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UniRef90 UPI0003
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UniRef90_C9RLZ5 UniRef90-I2B6T2 UniRef90-V6MD50 UniRef90-Q1QEU8 UniRef90_A6CJW9
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UniRef90_C6RHK7 UniRef90_UPIO00470811D UniRef90_A4BFJ0 UniRef90-A8IGL1 UniRef90-UPIO0035DDCEC UniRef90_UPI00030CBA31 UniRef90-M5E510 UniRef90-UPIO004045120 UniRef90-X1NHB8 UniRef90-E3H5D5 UniRef90-B4WJQ8 UniRef90-D1B0U7 UniRef90-UPI0003036A2C UniRef90-F6AHJ2 UniRef90-H3RKN7 UniRef90-U1WRT1 UniRef90_UPIO002F42A48 UniRef90_UPIO003679B28 UniRef90-J3ANP0 UniRef90-J1EHP7 UniRef90-G4R698 UniRef90_Q11HQ7 UniRef90_UPI000307BF9B UniRef90_A6DA58 UniRef90-A7GWJ6 UniRef90-W7DGL6 UniRef90_UPIO00463657C UniRef90-B4RDJ8 UniRef90-D2NOR6 UniRef90-K6ZQK2 UniRef90-UPIO003816E80 UniRef90_W7IPZ3
UniRef90 O28850 UniRef90_UPI00037A0A9D UniRef90-B8J3NO
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 UniRef90-Q0CYK2 UniRef90_A1S9N2 UniRef90_V2TL20 UniRef90_M4XKZ8 UniRef90-S4YQQ6
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UniRef90_R5S1Q2




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| $\begin{aligned} & \text { UniRef90_IOGUR66 } \\ & \text { UniRef90_LOA797 } \end{aligned}$ |  |
| UniRef90－COEC33 |  |
| UniRef90－UPI00037B8897 | NTMHRVAEEVESTT |
| UniRef90－Q1NBM6 | NSMHRVYDQVQGAV |
| UniRef90－85BS | NTMHAPA |
| UniRet90－H5S | A |
| UniRet90＿E4UAB8 | NTMHKVAEAVGAVSGLEVLHIADATARALQAAG |
| UniRef90－UPIIOO22FCD218 | NTMHRVAEHIEEAVEVPLLHLADATAGAVRAAG |
| UniRef90－W0RTU2 | CANTMHHVAPAVEAAVSVPLLHIVDVTAAALARAG |
| iRef90－UP100037 |  |
|  |  |
| UniRef90 H8KN |  |
| UniRet90－T1D165 | NTMHKIDPLI ${ }^{\text {de }}$ |
| UniRef90 | NLIHKVHDVVAARVPEPFLH：GDALAAA TAGG |
| ee90－UP10004787 | TNTMHKVADRVQAAVHDPLLHLADATAQA I RAG |
| Ret90＿R9M2S3 | T NTMHKVAPQ ASMVR V A ATAGELEKA |
| niRef90＿C4XGD |  |
| A1S | T TFHRVADQV |
|  | NTMHKVAPQVEAAVSIPLLHIADATAEQLLKMDG |
| UniRef90＿U2L043 | LSCNTAHAFYEKVQAGVRVPL NMIDWTAKRAKETG |
| Ref90－FOEXH7 |  |
|  | N M |
| UniRef90 R5MK57 <br> UniRef90 |  |
| UniRef90－J1TE | I CTNTMHLIAPEVSSHISVPLIHI IDETAKTDHEAG |
|  | I GTNTMHKVADRV |
| UniRef90－F9U7 | I ASNTMNSTADLI TREVDIPVLHIADAVGARVKAAG |
| UniRef90 AOAO | LPCNTAHHFTDEAAAVQVPLVNVEETVAEARGR |
| D47463 | NTMHKLVPDMLP ELQ |
| Ret90 D4Z46 | ANSMHRVYDEVAGVD P VN AEAVGRKMQADG |
| niRef90 F9FL25 |  |
| UniRef90 A4A | STMHLCADA KEKVT，PLLHIADVICGEEITSKG |
|  | G |
| P1000366 | CNTM A A A A S |
| UniRer90－UP100037BSC4C |  |
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|  | MPCNTAHYFYQEIKDVINIAFLNMIEETVMHIKEK |
| 俍e90＿MOK7 | M |
| UniRef90＿A8L | TNTMHKLADRMME |
| UniRet90＿G2P7 | SNTMHRVAPA |
| Uniref90－D6S | MPCNTSH |
| 退90－A6PMP3 | MPCNTAHHYKAVEESDLPFLDMLELTAEEARAG |
| niRet90＿UP1000361 |  |
| iRef90＿R7XTM9 | G |
| D3L3 |  |
|  | NTAHYFYDEL |
| UniRef90－UPI00040E32C1 | MHLLVFDRIAEAVDKPVLHIVDATAAAVRRAG |
| UniRef90＿R5B4H3 | MPCNTAHYFYPAIQASTKCPILHLRLTAEEIKSRG |
| 2F7R1 | G |
| C8PHM7 |  |
| N9W |  |
| 14A | T |
| UniReef90 UPIO003F81897 | ICTNTMHYCADDIERETGLPVCNII DAVKDQLIANG |
| UniRef90－UPIO003610BCE | $\\|$ CTNTMHLLCADEVQAAM |
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| 退ee90－A710k7 |  |
| UniRet90 UPIOOO4189833 | TNTMHLADQ Qas |
|  | MHLVADQVAASCDVPL H M GETAKT NGGG |
| UniRee90－D6C | MPANTAHLFADEIQAHLDVPITHIVEATAKALKKEN |
| UniRef90 G9ZHW1 |  |
| UniRef90－UPIOO047 | antphVVFDQi Qagsplplisi Veatlesaraag |
| UniRef90 UPIO0 | NTDHLV |
| Ret90＿UP10 | FCANTPHKVYGQVEHQLSVPIIH：ADATAENIKERG |
| ef90＿R5X7U1 | IT CNTAHYFYDKINESVNIPVLSIVEETVKYAKESG |
| 7D | CNTAHFWFAAVQKAV |
| UniRef90－UPIO0037A176D | I CSNTSHFWVRQMAEGVG｜PLLDIVDVTARAARELG |
|  | ATNTML |
| 俍90－W9BX49 | CANSMHKVYDRVQGAVSV |
| Ret90－G3JKA5 | VVSNTWHRASPVFMAGVS |
| UniRe990－66FW30 | CNTAHYFTQQVL |
| 103BA | SNTMH |
| UniR | G |
| UniRef90 W2UIW9 | AHLTFADEQSKIDPI HIASATAEAIKK |
| UniRef90－R6TKC | CNTA |
| UniRef90－UPI0003698912 | CNTAHYFYEKIVKGVNIPLVNTVEETIKHAKETN |
| UniRef90 A7ZC82 | CNTAHYFAPSIEKEAG |
| UniRef90＿UPIO002 | MHVLADD：ASATPLPFLH：ADPVGTAAQALG |
|  | NTMHKVTPA |
| iRef90－T2RS | Q |
| UniRef90－UPIO00463DF37 | NTSHYAYDQ QAMTE PTI HMPRETVRYAKER |
| UniRef90－V8D163 |  |
| UniRef90－UPIO0046E84BE | M HKIADE |
| f90 |  |
|  |  |
| UniRef90－UPIO002EE40D3 | LATNTMHLVADRLEAAVSIPLLH ADPAAEAlRAAG |
| Ref90－utiocour | IPCNTSHYFYDQMQAMTEIPI HMVDETLKVIYQK |
| UnRef90 U2TCS8 |  |

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UniRef90 - TOKE84 UniRef90- $\times 1$ H9x0 UniRef90_UPIoo03B463B9 UniRef90-UPI00047EA55A UniRef90-UPIO0046E5857 UniRef90-B4VDA3 UniRef90-X0RKHO




