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UniRef90_UPI000410A5BF UniRef90_UPI0003B5BFE7 UniRef90_C6A1D4 UniRef90_A3I500 UniRef90_R5NH04 UniRef90_R5ITS1 UniRef90_J6Q668 UniRef90_A0A011RPC1 UniRef90_V9XJ53 UniRef90_R6WFB6 UniRef90 K8F9F0 UniRef90-UPI0004203ED5 UniRef90_UPI00037AE8CC UniRef90_S9R3B0 UniRef90_R7GRY7 UniRef90_Q987L3 UniRef90-D4LA61 UniRef90_C4ZD58 UniRef90_D6SB28 UniRef90_UPI000289D723 UniRef90-J2ZWJ0 UniRef90_R7QSW4 UniRef90_UPIO0024911AF UniRef90_C7DAV5 UniRef90_E3PY21 UniRef90-D4MIJ6 UniRef90_W7CMG8 UniRef90_A3DGK4 UniRef90_D0DHD0
UniRef90-E8MXL7 UniRef90_UPI00036EB33E UniRef90-LOKIJ7 UniRef90_D6S362 UniRef90_R5HY37 UniRef90- $\times 5 \times$ KA6 UniRef90_E6U3Q7 UniRef90-Q9V293 UniRef90_V6MLH8 UniRef90_MONNM6 UniRef90_UPI0003B583E3 UniRef90_IOI4X6 UniRef90_KOI6L1 UniRef90_LOLVL3
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UniRef90 K8E1U4 UniRef90_A1WG23 UniRef90_K9RP72 UniRef90_U5E984 UniRef90-M9RAH4 UniRef90_GOHYW2 UniRef90_F0M655 UniRef90-A0A024KER3 UniRef90_UPIO003454433 UniRef90_M0AN81 UniRef90_N2AHN6
UniRef90_UPI00034BB80C

E $\square \mathrm{N}$ E $\square \mathrm{E}$ K 10 20

30
ENELE GKVTNEGVVIGSDRFPVSVSSDRA\IGIRPEDVK Q M N F I D A VA I Q E GEDV G S YA I K L P E Q K K E VV L GI R P E D I K


 Q M N F L $\quad$ D A V V
 MNFLHGTLEGEFFKVNDVSLKVPAGKKELILGIRPEAVH


 $M N M L K G K I D E G G S V V I D G A S D P F S$ G S GQEVVLYGVRPEHED
 QMNF LDAQVEDDDVY GEMKLRLP

 D GKI R N T NL R $M N F L T A T V S S D G F D F G E F R L K L N L I G K E V I F G I R P B D I V Y$ MNFLE GNLLEKDFQDDAVEI RFPEDNKPVI FGI RPEDMY $M N M L P V D I E N G T A V H D A F A I P D P N D G R R A V L G V R P E D D G$
 $M N L L R G A A T G G Q F G I A A L N L A A P A S A N E V L L G V R P E H L V$ $M N F L E G K L T G G G T R I Q L A N A P A Q S E G R E V V L G I M P B E D I S$


 | $M$ | $N$ | $F$ | $I$ | $K$ | $G$ | $R$ | $I$ | $T$ | $E$ | $G$ | $R$ | $L$ | $V$ | $F$ | $D$ | $A$ | $V$ | $S$ | $F$ | $P$ | $E$ | $D$ | $K$ | $A$ | $N$ | $K$ | $E$ | $V$ | $T$ | $F$ | $G$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $M$ | $R$ | $R$ | $E$ | $D$ | $I$ | $Y$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $M$ | $P$ | $A$ | $T$ | $V$ | $E$ | $K$ | $G$ | $G$ | $V$ | $L$ | $S$ | $D$ | $G$ | $Q$ | $K$ | $L$ | $R$ | $L$ | $P$ | $D$ | $G$ | $G$ | $D$ | $V$ | $I$ | $T$ | $V$ | $G$ | $L$ | $R$ | $P$ | M N FIIK GRI H GE QI FVVSDSVLPARGGGQPVVVGIRPCBID

 | $M$ | $N$ | $L$ | $K$ | $G$ | $H$ | $L$ | $Q$ | $G$ | $R$ | $F$ | $V$ | $T$ | $A$ | $S$ | $A$ | $N$ | $A$ | $P$ | $A$ | $A$ | $S$ | $D$ | $G$ | $Q$ | $P$ | $I$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $I$ | $Y$ | $G$ | $R$ | $P$ | $E$ | $H$ | $F$ | $I$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $M$ | $N$ | $F$ | $P$ | $V$ | $E$ | $V$ | $H$ | $G$ | $D$ | $S$ | $V$ | $V$ | $D$ | $T$ | $G$ | $L$ | $E$ | $V$ | $P$ | $V$ | $S$ | $A$ | $D$ | $E$ | $D$ | $A$ |
| $A$ | $D$ | $L$ | $G$ | $V$ | $P$ | $E$ | $D$ | $I$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $N \mathrm{~N}$ LE GQAE G R V L K V G GI K I E L P R E K G K V VR I GII R P E D I V

 M N F F DVVQ

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



Q M N F V V N A K V S G S D V T L



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UniRef90_UPI0002D967C5
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| FE G R FK D G H F VS N D WK V L DP N P DVD V V F G I R P Q D I |  |  |  |  |  |
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Q M NLL T L Q C E D N Q A L L G R H K L D I S N L G K Q V V V F G I R P E D V H





MNLVVRGELAANGL RTDHFDLEFAVDDLEVTMGI RPEDI Y


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


M N F I P A K V IE Q D GV TVVALP FP KP ES L K D I L L G L R P EMI T

$M N F F K G E D E K N G A V V G G V D F G L T G P G R K V V L G A R P E H M A$

E M N F I F R P S S QL L V E H G L




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

INFFK G E NGELFFANSSI RLHIPPKKEAVLGIRPEH
MNLVEAAVHDGYAELGALRIPRSVDSDRVVIGVRPE
$M N F F N G T F R R D G R V A G D I R F P V E N D G Q S V T Y G I R P G H L T$




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UniRef90_D7A2R0

MNFIPVTLNKQHVDLAGQTLPLNQSSANATLGIIRPCDI|H $M N F I K G E M K A D G F Y F Q G G H L D D V E G D K K M M I G V R P K D D I A$


 MNFVEGRI ERGGVELSSGYAFSAGAAEGPATLGFRPEHLV M N F I R G K V D L N K V K D G E H A I R L P E S G Q D VVI G L R P E N I
 $M N L L S A T V E G G G$

Q M N L F N A R L E K DG V S CA GA T I A L S V G E R DI IL G V R P E H V L




M N F L D A TVVEGNGLSDGS I R I A A G E P GK R V R L GI R P E H I L
 $M N F D P V E I T N G D F R \quad L T D P D F W G N R T L I L G I I R P E H L I$












 MNFVPGRITADGIDLGAMRIARNESAQEVVVGIRPEHFE M N F I E GRIVVDT F ESNGLKI NLSGKAGPATLGIRPEH



 Q M N L L




$M N F L P V Q L S K G A A T L D G T R D A V P V E R Q D A E V G V R P B E H L S$ Q M N F Y N V K V D G N K F T D G N S MV L N D EN Y K E V I L G I R G E D I K
















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## UniRef90_A6VYz9 <br> UniRef90_F9TS22 UniRef90-UPIO0036BE02B UniRef90_B8DK16

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UniRef90_UPI00037FD716
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UniRef90_D7A2R0


## 0

LV I |K G K|V| ${ }^{60}$
70
80 WRAVVESVE YLGS GSVLGCRVGGEEL
LVNETKSLSKDDKAGAVTVNVVEELGADGYVYVGGQDKDL V S

 $\square G A D A A G S N$
$D P D G A D R N A R S L V E G E$
 $\vee G \quad G P D E P G I A$
 $L L P T V G A A D A P A R V A L D E H L G P R A I V T V D A R G T E L$

