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QTWREQDG | T |
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$T R A E T L M A A M K P Y T C O P N T V R E A V V L M$ PRREDATTRAETDMAA NPYTCQPNTTVREAAVLM PRSGLYTVGDFMT RKEDLHVVKPTTTVDEALDIL
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[^0] $R D V D A Q N T L N Q \| V Q D F Q N$

 REF GI G GI PVVNGHQVLNGIVTNRDLRFEKNNGRA Q R H G V K S L P V L D D G R R L I G V T T R A D L T G T A A R A P R Q R L R D

A K Y R I S GLLPVVEES D GTLVGI I T N R D $\quad$ LK Y
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SERSI S AVVPI ID E Q GVVVNLYETVDVITTVVRLGAYQSLDL

RDK HV S S L C I TN GE D S L K G I I V VR D L S G KV L A E G R
 G Q Y R V S G L P V V D D N N T L L GI I T N N R DLLR F V K P E A Y L T T T V R A S Y R I S GlV P I V M E N R K L V G I I TNR R D M R F I S D Y T Q P S Q H NVGSI PVVVENGNCVGIVTDRDDALRAVSQGQNPSST K S H GI S Gll P V V E K S G R L V G I
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A Q H DV G A L L V L E E G QL V G I FS E R D Y A R K I I L M GRA S R D T E T H GFS GL PVVEN P GQPVGILTSRDIRFE
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## QUERY

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ALGQTV | LGQTVGEVMMS |
| :--- |
| KVGKVVEIJMT |
| SHAPV KGYM | EKLTVRHGASPAEARELLHRHRIEKL RKVDEVMTSENAVSTTGXRPLKEAABLMHKREVRRL Y $\square$ TEKHDKRSPMLSGMITCKRDKTIKELIQTLDLEKI KRV

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Y Q L L S
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$\square$ S A N T ANMTKENLVTAPLGTDLETAEKILHK QSVMTSGVVTGSPEMDVHEAANLMAE QKTHELMTKDNLVTVKESVDQOEAKRLLHSRQVRRL
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 SKYKIGGVPI C VDGKLVGII TNRDMRFLTDYSGR REKNVGGLPVVKGEQKLVGNISMRDIRFLLLQPVYDFMHS HESNVGSIVITDDNRHPVGDETDRDLRTLIAEEKA SEYNVGSVPVCRGEEVVGUVTDRDITLRSSAQGKNVHQQ SMHRIRHLPVTARQGKLVGGVTHRDLLRAAATHASDPAAQ AEHQLGALIVTEPDNKIAGLI TERDYARKIV DKFGHSGMPVVSGNKIAGGISRRDIDKARVHGYGQSP


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KNNNTGGIPIVDANGKLKGMVTNRDLRKAKHGLAN FE SQWKV SAVPVLA GEGRVDGVVSEADLLAKEEFRGGDPAHR

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LIFNKISGTPVVEASGKLVGTLTNRDVVRFADNPAQ TSKKVGVAVVCDTSGALLGVLSERDIVHGDSQFGKAATDM RTHRVAALPVLNRARRVIGVTQTDFLEHGGLDDYRGLRH KKNKISGLPVIERNNRLVGVVTHRDVRFATNP ADKNLGGLPVVE GNQVVGFFSERDYARRALKGRNSEDT
 QTYSISGVPVVDSNKCLGGLTNDTRFETDFNKG




 LRYGHTGMPVVDGENKVVGVISRRDV LKYGHTGVPVVAGEKLVGVISRRDVDKAIKHGLA


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| UniRef90-G5GZK1 | DVMQKDVITV TDTMT EEAALIMTREKIGAL |
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| UniRet90 N6UUF6 |  |
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| UniRef90-F1A546 UniRef90- X6JYS4 |  |
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| UniRef90-UP100001A6356B | TUQEVLD ${ }^{\text {d }}$ |
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| UniRef90-P95554 | RSMGEVTAADITSRDVYSHTPDTFIEQAWSTLQRNRLRSL |
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| UniRef90-COQIF8 | VLLQCLDNSHCMSSPPVTVETTAS LDVASTMDRFNDNRV |
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| UniRef90-E1YJA6 UniRef90 O9YF58 | DGFISTPSMMSVNVYY S |
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| UniRef90-UUUBF8 | VVAYQTPVSEIMSTDLIIVDSNAYVFEAMMLMLRDNVH |
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| UniRef90-D1CF27 | NSSVSSVMS |
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| UniRef90-W1RNI6 | D TV |
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| UniRef90-F4G7A2 UniRef90 A2U20 | PVVDEARQLVGG |
| UniRef90-G22 | PVINDK |
| UniRef90-N6U | PILDKEGHFLSLITERDVIKALI |
| UniRef90-C5C | V ENGVLTG VTRSD |
| UniRef90-C7\% | PVVDKNYKLVGLI TFRD |
| UniRef90-UP10003 | PVVDGVGLLQGIVSRGDLLKVFL |
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| UniRee90 UP10000 A6356B | VIVNNDYRVDGII SLSDVLRFTV |
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| UniRef90-895A29 | PVVVSDSRELVGLVTLKVDLLK |
|  |  |
| UniRet90_UPI000226081E | PVVDENGKLVGGVSVGB |
| UniRef90-H8FRQ1 | PVV ADGQLLGIVSIGDAVSY |
| UniP | 1 VDAEQRFAGIVTQSDLVAALD |
| UniRef90-G6EZ | $V$ VDAQDRCV |
| UniRef90-M4W | V N A A V |
| UniRef90 - V8C630 |  |
| UniRef90- ${ }^{\text {C3XH58 }}$ | PLVDENNVLHGLITIKDIQ |
| -iRef90-C9 | PVVSEE |
|  | $\checkmark$ D ${ }^{\text {d }}$ |
| UniRef90-COOLIF8 | PVVDENTKLAGII ARSDLVQAM |
| UniRef90-E1YJA | PVVDRDGKLI GIV VGKEDILRTLI |
| UniRef90-Q9YF58 | P V L ${ }^{\text {P }}$ |
| UniRef90-F8J | $V$ KDGAVVGL L S |
| UniRef90 UPIO0034BB549 | PVV EGYRLLGGI ${ }^{\text {P }}$ |
|  | PVL EEGKLAGIVS |
| UniRef90 UPIIOOO3789948 | PVVDRYGKLSGIVSRADLVRALV |
| UniRet90_G7SQD5 | $\checkmark$ |
| UniRef90 R5xWV9 | V SDEGYLKGLITMKD |
| $9 W$ | PIVDGQGNLISLLSRSD |
|  |  |
|  | PI TV NNKLTGMLTKTDVLRTFV |
| UniRef90-F4BWT8 | P VDEDSR1K |
| UniRet90_UPIO0026 | PVVDAGGRVVGVISVGCLVKAVI |
| UniRef90 - IVLGB6 | PLVDEEFNLKGLIT |
| UniRef90-UP1000 | $\checkmark$ D |
| - | $V \mathrm{~V}$ EDGK |
| UniRef90-j9HN | PLVDAEGNL |
| UniRet90-E3 | LVTDDAGKLTGLLThKDSEQAVL |
| UniRef90-G214R7 | LVVDDEDRCIGLITVKDMDRA |
| UniRef90-S9ZN57 | VDDKGA |
| UniRef90_UPIO00428609E | PVVGEDNEV |
| ef90 A5U | PIVGGEKKLLGGVTSTD |
| UniRet90-UPIO0046F88EE | PVV RNEQLMGVVSRTDMLRALL |
| UniRef90 | T |
| UniRet90 |  |
| UniRef90_H818G2 | PVIRDNEL |
|  | PVVHKRKP |
| UniRef90-K1v | PVLSKTGELVGLISTQT |
| UniRef90 UPVI0004685A3D | PVVDDDQRLVG |
| UniRef90 E3FSJ2 UniRef90-D1CF27 | LIVVNEEF |
| UniRef90 A1AQ ${ }^{\text {a }}$ | LVVDNDRFLKGLISTK |
| UniRef90-E1TFZ0 | PVTEAGRLVGIVSRAN |
| 35 | VDGEKN |
| UniF | PVT QNGKLVGILTPVDFVK |
| UniRef90 D5AUM1 | LVVINADGKLTGL |
| UniRei90-M1WTL7 | PVVDEGGELMGII TQAD |
| UniRef90-D5A9R1 | YLVNGQDELLGVITLRDVISCFV |
| UniRet90-R6UM27 | PLVDSENRL |
| UniRef90_D80 | HIVDDKQRIVGVVTLRDIJSCFV |
| UniRet90-M1 | CVVDEENRLVGVV |
| UniRe90-5VAP | PV v |
| UniRei90 UPIOOO35DE012 | PVIDED RLVGMVSTGDLVKTII |
| UniRef90-UPI0001 E2F145 | PVLKDNEMI G\\|VTRTD |
| UniRef90_UPIOOO4 | PVLNRDKRL |
| UP100046535E8 | VVVDGDDRLVGI VSRRDL LADFL |
| UniRef90 B9Y8 |  |