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| :---: | :---: |
| UniRef90 W9V656 |  |
| UniRef90-E9URY6 | RSVDFAEDEEMQVSGEWERAGARLAEEAATLSGAGAEVIV |
| UniRef90-D9V | ALL GNGPDPTPWLLNGSRVLREAGATVI A |
| UniRef90 ${ }^{-}$V90 | 听 YADTARFTTTGDFDGMTATLLAHGHELKRAGAQAl A |
| Ref90-x010 | DFALVEQAQTEGRWDEVGRLLAGEANKLKAAGADFFL |
| UniRet90-UPIOOO4758632 | YSVDFAEVAVLQTEERWAEAAELLAVAGERLVLSGAGVVL |
| UniRef90_U3QQY1 | QNPQIPDRTANLLYQEADPTVALEAT CKRLESEGANAI A |
| UniRef90-S1RJ50 | NHATI PDRTAYILDRSKPNPIPLLQEDTRQQNILQPSFIV |
| UniRef90-A4C. |  |
| UniRef90-w9 | DFSEVERMQASGDWAAAG |
|  | QHPFTGAGVALERGTSMTARKLYVFQASQSFVARRADAL |
| UniRef90_B9Z6555 | QHPFTGAGVALERGTSMTARKLYVFQASQSFVARRADAIL |
| UniRef90- W2S | A SMDLAASEYFVRHDE |
| UniRef90-UPI0003D3 | ASVNFGNITQSFVREDRWDEAAAYLTDKILRLEAARVDVI |
| UniRef90-G7V5D9 | DSLDLAEMYDLAAAKDWEDFSQRLDDSVKRLSAGGAEFAA |
|  | DFQEDEECQTRGD |
| UniRef90-UPIO00475 | SEPGIPDRTASL |
| UniRef90_C2K | QHSSTPDRTAALLDG GESPAPIMAADARKLQDAGAEFLV |
|  |  |
| UniRef90- J3JBM4 | NDPKVPSRTKALLETMS |
| UniRet90-C1D4 | NNPGVPDRNAA |
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|  | APWP |
| UniRef90- UPIO00314229C | ESGDFCQLYALTA ERDWQRAASVLI S SARRLEGAGAEAGI |
| UniRef90-H3KG35 | QNPQTPDRT ACLLGQGDDPTFALYGMAMKL |
|  |  |
|  |  |
| UniRef90-UPIO0037B | QHASVPDRTAFVLGRSADDPGPVLADDARRLARAGAGLLV |
| UniRef90_C8WFN | ESLNV |
| UniRef90 D1PPZ | SRASTPDRTAFILGKSKEDPFAVMEQDGFSLVN |
| UniRef90-J2LIT8 | GQQAFDDTDMAGAENAETNARKLYVDMLREFEERKSSAVL |
|  | - D ${ }^{\text {d }}$ |
| UniRef90_A4N5B1 | S $\square$ PD DPDRTTSILHGGESPLLA MEERI |
| UniRef90 U3 | MNPQVPSRIARLITERRGEDPGPVLAAMARGLVAGGATALA |
| UniRef90-AOAO31GRW9 |  |
|  | FAD SALFAAG |
| UP100023 |  |
|  |  |
|  | ERMSNGERSDACMAGSAEHQLRI DA |
| B2J | ERMSNGERSDACMAGSAEHQLRIF DA RDFEQRGVSAVA |
| 0E8Z0 | Y SM |
|  | QNPQVPSRTARLLEGRGEDP |
| UniRef90-UP10003 | HSVDFAPITADMQRRADWAAAAQL |
|  |  |
|  | VGMNFGNIEAMVRADDWDGLSTYMRTKAQALVAGGADVIL |
| B8IF | MAANTPDRTAAIL GEGTDPFPAMRATVRWLETAGATCIA |
|  | $\mathrm{Ni}_{\mathrm{K}}^{\mathrm{K} P \mathrm{Q}} \mathrm{i}$ |
|  |  |
|  | CQLRGDWQGAGDLLAGAAR |
| UniRef90 UPIO004678 | SIPDIPDRSACLLSG GPSPYDYLERYLHLLEHAGAECIV |
|  | SASOVPDRTAACKAGQGEKPAPAMEEGLAMLARAGASCAA |
| UniRef90 U4V295 |  |
|  |  |
| AC31 | DQT DSEETLRLEEAGEWKRLGETMVGLAEKLKSVEADFFL |
|  | PPRTDALLE EGEPLPYLVEG |
| UniRet90-UPIO00374320E |  |
| UniRef90-UPI000377D3EA |  |
|  | N |
| NoA |  |
| UniRef90-UP1000372 |  |
|  |  |
| R4x | NVPQVPDRSAAFLAGS DAPWPHLLDGLRTLEAAGCSAIA |
| W8 | Y |
|  | N |
|  |  |
| UniRef90-C5RCW8 | NHASTPDRTAYISSHTKQNPLPFLASDVEKLNYLGVSFIV |
| UniRef90-B8FDC0 | Y |
| 003 |  |
| 0041 E6 | YSVDFAELEENMENGYWQGNAVILADAAMRLEKAGADFIV |
|  | CNPKVPNRNA |
|  | NHATVPDRS |
|  | S |
| UniRef90-D1P158 | STPDIPDRTEA |
| niRef90 ${ }^{\text {K1LBT6 }}$ |  |
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| UniRef90_LVVT10 | A |
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| :---: | :---: |
| UniRef90_C5EK21 UniRef90_W9V656 |  |
| UniRet90-E9URY6 | ATNTMHKVAGALEETYGD |
| UniRef90_D9WPQ5 | PCNTAHAFVPRIADHVGDPIIHMIGEVARHL |
| UniRef90-V9CXI4 | LCANVAHKAADTLAKHVDLPVLHTVDFTAREVVKGG |
| UniRef90-X010 | LACNTVHTAEDFITPAVNLPMLHIVDAAAKKVLDNG |
| UniRef90-UPIO004758632 | VCSNTMHLVAGPLAE RVPLLHLGDVTAAAVRAAG |
| UniRef90-U3Q | I PCNTAHAYVERIQ |
| UniRef90-S1RJ5C | LTCNTAHYFFDDLQ |
| UniRef90_A4CJFO | G |
| UniRef90-W9G205 |  |
| UniRef90-B9Z | LPCFASHVFRDEI QTELEVPLLD |
| UniRef90-D91 | $\square P C H T A H F F D D R A A D S G V F V D$ |
| UniRef90 W2S | CVSNTWHRCAESFMSGANDPLLHIADATAQALKAK |
| UniRef90-G7V5D9 | MAANTAHLVFEKVQAESPGPLVSVVEETCKAAKKEN |
| UniRef90 COD378 UniRef90-UPIO00 | IVPCNTAHAFV |
| UniR | 1 PCNTATNFLQAVVEAVDIEVVNIVTET |
|  | MASNTPHVFEEVSAKAPLPLLSI |
| UniReef90-UPIO002FEE6F5 |  |
| 3 |  |
| UniRef90_C1D469 | MVCNTAHAFEEDL ${ }^{\text {L }}$ NATTLPFVSLIEETRDA |
| UniRef90 B1Z3R8 | LPCFLSHTFIDELKANTRLPIVDIVEALV |
| Un | 1 PCNTAHFWFKELKESCHTELLSIVETTLNEVRSCG |
| UniRef90_V5PV | R |
| UniRet90-R4KCP7 | SSNTPHVVFER K ELS P P PL S VEETCKNAEALG |
| UniRef90-H3KG35 | VPCNTAHALMPFVERHLSI |
| UniRef90-X0XPK4 |  |
| UniRet90-11T8U5 |  |
| UniRet90_UP100037E | NTAQAFAGP |
|  | GNTPHUVFDDLQKQSDVPLISUVEATCDEVKRQN |
| UniRef90-D2Z4E4 | VPCNTAHFFDDGFREEL |
| UniRef90-D19PZ |  |
| UniReego-J2LII8 | CFISHTF |
| UniRef90-A4N5B1 | YDELKEKCHVDMLNTI DSTINEVLQMG |
| U5F4C4 |  |
|  | AP ${ }^{\text {P }}$ |
| UniRef90_AOAO31GRW9 | VVPR GLPFIS VEETAKRVQQSG |
| R8B95 |  |
| UPI000237 | VAL |
| UniRef90 B2TDM8 |  |
| UniRef90-B2NB5 | LPCFESHLFDDALQQNA |
|  |  |
| iRef90-H2BVL7 | ICANTPHMVFPFVQPKIDIPILHIADADGKEAS |
| UniRef90 A0AO17HS | MPCNTAHYYAPA RAAVG\| PLIDMIE |
| UniRef90-UPIO0037510EB |  |
| UniRef90-UP10003F7, | CVSNS |
| UniRef90-E8FIFG0 | CNTAHHWHAALQAETSVRILHIVDAVADTLAGQG |
| Unil | - WY |
|  | VAKK |
|  | CTNLMHKVFA |
| UniRef90_UPIOOO4 | CNTAHYWYDRLHAAASVEMIS LDA TLSEL |
| UniRe G5IIP7 | LASNTA |
| UniRef90-U4V295 | LATNAMHKLKDQIMQGDDLPFIHもAEATATAVLAGG |
|  |  |
| UniRef90-T5AC31 | CNTMHKSLLLLDQRLPL |
| UniR | MPCVTAHYWFHEI MAQERV |
| OE | CNSAHAWAGERAATS PVM D A AEA GRD |
| UP1000377D3EA | ANTPHVVFDRLEQASPLPLSSDSTQRE HARG |
| UniRee90-UP100046A568C | CNTAHYFYDEL |
| UniRef90-B2GA | L |
| UniRef90 UPI0003728304 |  |
| UniRef90-C5BBII | G |
| R48 |  |
| UniRet90 - X1AFQ5 |  |
| W8P414 |  |
| 4IY13 |  |
|  | NIVLDRILPLSPVPIVSAIDATCNAAQERG |
| UniRef90-C5RCW8 | CNTAHYFLP |
| 90888FDC8 | M P M AY |
|  | NTPHN |
| UniRee90 Uploou41E6C1A |  |
|  |  |
| UP10003B45C84 | VPCNSAHYWFNDMQHAAD |
|  |  |
| ef90 - D1P158 | IPCNTAHFWFDELKKSCHVETLSTIEA |
|  |  |
| UniRef90 ${ }^{-} \mathrm{K} 8 \mathrm{WRSS} 5$ | I PCNTVHYWYPQLAQASKASILHIVVDIIATEYAA |
| niRef90- D9WJV1 |  |
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UniRef90_UPIO0029AEF17 UniRef90-E4TMQ8 UniRef90-A9DFX3 UniRef90_V1CJF2 UniRef90-G9SI81
UniRef90_G6CCG1 UniRef90-13YG00 UniRef90-XOPPH5 UniRef90_U9W799 UniRef90-A3K6Y0 UniRef90-N4WR88 UniRef90_A0A022KUF4 UniRef90-R2PU28 UniRef90-K8ZJT0 UniRef90-H3NCT3 UniRef90-TOPKV3 UniRef90_K1Z102 UniRef90-C6D1N1 UniRef90-F9TQD1 UniRef90_UPI00042594EC UniRef90_Q04F20 UniRef90-I3WGY8
UniRef90 U2ZFV7 UniRef90_UPIOOO2625860 UniRef90-N1WNB9 UniRef90-E5ASJ5 UniRef90-MONXI1 UniRef90-JOUSM1 UniRef90_R7L5A1 UniRef90-A2RP21 UniRef9O-V5PQH8 UniRef90-B1FNA9 UniRef90_V6ITR4 UniRef90_H3NWP0
UniRef90_UPIO0037F09E1 UniRef90_A91M59 UniRef90_S5XZQ3 UniRef90-D5EFP4 UniRef90_UPI0003B5D529 UniRef90-Q470U8 UniRef90_W1TU16 UniRef90_A5PBH6
UniRef90_UPI0002884F14 UniRef90 B5QM64 UniRef90-UPI00045E9E42 UniRef90-X6CU02 UniRef90_R6TVV9
UniRef90_UPIOOO463182F
UniRef90-R9KW93
UniRef90-Q5LQ34
UniRef90_Q5LQ34
UniRef90_A3WAJ3
UniRef90_A3SHT7
UniRef90 Q5JH55
UniRef90_Q5JH55
UniRef90_UPIOO03B41263
UniRef90_UPIOOO2491078
UniRef90-R5FVU0
UniRef90_K2E2T5
UniRef90-B2T9C8
UniRef90_B2T9C8
UniRef90_E6K309
UniRef90_UPIO00378FF16
UniRef90_UPIO00465417B
UniRef90_UPI0003B3401F
UniRef90_D3UY81
UniRef90-V715T4
UniRef90_UPIO004790502
UniRef90_G9WHM8
UniRef90_A7BLI9
UniRef90-A6TVW8
UniRef90_UPI0002491390
UniRef90_G4L7T2
UniRef90_Q6L2R8
UniRef90_UPI000478E3F8
UniRef90-K9FBH0
UniRef90_UPIO00362D0FA
UniRef90-L5MUR1
UniRef90_U2W397
UniRef90-L1N417
UniRef90_UPIOOO378C786
UniRef90-LOHPH3
UniRef90_UPI000312A32D
UniRef90-U2WKH9
UniRef90_UPI000308B4F3
UniRef90_UPIO002194C6D
UniRef90-D4M7U9
UniRef90-D6S2H7
UniRef90_G0RB82




