90-I0EKI1 | E R F I K Y V G K S S E ELDRKI L K C F K E |
| UniRef90-Q9FCV0 | QRLHDRI GRLD G Q K M K L V N E A LKV S L |
| UniRef90_E6X1V0 | R IL S R CLTVVLTPRELK EVEQKL CL H L |
| UniRef90_K9TVK6 | A R FVD RVVGVLE G D K L E EVILLALGGILI |
| UniRef90_X1BXC3 |  |
| UniRef90_H6RM51 | T R $\square$ T R R T G T A G A D T M R R V D Q WLR D F |
| UniRef90_UPI000468042E | ARAAKFK TNVTPEILDEV DGKI V DII |
| UniRef90_C3WQW4 | A R L G N F V D L S K E L MEEVDEKI I I S I |
| UniRef90_F9PJP6 | QRLT K K I GVVEESVLR SVREWL L D Y I |
| UniRef90_UPI00035C6EC5 | RFDFLVGHAPEKVVA QAIDTVLLRML |
| UniRef90-X8BLA2 | T R L LERLG TVAP DTMD Q I ER GL ALLIL |
| UniRef90_F5YL64 | E LGEKIGVVT DEQMRQ\\|SRGLA K L L |
| UniRef90_UPI00036D7300 | ERGATKWGGGHSKVLDAALEKLDA |
| UniRef90_UPI000364BC89 | $R$ LGD M A G H L T T GEL LA I D R A V R I V |
| UniRef90-Q332J9 | SKLID K L G R A N S L M ERVEK GL DV |
| UniRef90_W9UQR9 | AREFRFNGRATDEEMEAI R Y AVRMYL |
| UniRef90_G2H1V4 | LR NAKP WK K AP E EVLVLAASEML N Q I I |
| UniRef90_W4LEC7 | S DLR E K I G T LT RERLEEIVE AV |
| UniRef90-W7BKN4 | AR GFK I I E EVPLGVMDEAKDLLS I L F |
| UniRef90_UPI000477CE63 | LR L G D F S G R L P P EMDEVVRACRLVL |
| UniRef90-M1LLC6 | $L R W W R D T G E L P P S F V D Q V L A V L Q L I \quad I$ |
| UniRef90_UPI0003B50BAD | $R \square T$ GF H GAV T A T T L K El R WW WL HRFL |
| UniRef90_UPI000360F1FD | YCL RRMGERDAA TLS QI WALLLDNLL |
| UniRef90_B9JW05 | S RVAR H I D T LD S D TVVDEIVA KVVGI I |
| UniRef90-M2BPX9 | RLLLHCVGKI N QLVLD KI ET A I D Y V |
| UniRef90_F4HFA1 | G G N A Q K V E S V P H YVLS G |
| UniRef90_UPI0003683B9B |  |
| UniRef90-X1R5U2 | S LQERLVVTLSSEK】K AVEA A L H F A L |
| UniRef90_F8KGC7 |  |
| UniRef90_G0JTR8 | $R \mathrm{RLLS}$ G K $\square \mathrm{GE}$ I P P $\\|$ T A WH S V L |
| UniRef90_D2TLE0 | ARNARYAATVAPHIMDEILGMVID |
| UniRef90-B9MNF9 | LR $\quad$ IMR TVGRANNDVLNAV DEKL KELF |
| UniRef90-R0B1A1 | R I K E K I G T LP L E I L Y NVK S S L L M M I |
| UniRef90_UPI00036E07CD | RII TK T L G DV GQEAL HEI R S WL S D F L |
| UniRef90_K9VAC4 | VRLDQRVGDLEPE LL Q Q V Q H S L R H Y L |
| UniRef90-N2AW63 | AVRGT V GFI D SEVMDKI NYALKLHL |
| UniRef90_D4JJ17 | T DL I E K I G K V S K N Q L R Q I T K G M Q I Q L |
| UniRef90_F5LMG0 | $R$ IT T S CLA NI R GEMDEIIE E K V MVS L |
| UniRef90-L8A3E2 | VRLLK Q HI G NI NED DL L K I M N R V K WV F |
| UniRef90_K6VY57 | $R \mathrm{~L}$ G E S A Y L T Y E EL R RVD A A L RVVL |
| UniRef90_G9ZRB1 | ARSGK VVDHVNAAELA QAMNAI R DI F |
| UniRef90_E8PPI4 | R R VRA HL GTL P G D L L E A L D $\square$ RI R E HL |
| UniRef90_K1YQ31 | SKI H Q Ki GVLT K E Q M H I D D A L L W L S |
| UniRef90-R9KNQ5 | GRLG R K I G S I |
| UniRef90_F6DAT7 | $R \square Q P S P L T K L N S D E L N E V A L K L R Q H L S$ |