UniRef90 Q1M8W5 UniRef90-UPIOOO365241C UniRef90_UPIO00255A607 UniRef90-Nob9C6 UniRef90_D1YUT2 UniRef90_S9ZQH3
UniRef90 G7WM81 UniRef90-O6N206 UniRef90-M7P3G0
UniRef90 D2B9X2 UniRef90-UPI000379B720 UniRef90-A5D2V4 UniRef90_D7E5T2 UniRef90-A0B5X3 UniRef90-UPI00036F07FA UniRef90-UPI000344C83 UniRef90_B7G2R8 UniRef90-Q1N3V8 UniRef90_W4F4E4 UniRef90-UPIO00404DE97 UniRef90-B51318
UniRef90-M4K9K7 UniRef90_AOLKD2 UniRef90-U2ESL5
UniRef90 E1RAX4 UniRef90-A1K5U2 UniRef90-K9HLQ4 UniRef90-N1QPQ7 UniRef90-11JBP2 UniRet90-KONGM8 UniRef90-E4TH81 UniReffo-S2KAT3 UniRef90-U5VW14 UniRef90-UPIO002626827 UniRef90-UPIO0026287F7
UniRef90 UPIOOO4744A1 UniRef90-UPIOOO4744A91 UniRet90-AOAO22GWO5 UniRef90_UP10001 E8985A UniRef90-H5SBI9 UniRef90-W0RS87 UniRef90-14CAH5 UniRef90-AOB6F7
UniRef90-I4ZOV2 UniRef90-T1CVC5 UniRef90_UPI00035EFC17 UniRef90-Q5SK35 UniRet90_S6CUK8 UniRef90-A1BAJ7 UniRef90_M5SO24 UniRef90-AOAO23WPJJ UniRef90_UPIOO02F61505 UniRef90_Q05T69 UniRef90_UPI00028A3803 UniRef90-A4S4A6 UniRef90_UPI00016C38F7 UniRef90_E8PN14 UniRef90-U2Z253 UniRef90-G4MGE5 UniRet90_M2ZTE7
UniRef90 UPIO003FEF7F5 UniRef90_СЗМКоо UniRef90-A1WXN4 UniRef90-B6B5R0 UniRet90 A4WL54 UniRef90-R4SUX7 UniRef90-A0A016QU31 UniRef90-Q470R2 UniRef90-UP100031E8B36 UniRet90_A8UWB7 UniRef90_K9S804 UniRef90-B1FTB3 UniRef90-H1XZLO UniRef90-F8E4K7 UniRef90-UPI0004719C1B UniRef90-R9PRI3 UniRef90-W4HNX2 UniRef90_C7RQ79
UniRef90 O29009 UniRef90-C6WVB9 UniRef90-LOJYA5
UniRef9_-G8M9M1 UniRef90-FOT6E1 UniRef90-UPIOOO36F195B UniRef90-J7Q7Q9 UniRef90-U5T339 UniRef90_K8R2K8 UniRef90 W6WHQ1

I S S N G WClV T $\begin{array}{lllll}\mathrm{V} & \mathrm{A} \\ \mathrm{S} & \mathrm{F} D \mathrm{D} & \mathrm{P} V \mathrm{~V}\end{array}$

VMS QDVIVASPDSEVSDIA ESLLQAHRTKR|L E E R N V K T V
$R$ V $G$
PI SKVP
WL R H G R K V V
SVGGRVD
$P \vee S$
GLSGDR LVA
 SKVGDLMAE GMVSV HRHHTI A HVVEQMNLHGVSRV
RRFGEDTCADIMSKDVI SVEFGTELEQAWALLRKHKI KALL GRRARETVRRMMTAPPVTVGPEEPVARAAELMHRHRVKHLL









 K K P DTTTTVQEVMS DEVYHAS QDTSVQQEAADMMAKK QUR R L
 K L
$\mathrm{G} Q \mathrm{~L} R \mathrm{~A} G T A$

 TVDL Q DEITKMMVA WRTHGRKA QHVMMR QVVTATEAMTLLADAA DI MEKRRLLKRM

 K V G | $L$ | $P$ | $P$ | $S$ | $T$ | $P$ | $V$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $D$ | $R$ | $V$ | $L$ | $D$ | $L$ | $P$ | $V$ | $R A A K P R Q \square$ VERDAYIVKDVMSGEDTTMSPSADAMDAITTMQQN GVGR

 $V$ K GAMRRSSPLVLSSSA LGGAEAARRMRNAGAEAA
H Q VLGT T K
N SLNNRCI E E F MVRDVI I GHPLDFI E E T A L LIF FEERI GCLL $M Y K A S G S K V S T A M M E A T T C T P D M P L V E A T E L M M N G N L A R M M$
 $R$ VA
RASKQTPVH
P V D I M T A E $Y R \cap{ }^{F} N L H \square$
 S P CNVMTP
QLD FPHRVRDVMTRII YVLTPYSTIMMDVLEGDTIVKFRRY
 EAT T QVSVREVMRRSVVTTTPDADARDAAYTLLHRRIGGM

E L I E L L E K M
$G V S L G E A M E$
$\qquad$ E L I T
$\qquad$ ENHYTVMTANLET $\square$ T P SETI DHCMEMMSTYK RHEL
T E N DRVGDVMHSEPLTARPE GSVV DLAQDMTSAKPK I F



$P \square K N D M T P R D R$
A D D TVVVA DVVMS T E L A T V G GPN D E A T S A A L R T I Q Q E N I G R L
WWE H A GKVVKDVMSTEVVTVVENCTVAELAELLERRRIIKRVV
R N Y K E L
$R \square S$