 K TVVGI G G L GPRA TV A FMNSVVLENTPDKSNRDHDRMMV D M R L $\vee \mathrm{L} \mathrm{V}_{\mathrm{G}} \mathrm{G} \mathrm{M}_{\mathrm{M}} \mathrm{G} T$




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| :---: | :---: |
| UniRef90－UP100029AEF17 |  |
| UniRef90－E4TMQ8 |  |
| UniRef90－A9DFX3 | HSVDSHMLHQHQCNNDWPEIGA LLGEAGRSLKNGGADF |
| UniRef90－V1CJF2 |  |
| UniRef90－G9S | ESDNVYDVLTMCGRKDYEALTKYLAKAVGNLV |
|  | NHAEIPDRTAYILDNSQENPLPVMLKDIRQMNL |
| UniRef90－13YG00 | TLPRVPDRSAAIL GRGQDPLPALKEGIALLNRADVGLVV |
| UniRef90－X0PPH5 | NHATVPDRTSY』LDHSKPNFYPDLLEDIK Q S S Q Li PaFFA |
| UniRef90－U9W799 | SAASTPDRTK SLMGTGLDCMPYLIDSAHQLETMGADFLV |
| UniRef90－U7UB16 | SHASMPDRTQVILKGLHKSLVKEVEKDLK F F A Y GAKNLA |
| UniRef90－A3K6Y0 | QNPAVPSRDAALIEGTGPSPLPALQAMARDLQAAGAAALA |
| UniRef90－N4WR88 |  |
| UniRef90＿A0A022KUF | QHSSTPDRTARILNPTAADPGPVIARDAVMLERAGARLLV |
| UniRef90－R2PU28 | NHATVPDRTAAI HPGEAADPLPFLLDDIAKQNLLEPNFIV |
| UniRef90－K8ZJT0 | NHASIPDRTAFILQQSKEDPYPVLQEDIVSLQPLHPRFFV |
| UniRef90－H3NCT3 | NHATIPDRTDY I I GKS Q |
| UniRef90－TOPKV3 |  |
| UniRef90－K1Z102 |  |
| UniRef90－C6D1N1 | NHTSLPDRTDVLRKKEGDLFLDKISKDMALLHDAGVSNI A |
| UniRef90－F9TQD1 | NVPQVPDRT NYLMGFGSDPFAALNHGFGELLKAGATCIV |
| UniRef90＿UPIO0042594EC | ESLNFQYFTDFENRNDMDGYKEYIMKGDRNLESAGSD\｜II |
| UniRef90＿Q04F20 | NHAClPDRTAY IFDRTKDNPDPFLKEDI QQLNS LSADFVV |
| UniRef90－13WGY8 | NDAAVPDRTAFIIGGSDDDPFPIIADDIDKATAMGASFIV |
| UniRef90－U2ZFV7 | $\square$ DPRVPNRNTA PEAAGRELARMAAALRDAGAEVLA |
| UniRef90＿UPI0002625860 |  |
| UniRef90－N1WNB9 | Y SINTDVMRRQNIN |
| UniRef90－E5ASJ5 | SCPEIPDRSTA I ENGDTIVPTMDHARLA QLARAGCGAVA |
| UniRef90－MONXI1 | NDPKIPDRNAAILDGS ESPLPRLQKNAKTLKEAGADVI A |
| UniRef90－W6TEM7 |  |
| UniRef90－JoUSM1 | DSLDVFELLTLEETGNKQALLRVLLTSLINNLKNAGASLAA |
| UniRef90－R7L5A1 | NHASI DDRTYAIKNNKLDELLKQMHENLKILENAKVTS |
| UniRef90－A2RP21 | NHATI PDRTEYI KNPSLENPEEKLIDDIKI HSQLSPKFFV |
| UniRef90－V5PQH8 | SVPQIPDRTEALL HDGASPLDGMLDGVHALEQSGAGCIA |
| UniRef90－B1FNA9 | VSLNFET |
| UniRef90－V6ITR4 |  |
| UniRef90－H3NWP0 |  |
| UniRef90＿UPI00037F09E1 |  |
| UniRef90－A9IM59 | NDPRIPDRSDARMRGGEDPL P Y MVEGLDRFLHAAGARVIA |
| UniRef90－S5XZQ3 | QNPQVPSR】ARLIEGQGDDPGPVLAAMARDLQAAGAEALA |
| UniRef90－D5EFP4 | K S LDFQYF TDLENERRTEEY\DYıVKG\KSLESAGADFAl |
| UniRef90＿UPI0003B5 | ESVDFRRAWDYVSSGEYYLLKEYLSEKVHSLEKAGAEVIS |
| UniRef90－Q470U8 | HLPHTPDRSRSILLAGD ELPLDPHLLAGIDLLNRNQVGLVV |
| UniRef90－W1TU16 | GDTDLPDRSAAML GKGADPGPQMRDDFEKLDTWGADVLC |
| UniRef90－A5PBH6 |  |
| UniRef90－UPI0002884F14 | Y S CPTPFYVDRPID H DEMKKAII D GAVKLEKTGADFI S |
| UniRef90－B5QM64 | NDATVPDRTDY ILDHSKPSFFPDLLEDVRAQSLLQPEFIV |
| UniRef90－UPI00045E9E42 | RSFEFAEDCELQEADDWAALGA I YATEAAVLRDGGARVLG |
| UniRef90－X6CU02 |  |
| UniRef90－R6TVV9 |  |
| UniRef90－UPI000463182F | NHATVPDRTEFILGRSEDDPFPYLAEDVRQATAMGASFMV |
| UniRef90－R9KW93 | NDTAIPDRTAFITGESARSPDSALIEDGQLLEACGCEVLA |
| UniRef90－Q5LQ34 | QKPLSEPDPVSRPDYLPTHRKFYVFDTLTRMEQNGCDAAL |
| UniRef90－Q5LQ34 | QKPLSEPIPVSRPDYLPTHRKFYVFDTLTRMEQNGCDAA |
| UniRef90－A3WAJ3 | HS LDFAPIAQLQADGEWEELGEAMADSARSLEAGGADCLL |
| UniRef90－A3SHT7 | QNPQVPSRIKALLEGGGEDPGPVLAAMAQDLERAGAQALA |
| UniRef90－Q5JH55 | FSMNFKTFKDNPR GWEGRKEMLIEAAKALERAGAEVIG |
| UniRef90－X8K1L4 |  |
| UniRef90－UPI0003B41263 | SNPHVPDRNAAALHGA DSPGPALAAMGTALVAQGAQVLA |
| UniRef90－UPI0002491078 | NHATI PDRSAY I LD S SPNPGPKLVEDVKQFSTLNPNFFV |
| UniRef90－R5FVU0 | NKCSIPDRTAAIFEN GENPVPKINEGIDELIKNGCENF |
| UniRef90－K2E2T5 |  |
| UniRef90－B2T9C8 | QH PFRGAVAGGEATTQRKLYIFDMISGFEKRGVTTVV |
| UniRef90＿B2T9C8 | QH PFRGAVAGGEATTQRKLYIFDMI SGFEKRGVTTVV |
| UniRef90－E6K309 | NDASVPDRTAFILLGKSQEDPFPVLADDIIAKATAAGASFIV |
| UniRef90＿UPI0003 | Y SVNFHD |
| UniRef90－UPI000465417B | NLPGTPDRSAAIIDG GPSPLPALLEGDDLLNRNAAALIV |
| UniRef90－UPI0003B3401F | ESVNFRKAWDYVSNNRYDLLTDYLEEKI N YLIS GGAEVI S |
| UniRef90－D3UY81 | $\square$ SLNFSK\LAA QKRDDNETEFNILSKAVHQLAQAEVKKIL |
| UniRef90－V7I5T4 | SNPKIPDRTRAUL GDGENPVPMI I ETARNLERMGVD\｜AC |
| UniRef90－UPI0004790502 | A S LDFAEDEALQVAGEWDRAGDVLAAAAARLEAAGAELLV |
| UniRef90－G9WHM8 |  |
| UniRef90－A7BLI9 | NATTIPDRTQ SLS GKAESCAPWLI KYGKFLESAGVDFIV |
| UniRef90－A6TVW8 | SNCKIPDRTKAリLYQGVSPLHA MIK SARQLES\GAG\｜LI |
| UniRef90－UPI0002491390 | NHATVPDRTDYI I D H S KPSFLPSLVEDVKQQSLLQPVFMV |
| UniRef90＿G4L7T2 | NHATVPDRTDFILGKSTENPSSELKKDLRQYTKLQPDFFV |
| UniRef90－Q6L2R8 | NDPEIPDRDEAYFEN MESPVNAINNGIKYLESIGTDTMG |
| UniRef90－UPI000478E3F8 | YSCPTPFYMDRPINHK DMKQAIVHGAQKLESTGVDFI A |
| UniRef90－K9FBH0 | SAASTPDRTQ SLA G $\square$ GPDCVPYLVRSACLLEAMGAGFLV |
| UniRef90－UPI000362D0FA | SNTQVPCRVQALIA QGPTPVPEIVRSLQQLERMGADFAL |
| UniRef90－L5MUR1 | Y SVDFAEIEEMQREGRWAEAGERMAQAAQGLEAAGA |
| UniRef90－U2W397 | ESLSVFDVLQYASSNDREGLTEYLLEGFQHLAGAGCEFAA |
| UniRef90－L1N417 | DSLSCFEVMPMASAGKREELAAYLLGSDRNVTAAGADFAA |
| UniRef90－UPI000378C786 | F MLD ${ }^{\text {S GVMDGHYHDENWEAFKAEVVKGAEALKAAGAEADA }}$ |
| UniRef90－LOHPH3 | FSLNFKKFRELP DWRKKKEYI MEG\RALENAGAE\｜I A |
| UniRef90－UPI000312A32D |  |
| UniRef90－U2WKH9 | NDAQIPDRTAYILDHNCTNPLPSLKADVRLLNRLGAKFIV1） |
| UniRef90＿UPI000308B4F3 | NNPKIPPR】TSLNQGSKTP |
| UniRef90－UPI0002194C6D | NHSTVPDRTAHILDHSKPSFLPPLAED\KQQSLLKPEFMV |
| UniRef90－D4M7U9 | S DPDVPDRSD GIM GLGPDPLPAIKKDLLQLVEWGAEVLA |
| UniRef90－D6S2H7 | NDAQIPDRTAYIKDHTKENFFFALKDDVEKQSLLKPDFFV |
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## UniRef90 X1M2D0 UniRef90- W6WRT5 UniRef90-W6WRT5 UniRef90 $\times 0 \cup 4 \times 6$