 IVDNDY $\square$ NEHQ EDCFEGKAEVVEFMGSESYIHMVKDEKPF



L V APGDAGALNATVDLVEELGAGRVIVVDLDGAPF



VD LD NEAVL

A D GQPQ NA I T A GVVVVVEPVGSDNFLHLDVGBEF

## V S Q Q K T S A Q G V

$V$ G Q G G D G $\square S A$

LASAEVTGAPDGA LL

L A A GKGD
$M T T D G A G L A T D$
LLTDSVRGTGGTVFT



L L VS S E E D ${ }_{S}^{\mathrm{S}} \mathrm{P}$
SGGVGGAD LQVELVEEL GADCLI HGRTLSDPLL




|  | - ${ }^{90} 100$ (10 |
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| UniRef90_A6VYZ9 | TVEAPSSHTVNEDDEANFY |
| UniRef90-F9TS22 | VVAVDGQHRYQPDTEVWLALLNWDE |
| UniRef90-UPIO0036BE02B |  |
| UniRef90_B8DK16 | SVVVDGVPTDAVGAEI Y L H C |
| UniRef90-UPI000362292F | VVRVNGREVPMKGETL HVVP |
| UniRef90-B4VIZO | QARIPADHVVKVGDQIWLSINADKV |
| UniRef90-16XN15 | VVNLDPRSQILEGEEAKLYFMPENMMV |
| UniRef90-B6A303 | SLRLLMGDVDLQPGDAVAPGL |
| UniRef90-U4K7C3 | A CRLSPEFDVNVGEVTELYFDLSKAVFFD |
| UniRef90_UPI000373DA81 | K A FVPGVS SLRAGDTVPLRLAGDH |
| UniRef90-UPI0003802C91 | VARLRADARIAPGQHTRLAFNLDK |
| UniRef90-D4TED3 | NMQVERDRHLHPGEKLKICLDLNN |
| UniRef90_UPI000360FF5F | VVRVDGRDHAQPGDMITVAPHPDRVHL |
| UniRef90-R9LM80 | VLRIPTRGGFSYGTEIHFTFRSDLLHLFD |
| UniRef90-A4TBU8 | TSVVDTARGITEGTGVELAVRQGATHLFD |
| UniRef90-R4VQF4 | VVEERGVHQVHPGERLEI HLDPTRLY |
| UniRef90-W6WQM5 |  |
| UniRef90-W8GZW7 | VVRADGRIPPRRGEVITLLS YAAERT |
| UniRef90-R5QTT7 | 1 VKAPGGTTLTNGVI GRFAYKMDKMHFFD |
| UniRef90-K2PG20 | TAVVDGGYPARHGMTFEGGVPAEQV |
| UniRef90-UPI00035F8587 | VARVSADSKARQGQKVQLALDTTK |
| UniRef90-A6UFH3 | IARIAHSGPVREGDELTLSFDPSEIHLFD |
| UniRef90_UPI00047966D6 | QVRVPPDRFLR】GEELWLSLTPEKLHFFD |
| UniRef90-H0J2B1 | TARVGPKCAISPGERLPLRVDMARAVLFD |
| UniRef90-W8IRD6 | RAEGDMSIRPGDRVSLTADPSACR |
| UniRef90-Q98G42 | SVMTSEAVHPEPGSQVGLK】SPDDMH |
| UniRef90-UPI000372517E | HFIVDGNSTINS G S SLKVGFDP LHS S |
| UniRef90_G4F8D2 | TARVGPKCAVVAGERLAL R 1 D M M R A |
| UniRef90-J2L715 | S CLLFRERLLAI A Y D D TVVSIAI D P A S V |
| UniRef90-UPI00035D4AA5 | TIVETGRSTARGGETI GVTI DPAQLH |
| UniRef90-A4BGN1 | EFIA K M DV CPQDGSTI |
| UniRef90_Q1ZA61 | VARVSQDQMIKHGDMKPMHFDMSH |
| UniRef90-Q11BS7 | TARTDGE\SLRHGDTVWLTPEPDK\HRFD |
| UniRef90-D3SRM9 | IIA R\|VP S DVDIE S GDHI S |
| UniRef90-A1JIE0 | I ARLS HEEMPTAGSVLYLYLPPAALHFFD |
| UniRef90-A0A024KBX5 | 1 ATAPGRVVPAVGSTVSVQAQPGSLYLFD |
| UniRef90-UPI00037DD683 | SVKADGLATAHPGADFRIG\PPKACHLFD |
| UniRef90-UPI0002D3669A | C CRLAP DVAP QVGEALLN |
| UniRef90-F8F9D2 | VVRVHPHYRYE E GEKVRLAPEMSK |
| UniRef90-X6GNZ0 | LAVVVGQCPVASGDTVDLKFDTSHLHLFD |
| UniRef90-M0JTF5 | RII DAS L R PSPDETI QFGFEETALYLFD |
| UniRef90-B6A3N9 | KVFTLDREALKAGPKVNVAFPAQYL HVFD |
| UniRef90-R7WLC5 | ARLSTESAVRQGKPI ELWFDPAKVSVFD |
| UniRef90-J2JBL9 | S SRVMGDVTFVPNTRIA PGLDDAK |
| UniRef90-UPI000381D358 | T LRVQGVPEVTEGQDLELGLDPAHVHLFD |
| UniRef90-F2J6W2 | VVAAPSAARYEHGARILLHAPASA |
| UniRef90-A8U4M8 | \|VASVPPTVVRTMHETI R L A L |
| UniRef90-T1Y481 | I A RVNTIT T A HIIGKTMRFNLNTTFCH |
| UniRef90-W8IGV2 | L CRFRSSRTPDVGAVQKLYVDMQNCSLIFDK |
| UniRef90-M0L7C7 | VAVTEGLRDVAEDSTATVRLPSDAVHFFD |
| UniRef90-K9TAU3 |  |
| UniRef90-UPI000380985D | TVKAASEIPVDTGDSLEVGIPAKACYLFD |
| UniRef90-B9K1D4 | I A MVMEDQQI RKGEKV TI HI DSKRCYLFD |
| UniRef90_UPI000375D5E7 | I 1 RGDGRTPPTPGETVNVAVDLEETHLFD |
| UniRef90-A0A038GYQ5 |  |
| UniRef90-UPI000374A9DE | SFVTKAFRTLQPGQPVRFSIESASIHVFSK |
| UniRef90-R7Y3A7 | VAR $\mathrm{V}^{\text {a P R SVPAKGAKVWFT I APGRI HAFD }}$ |
| UniRef90-UPI0002D52FE7 | VARMPANDSLKAGDMAHFR |
| UniRef90-A9CL93 | NCR\PGDMAPTPGEILTVSFDPGRCVLFDQ |
| UniRef90-R5RWY2 | VARVSKYEVSDVGEEI EFVFVPHRMHFFDK |
| UniRef90-R6S3H7 |  |
| UniRef90-H0E0L2 | TAALAPRRPLAPGDEVELADDTSRLQFFD |
| UniRef90-L9XER9 | MARVSADFEPAVGDVVDVTFDESKIRLFD |
| UniRef90-M9RFP5 | TVSLGGVHHAVTGDII R F GVDPKNLHFFD |
| UniRef90-A0A023D | VVIAEGDADLRIGADLSFAFPAAHCHLFD |
| UniRef90-_UPI0003AA884A | $V V Q A S G A H P F E L G Q T L S V H V D P R H L F A F D$ |
| UniRef90-UPI0003670D44 | II ESPAEFDTSEGDQVTFYFDSSRLHFFD |
| UniRef90-A6U5W2 | TVEFPRSTP\RVGEPI HVRPNMEAIHLFD |
| UniRef90-U2EF80 | RALIDSESLVES DKI NLTVRKEKVHLED |
| UniRef90-F5J8W1 | MARLPT GSEl R VGEKVRFSVDLS |
| UniRef90-A0K5E7 | VSRVHPAANPQPGQTQSLLFDVSKAVLFD |
| UniRef90-C3MCV4 |  |
| UniRef90-UPI0002EA15C6 | RVRLGGKHSLT GQPCRLFWSADKAHLFD |
| UniRef90-UPI0003638824 | YVLITS GKKLKEKDIINI RFNKDK |
| UniRef90-S3B9D5 | VVRVSGRSVPEKGTTLHVVPHAGETHVFS |
| UniRef90-UPI00037FD716 |  |
| UniRef90-IOICl8 | V ARVKAEV I EEGTAVKLFLDPDKDHL |
| UniRef90-W815W5 | $V$ SRMLNPRPLRSGESVRMSFDLS RAHL |
| UniRef90-D2S1Q1 | RVRVP G GVKPEENESLTISFDEDD |
| UniRef90-A3YDH4 | S HSVVS ELVFAKGERVNVKDEPSKCSFFD |
| UniRef90-X5L9F3 |  |
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| UniRef90-A0A011ABQ7 | RIIRTDGRKVPTLADTVHLQ |
| UniRef90-M2VZA4 | CVRAPRPIELTEGRDVTLTAAAEHV |
| UniRef90-F3IUJ5 | C CRLLAPDVAPQVGESLTLQFDPARVL |
| UniRef90-C0C136 | AARVEPDTAARRDHMVTWGMDMDKAHIFD |
| UniRef90-G9WFA3 | VVKVNQRDNAKVGQTITLAMDLNKAHF |
| UniRef90-UPI00036B |  |
| UniRef90-UPI00037E70DE | CVKIFTDQVIKIGDKLNLNDNLDKI SFFD |
| UniRef90-I4BKG4 | ALTSGRHGVGEGDNVTMRIAESDVHVF |
| UniRef90-J3CBB4 | S RMLNPRKLETGEIVTL |
|  |  |