$K$ V S R T T T V
S E R R E W

|  |  |
| :---: | :---: |
| UniRef90-UPIO00365241C | PVV QGGKLVGI S ${ }^{\text {a }}$ GDVVK |
| UniRef90-UPI000255A607 | PVLKKQ RPLGVI |
| UniRef90-NOB9C6 | VLSDDSKLVG |
| UniRet90-D1YUT2 | PVIDKDKKVLGIV |
| UniRef90-S9ZQH3 | PVVQHGKIIGIVTDGDMVKSLV |
| UniRet90-G7WM81 | PVERDEGEIVGII T SRDLLSYFV |
| UniRef90-06N2 | PVM RGDLLVGLVTRKN |
| UniRef90-M7P3G0 | PVVKDNRLVGTITRQD |
| UniRef90-D2B9X2 | PVVADD |
| UniRef90-UPIIOOO379B72C | PVVEEGRRLVGI I TRSDII R |
| UniRef90-A5D2V4 | PVLKEGKLVGIVSRTDLLRTL |
| UniRef90-D7E5T2 | PVV KDSULLGIVTATNIMNYL |
| UniRef90-AOB | M RPVGVI |
| UniRef90-UPIC | PVIDRAKRVIGM! |
| UniRef90 UPI000344C834 | PVVGPDGAL |
| UniRef90-B7G2R8 UniRef90 1 N1N3V8 | PVVDEDGKIVGVISASDL |
| UniRef90-W4F4E4 | VDDEGVLKGLI T ${ }^{\text {d }}$ K |
| UniRef90-UPIIO00404DE97 | PVAEDNDKLAGIVTETKLLHNLV |
| UniRef90-851318 | PVVNELGMLEGIVSRADLLKVFL |
| UniRef90-M4k9 | PVVD DGKVMGII AAAD |
| UniRef90-AOLK | PVVD GNKLIGI GKEDVLRTLL |
| UniRef90_U2ESL5 | LVVNDAFELRGMI TVKD |
| UniRet90- A1K5U2 | VINDEGELRGLITVKDMM |
| UniRef90-K9HLQ4 | VTENGKAAGII A TGDVMRRMV |
| UniRef90-N1 | VDGAGKPVGSIMTKDV KHLL |
| UniRef90-11 | VEGKKRIVGNLSIRDI RHLLL |
| UniRef90-K0NG | VDKN KLVGI GKEDILKLL |
| UniRet90-E4TH881 | KLVGIVSLGD |
| UniRe |  |
| UniRet | TDPQGRLLGVV |
| UniRet90_UPI0002626822 |  |
| UniRef90_UP10002 | VDASNKVVGVVSRGD |
| UniRef90 UPIO004744A91 | PVVNRDKRLVGLLS ${ }^{\text {PV }}$ |
| UniRef90-A0A02 | PVVDAQQRLLGIVTQSDLIAALLL |
| UniRef90-UPIO001E8985A | PII QDSKLVGIVTETDLLYTFV |
| UniRef90-H5SB19 | VDAQGRLVGAL NMHDL |
| UniRet90_W0RS87 | DGD RLVGMV |
| UniRet90_14CAB5 | VIDEKGE1 RGLITKSDLFKALI |
| UniRef90_AOB | PVVEGSRLVGGVIRGD |
| UniRef90-T1CVC5 | VDADGALVGL |
| UniRef90-UPIO0035EFC17 | PVVGKNGKII GMFAQRF |
| UniRef90-Q5 | P LTTGEEVVGVVTHTDLLAH |
|  |  |
| A1BA | $\checkmark$ D |
| UniRef90 M5SO | P V EDGRLLGQVS |
|  | PVVVDA P P |
| UniRef90-UPI0002F61505 | VVEDASRSLGILTERDL |
| UniRef90-Q05T69 | YVVNERQQPVGVITRGDVV |
| UniRet90_UPI0002 |  |
| A4S4A6 | PVVDDRGALVGl ${ }^{\text {SRGD }}$ |
| UniRef90-UPIO0016C38F7 UniRef90-E8PN14 | V EGGRPVGVI |
| UniRei90 U2Z253 | PVVAEGEELI GMLS |
| UniRef90-G4MGE5 | PVI ENGKLVGMISI GDLVKNII |
| UniRef90-M2ZTE7 | PVL EKDELIGVVSIGDA |
| UniRet90_UPI0003F |  |
| UniRet90_C3MK | $V$ Did d |
| UniRef90-A1WXN4 | LVVDDAFH |
| UniRet90 B6B8R | PVVEAGKLA |
| UniRet90 R4SUX7 | PVVDRYGKL |
| UniRet90-S7VHG8 | SDDAGRLKGIADRDT |
| UniRef90-A0A016QU31 | PVVDDAGAVVGML |
| UniRef90-Q470R2 | PVL ESGR! |
| UniRef90-UPIO0031E8B36 | PVV RDGRLVGl VSRAN |
| UniRef90-A8UW | PVVNKEGLLVGI I GTDILKGL |
| UniRef90-B1FTB3 | $V$ TDGDGHLVGLVI |
| UniRef90-H1XZLO | PVTD NNRVTGMVSDGD |
| UniRef90-A8FU07 | PVIDENDQLIGIITRSDV |
| UniRef90-F8E4K7 | VIDSNF |
| UniRef90 UPIIO0047190 | NDEFKL |
| UniRef90 R9PRI, | $V$ ENNQV |
| UniRef90-W4HNX2 | Vodar |
| UniRet90-C7RQ79 | PVVNDTAALVGFVS |
| UniRef90-O29009 UniRef90 C6WVB9 | PVVDEDN |
| UniRef90-L0JYA5 | LVVDDDGSLAGLLSR |
| UniRef90-G8M9m | RDGKVVGLISRAN |
| UniRet90-FOT6 | DESETV |
| UniRef90 UPIOOO36F195B | DGK GRP |
| UniRef90-U5T339 | QGGR |
| UniRef90-K8R2K8 | GGgrLVGMI SDGD |
| iRef90 | D G |
| UniRef90_A0A017SX21 |  |


| UniRef90 R1IJ23 |  |
| :---: | :---: |
| UniRef90 | A1RS62 |
| UniRef90 M1FDV3 |  |
|  |  |
| UniRe90-AOBSX |  |
|  |  |
| UniRef90_O8T250 |  |
|  |  |
| UniRef90-A0L |  |
| UniRef90 | D3Q8A0 |
| UniRef90-V5SG99 |  |
| UniRef90-R5F7U4 |  |
|  |  |
| UniRef90 D5H9L6 |  |
|  |  |
| UniRei90 | UPIO |
| UniRet90-D7EA83 |  |
|  |  |
| UniRef90-O3INGO |  |
|  |  |
| UniRef90-UP100047DF578 |  |
|  |  |
| UniRef90-UP100047AFB0D |  |
|  |  |
| UniRef90-C0QC64 |  |
|  |  |
| UniRef90-J3JNR7 |  |
| UniRef90-Q9V1T3 |  |
| UniRef90-A6 |  |
|  |  |
| UniRef90-D8HVO3 |  |
|  |  |
| UniReef90-UPIOOO46 |  |
| UniRei90-UPIOOO3B3CD99 |  |
|  |  |
| UniRef90 UPIo |  |
| UniRef90-A0A024RHDO |  |
| UniRefoto- C6JVY2 |  |
| UniRef90-C6J |  |
| UniRef90- UPII |  |
| UniRe990-H8KN |  |
|  |  |
| UniRet90-A4SXK |  |
| UniRef90-D8PD09 |  |
| UniRef90 D5E8P6 |  |
| UniRef90-K9QS47 |  |
| UniRef90-D8UKH0 |  |
| UniRet90-L9XRT8 |  |
| UniRet90-UP10003821299 |  |
| UniRef90-13CU |  |
| UniRef90-W3RHJ1 |  |
|  |  |
| UniRef90 UPIO0030D1EE1UniRet90 R4T8E1 |  |
| UniRef90-R4T8E1 ${ }^{\text {den }}$ |  |
| UniRef90-D9S2K2 |  |
| UniRef90-A7NJE7 |  |
| UniRef90 R7IIZ2SiRef90E1RIT2 |  |
| UniRef90-G70550 |  |
|  |  |
| $\begin{aligned} & \text { UniRef90 } \mathrm{X1AWZ4} \\ & \text { UniRe90 D1Z104 } \end{aligned}$ |  |
| niRef90_13CGN9 |  |
| UniRef90-UPI0003 |  |
| UniRet90-B6BTF4 |  |
| UiRef90-F9VP89 |  |
| UniRef90-S3CFN3UniRet90 UPIO00348357F |  |
|  |  |
| UniRef90-L8H2L9 |  |
| UniRef90-H6D9M0 |  |
|  |  |
|  |  |
| UniRef90-D5EE80 |  |
| UniRef90 G5AIK3 UniRef90 B9LRT5 |  |
|  |  |
| UniRee90-E4U605 |  |
|  |  |
|  |  |
|  |  |
| UniRet90-F6D628 |  |
| UniRef90-UP10003B34C09 |  |
| UnRef90-O29291niRef90-Q28R30 |  |
|  |  |
|  |  |
| UniRef90-A0AO59L346UniRet90-E9CCW0 |  |
| niRef90-X1KZG9 |  |
|  |  |
| niRef90_R5Q3J4 |  |
| niRef90-J6JF14 |  |
| niReef90-14EK80 |  |
|  |  |
|  |  |
| UniRef90-K20163 |  |
| Ref90 |  |