A R A G K Y $\square E$ T L D Q Q T T RE $\square$ I N R V T S I
A R $\square$ AN F A G T A D $\square K T V E D V A A R V A D L L$
D RFVHRSGVVDATCLEAVRRWV

| E R | $K$ | $A$ | $T$ | $Y$ | $A$ | $A$ | $Q$ | $A$ | $E$ | $P$ | $D$ | $I$ | $V$ | $D$ | $E$ | $L$ | $L$ | $A$ | $K$ | $V$ | $I$ | $D$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

A V VGERVGFLNK G LME QVEK TLR LQLA


## UniRef90 R9BSB5 <br> UniRef90-UPI00037B30B4 <br> UniRef90_S5PAK0 <br> UniRef90-K1W5C8

 UniRef90_UPI00029B2C3E UniRef90-D6GWN0UniRef90_T1ACC5
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UniRef90_UPI000476A728
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UniRef90_A7VEW3
UniRef90_Q2NC17
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UniRef90_A0YKI8
UniRef90_G2FMK2
UniRef90_LOQRE4
UniRef90_Q39SF2
UniRef90_H8MZ67
UniRef90_UPI0002E3D245
UniRef90_L2EY86
UniRef90_UPI00047A06C0
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UniRef90_R2LZW5
UniRef90_Q0S083
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UniRef90 K2EH18
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UniRef90_S3H5P7
UniRef90-G1VUH6
UniRef90_F0NW19
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UniRef90-B8II21
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UniRef90_H7BVC3
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UniRef90_K1YKG2
UniRef90_Q8YZW8
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UniRef90_D0YQC8
UniRef90_W7CC05
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UniRef90_W9GI99
UniRef90_G9WKV5
UniRef90_X1NGV5
UniRef90_S2QJP3
UniRef90_B0G4H0
UniRef90_UPI0003CFF470
UniRef90_E6SG18
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UniRef90_H8K9D7
UniRef90_W6RME7
UniRef90-K1WI59
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UniRef90_UPI00031719C9
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UniRef90-UPI000255E2C5
UniRef90_UPI000365A2D3

IKR GQLI I WCDFKE GYGCCQGGKRPAVVVQNNTGNKFSTTT $M K R G D I V L V A L Q G D Y G G B P R P A V V Q S D F F E A L P S V$
 $M V N L D P T \square G S E \square Q K K R P C V I I S P D E M N G Y D T T V$