 UniRet90_UPIO0035EOA85 UniRef90_UPIOOO32ACFC3UniRet90-UPIOOO3B540C8 UniRef90- V6J294 UniRef90-UPIO0046A10E4 UniRef90-UPIO0046A10E4 UniRef90-G9WJH3 UniRef90_-J9YXK7 UniRef90-F9TEV9
UniRef90-O2HVX3 UniRef90-SOJMB8 UniRef90-G2IS85
UniRef90_W4VPZ4
UniRef90-E2Z9F3
UniRef90-S6C2B7 UniRef90-KOZ7B0 UniRefefo-TGUHAO UniRef90-U2TK75 UniRef90-B5IGH6 UniRef90-D3S201
UniRef90-P32960 UniRef90-ADAO24KHX9 UniRef90-D3F6Z0 UniRef90-UPIO003B430C8 UniRef90-B5WLG3 UniRef90-B5WLG3 UniRef90_S3NKE9
UniRef90 V6M5A3 UniRef90_UPlooo289B46A UniRef90-U4TIF5 UniRef90-K9AR65 UniRef90-UPI000367C3AD UniRef90-UPIO002F2E78D UniRef90-10GUN3 UniRet90_UPI0002DB175F UniRef90 UPIOOO36942DB UniRef90-16AVC7
UniRef90
U1XB76 UniRef90-F8DME6 UniRef90-K1LN34 UniRefofo-B1HU15 UniRef90-D5TL27 UniRef90-R8AVP1
UniRef90_E1NP11 UniRef90-U7UH02 UniRe90_B8GX88
UniRet90_UPIO0038147B1 UniRef90-V710P8 UniRef90-H1GYV1 UniRef90-UPIOOO3940575 UniRef90 B9GWD2 UniReforo- 7 7HF81 UniRef90-W9VE75 UniRef90-IOL9R7 UniRef90-C7HV57 UniRef90_S6JVL1 UniRef90_U2Q5A1
UniRef90 U1WK1 UniRef90_UPIooo30471E0 UniRet90--FONW78 UniRef90-17K1U7 UniRef90-X0QJ34 UniRef90-UPIOOO2379FBD UniRef90-UPIo0037CF796 UniRef90-W1JXH5 UniRef90-UPIOOO35CFADA UniRef90-UPIo003B344A6 UniRef90_S4YB36 UniRef90_Q21TT6 UniRef90_G9YJ02
UniRef90 MOT3A8 UniRef90-UPI000375AD73 UniRef90-UPIIO0037ECE35 UniRef90-X1T7F4 UniRef90-UPIoo035C1012 UniRef90 X4YVJ9 UniRef90-UPIOOOO1912711 UniRef90- W11SA4 UniRef90-UPIO003B4A841 UniRef90_UPIOOO2D90421 UniRef90-Q4FL57 UniRef90_U2A7J8 UniRef90_R6EQJ7
UniRet90_W2RR97

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40 RKYGIVGGLGPLGSADVFFKLVKAMPPSTDAEHANMIVIV RKYGIVGGLGPLGSADVFFKLVKAMPPSTDAEHADLI FQ MKK GVGC SAEGAALCYRTVEEAPREMGEHRHPEITM $\square R$ TVGMV M
MK
$\begin{array}{ll}R & S \\ R & S \\ K & \\ K\end{array}$ MKK GIVGC SAEGAALCYTTICSESDAKFGNYQHPDDSM

TVGII GGMSVDATLNFLRKLVELSSQ MKNFAILGGMGTLATESFVHVLNERTPNHSDQDYLNYVLI MKKLGLIGGISWTSTARYYDLINRAVQRELGGLHSATLLI MAK GLVGGLGPESTDDYYQS DSGYQEKHRSNKVLPHVI MKKLG

VIGGMGTPATESYVRKLNQRTHAHSDQEYGNYILV
 MKTVGLLGGMSWESTRPYYRLINEGMKQRLGGLHSAQVLL
 M MRT GIVGGFSWHSTAAYYRRINERTAERLGGHASAHLVL KRIGIGGGISHESTIKYYEY DKKYYARKRNYHFPEMVI

 D A


## $T \square G V L G G$

MKKLGVIGNMGPEATIDLLRKIDRCSNARSDQEHVHLIDD
 MKK1GLLGGTGPESTLLYYKELNSRIDKLTGAEHMPELVI



G $\| A M^{\prime}$
RRLGLGGGMGPLATVDFMRKVVACQAKYDMDFPHMMI Y MNKLGLIGGMGTVATESYVRLINSRVKDKCDQDYLNYIV KVLGVLGGMGPAATLDFLAKLQAATPDTREQDHLRVLVD MGPEATILVMQKILRAVRAEDDSDHVPLIVD MKR G L GGMAYPSTALYYT LLNKMANEKWGGYHSCPILL MK VGGVGGLGWVSTLEYYKLVNVLNQYLGGHQSAHVLI MKTLGLLGGMGPMATACFMERITAMTAADTDQEQDPVIVY RRLGVVGMSWQTTALYYQTINTHVATRLGGIHSANLLL RRLGVVGGVGPLAVAHFYQRLIQLTPAVEDDEHREVVLV MKTVGMVGGMSWESTASYYKALNEGVKSRLGGLHSAKICL