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UniRef90 E2XR8 UniRef90-Q2S9E6 UniRef90 UPIOOO3631FBD UniRef90-HOHSP2 UniRef90-UPIO00360A7DD UniRef90-B2TD43
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UniRef90 U4UXC1 UniRef90-R5×396 UniRef90-G4RCY5 UniRef90-F6E7V7 UniRef90-13X141 UniRef90-C6AX95 UniRef90-R6PGV4 UniRet90-UPIOO04679FE2 UniRef90-A6F055 UniRef90-J2TV61 UniRef90-F7Z6Z4 UniRef90-UPIO0037A2CCA UniRef90 K0JU01 UniRef90-NgVWZ1 UniRef90-D1BD64 UniRef90-UPIO00262796C UniRef90 K2MJP5 UniRefofo-W81E78 UniRef90-RSAIN1 UniRef90-K1LHA8 UniRef90-W6W693 UniRef90-UPIO0034B99DE UniRef90-DoLWJ3 UniRef90_UPIO003F839F4 UniRef90_UPIO00377D455 UniRef90-Q3MBG4 UniRef90-V6DV70 UniRef90-B9JHA1 UniRef90 UPI00041FFF34 UniRef90 UPIOOO37D5E68 UniRef90-UP100004689162 UniRef90-C7DE55 UniRef90- WOH663 UniRef90-UPIO004656118 UniRef90-B6A4J9 UniRef90-I0RV02 UniRef90-UPI0002378E28 UniRef90_C0Z8N6 UniRef90_UPI00046306B4 UniRef90-C7C5C7 UniRef90-UPIO004673E9E UniRef90-UPI000304A279 UniRef90-X7E293 UniRef90_M9S625 UniRef90-U4W4H7
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UniRef90
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10 P ${ }^{10}$ 20

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MNFIIEVKFQSPCLITGDFRLTLIPENGRTLTLGVIRPENWN
 MNLTTRLTPEGVLFEGHTLPRPQGDDEVTLGLRPEALR MNFLSAKVSNRTI EVVGQRTPVAAEEGELTFGIVRPEH MNFMRGKLVANGLEHAGQTLPLSWLIREVILGI RPEHVT MGFMKGKVTEVQLDAGTLSLPLSGPGSAVTLGURPEHLE
 MNFVTAELVRDAVAFAGYKDPDPDSGQKIILGI RPSDFE MNFLPGRVDAQGVTDETVRVPVNGTSQAVTLGVRPEHDE MNFLPVKVDD VREGGVKIELPDSGDNLSLGURPEHL

 MNFIDPATLDNGYDQVGHQKTYLPHYQQSLTLGI RPEHAG MNLRSAALTESGARLGNTVIPLSANLSSITLGURPEAFS MNFVEGRIPGGG MNFIP PEFHAPLLITHSFRFTLPEDGQTLILGURPEHER MNL PCAVEDGAVVVEGQRLALDAGGGELQLGIRPEFLR MNIFSGS REAKKLGAY IPATVDKTDGG| RPEHI QMNFDEVNVKDDVVEFNDNKDHDTKGSGKMILGIRGEDIK MNMTEGELLDATLDUAHFRLPLPDSPGRITGCRPEAIT MNFRPAGVAEQAATGGGRSRPVTDDRPVTLGMRPDKLE MNFIEG\|LERGDAGLGDVAFQLPDEGEAVVLGIRPEH MNVLPMTATGGKVHLEGLSDDLSDGNGAVQLGI RPEHLK $M N \square F T \square P V Q A E G V T \square G G H T L P V P R T V T D A V V G I R P E H F E$ MNFIDCTVETASSQFHSDELPINGHGESVTVGIRPEHLS QMNFTEAYVEEEK RGRIPDSFPKPTCILGURPEHFK MNFDPAVVEGERTVAGKRVFTDEGNDDETLGVRPQHVE
 MNLGTFTVSDGUAQ GKARIPLSREKGKVTLGERPEALD
 EMNLVDARDDGSSFSDGSTLPLSARPTEAVIGTRPQHLS QMNFFDAKLQKSYVTVCGVDFGISQEKQDITLGVRPEHIM EMNMVETRLTGEGLALSSQVLGLPDEKEDVVFGIRPEFIK $M N \square L S D P V E N Q Q V Q L L N F K L P F T Y D N S S U Y L G \mid R P E D V T$ MN ITATCRHDAFA IGEQT TPCPEAWQSVKLGi RPEHLC MNFLDATLRSADASSGGFSVTASVGGAPVALGIRPEHLV MNLLEAPVVDGGVQFGGTTYDDAASGSTVTVGVRPEDLV MNFIPVEITHSQFRLTLPEIWASADGQTLILGI RPEHLT
 $M N L R T V Q V G N G S R R G E L N V P L T D G L S E V T V G V R P E S L S$ MNLVGADLAGAAVAGTDLDRP MNFVKASPGESGAVLLANKVSKSDPGPNMQGGURPEHIT $M N F L E G Q L R D R G V E V A L P V R P G M E D G S A M T L G \mid R P E H V V$ MNFIPADVAEDGLDFGAVKETLADSGRKLVAGIRPEHI MNLIDGTVSDGELRAGGLRLTIGGPADSVTVGVRPDDLL MNFFEGKVEPGSLNGHDEAVPMEGAEGDLVFGVRPEHVF
 MNLDGKLLRGGVELENQRIRLPVDARRVRLGI RPEHLE DNMFEATVTGSGADFGTHPLPLSADHDRVTVCVRPEALK MNLLPVDVVDGTVELKGQRLPA GRYTLGLRPEHTT MGFLRGHLSRNGARVG LPLCAGGSPVTLGIRPEHLN MNLLDARFQTRGVCCGEQWLPLPQADQPVTLGVRPHDLI MNFIEG
MNMLKGRLTSNGVRGGKVNVAMPSSGREVILGLRPEGAT EMNMVEAKLENDEYQLATLMLPASKAQKVVVFGIRPEFIK
 QMNF UNVRVIDNDVFIENEFLKHS DKNKEVIIGLRAEDIK MNMVPMTYNMDAWYFDGQKVADAEGKAEYK MNFLPARVRGDVLELGTVPKPAVVGGKLLIVGVRPEHFD MNFLTGTVAGPRLDLGGQSLALPEDGRDLRLGURPEALE MNLIDCAIKKQGDQTGGLEIPVPPKNQPVVMGLRTEEMM ETNLFRSSYRNGTVDLGAFDVDVPLDSDEVITGIRPEDTN NLLDVTVTNEDLHIRGTAVGGVTPGGAARLAIRPEDLR
 MNIGEGIMDKGCLHVDGLQIPLSSGQLKVRLGIRPEHIV MNFFEGRLRNADI MNFVEGRHRNGTFTSEFFEYPFDGDTSDVVLGVRPEDID MNFLPARLHADTPVLGMTALPFDSSDTLLSLGIRPEHVS MNFFPASLTDVGVRLGEVTINRRGKPKNIIVGVRPEHLE


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 LNERRTERTEEKFGLEVEVKVVEPLGRETLI RVGLPGSGV

 DASEVSDSNGRYHPTEVTVELTVETGPDTLVFTTFNNARVM
DSEQKNDVD DTV
DANGADRNARHLAESECLI EVVVEPAGS


## L

L
D
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L

ANT DCP
FDSLNMELRK
LS K K G T G

| $A$ | $L$ | $L$ | $T$ | $T$ | $V$ | $E$ | $L$ |
| ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $G$ | $V$ | $E$ | $A$ |  |  |  |  |
| $G$ | $W$ | $K$ | $G$ | $T$ | $V$ | $G$ | $V$ |
| $A$ | $E$ | $H$ |  |  |  |  |  |
| $D$ | $L$ | $K$ | $A$ | $T$ | $V$ | $N$ | $V$ |