 $\square E K$ F GVVY I A D L N P R Y G T E P G K K R P V V V V V Q T D


 LQRFAVY LCNLGENIGNEQNEERPVIIISRNSQNATAGNV RRGEVFW GPGKKKIRPLLVVSNDQGNRYSNDV $\square$ QRGDIVLVDYPYTSSNET KVVPVLVI QNDRDNQRLKNT
 K K T R P CVVI I S P NELDNKY LK TII
 E R GEVVWLV DLGYVA K V V P P C V V S $\quad$ PAFEQDRALA
 FKRGGIVAVNLPHGDRREPEACPCLVVSNNISNEYSPVV, RR GEL FWCEPDEARGSVPP■THPYLVVQDDVFNRR\|HTV KPGEVWLVDLGLAA KMRPVVII SRYDPNPPRALV K K G DIV VWI DFDPAA GKEDQKRRPGLVVSRYEFNRKTMMA K RGEI WRVQLLDPTRGDEIQKTRPAIVI SADGLEEGLKLR RGEVWWCELAD $\square$
K K WDIVWUVFRTSAEKEDQNRRDELVV RGEVFRMKAPNARGHEQRGQRYAVVVQ
MKRGEVRWYKFGRP
D K K R P V
D R R D M DW WD F S P QVA GEMK DEHPMMVL
 MRRGDIVWTV SGGRDYAGKRPVVII QDDSFDATASSV MI DAEPHAGHEMVGRRRYLVVSRYQYNAKSGLV MKRGDLVTVAMSGDFG KPRPALVI QSDHF DATATV M K
 $R G D L V T V A L Q G D Y G$ $R G A A Y K V D L G E A R G H E Q R$ VSRGE DWQADLHGSDGNE $M R R G E V W T V$ S G GK DY $M K R G E I W T V A G G A D H A A G$
 KKGDI IIA DAEPHAGHEMGGRMPVIIIQNDAANEYSTEV
 K R GE: WF L E L N G K K R PV
$\qquad$ $\begin{array}{ll}G & K \\ K & R \\ K & R \\ G & R \\ G & R \\ Y & R \\ G & R \\ G & R \\ K & R \\ K & P \\ G & R \\ G & R \\ G & R \\ K & P\end{array}$ MKKGDIVLIP F PFTDLTGA
$M Y N N K T G M C$
$\square$ R H GA IVLVAAPDEAS
GGPRPCVVVQADLGNDSHATV $R G D V I W A D L G P P R G$
$M R R G E I \operatorname{RWYKF}$ $K P G E V W L D L G L A A$
 QHPD $R R P L C V L T R D A A T V V L T S V$ K KY Y DIVFI DTEPHAGHEF MKRGEI WTVAGG
MHS GEI WTLRDDAYA
G DVT
$G G R R$

K ARPVVI
KPRPALIVQSBYGT
$K P R P A L I \quad$ Q A D Q F
SKARPVVVVQQDAEFVE Y S K G S I V Y V DFF GNYGSEMTYDHPA V L K $\square N Q Q G E V Q Q D D$

QRGDLVTVSLQGDYG NDRVY A VI L S E NSFN
 K PRPAVII QSDLL G DLE S SV
 VS Q G DIVF Y V D F N P S L G HK Q K N R R P A L AL S H D L VA H F G GL T IE Q GK IV W IDAEPHAGRE EGGRRRYVVVI SNNRYN VGGMA I Y R G D I F Y I K I N Q D T G RPAVIVNNND $\quad$ SNESQNMV I N H R E V WY V K L G $\square$ VVGY E Q N GK

 MERGDVWTCLYEGYA

SKPR
$G M \backslash \square D V N$ LE P T K G S E $R G D V A W A S M D P T V G R E$
 $L$ N R G DVVLV L F P N S N L S
$M R R G D L V T V A L P G A Y G$
M Y Q WDI FYCEL GHNDGTEKNKPRPALIVQSDLASTH PS F RGELWWADLDD A GARPVVVVGRDAADAGRRRA