20
VNDMMSS DP $\quad$ TTLS 30
40
$R$ VRDVMT RDVYVLTPYSTVMDVLEGI

VKRSEHGVITDPFYLHPDNGLQDARDVM
VGK I M $\square R D A D T V S P E T S V L E A \square K \square M$
DQAIEDVMARSPITGTAHMSIREAAAKM
 K V K D A M H K GA E WV S P D T P L T QVAARKM
GTMQQSE】MT T R

QTVHEVMT T DVEYCTPVDNVYEAAVKM

E DMELV SHKGS L LD ACK LLL


$R \square R E D M T K E V V T V N P N D T A E K D T K \square L$
$R$ VREVM SREVVSVAVHDTVRHAA QHM I K R WM S K PVV TVVEKD A SLMDVS DLF L GELAMRHPVTESLDTPL REAVKLM

$\square \mathrm{L}$ N K T VR DVM | $K$ | $D$ | $V$ | 1 | $T$ | $V$ | $S$ | $K$ | $D$ | $A$ | $R$ | $L$ | $E$ | $D$ | $A$ | $I$ | $Y$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $L$ | $M$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $R$ | $H$ | $V$ | $S$ | $I$ | $V$ | $W$ | $K$ | $G$ | $T$ | $P$ | $L$ | $K$ | $A$ | $A$ | $L$ | $K$ | MTDEVLTVSSATPSAAVVGLL

MRDA $\quad \mathrm{KII}$ I E G N N A I M M


IG DVM H T G D GI P A V G P D A S L T E AL M E M Q M T R P H L D D S Q S D P | L | $R$ |
| :--- | :--- |
| $L$ | $S$ |
|  | $V$ |
| $V$ | $T$ |

 V N E $\square M$ S Q DVVRIA P T D S I R HAA QL M

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

VK RYES G IVLNPVT ISPRKTLGEALKLM TVAEFM SAEVRSVHKKASIKEAGRLL

## $\square S K P V R E \square M T$

 SPPTTTCKPTDND GEDWSAM MTRRPAIAAMN D Q E S
$M R$ V $E L M$
RKTARQLLLD S T DVV CTVVD Q Q S L Q M A A Q CM
 VGERMSAPVITVAPKTTVSDALMLF






 $M$ VRKVKRYENGF $\square$ Q D P I VLSPDTTVGEAKELK

 | $V$ | $T$ | $E$ | $N$ | $T$ | $P$ | $L$ | $K$ | $E$ | $A$ | $I$ | $E$ | $M$ | $L$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $L$ | $P$ | $K$ | $S$ | $S$ | $L$ | $V$ | $S$ | $D$ | $V$ | $V$ | $K$ | $A$ | $M$ | MESDVKTVAPDDDVADAFKKF MTANPLTATKGETLWVAAERM


 $M V R K V K K Y E N G F \square N Q P I V I$ S P ETTVVAEAKKMK $F \quad L T R$


$L L M K V S D V M R G \quad P E N D P T V G L D D P A M D A L D V L$
MRVEDLMT S QVF TVVE QH DMID RVFFLL
$M K \vee A D L L K G K$


$\mathrm{k} \Pi \mathrm{s} \mathrm{D}$ П m
HAGDEV PRVGSTA TASEALVEM
$K \square P K E Y \square E N \square K V R D D M$
N T D


UniRef90_R11J23
UniRef90 A1 RS62 UniRef90-UPIO0041BAB9E UniRef90-M1FDV3 UniRef90_AOB5X5 UniRef90_C7RD70 UniRefefo-O8TZ50 UniRef90_F2NHU9 UniRef90-A0L6G8
UniRef90_D3Q8A0 UniRef90-V5SG99 UniRef90_E6U2J2 UniRef90-R5F7U4
UniRef90 D5H9L6 UniRef90- E31AT2 UniRef90-UPI00025572F8 UniRef90-D7EA83 UniRet90-F2TWB2 UniRef90-Q3INGO UniRef9O-UPIIO0036FFE8B UniRef90-UPI00047DF578 UniRef90_D3BJ92 UniRef90-UPIO0047AFBOD UniRef90-F2LDM1
UniRef90 CoQC64
UniRef90-KOWQE9 UniRef90-J3JNR7 UniRef90_-a9V1T3 UniRef90-UPI00029A3D33 UniRet90_A6UUP2 UniRef90-D8HVO3 UniRef90_UPIO004679872 UniRef90-14WSR6 UniRef90-UPI0004240E3A UniRef90-UP10003B3CD99 UniRef90_B4UHE8 UniRef90_A0A024RHDO UniRef90_C6JVY2
UniRef90-A0A023C7K7
UniRef90_UPIO004656111
UniRef90-H8KNL3
UniReffo-A4SXK
UniRef90-D8JTTO
UniRef90_D8PD09
UniRef90-D5E8P6
UniRef90 K9QS47
UniRef90-D8UKH0
UniRef90-L9XRT8
UniRef90_UPIOOO3821299
UniRef90-13CU25
UniRet90_W3RHJ1
UniRef90-UPIO0030D1EE1
UniR Ref90-R4T8E1
UniRef90_D9S2K2
UniRef90-A7NJE7
UniRef90-R7IIZ2
UniRefo- $\mathrm{El1RIT} 2$
UniRef90-G7Q550
UniRef90-×1AWZ
UniRef90-D1Z104
UniRef90 UPI00038221B7
UniRef90-B6BTF4
UniRef90-F9VP89
UniRef90_S3CFN3
UniRef90-UPIOOO348357F
UniRef90-L8H2L9
UniRef90-H6D9M0
UniRef90-B9L107
UniRef90-D5EE80
UniR Ref90-G5AIK3
UniRef90 B9LRT5
UniRef90-E4U6Q5
UniRef90_R4W841
UniRef90-M3FAY8
UniRef90_D9PN48
UniRef90-F6D628
UniRef90-Q6CWA8
UniRee90-UPI0003B34C09
UniRef90-O292931
Uniinefolo 288 R30
UniRef90-A0A059L346
UniRef90-E9CCW0
UniRef90-X1KZG9
UniRef90-R5Q3J4
UniRef90-G4SVV8
UniRef90-J6JF14
UniRef90-14EK80
UniRef90-U1P9J2
UniRef90_UPI0003B63C41
UniRef90-K2Q163
UniRefor_K20163
UniRef90_B5YDLE
 QGAVEDIVSNYAISPIFVAKPNDPVIDVVKRMLIEYDVGGV QAHVMDDQ1QMRKKQ ITVKPESDLEEAVKMESAHAFKKV SRVPDKPVDA MSRDVITAR GAD SVM NLVIDSDMTKENLVVGYEGDKMKEADGLMEESKIEKL
 P VG