$L$ SPE EAH
$L A P$ Q GQ G D A ALLP R
$L E Y K E A K R R E K N S V G$

EY
NDDEA
EDGYSAAAGSE
FSAEVVDVER RL

VFRERNAK
LVSSQGVGMEMV
VSET P APA
L
L
L
L
L
LDTDQQ NGAQ

LTSD GEQPILYTENLGAN
VANGNAPGP


 LARGPAD
 V VE S G R S A

T
P
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V
LVEEGRSA
GTWAADVTVVEPNGNENFL
LV AAGSPNAFDAKVVHVEHLGADTIIYGESDHTLL



## Y E E

| L |
| :---: |
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## $\mathrm{G} V \mathrm{~V} E$ <br> GVEA G

 AGHGSFDVVESTG VTTEESTEPGM NRL 1 VDLAGAD


VTVAN GAAHEG
DPESAD LDE

FDASGQ
V S T D G D WS
DEGMVDPTAHA पAMVE
LAND NSPKGEVVKGDVILVE

D

DV EVVTDA
VVEAGSDP
PADNES LADAWK
$V L R$
$F$
A RVVK AVE H G

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V VEPGN
``` \(\begin{array}{lll}R A D \\ D & Q & Q V \\ L & V & E\end{array}\)

IVASEDTGDGLIV

PASD
LA EDGQ
LVPEGTPD E GVVALVEAL GHETS


\begin{tabular}{|c|c|}
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\hline Ref90 UPIO002F096F6 & NVRLHPGRPPHRGDRLCLELCD \\
\hline UniRef90-K9PU27 & NVQVGGDVRLRPGDRLS \\
\hline UniRef90-UPI00037F123B & VIRTDGRRPPALGERV \\
\hline UniRet90-W1DU14 & FRRHRGTVPEKGESLQLGFSPADV \\
\hline UniRef90-FOLAD1 & LLLDGQRHDR \\
\hline UniRef90-G0AJQ7 & HPRAAAKPKDQMQ \\
\hline UniRef90-E2X & MRTRGDMASQYGET \\
\hline UniRef90-Q2S9E6 & SCRVAPDSAGKL \\
\hline UniRef90-UPIOOO3631FBD & T MK1 \\
\hline UniRef90-HOHSP2 & TARLRADANVAAGE \\
\hline UniRef90-UPIO00360A7DD & IARVNARSHARSGQT \(\square\) D \\
\hline UniRef90-B2TD43 & VAKAPGNTRLAPGERAS \\
\hline UniRef90-B8F3M7 & \(V Y R Q N D I V V E E G D E M S I G I N P N R ~\) \\
\hline UniRef90-F8L & \(\| A R V D S S 1 / E P D V E R V A L T F D E S D\) \\
\hline UniRef90-UP10003B74E31 & VVLA GVRDLSAGDRVPVYIDAERLF \\
\hline UniRet90-E3GCF2 & RYTRRHRGADEKGDTLTLGFSPAD \\
\hline UniRef90-M01555 & SDUEPEDETISITFDESDL \\
\hline UniRef90_C9P4L8 &  \\
\hline UniRef90-S9R6Z0 & VEADAGYRIVPGD \\
\hline UniRef90-K9×300 & QVRTPPDRLI RLGEQLWLSLSPDKL \\
\hline UniRef90-S9P7K5 & KVRLPEDERLAPGETCWLQL \\
\hline UniRef90 S5SR99 & TVALRQRAVPGEGETVELALP \\
\hline UniRef90 R5×396 & K Y DLK \\
\hline UniRef90-G4RC & AVVVGPDAEIGEGDIVGL \\
\hline UniRef90-F6E7V7 & GTHPVASRDQVHLR \\
\hline UniR & HaAARISPDDVIEVP \\
\hline UniRef90-C6AX95 & VVRAEGDİAVPGDRVSTAERA \\
\hline  & AVREN ENE \\
\hline  & TMRTDGSDPVQEGSKVT \\
\hline UniRef90-J2TV61 & VVRGDGNRNVEDGETIA \\
\hline 72624 & KAKWAGQWQLDPDDRITVYFSPEDVHFFD \\
\hline UniR & KAVVPARERYTEGDTV \\
\hline UniRef90-K0JU01 & VVRVDGRTPPSLGQTV \\
\hline UniRef90 NovWZ1 & DADFSGQVGQE \\
\hline UniRef90 UPIOOO262796C & VVRADGRRPPQLGETVQ \\
\hline UniRef90-K2MJP5 & LPGRVHLSPGTQV \\
\hline & \\
\hline & \\
\hline & CTRLVPSDVVES \({ }^{\text {CGKEQRFHFEMSNAHIFDK }}\) \\
\hline UniRet90-K1LHA8 & \\
\hline & \\
\hline UP10003 & QIKVMGNLD R \\
\hline  & VCRTEGTTRVKDGQKVGVL \\
\hline UniRef90-UPIO00377D455 & TARLPGR TREDSQVGLAVDR \\
\hline UniRef90 O3MB & RVRVPSDRI I NVGEQI \\
\hline UniRe90- \({ }^{\text {a }}\) &  \\
\hline & \\
\hline UniRef90 UPIO0041FFF34 & \\
\hline  & V \\
\hline & T \\
\hline & KVRLPEDKPVPQGQ A \\
\hline UniRef90-UP10004656118 &  \\
\hline e90- \({ }^{\text {ary }}\) & TRRDRVKGDRIG \\
\hline UniRet90 IORV02 UniRef90-UPIO002378E28 & KARVDAREVVNVGESVG \\
\hline UniRef90-C0Z8N6 & TVNQEMETPYKTGLNVNLLFPKDK \\
\hline UniRef90-UPIO0046306B4 & A AAVEPTVQAKVHDQLRLALNPDR \\
\hline UniRet90_C7C & \[
\overline{\mathrm{V}}
\] \\
\hline UniRef90 - & \\
\hline UniRef90- X7E293 &  \\
\hline UniRef90-M9S625 & T \(\square\) RVRGD \\
\hline UniRef90-U4W4H7 & HMQLTGRSDAVPGGTLPVTVNPDK \\
\hline & \\
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\hline UniRet90-F6D0P3 & - \\
\hline UniRef90 A4EPQ0 & \[
K M F
\] \\
\hline ef90 K6VN47 & \\
\hline UniRet90_MMMTF6 & RVNGVFRGKEGD \\
\hline UniRef90 R6RL60 & V S \({ }^{\text {S }}\) \\
\hline UniRef90-08C & \(V\) VA \\
\hline UniRee90-UPIO0036E1F & SVRLDGFSKVQPGED \\
\hline UniRef90-UPIOOO36851A4 & RVQAAA \\
\hline ef9 & \\
\hline effog & \\
\hline ef90_UP10003B2 & \\
\hline & G D \\
\hline UniRef9 & RVRVPAQLLVKVGD \\
\hline UniRet90-C2W3W & SAKVIGQLILKKGDTVKLQFPVQK CFF \\
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\hline UniRef90-E4RCG1 & Qagdrveklatide \\
\hline & GDT \\
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UniRef90 OOFSU5 UniRef90-UPIOOO2627357 UniRef90-UPIOO03959B96 UniRef90-S6HCRO UniRef90-F6BRW0 UniRef90-M3ЕМ55 UniRef90-UPIO003AA8C9F UniRef90_U4V2FO UniRef90-S9R6W4 UniRef90_UPI00047EC47A UniRef90-UPIO0046505F5 UniRef90 DoJ065 UniRef90-10QUV1 UniRef90-X5JZ04 UniRef90-A4KKA2 UniRef90 A3SLE8 UniRef90-UPIO0040B9F1C UniRef90-Q606S1 UniRef90-D0L9D7 UniRef90-K2LK19
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UniRef90-X1P922 UniRef90-RODSY4 UniRef90_UPIO0046EE05F UniRef90-Q16A77 UniRef90-UPI00034D324A UniRef90-UPI000381B9A6 UniRef90-H8G647 UniRef90-A9HVZO UniRef90_UPI0003B6921F UniRef90_D3FIF3 UniRef90-F1VV17 UniRef90-D5X9W7 UniRef90-UPI000369D4AF UniRef90-UP10002D6B82C UniRef90-UPIo003624E53 UniRef90-A1SMZ5 UniRef90 JIPAW0 UniRef90_UPIOOO4724973 UniRef90-JgYYW4 UniRef90-UPI000393EF81 UniRef90-Q11AN8 UniRef90_U4K3U9 UniRef90-A6F8J8 UniRef90-D9X9F0 UniRef90-UPIO0037FODCB UniRef90_W5TF74 MNLVPVRI RGTHVQLGDHSLRLPERREEWLLGVRPESVF MNFIP\QITN MNLVDAKVTATGMSDGGHAVPISDKGARVKLGVRPEDLS MNFAEVRITASSFADGELESPVPPANTPVILGLRPEKLQ MNVAGGRLENGDFATSDVAVPASGANRALHMGFRPEHLT MNFLSVKLDESTEFVSKLKVPESMNKRTLTLGIRPEHLE MNDVDGQI HNHALSIGHHALAYCQGTTSVCVGLRPEHLK MNFLNAVVENGGVRVAALQVQLPAEGAAVTVAIRPQELS MNVLDGTVDADDVRLGDIRIAPERPGQAVRIGLRPEHFV MNFVNATMGDGVLHLGDLALERQNAPREVIVGLRPEAFQ