UniRef90 R6YK56 UniRef90-M0P484 UniRef9-C3KMR2 UniRef90-W4Q3V0
UniRef90-Q07HE2 UniRef90-G7UPP8 UniRef90-X7YP05 UniRef90_UPI000361ABFE UniRef90_F6CI22 UniRef90-A7BRP5 UniRef90_UPIOOO3454C35 UniRef90_UPI000464F314 UniRef90-R5HUK6 UniRef90_UPIOOO36268F9 UniRef90-B7K2W4 UniRef90-B2A8Q5
UniRef90-D9TIC0
UniRef90-B9JZS9
UniRef90 Q8KDP6
UniRef90_UPIO00366578B
UniRef90_R9JVW3
UniRef90-UPI0003A5AC63
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UniRef90_UPI0003B5A612
UniRef90-LONBE3
UniRef90-R7LR67
UniRef90_UPI0003708A4A
UniRef90_UPI00047E2FA5
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UniRef90_UPI00035D79D6
UniRef90-E8U2L6
UniRef90-K1XHE4
UniRef90_UPI0004196FBA
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UniRef90-AOK4WM
UniRef90-K9VES3
UniRef90-UPI0003B59CD2
UniRef90-W9H2R3
UniRef90-S9TL07
UniRef90-A8L7W1
UniRef90- X1NTS6
UniRef90-X1FQG6
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UniRef90-Q20X42
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UniRef90-UPI00041BDE6F
UniRef90_UPI0002E693DE
UniRef90_UPIO0047D31AF
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UniRef90-D2RH55
UniRef90 D2QYT8
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UniRef90-H6RJ42
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UniRef90-R7FG75
UniRef90-F8FUF8
UniRef90-A7NJD9
UniRef90-A0A022FSR6
UniRef90_EONNX5
UniRef90_UPIO0036DEDOD
UniRef90_UPI000255583C
UniRef90_UPIO003620483
UniRef90_UPI00036CF80E
UniRef90-R4Z362
UniRef90-K6VY61
UniRef90-Q2RLK1
UniRef90_UPIOO0476A456
UniRef90-A0A021WCP4
UniRef90_H8Z0F8
UniRef90_E1YM61
 $M R R G D \| V T V A L Q G D N G \quad K P R P A V I V Q A D A F D R \square E R T \bar{L}$ KQGDIVLIPVVPFSDLSNRKQRPVLIISNDDYNQMTDDI MKRGDLVTVAMAGAYG KPRPAVI I QSDAFGDVWSVT $M K R G D F V T I \quad$ TMQGDFGKPRPALVI QANHF SESATV MMRGAVYRVDFGHARGHEQRGRRYAVVISPGSMPW RVV

 GDIVTARFPEHQGREQQGYRPSVVVPNRDGDPRFSLV FKRGELYFAKLTDSA KVRPFLIVQNNFLNEACHTV $M K R G D L V T V A L Q G D G G S E Q H A D R P A A L I V Q A D Y N C D N T S N V V$ LQKGDVVLCQVPPSSQFQQFK LRPAVIVSAND DNQULDDV
 $M K R G D L V K V A D P G D F G K P R P A L I I Q S D F F \quad S E T G T A$ MKRGSVVTIALQGNDG KLRPAVVVLSDYFPEH PSV MRRGEIWTVAAG GGYVGKPRPAVIVQADDFADDPSL
 MRRGD LTWN MQGDYG

 FKKGHI MWVDFGYNTGSELGGFRPAIVLEKNNSKKEKN V V
 QKGDIWHFSPDPVFGRELQGDHYGIVVTEGALNAALGVA MRRGDLVTVAMQGDFG KPRPALVI QADLLFA






ENGKRPVLVI KKVW
FKKQLFVIV
KKNAF



MERGEVWWVDFDERRGEEPGGFRAIQVVAPANDEDSGVAVI
 RGQVYRCDLGY GAKPWLIVSNNARNRHTADV $M \square R G E I$ WQVDLDPARGSAANMRRPAVIVSNDRANAAAGVV $M K R G N V T V G N G D Y G K P R P A L I V Q S D \square F S Q H P S V$
 KPRPA V GADABETALA

 $M K R G D I Y F A \quad A R G A Y T$
I NRGEVWWADVPG
A RGAYTGKPRPVVIVQDDRFDSTAS VV
LHRYDI I EAEIK TASGSVQG
 $\begin{array}{lllllllll}K & K & R & P & Y & V & V & S \\ K & P & R & P & A & L & L \\ K & P & H & P & A & L & V & 1\end{array}$

RRGE $\quad$ WFAE $\quad$ KK GKRRPVLIVSPDDVIVQLDRV

 $R G E V W V V D L G M V A$

K I R P ALVLIS A V D A N D R S LV






DQGD IVLIP $\quad$ PFTDLSSQKRRPVII ISNDHYNQTAADM $D V Y \square I D F K N N \square G G E \square K G K H Y A V I L S D F S Y G D S T \frac{R T V}{M}$
$\square R R G E \square W T V Q W S G \square A$
SKPRPALVIQSEAYLETSTDI $M K N L H P M L V L S P K A F N E R T G Q V$ F E Q G A VIRRVPF PYT DRATR QRRPAAVVVSAGGDGEDESSLL RRGDVWLTDLNDPADPEQAFVRPALIVVDNSHHPKLNMV M $\square R G E$ I WTV
MRRGAFVVVA