PMAGAAFAMRLAALTPADRDQEHIPTLLL
 MKKLGLI GG円GPESTLLYYKKLVYA DHDKADKDFFPPLVM

TVGVLGGVSAASTLRFREKLVQOWSSSDGQETPPFVV
KLGVLGGMGPAAAAEFLRLLAVKAPASNDSEHPVVYMV MKIGGLGGMSWESSQEYYRIVNEAVKEKLGGFFSAKSVM


UniRef90 X1M2D0 UniRef90-W6WRT5 UniRef90-W6WRTS UniRef90 UPI00035EOA85 UniRef90-UPI00032ACFC3 UniRef90-UPIO003B540C8 UniRef90 V6J294 UniRef90-UPIO0046A10E4 UniRef90-UPIO0046A10E4 UniRef90-G9WJH3 UniRef90-J9YXK7 UniRef90-F9TEV9 UniRef90-Q2HVX3 UniRef90-S0JMB8 UniRef90-G2IS85 UniRef90-W4VPZ4 UniRef90-E2Z9F3 UniRef90-S6C2B7 UniRef90-KOZ7B0 UniReffo-TGUHAO UniRef90-U2TK75 UniRef90_B5IGH6 UniRef90-D3S201
UniRef90-P32960 UniRef90-A0АО24KHX9 UniRef90-D3F6Z0 UniRef90-UPIO003B430C8 UniRef90-B5WLG3 UniRef90_B5WLG3 UniRef90_S3NKE9 UniRef90-V6M5A3 UniRef90-UPIO00289B46A UniRef90_U4TIF5 UniRef90-K9AR65 UniRef90-UPIO00367C3AD UniRef90-UPIo002F2E78D UniRef90-10GUN3 UniRet90_UP10002DB175F UniRef90-UPIOOO36942DB UniRef90-l6AVC7
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UniRef90 U UHO2 UniRef90-B8G×88 UniRef90-UPIOOO38147B1 UniRef90-V710P8
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UniRef90 lot9R7 UniRef90 C7HV57 UniRef90_S6JVL1 UniRef90_U2Q5A1 UniRef90_U1WK61 UniRet90_UPIOOO30471E0 UniReif90-17K1U7 UniRef90-Q5WBX9 UniRef90 ${ }^{-}$X0QJ34 UniRef90-UPIO002379FBD UniRef90_UPIooo37CF796 UniRef90-W1JXH5 UniRef90-UPI00035CFADA UniRef90-UPIo003B344A6 UniRet90-S4YB36 UniRef90_Q21TT6 UniRef90-G9YJ02 UniRef90-МОТЗА8 UniRef90-UPI000375AD73 UniRef90-UP100037ECE35 UniRef90-X1T7F4 UniRef90-UPIOOO35C1012 UniRef90-X4YVJ9 UniRef90-UPIOOO1912711 UniRef90 W W1SA4 UniRef90-Q6FWC7 UniRef90 UPIIOOO3B4AA41 UniRef90-UP10002D90421 UniRef90-Q4FL57 UniRef90-U2A7J8 UniRef90_R6EQJ7

D90421
 QH PFRSSGVGSAATTERKLYIFNMDRDFEKRGVTTVV QH PFRSSGVGSAATTERKLYIFNMURDFEKRGVTTVV HTHPLSDYMVY RAGDWEKVAELMLSSTHKLARVGADFAU ESLSVFNVMSFCANRDYDGLLADYLTAGFTNLANAGCEVAS SDPLLYERSLESLKLDSSNIVQSLINKRTFLENSGASCIV HSVDFSAVHAQQVAGDWAGUGYDLGRAALALQAGGAEAVA SCPTP A GRPIDPQAMEQA IDDGKRLEATGIDFIA QHPFSQ AGHTTAATTERKLYIFDLIRDFQRRGIGAVV QHPFSQ AGHTTAATTERKLYIFDLIRDFQRRGIGAVV NSDNMYHMFDLLEQKDYDAVVAYLVKAVNELQAAGADFGL NKSNTPRFENISSKRKYEKVLKSLI DGCKKLEKAKCRFIV HTPSLSLYVDALNQGDKQGVARLMLDSVERLKAAGAEFVI CSDPLLNKLLSYERSLESFKQSLRNKRVFLENSGARCUV DSLDFADVARCASANDWACGAGHMVGAARRLEAGGAQALM NSIDMYQVFAFIEEKNTQGLIDYLTKAVNELEAAGANIAA ESLDVHRVLSYCGQKDYAGLTAYLDKGITNLVAGGAQVVA NDATVPDRTDYILDHSKPSFYPDLDEDIQDQSLLNPEFMV NRPQIPDRTAFILGKSEESYDPAVREAAFERERMGCEVIC HSVDFHEDEECQRRGEWDKTGDILAEAALGLQRRAQKVLC ESMSCYDVMPDAAERRLDELTDYFMGGIEHLASAGCDVAA FNLNF KKFKSAKDWDDREDYLLEGIKALEHAGAEIDA YSLNFKEFV SCPTP FYADRPDDHDEMKKA IDGAVKLEKTGVDFIA VSANYGNVEHFVFNDLWAEAEVYLAEKLDRLEAAKPDVVL FSLDLKKLLMEFEDRKDMDGY GHYI REGIVALVKAGAEFIV 1 FEQRPFKGAGAGSAATTYIFNMIRDFEKRGVTMAV IFEQRPFKGAGAGSAATTYIIFNMI RDFEKRGVTMAV NHGGIP DR QLA IN ALGG SAATVAFNM R DFEKRGVAMAV YSCPTPFYTDRPIDH DSIDDMKEVLTLVSNKEWYKLVNLIVNSLNNLYMAGATIGV
 DSCDFSGDRDLQUAEDWDEASAALAATGQRLAAGGAEAVA
 KNPDIPDRSEANNGGGEDPVRELEKSAQLLERNNVRFAV ESVDFRRVWGYLTNGQYGELVDYLAEKVNNLRSYGAEVVS SHATTPDRTAALTDPNAADPSPVLLADAQRLEHLGAQIVA VEGGHEELVLCAARDWARLKARLLCAARRLTAAGAEKLLI ESUNMYHMFRLLDAQQYDKVAGYVGAAANNLLKAGCDFGL SHPQNPDRTEAFLDHKGPSPLDALMESVQLLERAGCDLIA SVPTPPDFYMDRPIDHEAMKKALIEGAQKLESTGASFIA NDAQUPDRTAY LKDATGPDFFAALRLLDQLSEQAGGTLFV ESLDVFK乌LSYCSTKDYY QNTKVPSRTRHLVNVGDDPGPVAAMAAGLRDSGAQVLA NHAT PDRTAY ILDHSQPNPLTPMIEDTQAI NTLKPKFYT Y S DYHNTKTRYANQWDEVPNLLKHEVETLLSLQPNCFL ESLINGLFLENQSNDPTETLCEEMITDAVGLVSGGAEVVA SNTQITPDRSAYLLGRPQENPVTALRQTAHFLEDGACDY IVA YSVDFEEDEKCQANGDWNRSAE LSDAAQSLEKAGA AERVPSRUSAYLRGVGPSPVPALLRAAKHLEAAGVDALV YSVDFDEDEKLQHPGKWSETALILAEAAKSVERGGADF


 YSCPTPFYTDKPLNHK NSVNMYHLFGLLNRQDNAGAAAYLGKGMAQLAQAGVDFVA ESVTQAKTRALRDEDSWAAFDAVFREALLTLEHAGCDFGI HTHSLSDYVECLDAGNLEGVAELMLSSANKLAAAGADFLI
 NKSNLPDRKQNLK KYNKILKSLEDGCKFLQQNKCRF: S $M Q V P V P D R T Q A L S S A D D A P L E A M A R A L G R L E T V G V C A V A$ ESLDVYRVLAYCKAKDYTGLTEYVSKGLADLAAAGAQVAA CNNPVLNRELALHQSGWDCCTENLRRERVFLERAGARCIA GDTQDPDRSTAILGKGVCPQAQURADGELLVSLGADILA YSVNFEEDEKLQHKGDWQAATELMLDAAQRVERAGA NDPRDPDRSTARLYGGADPWPAMLRGGRTLNNAGAKLI A NSVDFHEDEECQRRGEWDKTGDLLAEAALGLQRAGAEGUV



LCANVAHKAADA VVTQLDLPVLHDVDFTAEEVVKGG I PSATTHAFRDDVARAVAVPVLDLLAEVGAVLAGRG ITCNTAHFFYDDLQKLTKKPI INMIELVENKLNK

VPCNTVHYFDDDFVDEDPVPGIHDVDATDTAAMQ
MGANSPHSVFNEVLNKINVPMISIVESTAKRATE VTCNTAHGVYDQVQAQLNI PWI HLMACTSDY $\square$ MPCNTAHYWYDELAALSDVPFLNMMEDAV
MPCNTAHYFYDELAELTSSIPFLNMMRDAVVQFDEK IDPCNTAHVYFDQVKNSLSIPLLNMVEETIKRV MCGMTPHIVFDQLQAEAAVPLLSMVQTSVTAAQAQ