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EDABT
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 \(M N F L P A T \square A A A H G D T \square E \square R L D A S G E G E R V T L G I R P E H\) \(M N F L P V E A Q G G A L T L G G Q T V P M P E D G E T A T L G I R P E H F R\)

 MNTFDGFYEDKKTYSTNRFDQLDVENNQQLVVGFRSEDIIK





 \(M N M L D A K L I N Q G \square Q L G D N L I P L P E K N L A L H L G V R P T D I D\) \(M N F I D D G T L T P D G A R L G D R A L P V K E G G Q P L V I G L R P E N L A\)




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R A E
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VP NDQAQ



 \(\square \mathrm{T}\) A T G

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LVDASHQ LS ADPANK

NA A KVQTV


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\section*{LAETSSEGDA}

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 LA GAGEHAMTVA

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1 H A Q GQ
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GQNMLTEDNAM
LAS
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LS QDGSGA
MSK SESKDC
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LLEV SLENLGMQNLLSVRVAGDED

GGTF \(\square\) AD

\section*{EV}

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\section*{I ASSAGE}
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 T I RVVNPRALDKVGDTVK K K I D P S K M H LiF
 NALVMRSADCQWNSEVDFTFSLESLHWFD \(\triangle \operatorname{V} A \operatorname{R} P T A K V G K G E T V R I L F R \quad H V H L F D\)

 T TVAS MD RSL DTI RLDPEAANMHDFDR

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 TAK L DPAVQDKHGDKVTVNMDMLKAYYFS VVNLDARSRVREGEDARLVFEPSAMHVFD I ARCDPK IVNQQSESHYMHFDMSHCHLIF D IVVTDGDVISQVRDTVHFGFESGRAHLF
I AVVEARSGIHEGSLVDVDFASAGLHFF EI AV TAEDPLDVHQTLPIWVA LEQLHDEDQ


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 \(M N F L T I T K T G S T L A F G G Q T A P A I A A E D G V Y L G F R P N H D E\)


MNFLAGKY

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MNLISGRKNGNSVEF
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 M NFLDPVKI S DVKFFGAEHRI QC ES QMNFFDGKVTE DGLDASGVRL

G GE L I V G L
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\(\qquad\)

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\(\stackrel{V}{V}\)


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\(T \square Q L G K V V P D V G S S I R V G F A D D D C Y L F\)


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1
\(M N L L P V Q G D Q G A V I D G T V A P Q E A A G G\)
\(M N F L Q V R K G D G S F G Q S A P A L G A A D\) 30 Q|LIURPE

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 Q
 \(M N F L P A V V E G E T L D L G D V K V P M T \square K\)
\(\square N L F E G R A D S E G L H L G N V N V P E S L F N T K L\) MNLLKGTLEDGALHEGNARIDVPAHGVPGAVRPRAFK \(M N V L P C Q L D H G E A L D G \square R \| A V D P A G G Q L E L G U R P E Y L S\) QSNLVEGSVTGGGVEAHGHRLATPAESGDAVLGIRPEKGG TNMLQATI HSNGVRDAGMVIPLPTADPALTLCVRPASVQ
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ПNVFNGKVESEKLYDGGEAVLDGAPDGEVMVGVRPEGFT MNFVGGSAAQDGVLAPGLAAAVPGVGTEVTVGIRPQHLA NIFQGEDTSHELVIGEVRILEQLPINNYLAIRPSHVS EANMFEGSFNGEDIEGYRLPATADNVAGIIGVRPEAI Q MNMDDAQLIQQDLQLGDDF亡PDPEKNLALHVGIVPTD: H MNFFKATVGSGQLFGRDVPLPAS LSGREVVVGLRPEHIV INFFLPGTVVASNVDTATGRVPDEATGQKVIVGVRPTDVV MNLIKGHITDEGIRDPDHRAPAGSDGRPAFYGIRPEHFT
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\(N A Q V L H L E F L G S R V R S L L Q D D N H E T\)


FNGHEDDKNSL LSRHSPAAVEFPCTLVAT LSRHSPAAVEFPC
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\end{tabular}

L H P
L


\(\qquad\)
QA G ENA
 ERLGHD
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QAGTENA!QC

\(V G R E K S\)
\(F A A T G L\)
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ATAEAE LD P RGQDA
RPDAESPDAKY
AEVLTVENVGG
IAQNQNEEDGL \(\qquad\)
KGEVVSVENVGS

\section*{ \\ VMDLA GAD}

LTAEGG
ADP D GP \(\square A \square D\)
FGDKRGSND VAMAELGA
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LV PS
I
V SRES
L
V T DE K DA

EAGPA
NDDD
DGAK
 LSTSTVNNSFDMLVA I T A GASE

RAKVS L

 VG

DEHAHDGDCEVVTA
VS D GGE

VTSAEKGD ITEE

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$\square G$

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V T D D R VE
LS QQGEA
GGTP
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E & L \\
A & P \\
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\(T\) VD NAVVV
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V \\
V D D \\
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V ESESS \\
\hline PAPAVAGDD
\end{tabular}LKKTPVTT
\begin{tabular}{lll}
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\(V\) & \\