FWI EPDPSRGSVP
RGDFVTVAMQGDFG
PFTDSAQTKKRPALVLHANFGNE

|  |  |
| :---: | :---: |
|  |  |
| C3 | V |
| UniF |  |
| UniRef90-Q0 | PLTS DV |
| UniRef90-G7 | TVLPVTSTLVAAPLLQPEMENGLQKPSQVMIDK |
| UniRef90-X7YP05 | TVVPTSTQAQPAVFRPELEVMGAKT |
| UniRef90' F6Cl122 | VIVPLS |
| UniRef90 | I YIPLTTQYRNSAYEVVLPKRF口NQNSV |
| UniP | IVVPMTTDKPHLYPRFPIGMAQLRTPSI |
| UniRef90-UP1000464F314 |  |
| UniRef90-UPIOOO36268F9 | EVV YMTIQPKTDLPTHVERSIGRISTVLCEQVYSVST |
| UniRet90-37K2W4 | MVVPCTSN |
| UniRef90-B2A8Q5 | MVVPLSSLKKEKNDFNEITGKEPGTESIAVINQMRTISKL |
| UniRef90 D9TIC0 | LVAAI TS NLTAKDYLVMLTM |
| UniF | TVLPPISSDLRSPFFRDDVEPELLKPSRI |
| UniRef9- ${ }^{\text {R9, }}$ | AVCGLTTDPTPAPLLMPSESNGLHSPCR1 MVDKVLT G |
| UniRef90-R9JVW3 UniRef90-UPIO003A5AC63 | TVMPLVT ${ }^{\text {P }}$ |
| UniRef90-R6B1Z5 | TILPLTTKRLNDELWFHVDLDELI DSTVL |
| UniRef90-R7FB47 | Y 1 |
| UniRef90-C6E412 | SHKLDAPLERYQVEPHLAVTSWVQTD |
| UniRef90_C1DRC8 |  |
| UniRef90-UPIOOO23 |  |
| UniRe |  |
| UniRef90 M | TVLPVTSTUVNAPL |
|  | TVLLVSATIVEAPLISPSAANRLRKISQVMVD |
|  | T |
|  | TVLLLSGTLVDTPLIQPSASNGLRTPSQ |
| UniRef90 UPIIO0047E2FA5 | $4$ |
| UniRef90-41848 | VVVPATSNLRAAKA GNVGEGNLP |
| - | $\checkmark$ LCPITSEL |
|  | FVI PMTTKIKSSHFYHRLQSVKFSRPSSLILSQARVIDKK |
| UP10004196 | HVCPMISGIPAGPIHELVKGKNGESGTVICEQ |
| UniF | SSMVDAPLIRPSEQNGLRMPSQIA |
| UniR | VLIPEGGL |
|  | SKYSI |
| $\begin{aligned} & \text { UniRefó-UPIOOO3B59 } \\ & \text { UniRotan WaHPR2 } \end{aligned}$ | NVCALTSNRRRATEPGNVGEGGLERPSVVVVSQLA |
| UniRef90-S9TL07 | dapraptong ersol M |
|  |  |
|  |  |
|  |  |
| niRet90_P64860 | V |
|  | VVAPFTSVLTGASVFRYRMEPDLNCDSEVMLDKLTAV PR |
|  | VLPLTTELRDVPALRDPDEPDPLMQTSQVMVDKDTAVADR |
| UniRef90-UP100029AAA6E | Q |
|  | FVMPLT |
|  | GLEVDSLAlCDNISSVQKP |
| UniRef90-UPI00047D31AF | KVTTIPR |
|  | L |
| UniRef90-S2Y3T3 | TVMPLTHVIKKMPVHGC M ENGLSKYSMVLGEQPMTICKE |
| UniP |  |
| UniF | TIAPMTTKGRDYPTR VIDCHFQGKDGQIVLDQ ${ }^{\text {P }}$ |
| UniRef90-M8DS23 |  |
| niree90-B2IJ3 | VACALSTNLDRVSEPGVVGEGGLPRRSV |
|  | IVVQUTSNLREYNVRISNDDLEIC |
|  |  |
| UniRef90- R2R4N3 | 1 |
| UniRef90-UPIO0036 | G |
| UniRef90-K5AEM5 | THVEI DAETHGFDRDSV |
|  | NLVEAPLIRIIAVEPTIEQASQI MVDKVVTM PR |
| UniRef90-G2 | SVLPLTSDLEDAPVFRVVDEPTUSRLSQAMVDKIMPV RK |
| UniRet90_R7FG75 |  |
| UniRef90-F8FUF8 | PITQGGDFARHAGFAVT |
| 22FS | VPVTFQR KTGLILLD |
|  | APATSKKSGKKYRGGFTINCRDYQQNAFVRINKL |
|  | I NCHVDGKDGQIALDQLRTID |
|  |  |
|  |  |
| UniRef90-R4Z362 | PMHHPNAGTGLDVPTSFQIEQ |
|  | VVAPMTSHLLDAPLMRITRIPSGLDRDSDVMVDKLTAVRRS |
|  | V |
| 56 | v |
|  | TLLPLTSALVDAPLDDPSPNGLQKP |
|  |  |