$M A C N T A H A W H D E L Q A R D P$
$L T$
$L$

 VPCNSAHYF DDRFQQPLSKKLVH VVEETVLATKKA


UniRef90 A1X1Q9 UniRef90_D0CVC1
UniRef90_A4ES80 UniRef90_UPI00037CEF07 UniRef90_E6SRI6 UniRef90-WOPB551 UniRef90-U2RP81 UniRef90-D8HX22 UniRef90_UPIO0037B984E UniRef90-W9DW15 UniRef90_C3H0G9 UniRef90_UPIOOO42B008B UniRef90- X1E0S2 UniRef90_UPI000365065C UniRef90-U2W388
UniRef90-UPIO00422137A
UniRef90 K8WYL1
UniRef90-A0A058YT53
UniRef90-F6HXA3
UniRef90-X1AGP3
UniRef90-E8TZH7
UniRef90-UPI00039E43A1
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UniRef90_UPI0002C34FD9
UniRef90_K6LAH4
UniRef90-19MIB3
UniRef90-W4F944
UniRef90-X6NCM0
UniRef90-R4K8D5
UniRef90-K2J3K2
UniRef90-UPIOO035C2B4C
UniRef90-K0B091
UniRef90-B8CUM1
UniRef90-E0XWC1
UniRef90-A0A01718L2
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UniRef90-D5VIR9
UniRef90_UPIO0039F9231
UniRef90_S3YDM7
UniRef90_P70716
UniRef90-F5Y3L5
UniRef90-M0B479
UniRef90-MOB479
UniRef90-DDMF40
UniRef90_UPI0003B5E2BA
UniRef90-UPI000377B016
UniRef90_R7FP56
UniRef90-S2XEM6
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UniRef90 F0Q8D2
UniRef90-UPIO004178520
UniRef90-E5Y345
UniRef90_UPI0003FA0765
UniRef90_E5Y3B0
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UniRef9- UOYSL5
UniRef90-U0YSL5
UniRef90_UPI0002D83C3D
UniRef90_M5X5W7
UniRef90-C7GZW2
UniRef90-V4TUM4
UniRef90_C3Q272
UniRef90_DOIV73
UniRef90-G6YIY1
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UniRef90-A5BHIO
UniRef90_UPIO0042B440C
UniRef90_UPI0003B3106D
UniRef90_Q5LNG4
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UniRef90-E3CLR2
UniRef90_UPI0003B72CDB
UniRef90-B4UBY8
UniRef90_UPIO00379CB31
UniRef90-H5WTC0
UniRef90-C6TOI4
UniRef90-A0A021W8F4
UniRef90_UPI0003B5F632
UniRef90_A4BZM4
UniRef90-E6V5K7
UniRef90-K7Q054
UniRef90-A0A022QAM2
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UniRef90-W5XAC2
UniRef90-J2VRZ1
UniRef90-B9SEP2
UniRef90_S0FM99
UniRef90_SOFM99
UniRef90_UPI0003B6C161


$M K K \square G T L G G M G P \square A S A E F L K T T Y E F N L A D R E Q E M P A C F L Y$ K VLGVLGGMGPAATLDFLAKLOSAPPVQREDDHARVLVD
 A A MNQALGGNASAPLLMM AGAAFAARLVALTPAGRDQDHVPALLC QIVGVLGGMSSQSTSEYYRLIDDSISDARGGH $M K I \quad$ GILGGGDHHS GLLEYFRQINDKVQKSDPWKYTSKILM $K V I G V I G G M G P Y A G L E L V R H I F D Q T L A A S D Q E H D P V V L E$ MTRIIGVIVGGMGPHAGLDLVRKI FDQ
$\nabla K R T K A K T D Q Q H V N M V I T T$
$R T \bigvee G \square L G G M G P A A G A D F A R L F V E A C T A R M Q D Q A Y P E H W L L$ ATVSFLQQVIDATAVTVEQEHVDLIVS

PKATNQF LDRDTELTDAANDQEHVRY乌LY

 QVVGVLGGMGPAAGADFVRLFVEACSRQVQDQAFPEHWL $V G I I_{G} G V S V D A T L K F L R K L V E F S S Q D D G V N S T P F V L$ $\square G V V A C S A E G A A L C Y R T V C S E G A A L L G P H A H P Q Q A L$ GPAATVAF LDALVRATPAATDQEHDDTVEL

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



|  |  |
| :---: | :---: |
|  |  |
| - A4ES80 | $V N Q A E T R S L R D E Q S W A D F D A ~$ |
| Ref90-UPI | VPVPEETALTQKHDLGR |
|  | TQAP |
| UniRet90 Woprs51 | NDPRIPDRSSAQLAG GPSPLPAMREGMQDLQRWGAQCIA |
| UniRef90 U2 | D |
| -90 D8HX22 | RVPDRT |
|  | Gl PDR |
| NiRef90-W9DW |  |
|  | , |
| UniRef | SDPALDEGEDAQKEGNHEP |
| UniRef90_X1EOS2 | HTHSLSEYIRYOETGDWESVANLMLSSUNKL |
| UniRef90-UPIOOO3650 | S L A |
| UniRet90-U2W388 ${ }^{\text {UniRef90 UPIOOO422137A }}$ | ESLISVFDULGFCERQDHAGLTAYMLKGUS |
| UniRef90-K8WYL1 | S PD |
| UniRef90-A0A058 |  |
| UniRef90-F6HXA3 | SDPHFPLLSTKRESSRMDPVVGNLQSKRAFLERSGVQCIIV |
|  |  |
| UniRef90-UPI00039E | PPAVLDETGAFRM |
| UniRet90-K1WB66 | NATDLPDRTQ SLLGNQ |
| UniRef90-UPIo | R |
|  | SGDWERAGE |
| UniR | N |
| UniRef90 W4F944 |  |
|  | GRPDDQ MKK |
| UniRef90- K2J3K2 | HCFSMSQYMG |
| UniRef90-UP100035C | HTHSLI S YV |
| UniRef90-K0BO | PTPFYIDRKDDE E ELLLKNSLKEGIIEKL |
|  |  |
| UniF | KTGEI |
| UniRef90-K9Y090 |  |
|  |  |
| UniRef90-UP100039 |  |
|  |  |
| UniRef9 | NDPR $\square$ P DRSSAR $D_{\text {GQG }}$ |
| M0B479 |  |
| X6LU27 |  |
| 90- UPI0003 | R |
|  | AERVPSRVAHLVGTGPSPLPTLIDAARRLERAGAGVVA |
| R7FP | SGASTPDRTDY TGKSMDSPLPKMKEDVKKL |
| 仿EM6 |  |
| Unif | A |
| UniRef90-UPIO004178520 | RTAALLHG GPTPAPQ |
| iRef90-E5Y345 | SFPDIGERPAF |
|  | NATDI PDR |
| UniRef90-E5Y3 | SSEHIIDRTRFLLGETDENPGEAI GEIIMVRMAKAGATVIG |
|  | V |
| UniRef90-UPIO002D83C3D | D |
| UniRef90-M5X5W7 | CSPSFPYVSRKNEGTEDDPTVENLRSKR\YL |
|  |  |
|  |  |
| UniRef90_C3O | QATKVPSR SMYLEGKGPNWIEDYVEDGRKMKECGCTKLC |
|  |  |
|  |  |
| Prioooth | FSDDQFDFTARAAQADPAS HDFLVEEGVRLKAAGADFFL |
| Ref90 UPIOO | C |
|  |  |
| Unireigo-Q | E |
|  | - |
|  |  |
| UniRet90_M4EBH4 | GLWQEA |
| UniR |  |
|  |  |
| UniRef90-UP10003B72CDB | SRPATPDRTSYILGKSENSPLSELIRMEDDVCKMGAKVIA |
| UniRef90-B4UBY8 | D HVW |
| UniRef90-UPIO00379CB31 | AQVPVPDRTGALLNRDA |
| UniRef90 H5WTC |  |
| UniF | HTHSLADYVVCLDRGD |
|  | SHAGVPDR |
| UniRet90-A4 | ${ }_{4}$ |
|  |  |
|  |  |
| niRef90-K2D2K7 | ESVPVPDFTSDTSRITEEAKEMLTKSVQSLTNAGATRLC |
| UniRef90-W5XAC2 | HTPPFVDYVRCFDQGDWA AVGELMLASARKLTACGADFLI |
|  |  |
| UniRet90_B9SEP2 | E |
|  |  |


UniRef90_R6A1I1
UniRef90_UPI0003B32ED8
UniRef90_V4KC21
UniRef90_Q12C11
UniRef90_B8IZK0
UniRef90_L1QLD0
UniRef90_Q01ZT1
UniRef90_R9JRX4
UniRef90_W9R151
UniRef90_G7JVC4
UniRef90_J3L0Z9
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UniRef90_UPI0004728DD0
UniRef90_V7C034
UniRef90_Q7VK17
UniRef90_A0A024KHA7
UniRef90_J2KAQ0
UniRef90_UPI0002C2EB40
UniRef90_UPI0002374FF2
UniRef90_W9RC82
UniRef90_UPI000377F763
UniRef90_UPI0002191A7D
UniRef90_I6ABJ6
UniRef90_B9RV29
UniRef90_G8PPN8
UniRef90_UPI000364DF9D
UniRef90_UPI000349BC94
UniRef90_UPI0002B4357E
UniRef90_A0A059CN45
UniRef90_C7PT81
UniRef9_-T0LY11

UniRef90-TOLY11
UniRef90_J9NDK5
UniRef90_A0A059AK76 UniRef90_C2G166 UniRef90_UPIO002E806D2 UniRef90_W0J6D2
UniRef90_X0ZWQ0
UniRef90-UPI000370B752 UniRef90_J3D0W3
UniRef90_I1NNZ1
UniRef90_UPI000395DB75
UniRef90-H0JR88
UniRef90-V4UM11
UniRef90_V4UM11
UniRef90_UPI0003AD2336 UniRef90_F6AYV8
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UniRef90-J0KNP0 UniRef90_Q122A8
UniRef90_H3RKP7
UniRef90 N2B5D0
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UniRef90-W4L7M8
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UniRef90_I3BZS0
UniRef90_R4XTL9
UniRef90-R7AKA4
UniRef90_K3XK00
UniRef90-X1KZM7
UniRef90_L8JIU1
UniRef90-G1V6E9
UniRef90_UPIO004278CCA
UniRef90-I5BUH4
UniRef90_C2E4Z5
UniRef90_K0I6M8
UniRef90_R6KYE3
UniRef90_UPI0002ED6CB8
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UniRef90_UPI000287A543
UniRef90_H0TFW5
UniRef90_W1YML2
UniRef90_R9SJJ9
UniRef90_B0JPW0
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UniRef90_B9NWQ1
UniRef90_D0D0R2
UniRef90_UPIO00380258B
UniRef90_X0U6K3
UniRef90_U1V327
UniRef90_B6TUV7
UniRef90_UPI00046EAC8E
UniRef90 A0A014P5N7
UniRef90_W1IXA1
UniRef90_B4VZL8
UniRef90_A0A028Z5E8
UniRef90_Q9Y8I0
UniRef90_UPI0003A6EA2F UniRef90-X2N8G8
UniRef90_F0RI87
UniRef90_I1HNJ7
UniRef90_UPI00030C024E