\(V\) & \\
\(V\)
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L RAEQQNHER CQRCQI KSTAYMGSSMYEVVVVDWQDHEMA GQGSVTFP
VDEAGPLAAKSVLL
L G ..... I GPTQGEGAG
L N A Q GLAI E P A EAA G
L G H Q
DA D LP GE A PEGT
LDPPS DDA QPGG
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N【TPASRNGSGVRपGYपE पPT पPQWEEGNQADPERVE I REAAPTGRVTLGVRCEDL $\square N L \square H G S D E E E Q A R D A D S L D P P S T Q K V L G U S E S L F$ MNFLKAVLDEQSADTGDDTDPVSGPGAPVTLGIRPEHFV
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$E \square N \square L D G L V L E E E G E \square G D Y T V P D D V K D K Q V D i G F R G W A \mid I$



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 TNTLPAEADADGVVVAGDADGLRAMPGPLTLAVRPEDLG DVNLFHGRVHDGHVRI GDAEVELAGGQDSAVFYVRPHEIE INFMHGDIHQGQVNIGSFKAPPDLPPGSYTFG｜RSSQLN NLVAAETFDGALEDGELNLPVEEKLRGVTLALRQEDLA $D V N$ VNGGVDAGQVA GDYAHPISATDGAAKVYVRPHDIE MNILPAEVRGREARIGGNVIALGRSYDKПEIGVRPE TNLVPGRTSGNDVCLADLQ PLAEGDGELVGGVRPEHLA MNILKGKLDSGKFSINQSDLDLSNYQGSTLIGFRPESIK MNLKEAR1AKEGVFATGAR1ALPQEGAPIVVGMRPEHFG MNFLSGTVTGETQLVG VLPGNAPGDAVTVGVRPEHLL EVNLIEGRVRGDTVYAGAFSSGGLPNDQNVTVVVRPEGVM MNFLPVTKTGARLTFGHLANAPAEGDGRYLAGFRANHLA $M N F F E V N D E G A K F D D P K Q L E E S K G S K N F F G T R P E N L T$ NLVPGSAFGNGARTALGDLPDQGEKGPVLLSLRPESLR MNFIEGKLRENDGYLGSLRLTAGQANRDITMGIRAEHIS MNFVDGARLGETAK

## FGATVTGTVISDGRL


 KATVEDDGYNGAKAAVPISEKDRKVTLGIRPEH DNDDGEIASNKLKLGDVIKEVSDKDGKVKIGLRPEFFE NFIDGRVRDCHDEDGNVLTESALGGDAAVISVRPENVM N FNGTV KGTNEAGETVI QVPTSKKDVE：IVRPES：R MNLAATASLGVELGGLPLPASGALTLGVRAGALR MNFVNVAGVGEAGGFATATLPVSVNGSELTLGI RPEYLV DVNLFHSRVHEGWAEVGGTRFAAPEAGDKAVIYVRPHEI D MN【VAALPAAQGLQपAG【K【p MNLVAALPAAQGLQLIGGLKLP DAPAQRLTAGVRGSALR $\square N \| \mathrm{LPADLFG}$

GSSKTTLPAEG
NIDEGIIIANNVNTGGNAIQAVSSYKEVYG R ELD MNLGTFTVDGEWAKIGPARVRLPEDGGKIK\GFRPEGLD MNLLPATVTETGQQLATVPIATTKAEQNLTLGARPEDMQ $M N L P V I G D G T V L R A D G Q V V A Q A R L T G A Y L G 1 R P E D V L$
，MNFIEGEI DGAAFVTSFARLPRAEQGARATLGLRPERI E MNVLAAEMRDGGAFLNGHHTALDGAEGAPQUGURPEFVQ

 MAMVEGQVTPQFAATDGTRMPIPQDGQKVLFGI RSDAFS MNFLKGVAEGESTHDGSLSLPNEKGSGQVTAAVRPEDVQ MNVEVERSAAGVRFRSTQVDLALTSKNIK GIRPEFLQ NLLPGHLDNGHARCGDVVLTVVSLGNVVVGIRPYAVQ INLIDGEVHDHGVVRTGLEI ALSGSGRNAALGVRPQDIY MNLLEGEIDGGTIRVEAANIAAAPGLRVTLGTRPEHTA
NFVEGEVQGDRVY■SGTGVSFPNTSGSATVAVRPENIT VGFRAHQLD NFПEAETAGRTLRAGDGKLVLPTTGDKVLLGVRPEKIS DTNLLTGSVVSGNAVIGGПEIPADGHSGEVQVSIRPEDFQ MNVFEASVTENRLAFGGDRLEYAASDQRVVLGVRPYAVK $M N \square \square P$ LIDSN【HDPACKAEA LLGIRPEDLQ
 N LEAA V V GQLRLGRLALADSSSRPRVVAMI RPET：A MNFVKVKVVNDS $\square$ TVSSDVIDDPRHDRDVALGG RPQY E $V^{R}$ NFLPARPHPGGAELGVLRLKEPDS QEAHLVIRPEKDR NVFDATIERRDVTVEGTTIPDEESQQGVTVCVRPEDVT KYH $\square$ AKVDESDYAVEDD 1 TDEDFVI GVRPECIK NFlPAEVRGDRVFVQGTQVSFPNKQGPAVIGGVPENLT TNTID LRADSLLRDRLKLSQNGHSSATALGVRAEDIR EMNDSKATVDRMNSQLNDLIIPDSMKSDTVY：GIRPEQ：S
 GIIRPEYA NVFEGTVRERRTDVGGETLAVSAEADRVTVCVRP


UniRef90_UPIO0047E3E32
UniRef90-R5ZKD5
F V K D
50
K T TI 60
60
$\square \mathrm{PG}$

 L ASNGL
LASNGRSAG
${ }_{C}^{A} P^{-T}$ $T P^{P}$ A R V

IA A K E A MEFL

| $F$ | $L$ | $G$ |
| :--- | :--- | :--- |
|  | $L$ | $G$ |
|  | $N$ | $G$ |
| $Y$ | $L$ |  |
| $A$ | $V$ |  |
| $D$ | $L$ |  |
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AR TRV
LSREPGAA
L V P AD GD RADAVVSYRECRGDADSLILITPRDVQ
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 T2
## 4791C90

UniRef90_UPIO004791C90
UniRef90_R5G4G6
UniRef90_G8MP12
UniRef90_V6M4W0
UniRef90 W1FYD4
UniRef90_B9J850
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UniRef90_UPI00040E8D52
UniRef90 J2KU65
UniRef90_UPI0004276953
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UniRef90_X1QAA2
UniRef90_J2ZFE9
UniRef90-S6HNN9
UniRef90_WOIJN2 UniRef90_UPI00023753A2 UniRef90_UPI0003660AB6
UniRef90 UPI0002E002F0 UniRef90_A3JMQ0 UniRef90-A4EDI7
UniRef90_W3AR48
UniRef90_UPI00037A363C UniRef90_M8DZU0 UniRef90_A0QXE3 UniRef90_B7QXH7 UniRef90_A9CEJ5 UniRef90_UPI0004043621
UniRef90_M1FE30 UniRef90_UPI000262D0A7 UniRef90_M3IZ46 UniRef90_B9QXF4 UniRef90_UPIO0041058DE UniRef90_A5FVQ4 UniRef90_UPIO003C16C4C UniRef90_R6HKB8 UniRef90_F7QR31 UniRef90_UPI00037586F8 UniRef90_U1NLC2
UniRef90_G9AFV2 UniRef90_D7BX58 UniRef90_UPI000424AED2 UniRef90_UPI00037A56E2 UniRef90_W6LXJ3 UniRef90_Q2ISS4 UniRef90_A6VRU1 UniRef90_S5SR85 UniRef90_Q16211 UniRef90_E8PN29
UniRef90-C7NRE0 UniRef90_R5TJY1 UniRef90_E5BDD1
UniRef90_D2RNJ5 UniRef90_A0A011QWA7 UniRef90_E6U235 UniRef90-K5KIH1
UniRef90-Q2CED6 UniRef90_I7DSX0 UniRef90_LOJQU7
UniRef90_D4W4G6

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| :---: | :---: |
| UniRef90_UPI00047E3E32 |  |
| UniRef90-R5ZKD5 | KFLVDSDQNVGLGKK HFlVR |
| UniRef90-X118R4 | RFNPAA L K E S D E VKY |
| UniRef90_UPI0002EE9517 | VLRLPPRSGLPGDQAFLGFDAGKALLFD |
| UniRef90-UPI000415EE70 | MVEVFANKGFREGESV |
| UniRef90-M1WL | VVQENGDHSVKVGNRVKAY |
| UniRef90_UPI00047DC4D5 | VSASASSGPLRAGDKVKLHFPPERC |
| UniRef90-K2PSI3 | RILDAPHDLEFERGDAVRVT\\|DPAR\|RVLSR |
| UniRef90_UPI0003B3: | Y I D A Y S L R L M L G QV Y I R P R KV |
| UniRef90_Q89SG2 | A ARAPAGFTSADG TAGLKFDPSHVHV |
| UniRef90-UPIO0036278C9 | LVEDPGPAAFRPGDAVSVSVAPDRVHLFE |