|  |  |
| :---: | :---: |
| $\begin{aligned} & \text { UniRef90_R6YK56 } \\ & \text { UniRef90_MOP484 } \end{aligned}$ |  |
| UniRef90-C3KMR2 | SKIGSVIGHIDRETMQEIDRLL |
| UniRef90-W4Q3 | G V R |
| UniRef90-007HE2 | SKVGP |
| UniRet90-G70 | E |
| Unireeg-XYPO5 |  |
| UniRef90-F6CI22 | RRLK |
| UniRef90-A7BRP: | $\square R L E R K D G E P N$ |
| Ref90-UP1000 | RIVAYBGS |
|  |  |
| Ref90 UP100036268F9 | , |
| UniRef90-B7K2W4 |  |
| UniRef90-B2A8Q5 | RTIKPKSGSLEPEELRKIYEK |
| UniRef90-D9TIC0 | S IVIJNKFGSVKKHIIERVKEK |
|  |  |
|  | 1 GKVI |
| UniRef90-UP1000366 | AKVGFRI |
|  |  |
| UniRef90 R6BIZ5 | RRRKGK |
| UniRef90-R7FB47 | W |
| UniRef90-C6E411 | GTVIGHLSEKQUSEVTKLLAFWI |
| iRef90-C5C | NKIIGGLSDEELDLIDDQL |
| UniRet90_UPIO0023 |  |
| iRef | RGATFETVA |
| UniRef90 UPIO003B5 | AHVTQRDGRLSSTQVVDV |
| UniRet90-LONB | DKLGPTFGRLEDESMLAV |
|  | KKGOLVT SONDWK |
| UniRef90-UP1000370 | EK GAPFGRLDAEAMTSV |
| UniRef90 UPIo0047E2FA5 | M R Gerva |
| UniRef90-4141848 |  |
| UniRef90-E8U2L6 | NKLSEPFGRLDDDRMKAV |
|  |  |
| UniRee90 UP10004196FBA | N RVD |
| F3W | E |
| UniRet90-AOK4V |  |
| UniRet90 | YIVVEKFGSVKKDIIDKVK |
| UniRef90-UPIo003B | VAL TDRDGRLSDARVD |
|  | GQAFGRLDDAEL |
| UniRef90-S9TL UniRef90 A8L |  |
| UniRef90-X11 |  |
| Ref90-X1FQG6 |  |
|  |  |
|  |  |
| UniRef90_C4K3 | HRLGNFCGSASKKDMQLVTQLMAVFL |
| UniRef90-Q20X42 | R |
|  | VHRLGAVGWEVMDQVSFNIGT |
| UniRef90-UPIOOO |  |
| UniRef9 | YLERGPYGQisaEsherlorgl |
| UniRet90 | VNMRNHLGRLADVDLVRLDRALLVFL |
|  | SRFTSR |
| UniRet90-S2Y |  |
|  | SKISKPFGHLNDE |
| UniRef90-L8MSK4 |  |
| UniRef90-M8L | QLL F Kignl HSHDLKRVMETIRNYFS |
| Ref90_B2III | SKVGLQI GRLDDEDILRLNQAMLVFL |
| RRef90-UP | A LGDYLGTLAGSRVDQI VAALRFL |
| UniRef90 D2 | GKL |
| UniRet90-SOFSL | VRRATVHKKLSDSFFAEVCKRLNQII |
| UniRef90-R2R |  |
| Ref9 |  |
| 俍et90_K5AEM5 |  |
| UniRef90 H6 | 兂 |
| UniRef90-G2J |  |
| UniRet90-R7FG75 |  |
| Ref90-F8F- |  |
|  |  |
| UniRet90_A0A022FSR6 | ${ }_{\text {AGG }}^{\text {G }}$ |
| UniRef90-UP | kI GRVD |
| UP | ANIGKR |
| UniRef90 UPI0003620483 | ARGAKPWKQVPADVFSAACEQLNQIA |
|  | - |
| UniRef90 K6V | NVLA RVGRLTSEQ |
| ef90 ${ }^{-}$ |  |
| UniRef90-UP1000476A456 | SKTGEVI GEADDALLLRVNRALALFL |
| AOA | ARLGEHIGVLSPQRVAQ |
|  | FII RKIGGQLS DSDQKKV |