KVSDIC RIP VIC
 Q

$$
\mathbf{S}_{\substack{S}}^{T} V_{A}^{N}
$$

CEHUMQR NKSLRETRLATPSTIVSCPATCTTDDAFE HMSKHEVSAMM ERMLDLPVYDAMNSPVQTISAEASVRDAVERMFENDFGGL ARLRRRTAEELMTAPAVTVRADEPLPCAARDMARCRVKRL QKAGTETVASIMSREPYVITRQAYYYEAMSSFLMNGVKHL LLGGGFDMVKDVMTTPVIKVKESDDVRSVVNIMLDKNVNRV
 RIRLLADDKAGVLEQVVKIISDDHLNDRRIVVADRQVGKV位 SKHNRNPVKS MASNPICVKETARLKDVLNTFSEKHMGGA ALCPMGTAR EVVMQLTVHSVTGDASLDDVLQKMLA H HVKRL KVA DLMTRHPKSIGADKLADEAAQLMEKHQUHALL
 HSALIJPPVERMSRPAHTVSVHASQQTAVVRMRDLIVRHLV

R KKLQSMLCKNIMTTEVLYVGMDSPLDQAWNLLRKRHVKAL

## $T V$

G S T
N SCMSKSVVTIEDSEPLMEALSLMKKEGI RHL

V

## QLR AT


EKVMST

KGPSt
KVS
MLSGRTEVS
YL LS KLTVD KVG
RKHKNDSVR KKDPTTPLREI MSPKVLSVRENARIQEVASLIVE


A D IM
PVKNVMTPR V

YVSEAMKKRLVTVNEKASKEEVMRLLHQKRLERL VLTGRHRVSAVMVTDLITAAHGTTLVEANALLAKSKKGKLV $\stackrel{V}{\mathrm{~N} V} \mathrm{~V}$ GAF GR DRRVAVMATDLVTAPAGTTLAEANDVLRSSKKGKL GAAFMEPVGKYMTRKVIYFSEEDSDLHAALSLIQQGLKMA YV QVKAPWADSDVMSTDVATVTPDTDVDEVLDLLSDPNTNRV QLYKEKRVEEVMRTEVMVLKPGDPLRVVLDKLIENLLYRRM GEPYKKKVAEIMTANPVDAHPDDFVEEVAMDEYEHKIGC E $\square$

MSKHIISVEKDVMDADADEVMNKNSIGRL
KDTFSRNVSEVVMTKDVVTGKKGITLEEANDVGKSTKKGKL

P V
PVRSFTAY苗SQLTPAISVRPEDTFERVVDMFASSKVHRL
NIRKPLLAKDUMSYPVKVVKENVSISGVDEEKKKYGHSG|
TVVVPQKVQHIMRRGVLTVNPDTYASEAASIMAENKVGAL
QVS AGTDVMTKAVITCSPQDSVAEVSKVMTVRRIRHLL
VETGAGTVGAVMSRQVPAVGADAGLGDVLAALASSRQNRV
DRMLDLPVDNLMTSPVLTAERSESVEATVERMFDNDTSGL
P V
LSILNVDDVMTRNPKVIKGDALATTAAAMINKHGIGAL
ERYMVREPKGLKPDDNLYEALLKFRQFRFGRF


Ref90 B4SN19 UniRef90_F9U9U6 UniRef90 U6NHU7 UniRef90 XOTPK5 UniRef90-K2F7U8 UniRef90-A0B5X4 UniRet90 E8RQV8 UniRef90_R5QH27 UniRef90-A3WFX7 UniRef90-LOB8S66 UniRef90-J2QAW5 UniRef90-C9CWQ1 UniRef90 UP10003678109 UniRef90-D6K6A7 UniRef90-V5SG35 UniRef90-M9RGV3 UniRef90 S7QN60 UniRef90-K2RE52 UniReffoconger UniRerg-X24 UniRef90-FOQWW4 UniRef90_G31UG8 UniRef90 C5TBJ8 UniRef90-V5BNAO UniRef90-A4YDF5 UniReors UniRef90-O57647 UniRef90-F8AFU3 UniRef90-UPIO0037BC2E0 UniRef90-A8AA28 UniRef90_F5z929 UniRef90 Q8TH73 UniRef90-U5W269 UniRef90_UPIO0046EBE2F UniRet90 B8GM11 UniRef90 W6N280 UniRef90-FOSM06 UniRef90 V4ZNB7 UniRet90 Fow7N5 UniRef90-EOU9V2
UniRef90 V6L5W2 UniRef90-B7A7T6 UniRef90 A3DP37 UniRef90-K9EGUO UniRef90-UPI000376014B UniRef90_S7TPP9 UniRef90 LOEHS UniRef90-E1K2L5 UniRef90 B2J2P8 UniRef90 O3B460 UniRef90-Q67N66 UniRef90-I2G579 UniRef90 Q8ZST7 UniRet90-A3CWH2 UniRef90-G7WM82 UniRef90 K0K7L9 UniRef90-Q0WD32 UniRef90-A1WTGO UniRet90 M5EHS UniRef90-H5T8D6
UniRef90_UPIOOO368A9F1 UniRef90_UPIO003655439 UniRef90 UPIO0034DE276 UniRef90-UPIO0047D2C08 UniRef90-L7IDB6
UniRef90 -14Y9F6
UniRef90 X8JES5
UniRef90-EOSRK6 UniRef90-UPI0003482904 UniRef90 F2QMT1 UniRef90-R1G9L4
UniRef90 A6UP32 UniRef90-UPIO0047D5B23 UniRef90 UPI00041AAB52 UniRef90-A0A059A5U3 UniRet90_A5EM11 UniRef90 K4MC77 UniRet90-CODSB3 UniRef90-E5A3X2群 UniRef90 UPI000466A96E UniRef90-MOCGH7 UniRef90-D6E7P9 UniRef90 F4A7R8 UniRef90-K7QXF4
Unireef9O_UPIO0046ABC9B
 GMQRD F I S I N S N Q S I F H A V EL L
 GD L L S A S EVVVTVVSPEDTVAAVVA M HEFSKEQY LMLLTVRDLM HSGDDMPLVPPDMKMSEALII M

VKRHE F GIIV I D PI T C T DLG DRTVEEVMLHRSK | $L$ | E |
| :--- | :--- | :--- | $M L R T V G D L M H G H D E$

PEVRA E LVV R DVVMT DPI S V D P S A T I K DVV F D L Q
$P G S R \square M D R P$
VA S L LKAK GR E Y Q S K Q R P LT A S
 VK R Y E S GVVVK D PVVTIT P D T LI G DLI G P G

 LTMRRVSELHSG P A P LMMLS Q A ID $M \mathrm{~S}, \mathrm{~V}$ V S $E \square M M$
$E$
$Y$ K VK T DM T K VREDMTP
 MNTHPVKLNGDMTVAEAVEAL

 $R$ VKR S E H G V I V V D P V $R P V S M L \quad R P R S V L H I D E N D S V$ TEAARQM LQP T DLLKRRVAEVMM SENVI QASPNA DVLSSLARM GSHRVS DVMT $R A V V A V G G K A D E F K D V E R M$