TI GIVGGMGPRAGNALFERVICNTRANTDQQHLPVVVM
$R V V G I L G G M G P A A G A D F A R L F V Q A C A D R M R D Q A F P E H W L L$


 VG V G G L G P LA GA HVY ERFVRMSPAASDQE H GF VI L I

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




$M K T \square G V L G G M G T F A T \square H F F Q Q Y A S V F K A E K E W E R P R \square I I D$ $R V V G I L G G M G P A A G A D F A R L F V Q A C A D H M D Q G F P E H W L A$ TI GVMG DSASSSLRFDQKLVVHWSTRDGEEAPPBEVC

 $H \square G M \square V G \square G P A A T D Y Y Y R Q L I$ ATMAKAGDD LDQLTM





 M GKHRHPEITM GVLGGVAP WATLDFCQQLYGLVQADKEWQYPRLIID $G A V G V M G$ A S S S S C LIR F L EK FVVSWSTGGEAPPFIIC GVLA GMGPRSTAPFI DMLIDACQSQYGACNDEDFLMM

 MKHLGVL A HSTGGAALLCFLAAFCEEGFHRTGRNEHPDVTG

UniRef90 R6A111 UniRef90 UPIO003B32ED8 UniRef90-V4KC21 UniRef90_Q12C11 UniRef90 B8IZK0 UniRef90-LIQLDO UniRef90-Q01ZT1 UniRef90 R9JRX4 UniRef90_W9R15 UniRef90-G7JVC4 UniRef90_ 3 LIOZZ9 UniRef90-J2KR0 UniRef90-UPIO004728DD0 UniRef90-V7CO34 UniRef90-A0A024KHA7 UniRef90-J2KAQ0 UniRef90_UPI0002C2EB40 UniRef90-UPI0002374FF2 UniRef90 ${ }^{-}$W9RC82 UniRef90_UPI000377F763 UniRef90-UPI0002191A7D UniRef90-16ABJ6 UniRef90-B9RV29 UniRef90-G8PPN8 UniRef90_UPI000364DF9D UniRef90_UP1000349BC94 UniRef90-UPIO002B4357E UniRef90-A0A059CN45 UniRef90_C7PT81 UniRef90-TOLY11 UniRef90-J9NDK5 UniRef90-A0A059AK76 UniRef90 C2G166

 UniRef90-UPI0002E806D2 UniRef90_W0J6D2 UniRef90 ${ }^{-}$XOZWQO UniRef90 UPIOOO370B752 UniRef90-J3D0W3 UniRef90 11NNZ1 UniRef90-UPIO00395DB75 UniRef90-HOJR88 UniRef90-V4UM11 UniRef90-UPI0003AD2336 UniRef90-F6AYV8 UniRef90-V7CCG5 UniRet90-JOKNPO UniRef90_Q122A8 UniRef90-N2B5DO UniRef90-UPI000368A4EB UniRet90-K2E8M5 UniRef90-W4L7M8 UniRet90_R1BA63 UniRef90-13BZSO UniRef90-R4XTL9
UniRef90 R7AKA4 UniRef90-K3XK00 UniRef90-X1KZM7 UniRef90-L8JIU1 UniRet90_G1V6E9 UniRef90 LOEE11 UniRef90-UP10004278CCA UniRef90-I5BUH4 UniRef90-C2E4Z5 UniRef90-K016M8
UniRef90 R6KYE3 UniRef90-UP10002ED6CB8 UniRef90-19X0E7 UniRef90-UPIOOO287A543 UniRef90-HOTFW5 UniRet90-WIYML2 UniRet90-BOJPWO UniRef90-UP100036C08CB UniRef90-B9NWQ1 UniRef90-DODOR2 UniRef90-UPIIOOO380258B UniRef90-X0U6K3 UniRef90_U1V327 UniRef90-UPIO0046EAC8E UniRef90-A0A014P5N7 UniRef90-W1IXA1 UniRef90-B4VZL8 UniRef90-A0A028Z5E8 UniRef90-Q9Y8IO UniRef90-UP10003A6EA2F UniRef90-X2N8G8 UniRef90-F0RI87
UniRef90 $11 \mathrm{HNJ7}$

FQATQAPSRSMYLIEGRGPSWTEDYVEVGNKLKACGCDELIC
 LQATQAPSRSMFLEGRGASYIEAYLEALQKVRSAGATKIA VHADMAHALGHVTRGDRIGLADYFARLIERLARGGAEVAA SKPSMPDRTNY LGKSVQSPLSEMDWTGKQLKQLGAGLLA


H
S
S

- NSVNMPSRIDHQLAG G ATVCFDEDKTLQHAGEWDELGRLMQQAAR
SDPPSDGRQKEYSKLDHAQIVENLRSKRVFDERSGARCV WSFDFSQRELLLAHGEWEEAGSNLRSKRVFLERSGARCDV
 SDPALSRRRNVCSELNKDAVIENLRRKRADLEDAGAGCMV


## Y

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NRCTM

 KELLLSHE R S S F S S L N D D S LI VE NLR R KRVVF L E K A GAR C I V


 STPF FP DRVVE D
N N F T MP SRTRA L L NNFTMPSRTRA LLYDEYD
SVPHIDPDRTEFLLGNSKI
 SALTLLSRNVAT GRADAQAAEFNRVTGQLAAA GA EVVV F S F D Q A S V DE LEFA Q R WE E VGEQLA R A G L A LAA A G CE A L L SVAMNPAIENAFLQGAVDEAAELLNEAVQHFLNNRVTTVA


 Y S VDFSE $\square E E M Q R R G D W E A A G A H L A E A$
N P E HE R NE ELMLAAHD WD G L A A L ML E S VDDVLARA GA D FVV K N P N $\square$ A D R T L A $\square$ FE GEASPALLGVI E S SEILLLKNGCYFAA ATDKVAGDVGAAANNLLKAGCDFGL H T P S L A D Y V D C L D R N D L Q GVA D L M L A S A H K L A R A G A D F L I S R P S I P D R TN Y I L K R S E D N P L P HM L D DIE K K L V S Q G A QVI A