| UniRef90-F8FXF3 | L HLP GVGEYQVDTP I R V Fil P T H K L F VF |
| UniRef90_Q04HP8 | I I QTEKNFSRNTDKNFQISUPNNKLFYFD |
| UniRef90-UPI0003668E1A | SHRVEPGARLRPGQTISVAFPRGKANLFD |
| UniRef90-G8M4Y0 | SRIIPPLEKHARGEKLKL GAAPDHCHLFN |
| UniRef90-X1UEC1 | RSFEEMRLTEGQKVYI TFKASA |
| UniRef90-K7YRJ1 |  |
| UniRef90-D7GRU7 |  |
| UniRef90_V4ZJA5 | DAVSSAFGDVDPGDRLAVGFDAED |
| UniRef90-A3PJC0 | VGLVPGIHDLPPGSEVSVWLDPA HVYL F |
| UniRef90-W9DVF |  |
| UniRef90-Q09DS8 | TVRGGPESPLRPGDRARLEVTGKAVVL |
| UniRef90_UPI000470 | LIARSQCLREEGERVT MAID MEKALFF |
| UniRef90_E8TEP5 | TVRIF GVYDAEPGATLYA |
| UniRef90_UPIO003740733 | VARVPVPVRVRPGQLVRLLIK P ELLA Y V F D |
| UniRef90-W7S7T8 | VLHLKTTEPVAAGS |
| UniRef90-U5W021 | NLR SVDRPAV GD RI TVVTVEPRR |
| UniRef90_K1ZK40 |  |
| UniRef90-A3TYT2 | VGLVEGVHAPEVGAPI RIS SV D P A |
| UniRef90-R5WBS9 | HVQVA GRVAVA A Q Q T G L T L R R |
| UniRef90-W6S7H5 | TVQI A DVKPFQNDRLVSVGFDPAD |
| UniRef90_UPI000479 | TI QLPEGHSVKQGKPTSASFDPARAFLFD |
| UniRef90-R5G4G6 | RLIVPS LiRDYEEGQQ IR |
| UniRef90-G8MP12 | RVHPSHK |
| UniRef90_V6M4W0 | EVVFEAGSP L LPGTAVKLQ |
| UniRef90-F5Y620 | VAQLP GV V R F GLLGEAI T L Y L HPSQ |
| UniRef90-W1FYD4 | LRIN S SPDWAPGESI KVKFNLEAAFLFDK |
| UniRef90-B9J850 |  |
| UniRef90-UPI00036521D3 | EVELTTRERYWSVGEAVWL |
| UniRef90-UPI00040E8D52 | TVRAIGDAAFVGGETI GLAPRANTSHGFD |
| UniRef90-J2KU65 | VA QLT GVHYFDLLGAPVTLYLDPAQVYVFD |
| UniRef90-UPI0004276953 | TTVIDAHTPLRAGDIVK IQPLKPFYFD |
| UniRef90-U5A2M7 | KVHLPGDQEVTRYQSLNLNFSSKDCHLFD |
| UniRef90-X1QAA2 | ALVTKEDLDVVQVGTEVYATFKATGVY |
| UniRef90-J2ZFE9 | RVPPRTAPGRGGVLYVR\\|REGQQHNFS |
| UniRef90-S6HNN9 |  |
| UniRef90-WOIJN2 | R I A T P F GVEE I P D S Q L |
| UniRef90-UPI00023753A2 | RARLDPQTPPAVGATVWLQ |
| UniRef90-UPI0003660AB6 | T L R V SRERPLS WD DEVFV |
| UniRef90-UPI0002E002F0 | VLRVGADGRFA IGGDVKLT\APDAGVLF |
| UniRef90-A3JMQ0 | $V \mathrm{GLLNLVQNFPVGGKVSI}$ |
| UniRef90-A4EDI7 | KAITTEGTAPQQGAAVHLQFQQNQTRLY |
| UniRef90-W3AR48 | VSTAQENVFSVGDNI TLS S L P K K V L |
| UniRef90_UPI00037A363C | QVN】ERDTRLVPGAPVVLHWN |
| UniRef90-M8DZU0 | K SKWNGQWPCRRGEMVRVGFYPGQTCLFD |
| UniRef90-A0QXE3 | VVQTPALESYEPEQQVVVTAPPERVYLFD |
| UniRef90-B7QXH7 | LSKMFNPTNVEVDQSMEFELELDDACYLFD |
| UniRef90-A9CEJ5 | F DAKAETLY GDHARLSI D TARVHVF D |
| UniRef90-UPI0004043621 | AFLDNKEFQLQVGKDVG |
| UniRef90-M1FE30 | KVRMNEEFEGAIGGSTNLS |
| UniRef90-UPI000262D0A7 | VTVTDPHTDLKAG CLISVKPNNPFFFD |
| UniRef90-M3IZ46 | VLVEHERSAVQVGES 1 GVVFPANDLHVFD |
| UniRef90-B9QXF4 | R L V 1 R |
| UniRef90_UPI0004105 | A I D ERDQLA LGE DVKF H LS A R G C M A F D |
| UniRef90-A5FVQ4 | $V K$ A D D A GVRMGDPVRMKPQSARA |
| UniRef90_UPI0003C16C4C | HASVPS GT TVPEGDAVVLT F NRDAI HLMDE |
| UniRef90-R6HKB8 | RVIVKGAKEFTDGEKVYLDFD KI MVFPR |
| UniRef90-F7QR31 | VAVLPGDHEFLPGQELDAVLDPNDLFIFFD |
| UniRef90_UPIO0037586F8 | EVNIERDARLSPGAEVVLHWNP |
| UniRef90-U1NLC2 | PI QIVS GHTAE\\|GDQVTVV I LP GTPVVFD |
| UniRef90-G9AFV2 | VLVEHDRTNLEVGQPI GII RLEPASLHVFD |
| UniRef90_D7BX58 | HAIT T DETLRAGASVRLHL |
| UniRef90-UPI000424AED2 |  |
| UniRef90-UPI00037A56E2 | VVTGGRHQRYEAGDRLALTVDPQR |
| UniRef90-W6LXJ3 |  |
| UniRef90-Q2ISS4 | S $\square$ DAS A A AI RVGDRIGLAVAPEAI |
| UniRef90-C7Q138 | RRLLKAHESVRPGDRLRVAVDAERAL |
| UniRef90_A6VRU1 | VISINEDKVFEVDEEISLCFDIEKV |
| UniRef90-S5SR85 | SAMLIGDPLPEPGTTVSLAVRPNAA |
| UniRef90-Q162l1 | VLVEHDRADVAVGDAI HVRLAPEDLHVFDK |
| UniRef90-E8PN29 | EVVRLLAYTDLQEGEEVFCYLPPENLVV |
| UniRef90-C7NRE0 | LAKT GTAPTGDAVSLGI DAADV |
| UniRef90-R5TJY1 |  |
| UniRef90-E5BDD1 | Eil T TKEYKKGDRDFL DFPLSKRYYFN |
| UniRef90-D2RNJ5 | M THGSSYHQWADGEPI Y LDLA DVILLD |
| UniRef90-A0A011QWA7 |  |
| UniRef90-E6U235 | KAKWLGQWPLDLDNRQTNI SFS |
| UniRef90-K5KIH1 | LLQL ${ }^{\text {S S A QF }}$ NHATQHAYVVFNPRGL |
| UniRef90-Q2CED6 | VIFI GARHEMH_GTVQTVVPEPGRAFAFDR |
| UniRef90-17DSX0 | TARLFGQHDTNVGETLQFDFDPANCLSFDE |
| UniRef90-LOJQU7 | VLQLPA VPEADELTVGFDPDDAHV |
| UniRef90_D4W4G6 |  |

UniRef90 F0LB47 UniRef90_K0VGJ2 UniRef90-W1KJG7 UniRef90_L7WX98 UniRef90_KOV4W3 UniRef90_UPI000479AE84 UniRef90 W5IQU7 UniRef90_A3K2E7 UniRef90_M4XS09 UniRef90_K2IUE2 UniRef90-UPI00026C8073 UniRef90_U0EDX9 UniRef90_Q28PP5 UniRef90-B9KNN7
UniRef90-W1N1C3 UniRef90_UPI000363837F UniRef90-W8WZ41 UniRef90_D3PPQ0 UniRef90_G7VU14 UniRef90_UPI0003EB38AF UniRef90_A6D1Z8 UniRef90_C7DB39 UniRef90_C7LWP9 UniRef90_C5D0S4
UniRef90_C6SMQ1 UniRef90_U7GL29 UniRef90_UPI000380AAF7 UniRef90-UPI00040BD67B UniRef90 D6TTD6 UniRef90_I1ARM5 UniRef90_A6W146 UniRef90_D3T1D4 UniRef90_A3CWQ5 UniRef90-X5L6D5 UniRef90_E8XNV
UniRef90 IOI647
UniRef90_C5EFD4
UniRef90_C7D7Q2
UniRef90_D3PL01 UniRef90_UPI0003B4FE2A UniRef90_R9CCT6 UniRef90_UPI0003B77F97 UniRef90_UPI000366A1DC UniRef90_UPI00041DC2F9 UniRef90_UPI0003C7586F UniRef90_UPI00036D520E UniRef90_K9FP76 UniRef90_J3DH86 UniRef90_UPI0004674FBF UniRef90_E8XZQ3 UniRef90_U6EAP0 UniRef90_UPI0003722903 UniRef90_S6EHC2 UniRef90-F5Y5I3 UniRef90_F3GP26 UniRef90-B3Q706 UniRef90 W8I4K0 UniRef90_A0A011TYK2 UniRef90-I0RB64 UniRef90-W6W6W1 UniRef90 S3AXK2 UniRef90_UPI0003613A7B UniRef90_D1Y6Q5 UniRef90_D1A2M7 UniRef90_U0FBV4