$K \square R D V M T P F P K R D R T$
T T P V D QVVRLL $R L I T R K I M L L E D \triangle V T T D P L T L R M S E T V A D Y L R L R$ MFKHRVGELAA KRPHIVAAEASITRAADLMM ETLEMQRRVETLSSQMSIDEAVQAF
ETLEVK $Q R N \vee V T C P E D$ M T E D V T T V V S P D D T L L Q QA Y E I I

GE IMA I A T R DVVVA Q Q T T T I I Q A V G I M
 GDGLPLVGADTPMADVLLVM
 $K$ K P E I M T D K L V T GHP D E G V R E AF F K M $L L T K V K D V I G I \quad R E Q N P V V K I E T A V R E A L F K M$ WL H K RLDEVVD N

T T P D P I T A N E D M T I G D LR A L M MDRQPAVIYCNTPLTKVVQVL MQQRVETLDRRVTL GAAQRI F
 RTHPATVSVRTTVREAARDM K T T L P D L T T VMRTQPATVGVRSTVRDAAKLM MAATVRDVM SAPPHTAAPDTTMLAEAARTM $\bigvee M A L K P S E P D I C K P N Y T V H E A A Q L M$
 NKTAKDIMTBSHVVIAHRDDTIVNVAKLL K SLK DVMT TNVEECTPD DNLYQAATKM
 R P A L R K VT Y E ELLRS GHVRDVATSS

$\qquad$
MSVGELG MNRTIGDIME



UniRef90 B4SN19 UniRef90_F9U9U6 UniRef90-G0EEJ1 UniRef90_X0TPK5 UniRef90_K2F7U8 UniRef90_A0B5X4 UniRef90_E8RQV8 UniRef90_R5QH27 UniRef90_A3WFX7 UniRef90-L0B8S6 UniRef90_J2QAW5 UniRef90_C9CWQ1 UniRef90_UPI0003678109 UniRef90 D6K6A7 UniRef90_V5SG35 UniRef90-M9RGV3 UniRef90 S7QN60 UniRef90_K2RE52 UniRef90-C0NGE2 UniRef90_X2H646 UniRef90_C7R912
UniRef90 F0QWW UniRef90-G3IUG8 UniRef90_C5TBJ8 UniRef90_V5BNA0 UniRef90-A4YDF5 UniRef90_K9F410 UniRef90_Q57647 UniRef90_F8AFU3 UniRef90 K9VKY0 UniRef90_UPI00037BC2E0 UniRef90_A8AA28 UniRef90_F5Z929 UniRef90_Q8TH73 UniRef90_U5W269 UniRef90_UPI00046EBE2F UniRef90_B8GM11 UniRef90_W6N280 UniRef90-F0SM06
UniRef90-V47NB7 UniRef90_F0W7N5 UniRef90_E0U9V2 UniRef90-V6L5W2 UniRef90_B7A7T6 UniRef90_A3DP37
UniRef90_K9EGU0 UniRef90_UPIO00376014B UniRef90_S7TPP9 UniRef90_LOEHS7 UniRef90-E1K2L5
UniRef90-B2J2P8 UniRef90 Q3B460 UniRef90_Q67N66 UniRef90_I2G579 UniRef90_Q8ZST7 UniRef90_A3CWH2 UniRef90_G7WM82
UniRef90-M3A867 UniRef90-K0K7L9 UniRef90_Q0WD32 UniRef90_A1WTG0 UniRef90-M5EHS1 UniRef90 H5T8D6 UniRef90_UPIO00368A9F1 UniRef90_UPIO003655439 UniRef90 UPI00034DE276 UniRef90_UPIO0047D2C08 UniRef90_L7IDB6
UniRef90_I4Y9F6 UniRef90_X8JES5 UniRef90_E0SRK6 UniRef90_UPIO003482904 UniRef90_F2QMT1 UniRef90_R1G9L4 UniRef90_A6UP32 UniRef90_UPI00047D5B23 UniRef90_UPI00041AAB5: UniRef90_A0A059A5U3 UniRef90_A5EM11 UniRef90 K4MC77 UniRef90_C0DSB3 UniRef90_E5A3X2 UniRef90_UPI000395B3DA UniRef90_UPI000466A96E UniRef90-M0CGH7 UniRef90_D6E7P9 UniRef90_F4A7R8 UniRef90-K7QXF4

VR T A K $\square$ A
90
100
110



 MTYNPKTIS PDVSAA

## $T \vee G$

 $\square M$ T S P A V T V E P A GVIKDFKVTDVAMKPYFVPDTTSLDEQMRQFLRRRTHFA LMGHAA GEVVMTR GPQTI AP GALAAAEADK DMNDRRDTVL
 SVVRV T I DK I S $\quad$ R R TIIA KV S S $\square$ M T PR
$\qquad$ ERLVTVSETTSIDDARELMHTHKDERV

 AiD ARRPVSEVMVSPVPTVSPDTELRRVAAVLLGTGLPGL
 I Q D D LT $\square$ A DVMTQ SVI KIT G N Q DI F VAL N L I R E H R I R H L K
 R DVPTVVK PD D DL K K A A R L MLE H DYR RV

FAGTPVTAAMSF AGELNQG GVVK LDK A S D V M T E D Y REQUCRRAA NRFIINEEVRRIMMQT DVVVI KPYLSVIELAQLLI KNKPRVY | P | $\mathrm{V} T \mathrm{~A}$ | I | H |
| :--- | :--- | :--- | :--- |
| E T R L |  |  |  |

## E

WRESSFYR S E IMM T P R D
F D T C P V E WVM S K Q
$\mathrm{Q} \square \mathrm{A}$
Q IA E VMTK E G
$\mathrm{C} \vee \mathrm{A} T$
 LNS ODLRAEEVMTVNPCCVQADESAIGADTKMLE GRFKHLL
 ERPSSTPVGEVATRPLFALPADTPLYEADAAMVERGI H HL
 $R \mathrm{~V} D \mathrm{Q}$ QKDFFELQPA I Y V R GSEPDITAEA

RMTRPPVMAHPSMPVAAAAHRMT

| $D$ | $M$ | $D$ | $L$ | $D$ | $A$ | $S$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $Q$ | $I$ | $R$ |  |  |  |  |
| $G$ | $S$ | $G$ | $N$ | $T$ | $T$ | $R$ |
| $G$ | $V$ | $V$ | $N$ | $R$ | $P$ | $V$ |
| $R$ | $V$ |  |  |  |  |  |

 P V K E F M V P
 VKH K K F AFMSPGLVTDEEDEDVRKAAKLMTMHNIRHL


$\qquad$
 DLD Q PVTAVMTPK ERLVVVKE GETREVVLQKMHEKRVEKV

 NYPPQTPIGDLMTPHPVTVQLADTLAHVLYLLNQHQ\|SRL


 TVA $S V M D P P$
$D A F T A P$
$\mathrm{T} V$ A AM T P S P


UniRef90_UPI00046ABC9B


 MAMKI RDVM SKDVQVARPEDTLHNVAGRM



 MMLKAKDIVMT T DVVVTIR GSA TVVAEAVVKKM

VA D $\square M$ HQ G D D $\square P M V R R G T P$ L K D A LVEM Q D $\square M T K E V V S I R G B A T V A E A V V K L M$ R S VK K Y E S GVVVK D P I T I N A D E P I S K L F E I R D DVV $\square$ GEIVSPVVLEPERPVHEAAALM
 $M T V A M \| L S E K G R Y V V T S P P S M P L R K V A Q E L D$ D F M V E S V T C R Q L M R P D T A A L P P P D R P V R E A L A L M