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UniRef90 S2KNS7
UniRef90-Q73Y72
UniRef90-R9MLP8
UniRef90-UPI0003657281
UniRef90-D6SRT7
UniRef90-UPIO00467D2C8
UniRef90-B8G5E6
UniRef90_L9Z7L7
UniRef90-SOAQI6
UniRe990_Q2RIOO4130BEA
UniRef90-X6UCD9
UniRef90-B7JQY6
UniRef90_TOZ5C8
UniRef90-R7C809
UniRef90_R5Y844
UniRef90_UPI000425CC29
UniRef90-F6CNK1
UniRef90-U4QYH7
UniRef90-F4A864
UniRef90-R4ZOR4
UniRef90_U7VD41
UniRef90 UPI00034BCB7A
UniRef90-K1ULR8
UniRef90-E1YHC7
UniRef90-UPIO002DECD42
UniRef90_UPI000380F9F3
UniRef9O-K2D3E0
UniRef90-V6AUB3
UniRef90-N6X5Y8
UniRef90-UPIO00373765E
UniRef9O-H4EZJO
UniRef90-E6TZT7
UniRef90_R7DQT5
UniRef90-T1BTR9
UniRef90-R7N7C0
UniRef90_UPI00041E66DC
UniRef90-UPI00024909A9
UniRef90-K9XYS2
UniRef90_GOJLC6
UniRef90-J6HWD4
UniRef90-B7K1Q1
UniRef90_UPI00039EA3E9
UniRef90-I4BS24
UniRef90_UPIO0021975B7
UniRef90_UPIO0046A7F4B
UniRef90_UPIO00475F421
UniRef90_UPIO003149375
UniRef90_Q11N06
UniRef90_W7T3N3
UniRef90-UPIO0028995E6
UniRef90_R7M8M9
UniRef90-R6Y6X1
UniRef90_G0HJD2
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UniRef90-N9VTE0
UniRef90_I9LIB2
UniRef90_UPIO0042777F8
UniRef90-K6R5G4
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UniRef90_UPIO003B630D3
UniRef90_U2SZT5
UniRef90 L8LX54
UniRef90-A0A051UOV6
UniRef90-X1KEH9
UniRef90_R5NCU3
```

lupas_21
lupas_14
lupas_28
jnet_
conf
sol25
sol5
sol0
jhmm
jpssm

|  |  |
| :---: | :---: |
|  |  |
| R9 | VACPTQVNPGRKVPECMHIVYFLDKDSII QCEEI RAVS K |
| UniRef90－F8AP23 | NVNSGFQELNVPGAKPIIPSVVKPYVIFSINTE |
| P10003657 | ， |
| UniRef90－D6S | I CAPVYSACHGLSTQVPVGENGLKHESSIHCDELVS PK |
| UniRee900－K2CIG8 | ICCPISTSMRGGITEVALINALEKPSVVASLIQTLSWK |
| UniRef90－UP1000467D2C8 | TLLPLSSALVDAPLIEPDERNGLRRSSQVMVIDKPT |
| $\begin{aligned} & \text { UniRef90-B8G5 } \\ & \text { UniRef90 L9Z7I } \end{aligned}$ |  |
| 促 |  |
|  |  |
| UniRef90－UPI | A |
| UniRef90－X6U | VPLASITPESKER |
| B7 |  |
| UniRef90－R7C809 | G |
|  |  |
|  | TI MPLTHLIKKEYLPVHESENGLSTYSMILGEQPQTICKD |
| － | VVAAISG |