UniRef90_F7XZP0 UniRef90_V2HDV1 UniRef90_G4RAC6 UniRef90_UPI0003B771F3 UniRef90_E7MNG8
UniRef90 U1ILH0
UniRef90_A0A024QF07
UniRef90_X4ZR91
UniRef90_D2BZQ0 UniRef90 UPI00046CDB91 UniRef90_I3BID4 UniRef90-MOPFK8 UniRef90_LOI2F4 UniRef90_H3NIF0 UniRef90_UPIO0037D0B2C UniRef90-B6YWL0
UniRef90_X4ZZB4
UniRef90_L2EPC4 UniRef90_UPI0003C11B80 UniRef90_G7M857 UniRef90 R4WW76 UniRef90-W0JPV1 UniRef90_UPI000361082A UniRef90_K8ENC9 UniRef90_UPI0004665C9F UniRef90_E3GW13

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 | $I$ | $N$ | $V$ | $P$ | $G$ | $R$ | $V$ | $H$ | $G$ | $G$ | $R$ | $V$ | $R$ | $V$ | $E$ | $D$ | $T$ | $T$ | $V$ | $T$ | $D$ | $V$ | $P$ | $D$ | $A$ | $T$ | $R$ | $V$ | $T$ | $V$ | $G$ | $R$ | $P$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


$\square$ F E G T $\square$ A G N Q $\square$ N $\square$ N GY Q F T L A N P D GE C L V G I R P E A $G L R E G A A S G G A G V L I G V R P E D L R$

 MNFVTVSEQGGELLADGEALPLSVAWQDAVL GIRPEFVE NRIGATMEAGGLDRLGDGSVRPGVAPCDVIV$A$
 $N L I Q G K R D P M G F E F G K L A L G Q T P P W D E G Y V A I R P E R V V$




 M N F I E GTVVQPGDF TAP GI L Q P L S Q A P M P A T NQFNGUIENGLCQVGTRTLNVSPDGERVLIVMVRPEDIAA

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



 TTA DGVEVDG

 D T N N L L $M N F L P V A A L D A N L \quad \square Q R L Q L P A T A H$

DD


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 $\square S L L K G K A E Q G A F V L G G L R L P L A A D G T A L S L G V R P E H F$



 $M N L I A G E W R D G A V H V D G A R D A L Q G Y A G P V T V G V R A G T L W$ QVNRIPARRSGDWLDSALGRFPAPGSSGPVQLIIRPRALAA
 $\square N T L P$ A TADA D GAVFG R L P Q R L V G T P G A VTVVAVRPC H L R
 $L L P G Y A S G H Q L T V G E V G W G L S S A Q G A L T L G D P E D D V T$ $M N L V R \square Q V E G D G A V V G D Q A L P G P A P P G P L E L G F R P H S A R$ $D V N V F H$ GHIDDQGNLVI GEFAHNLQVNNQSATAYYRPYE LT


 $N V I P A K V V E D R V T V E F E G I R L D E K S D D V V I V I R P E R I K$

 V R P E H I Y D S K SVGVAL R P E D ME





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| :---: | :---: |
| UniRef90 FOLB47 UniRef90-K0VGJ2 | EA TTKPSTALQPNQKTTFSWRAADAKLEGE |
| UniRef90-W1KJG7 | VVTTGSDTTFANGETVR1GFDLSDTYLF |
| UniRef90 U3ATG9 | RVRAGSGQP促RGAQVRL |
| L7WX98 |  |
|  | GVVVPA |
| UniRee90- ${ }^{\text {UPloouthat }}$ | RVRQQNRQGAEPGARVRVRVPGDADRV |
| UniRef90-AзК2Е7 | VKRRVANRDDT WEDEVYLSFTP |
| UniRet90-M4XS09 | TK |
| UniRef90-K2IUE2 | I AK/PGRPALVRGGKAALTWEAA |
| UniRef90_UPIOOO26C | NLRVSADNPLSGQ |
| UniRef90_U0EDX | MVGLSSGGSLAEGAEVVVEVA |
| UniRef90-B9 | TVRLMADRPAEPGSTMAMA |
| UniRef90-W1I | KARINEGHDVAVGTRVD |
| e90-UP10003638 | ADRRSMVEGEA F GFDP |
|  |  |
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| UniRef90-A6D | RVHVSGDFEVVRGDELDLSFNVED |
| UniRef90_C7DB39 | SIM |
| $\begin{aligned} & \text { UniRefigo_C7LWP9 } \\ & \text { UniRef9o C5DOS4 } \end{aligned}$ | IVRTTARLRVGDPVMLA |
| UniRef90 C6SMQ UniRef90-U7GL29 |  |
| UniR | PGTVSYPLGTAVSL |
| Unip | V 1 |
| Ref90-D6TTD6 |  |
| UniRef90 A6W1 | RITQPNVSREMGDRVFLSWDANSCVV |
| UniRef90-_D3T1 |  |
| UniRef90-A3C |  |
| x560 | NYEPEQKVVVT |
| UniRef90-E8XN UniRef90 IOIC647 |  |
| UniRef90-C5EFD4 | SVRDGMDQDGTRGD |
| UniRef90_C7D7Q | PG |
| 3PL01 | ESPESPFRPGD |
| UniRet90_UP10003B4 | AKW GNAR |
| UniR | SVRLPFGHELSPGDRVRLEFDPGAAHVF |
| iRef90- UPIOO0041DC2F9 | E |
| UniRei90-UPI0003C7586F |  |
| UniRef90-UPIIOOO36D520E | AREGALLPLSFGQEP HLIFD |
|  |  |
| 3 D | - |
| UP10004674FBF | RVRVLGADVIKEGEEC |
| U6E | FMVAAMKPEWQPGAESVLS |
| UniRef90-UPI0003722 | EVNVERQAG |
| UniRet90-S6EHC2 | FIHIPSNHFNIQTTEAYVNFAEHGTFLLKK |
|  | RAVTPSHVSIPPGDSV |
| $\begin{aligned} & \text { UniR } \\ & \text { UniR } \end{aligned}$ | V1RLDDPLRI |
| UniRe |  |
| UniRef90 A0A011TYK2 | VRASMDDPLTWSDRAWISFRPD |
| UniRef90 IORB6 | TSVIFGNTAYRIGGEDMK |
| UniRet90 S3AXK2 | TVNLERDSRLTAGAPVVLHW |
| Uni | EITQESKTSLSPGEVI YLKVKTDKDNVYD |
|  | RV $\mathrm{Da}^{\text {a }}$ GHTY |
|  | P |
| UniRef90-F7XZF | IAVRVTEDPLTWNDRAWVSFRPD |
| UniRef90-V2HDV1 | GVLELALGETVTLR |
| Ref90_G4 | QRGL |
| 03 | MRNVFDIG |
|  | FGSQSFVI GDRVHITVLPYDILLYDR |
| UniRef90-U111 | RVIVRSSRSLAVGTAVQLHLDPAR |
| UniRee90-A0AO24QF07 | NHEFHLQK |
| UniRefo - D2BZOC | ALVANSQAQYDVGMRVGVSLS |
| UniRef90-UP100046CL | TVERPPEAREQPGEGV |
| UniRef90-13BID4 | A |
|  |  |
|  |  |
| UniRef90-H3NIFO | VYLSTANRNIETDD\IDIFIPNSKVKYFD |
| UP100 | HEP |
| UniRef90 B6YWLO | DKHLRPLQE |
| UniRetgo-X4ZZB4 | VVETARRDAWRAGERVGLRIDTDHL |
| UniRee90-UP | SRDRT |
|  | S Y R |
| UniRef90-R4WW76 | WARUAGE CSEGER\\|SLRVAPSKTLVYGE |
| UniRef90- UPIOOO: |  |
| UniRef90-K8ENC9 | VEII QESTVIEPGTWI GLHDKKDKDNLFD |
| UniRef90-UPIOOO4665C9F |  |
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$\square I Y \operatorname{VETAKKFDVGEKVYLSWTDDSDHLMKK}$ VMLTQGVQD $\quad$ DVDDAI DVY IDDPRHIMVFD LVAVRVDDAGAPGQAVRMAWDPAFTVVFEK $M V K E V G P Q R F D V G D T V W V H M K Q E R M N L Y$ VWTIQSTQMVEAGSRVGIVMNPNDDHI KAVTEHVVP EPGSQVELQFKPE QMKVPYQLKDPVGEDVII GASCQHILVFDE QA DNMDRPFAAGDEVNLRDRP QVKTANDEA 1 KNGQRAGFSWRPEDARDF


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