QF LSRTV VGGVMDHDVPT DE EGATTAVTARR■
 D AKDI MRTTVETVGPDDDVSDVL GRL TVQE R R IG S DE DV H TVV KG T P L S E A V NRL $L L T N N V S D L M S T G N M N P V V T G D K L V K D A L F V M$ $K V A A L M K P S R N A P A Q V D R N E D V R E T A R V L$ $V R D V M T P \quad G V V A V R P D A S S V E A A R L D M$

ALRS E SVESLMNPT
PLYATTSSKLSEVLR IM
SFDERVAK D $\quad \mathrm{M}$ VPR

$T$ D A P QVDRTE DVRD TARML
 VY DTP LTMPPS GTVGEAFNLL $M N R R P V V T F T A D E M P V A A E A V E R L L$

VK D $\square$ MK E E IVLVD K D Q N I MRT GII E P L S P D M Y L D E A I K A I
RKPAGKVGSLVYA VVPTIGETTDDIREAARLM EFSERMAREIMM S A P I K T
$K$ VA D L M H G
MTKDVVS

RKVKRHETAIVHDPVTVVTPEDSVAKARWIM


MAT LVKDVMTG | $E$ | $D$ | $E$ | $P$ | $V$ | $L$ | $R$ | $F$ | $R$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $Q$ | $A$ | $S$ | $L$ | $V$ | $F$ | $V$ | $A$ | $R$ |


$\begin{array}{ll}V K & \square M \\ \square\end{array}$
Q D MM T R E VI TVVNARTS VRE LAAALL
VN E IMM S R D V V C C V A P T MKK D $\ddagger$ Y TVVRE E E K V H D L L K V F
TVQEVMT TNCASCTVLDNI YEAAVKM

MVK FEAGVVR


KVKEMMTTEVECCTPLDNMYEAAVKM
 M S V S E DM S A R

KLEELME
$T D F L$

 | $R$ | $P$ | $V$ | $S$ | $K$ | $L$ | $R$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $P$ | $V$ | $R$ | $E$ | $V$ | $R$ | $R$ | DF GNRPVREVMVPRP EVVMCI EQ GSK L A D F L T L L Y DLGE TMVRELLMDPRSKGVIVSVPEMTVEDLSHFM

 VEE $\square$ M N S T $\quad V$ FSSLK P S N T I K E AV QL L
 A I ELL R E E V V T T G L R A S V L E A A E L L M G K THLNDDALMSKNVISVGID DRLTKDKELV MKVKEAMNPM V YKI SKNES LYKAFKL M I E D D F V S M K D T A F L K S T D T V R E Y H L L $V$ R D V M


Und
$V G S \square M E R D A Y S$ CS A


UniRef90－H6Q5J1
UniRef90＿F9UFJ0 UniRef90 B7GGL2
UniRef90－S1QKK
UniRef90－FOT2R4
UniRef90＿D4IQ60 UniRef90－C8RY62 UniRef90－F9DW23
UniRef90 UniRef90 UPI000471B11B UniRef90－W9DWN3 UniR Ref90－J9H6N6 UniRef90－A6US31 UniRef90＿W4EPX1
UniRef90＿B2V8K7 UniRef90－K5XKS1 UniRef90－M5WDE6 UniRef90－D7CQC7
UniRef90 K6Y7J0 UniRef90－F8AKS2 UniRef90－W4ES33 UniRef90－K9E444
UniRef90 W9H010 UniRef90－UPIO00367BA09 UniRef90－K0YLE2
UniRef90＿A8FUJ7

| Ref90＿ToLCW9 | IK |
| :---: | :---: |
| Ref90－A8PK19 | VTYSISGIPVIDQNNCLVGMVTHRDIRYE |
| UniRef90－F4C | AAGDFGFIPVAD GDRLI GALTDRDI |
| UniRef90－A5ULB7 | MEHKTSAMPVVD DGEL |
| UniRef90－U3T | VGEGVGFLPVLYDDGTLHGVI |
| UniRe | RDYFLRGLPVVDDSNVM |
| UniRef90－R8A | AQHR1RH1PIVDDEMQLIGLLTQRDIQTSCLLSLSENRRI |
| UniRef90－UP1000467D4E1 | KGHDLGCLP GDNDRLIGMVTDRDIVCKGLAAKNFD |
| UniRef90 K5BEMC |  |
| UniRe |  |
| UniRef90－Loc | GLGMSAVVDDAGHVLG円ETDGDLRRTLDRPDD |
| UniRef90－UPIOOO37B0418 |  |
| UniRef90 N6Y | SERRVSSVVVE GGEAVG WTERDALAV |
|  | CNO |
| $\begin{aligned} & \text { UniRef90-G2DXP8 } \\ & \text { Uninefoo UPIOOODFA } \end{aligned}$ |  |
| RRef90－D9S | QRMQ |
| UniRef90－G7Q： | RLLRNVGCLLVVADGRPAGMFSERD |
| UniRef90－K7K | ADNNIGSLVVLKPEGHIAGATTERDCLKKIVAQGRSPLHT |
| UniRef90－H1Z1J0 | Lev |
|  |  |
|  | OGGHVVGVVGHDVVS |
|  | SL |
| UniRef90－B2KC19 | TKTKAGATSVVDKNGKLLGFFTDGDLRRAL OAD |
|  | SNAKVAPVFENGDL |
| $\begin{aligned} & \text { UniRef90_B5IOG8 } \\ & \text { UniRef90_D7SJFs } \end{aligned}$ | ONVGALVVVVKPGEQI AGGII TERDY |
| UniRef90－C7L | RERGVSACLVGDAAQVAGILTEKDV |
|  | D |
| 90－W0K4K0 | GGTKJAPVFEA GDLWGIVSEDALLEAVLEN |
| UniRef90－M9RDV9 | SNHTRLPLYDEPENIIGTLHAKDLL |
| iRef90－UP100 | RIVHRTSCAVIYEDDKI GLI TDRDMTKRVI］AHG |
|  | Gogal |
| $\begin{aligned} & \text { Uni } \\ & \text { Uni } \end{aligned}$ | GNQSGGAVLNPRKKVVGFLS SK |
| UniRef90－Q1PUW1 | AENQIHHVPVVNDRKLVGLISATD |
| UniRef90 UPIO003731747 | EDC PVVNEKDSLKGLISLEN |
| $0-$－ 5 C | VDEKGCVTGMLTETDFLRRLKVDTFGELFQ |
| UniRef90－J3J | VESQSMVLPVL AGDTL |
| UniRef90－UPIOO22ECA22C | RESRHSRLPVAHEDDRITGFVH |
| UniRef90－H8FXC7 UniRef90 K9ERF1 | HLVVIDD SGRAIGGIVVSTS |
| Uni | TNKRFGCAGVVGPDGRLMGTVTDGDLRRHMADSMLARTAK |
| UniRef90－A4YE55 | VRDNDSRDPIV QDKKLVGIVTTRDIVNADYTPLSERKRA |
| UniRef90－W8 | LIGSGFPVV SGQELVGVTGRD |
| $\begin{aligned} & \text { UniRef90_U6BEY9 } \\ & \text { UniRef90-D8RL34 } \end{aligned}$ |  |
| UniRef90＇${ }^{\text {F8JYM7 }}$ | REQDIGDV VVAGDDTVLGVVTDRDITVRAVADGVDPSGL |
| UniRef90－F8A1E3 |  |
| ${ }^{9} 90-\mathrm{C} 5$ | TAKRENCVLVVDEVGQLLGVFTAKDLAFRIVGS GLNANQV |
| 㖪90－A6C | KENDVGG P VDGDHLVGM TDRDIVVRGVAEKHPG |
|  | AQHGLGALP CGKDNKLKGVVT |
|  | LSRFKIGVAPVVDEAGKVVGVV |
|  | D |
| UniRef90－S9SZT7 |  |
| 0 | SRFPVVDQQLKVQG｜ATAKDVLDF |
| O－C4FP4 | V VDTROVG |
| $\begin{aligned} & \text { ef90-Q1MYK2 } \\ & \text { Ref90-Q6LU32 } \end{aligned}$ | LENGFAGYPVVSDNNELVGGITGRDVRFVTD |
|  |  |