| UniRef90 U4QYH7 |  |
|  |  |
| UniRef90－R4Z0R4 |  |
| UniRef90－U7VD41 |  |
| P100034B | LVVP |
|  | VV1 V |
| UniRef90－UP10002D |  |
| UniRef90－UP1000380F9F3 | $L$ VALLT STLREAPIFQPSVGNGLKLPSQVMVDKI MAL PR |
|  | G |
|  | VCCDITSNLDNYSLERGCSGRKDSKTSRIKFSKIFTL EK |
| W6X | MTTKSHPFPTRVPV |
| H4EZJo | WVVMITSAENRWPEDVPIDPDH |
| 6TZT7 |  |
| － 7 DQT5 | P |
|  | （ |
|  |  |
| UP1000 | VGNGLLK AVSQV |
| 隹 | SVMAMDTTVSHSPWALDVPITDLSSAGSITRMKL |
| iRef90－GOJLC6 |  |
| UniRef90 J6HWD4 | YVVL！ |
|  | TLCPLTATIGGESLFRPQEHTGLSVECEVQVDRI |
|  | LAARITTTSKNAHVPTVVPLTAADHPGYVL |
| UniRef90－UPI | L |
| UniRef90 UP100046A7F4B | LVIPCSKGRYNKTSDFUTKGETFMHPSGIQLDK RVV SKN |
|  |  |
| $\begin{aligned} & \text { UPIOOOO31 } \\ & \text { Q111N06 } \end{aligned}$ | RLTSEINDW |
|  |  |
|  | VIMAITGKTGNLTIECLIEDWQLLKPSSIKPA STI EQ |
| UniRef90－UP10002899 | $\overline{\mathrm{T}}$ |
| R7468 | N |
| UniRef90 GOHJD2 |  |
| Uni | IGLPMTTASYNDTNPFAVKFIPRGAVSYILAHQPKSFDWR |
| UniRet90－N9VTE0 |  |
|  | T $\mathrm{L}^{\text {R D }}$ |
| 27 | KKYGRG |
| er90－D6S | TV |
| ef90－UPI00036F | A PLS SLYDQHGYHLPYKVDYPELSNDSYVKLDQIMTFSRN |
| UniRef90＿B0JM4 |  |
|  |  |
|  | V |
| OV6 | TVAPMSSTLLDAP俭RIRIDASGLDHDSDVMDDKLTTV K |
|  | GSTRVPIKKMNLLHDSVVVADNI |
| R5NCU3 | YVELGK $\square$ YNFKTMWVN】FNINPLS |


| $\begin{aligned} & \text { lupas_21 } \\ & \text { lupas_14 } \end{aligned}$ |
| :---: |
| lupas＿28 |
|  |
| cont |
| solis |
| sol0 |
| jhmr |
| jpssn |





EKTGPVIGR\SPEEDSAVNRADA पFL GRLIERLGRVNDWSLENIERKYSGLL RIIUHKVIRLGNDNLKLI Y DKDKV

 EVIRKFGTVVNQKQRNMI NK

 SSFRRRVAALRPTRLDDACDRLADAL RFSQFI DK
Y LIERGPYGE $\square$ TSESFSR $\square$ QRA $\square Q \square A \square$


AKCSPPワGRLERDTLATLNRMLALVL
SRIDSIVGKASSKLLDEIDESI

KITGSYDCCLTETD
SVFQQKLGLLPSDLLNQVQTALKKSLN
QRLEGY I GRL DKKHIRGVNHALAVVSI
 S NV HT RVGRLTAEQVVE EAAMMAFL EIDDKVIGHCPD MTKVDDALR
R $\$ FAKRKGN【KGTDLDNISKA
lupas_21
lupas_14
lupas_28
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sol25
sol5
sol0
jhmm
jpssm