SDNKMHH｜｜P｜VVDGKGEVVGMLDYNLLYKRESDPVTTKDKT AAGDFGFiPVADGDRLIGALTDRDVVVAVASGA VGEGVGFLPVLYDDGTLHGVITERNI DGRIADMPYD
 KGHDIGCIPI GDNDRLIGMVTDRDTVCKGLAAKNFD

SRKGLGMSAVVDDAGHVLG川FTDGDLRRTLDRPGD
KEKGLRALVVSRHDEDAYGGVTETDVVYKVAAFGHDPKQM SERRVSSVDVVEGGEAVGA WTERDALAV NGMEDMSD CLYRFHGGPVVDEENRLIGVIAEKDVLHCLAPKGEDLMSE QRMQISCLLVTE NNLPVGGLERDVVRGTASGF
 －NLEVNHLLPVLSASGQLVGIVTSWDIAKAVAKNFL ASNNMGSVIITEDGGKLAGAITERDVIRGLARGDS RDTDHGGLPPVEADESLAGUVVQSDAQGYLTENDELDGDD VESNAKVAPVFENGDLWGVITDDAILEAVLEN THHNVGALVVVKPGEQIAGITTERDYLRK IVVQGRSSKST RERGVSACLVGDAAQ VAGILTEKDVVAQAARGTLDV VLNGIGLVPIILSDGTPYGVVTEHDLVRYLVNKDVN VEGGTKIJPVFEA GDLWGIVVEDAILEAVLEN DENNYTRYPVTEDGDRIDGFVSAKKMLPHZVAGREWYLEN RIVHRTSCAV 1 YEDDKII GLITDRDMTKRVDAHG PKRGHGAVIVVD DGRAVGVVTEADCQD LTGNQSGGAVLNPRKKVVGFLSEKDCDARMTTSSY AENQIHHVPVVN DRKLVGLISATDMNIASAKTNTKLLDE KKHKISRLPVVNTNRELVGMVTEKDIAMRLGSSKYGKLP


 KKHDIHRLPVME KEQDIGAVPVCE DHKLVGLITQGVIQESMPSKATSFELNN
 RQHGLKTLPVTG DAVLLGMLSLDDVTPPADPADP
HQTAHSAYPVVESNGKLVGIITSRDVVSK
KADKADAALVVSREGGLLGILTDTDVTRRVVA LGNDPGF■ AESPПSRFPVYQENDNVVGILSVKDVDMALAKGTDNN FENKHLGYPVIGKNSLKGGVFTDIRNVMPHERYAVL FENGFTRIDPVIDNLDNVVGUAYVKDLAKRVHENRDAELDE KKEQMRHRPITNGANEVDGLVTERDIKNALPSSLLKMPDE KEKNI RHLVVVNENDKIAGILTQRDI LRSLEFDYTRFL TRKGLGMTVVVERDGRLAGVFTDGDLRRTLDKGDD VENRITGFPVIDDDWKLVGLVSDYDLLALDTISGQGRTDN RARNVGCLVVVEGGKPCGILTDRDIALRVVAAGRDPKTT EQNSFHHLMVVNDRGELAGVISDRDYTKAI HPNVDMPSAT KDKGIKRIFVEDNGGKIIGVI SYRDLVNDIMNKSISEL ASTTHGGFPVVDKHHKIVGIVTSRDVIGKQDDDPIDRL TRKGLGMTAIVDAEGRPVGVFTDGDLRRVIER
DDLNVGVLPVCEGPKLVGLVTDRDITVRATSVGKSPSEC AERNIGAVVVLTDQQPSGVVSERDIVRHLHAGGERVLDW IDRGVSSLPVVDDDNHVVGFISDGDIMRA1AEHKTRSIFS
LKKKLGAPVVDASGQLVGFLSQQDCMSVMLKSSYHCDLV



VVIDDAGLDVGALNMHDLLRA
PVVDDSGKLVGIITRGNIIRA $P V V D R Y G Q L S G F F T L D D V L$ PVVDSKNHPIGVVSWRDLLKWL PVVNDQGLLQGVI SRQDVLKAL LVVVDEDADRLVGALHMHDLTRAKV
PVLDNQDKLIGGVSLGDI
PVIDDE QLAGIVSIGDVVKHMI




UniRef90 F2R2M2
UniRef90-W8KMK5
UniRef90 $\mathrm{J1O607}$ UniRef90-UPI00030CF5D6 UniRef90-K8RCl2 UniRef90-K9YV36 UniRef90-UPI0002E66707 UniRef90_K4KQP3 UniRef90-K2J3G3 UniRef90-B6YVFO UniRef90-A0A033UZT8 UniRef90-UPI00047E5D4F UniRef90-B8KIX1
UniRef90-J1KYK6
UniRef90-UPI00034BC3F9 UniRef90-FOT8D4 UniRef90 V4JO74
UniRef90 GOJRQ6 UniRef90_UPIOOO3829769 UniRef90 MOLMZ7 UniRef90-G2ML95 UniRef90-V2UQY5 UniRef90-11CZPI UniRef90-UPIO0035EA54E UniRef90-A7HAS2 UniRef90_Qow931 UniRef90 W4HHU7 UniRef90-UPIO00361CA74 UniRef90-C5R8X3 UniRef90-E3E3X2 UniRef90-A1WE89 UniRef90_UPIOOO472A614 UniRef90-C4XSC4 UniRet90_-_OTCQ6 UniRef90-M1 YoZz UniRef90-UPI0003605214 UniRef90 G9AFH7 UniRef90_UPIO0035F5295 UniRef90-AOYP66 UniRef90_Q2FS71 UniRef90-A4CPI6 UniRef90 - Fow6 UniRef90-K4RC30
UniRef90 A9WFBO UniRef90_UPIOOO3B34596 UniRef90-E9CG90 UniRef90-A6FFN8 UniRet90-L9W7H0 UniRef90-A2BJ56 UniRef90-Q3A5V2 UniRef90-M9SK24 UniRef90_M9SEL1 UniRef90-A0A016SCD3 UniRet90_N6YF76 UniRet90_R8AVN5 UniRef90-A5N198 UniRef90_UPI000372E331 UniRee90-UPI000375D1B3 UniRet90-FOSPM9 UniRefofo-L8D7N9 UniRef90-Q87R40 UniRef90-W7SWA3
UniRef90 G7M537 UniRef90-F4H643 UniRef90-A0B610 UniRef90-UPIOOO46CD844 UniRef90-UPIO00382460E UniRet90-UPIO002E9437E UniRef90-UPIo00225FA84 UniRef90-G1 X6L7 UniRef90-D6SM31 UniRef90-W7Q3K7 UniRef90-C3LSZZ
UniRef90-A3CWH3 UniRef90-UP10003B5CC8E UniRef90 J3L266 UniRef90-V6KYU8 UniRef90-UPIO003B671F0 UniRef90-DOLSG3 UniRef90-W3AFG5 UniRef90-R9PJB4 UniRef90-l1DXR1 UniRef90 W1PLF1 UniRef90_UPIO002554FE3 UniRef90_L8WNU5 UniRef90-13KCD4 UniRef90-U2CCG6 UniRef90-Q8T277 UniRef90_UPI00026C7653






[^0]:    K P Y R E L $\quad$ K VAMS T E I I TII GP T D S L L H AR R|I