 NGDWNRSAEI LSDAAQSLLEKAGADYIV

 A SVDFQKIVD YQLSDQWDKA GCELADLDAKRLEDA GADALA HADVQELI RNNLAADAREA QA EVVYLRHDERLR DA GCDCAA


 $V$ QMP P D R S Q A L L G DP QAP T GPALLQ Q GV GR L A A L G V A S I A

 SIPPDIPDRTAACLLSGGPSPY


|  |  |
| :---: | :---: |
| UniRef90＿R6A111 | MCCNTAHYAVEELAEKINIKFVNLLDLVAKRCHELG【ACNTSHSAYD【I EEKVDVKLLHMPNETCLFDKSN |
| UniRef90－V4KC21 | MPCH $\square$ A H T WY E EVCEGSSVPLLHMGECDAKELGEA |
| UniRef90－Q12C11 | VACNTAHAWHAELQERFPLEVLHVAREVAQALASRG |
| UniRef90－B8IZK0 | MCCNTAHWGISTLEQKSGMPFINVIYEVLMLVKKTG |
| UniRef90－L1QLD0 | MPCNTAHAHADAI RAA GLPFI D M |
| UniRef90－Q01ZT1 |  |
| UniRef90＿R9JRX4 | PCITAHFFHDELQDEVGLPVMNAVEETAVCL WNRG |
| UniRef90－W9R151 | MPCHVS YVWHSEI SEGCSLPFLHVGECVAKELSEAN |
| UniRef90－G7JVC4 | LPCHLSHAWHKEI SKDSSLPFLHVGDCVAMELKNA |
| UniRef90＿J3L0Z | MPCNSLHAYHYEISQGCSTPFLHI GDCVVKELKSAN |
| UniRef90－J2KR01 | CPDNTIHQAFAHVEARSPLPWLHIAEVVAAEAAQRG |
| UniRef90－UPI0004728DD0 | CNTAHAFCKLMQGGCRVRLLHMVEEVAAFVR |
| UniRef90＿V7C034 | CNVSHS WY EQVCEGCSVPVLH |
| UniRef90－Q7VK17 | MCCNTAHYSFETIKAALPVKMLNLIESAVLKVKQS G |
| UniRef90＿A0A024KHA7 |  |
| UniRef90－J2KAQ0 | CPDNTDHQAMHLVLPRSPLPWLHDAEVVAAQALSRG |
| UniRef90－UPI0002C2EB40 | MPCHLSHAWHEQI SQDCSLSFLHVGECVARELREA |
| UniRef90－UPI0002374FF2 | A CNTAHAWHGLLQQRFPLLVLHGVQEVVAELAAR |
| UniRef90－W9RC82 | MPCHVSHSWHEEVFKGSAVPFLHM |
| UniRef90－UPI000377F763 | SATTHVYRADLVRESRVPIVDLLLEATAHLERVG |
| UniRef90＿UPI0002191A7D | MCG |
| UniRef90－I6ABJ6 |  |
| UniRef90－B9RV29 | MPCH】SHSWHEQVSKGCSTHFLHMGECVARELKEA |
| UniRef90－G8PPN8 | 1 CANTMHKVASYI QDGL |
| UniRef90＿UPI000364DF9D | LA SATTHAYRRAI QQQT GAMLVDGMRATTQALTDRG |
| UniRef90＿UPI000349BC94 | CPDNTIHRAFSYVQAKSPLP WL |
| UniRef90－UPI0002B4357E | MPCHISHLWYEDVSKGCPVTFLHMADCVARELKEA |
| UniRef90＿A0A059 | MP CHLCHVWYEEVSGGCALP FPHVG |
| UniRef90－C7PT81 | MACLTAYHFKSSLAPVFN |
| UniRef90－TOLY11 |  |
| UniRef90－J9NDK5 | CA I L A H KVAKKLFDDS SVPLFH【A |
| UniRef90－A0A059AK76 | MPCHISHSWHDDISHGCPVSFLNMAECVAKELS |
| UniRef90－C2G166 | \PCHTAHAVFD\I RKEHKIRLLHMVEETSDYI A |
| UniRef90－UPI0002E806D2 |  |
| UniRef90－W0J6D2 | I CSSLLH V V SEDI MAAAELPVVSVVDAVLS GL |
| UniRef90－X0ZWQ0 | I PCNTAHYFLSSI QKSVKIPI L NMI E ETAKETQKKN |
| UniRef90＿UPIO00370B752 | LACNTSHILIPKI E EKFPQAIINI |
| UniRef90－J3D0W3 | VACNTAHAWHGQLQERFPLEVLHVAREVAHTLAARG |
| UniRef90－I1NNZ1 | MPCNTLHAYHDEI SQGCSVPSLHI GDCVVKELKSAN |
| UniRef90－UPI000395DB75 | VACNTAHAWHGRLQQAYPLQLLHIARVVAEGLQQQG |
| UniRef90－H0JR88 | CPDNTAHLALEAPGEPLAIPGLHLDDIVADTAQRAG |
| UniRef90－V4UM11 | MPCHLSSHIWHDEVCKGCSVPFLHVSECVAKELLKEAN |
| UniRef90－UPI0003AD2336 | CPDNTAHMALERPGGDLALPGLHIARVVADRAARDG |
| UniRef90－F6AYV8 | CNTAHAWHGQLQALLFPLHVLHI ARQAALHLQAGG |
| UniRef90＿V7CCG5 | MPCHLS HAWHSEI SEDSSLPFLHVGDCVAMELKNA |
| UniRef90＿JOKNP0 | IA CNTAHAWHGLLQQRFPLVVLHGVQEVVAGLAAR |
| UniRef90－Q122A8 | CPDNTDHQAFADVEPRSPLPWLH |
| UniRef90－H3RKP7 | VPCNVAHCYFAEMQEASGIPPVLH |
| UniRef90－N2B5D0 | VCGTAHYFDKDVYK\VPMKVMNITDCLGKKLQENN |
| UniRef90－UPIO00368A4EB | MPCNTAHADFNEI DERIPVKK |
| UniRef90－K2E8M5 | CNSLQYLNKKLQDKIKIPII G I S P I A E Y I K N K G |
| UniRef90－W4L7M8 | I TSMGGHFCAQAFAALSPLPMLNGPESVAAYLKQQG |
| UniRef90－R1BA63 | $\checkmark \mathrm{CCNSV} \mathrm{VHEA}$ |
| UniRef90－I3BZS0 | MACNTLQDELSALCKASGLVNLNMDDATADT■RQRN |
| UniRef90－R4XTL9 | CPDNTIH QALD HVLPGSPLPWLH |
| UniRef90－R7AKA4 | MSCNTAHAGYSEI A A APHTQFLHMPKETDQFVASLG |
| UniRef90－K3XK00 |  |
| UniRef90－X1KZM7 | 1 A |
| UniRef90－L8JIU1 | I A CNTSHSPASEMEK $\mathrm{L}^{\text {D A K P L L H M }}$ |
| UniRef90－G1V6E9 | IPCNTAHSALQMLEAGT DVRFMHM\YEVVRFIRE |
| UniRef90＿LOEE11 |  |
| UniRef90＿UPI0004278CCA |  |
| UniRef90－I5BUH4 | LP S NT THYFYEEYQNKTDLYI FDII KLTIEDITKKS G |
| UniRef90－C2E4Z5 | MCGNTPHLLFDQIQARTDLPLLSIVETAVAVAQQ |
| UniRef90－K016M8 | CPDNT $\mathrm{C}^{\text {P Q A M D R V }}$ P P S PLPWL |
| UniRef90－R6KYE3 | IPCDTAHYFQPELDRH GI KVINAIKETAVYLKKS G |
| UniRef90－UPI0002ED6CB8 | VTSIA GHFClEAFKKDSPIPVI DLLETVKAEVDRRG |
| UniRef90－19X0E7 | I A S DTLQCALAEEPIHFGVPVIPVHDALADEI QR |
| UniRef90－UPI000287A543 | PCNTAHAFMEKLQSGDRLKVLDM |
| UniRef90－H0TFW5 | V T S $\square$ A GHFCDEAFKACSPLPVIDMISEVSAAVEERG |
| UniRef90－W1YML2 | I CTNTMHKVADEDKRHDYIPLLH I AEMTAVELEKS G |
| UniRef90－R9SJ． | I A S S T CHIVIDDLIKK SPLPIINIILDCVYDKVVRNN |
| UniRef90－B0JPW0 | GCCTAHYALPQISENLKDKLLSLI K I A D Q L Q |
| UniRef90－UPI00036C08CB | MPCGSAHRYFEAVKSKLNDELLNM |
| UniRef90－B9NWQ1 | LAVNTMHKVADPI R D AVSI PFLD\REALGTALTS T G |
| UniRef90－D0D0R2 | I TSLGGHFCFDETVARSPLPLISAVAPLDDFLADQG |
| UniRef90－UPI000380258B | ITSIIAGHFC口DSFKAKSPLPAVDMITEVNRAV |
| UniRef90－X0U6K3 | CPDNTIUQAFEVVLSKSPIPWLHIAEVVAAEAR |
| UniRef90＿U1V327 | VPCNTAHLLWS R WS K D A AIPVINI D D A TLEHIIAPQG |
| UniRef90－B6TUV7 | MPCQFLHAWHDEDSQGCSVPFIHVGDCVVKELKAAN |
| UniRef90－UPI00046EAC8E | VPCNLAHCYFAEMSRAAGTPLLHIAESAVQQL |
| UniRef90－A0A014P5N7 | MACNTAHVWHAQLQALDFPLHILHIAQETARHVQALG |
| UniRef90－W1IXA1 | VPPCNLAH Y Y S D M K A SGl P I L HIA D CA |
| UniRef90－B4VZL8 | I CCITSHYLLPQLP DQLRERIISLVDVILNEVLER |
| UniRef90－A0A028Z5E8 |  |
| UniRef90－Q9Y810 | M P |
| UniRef90－UPI0003A6EA2F |  |
| UniRef90－X2N8G8 |  |
| UniRef90－F0RI87 |  |
| UniRef90－11HNJ7 | MPCQLLHA WHDEVSQGCSVPFLDVGACV |
| UniRef90＿UPI00030C024E |  |

UniRef90 M0ZIX5 UniRef90-D2XDW9 UniRef90-UPIO002379C69 UniRef90_D90FJ2
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UniRef90-C9D2E1
UniRef90 VgVUL2 UniRef90-UPIO002557A91 UniRef90_UPIO00255836D UniRef90-A0A059IP 15 UniRef90_UPI000418AD67 UniRef90-UPIO00466C67D UniRef90-UPI0003B5ABDC UniRef90 A0A037ZHY2 UniRef90 ${ }^{-}$Q7WRG6 UniRef90-UPIO0035DD71A UniRef90_A1TMR2 UniRef90 UPIO003795E46 UniRef90-UPIO0034A256B UniRef90-A6GDZ4 UniRef90 F5TCC6
UniRef90-UPIO0029A9FAO UniRef90-D3HMX4 UniRee90-UPI00047C290C UniRef90 UPI00046A59B8 UniRef90-I6AUU1 UniRef90-UPIOOO219620F UniRef90 UPI0003B7B6BE UniRef90-R1DZU5 UniRef90-G9XS33 UniRef90-UPI0003723485 UniRef90 19 C 777 UniRef90-W9A5K2 UniRef90-E82743 UniRef90-UPI0003696F8D UniRef90 V6DKN0 UniRef90-X1UF49 UniRef90-M7MID4 UniRef90 W6FX65 UniRef90_DOZ4F4 UniRef90-A2U190 UniRef90-A3USA8 UniRef90-UPIO0031545F6 UniRef90-A6E3D5 UniRef90-UPI000317B56F UniRef90 W4FA19 UniRef90-X0XBB8 UniRef90-×6BAW2 UniRef90-UPI00037104A0 UniRef90_UPI000409FCF7 UniRef90-UPIO004215855 UniRef90-M1NUA9 UniRef90 ${ }^{13 T I Z 1}$ UniRef90-UPIO002EDB99F UniRef90-D8SNH7 UniRef90-M4RJR6 UniRef90 A8TPE1 UniRef90-UPIO004686C5A UniRef90-UP1000311CCAA UniRef90_UPI0003B7888C

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TLINFVSKLVTWSSKDSGNDCSDPVLN HI GLIGGIGVAATVVYYQRLSAAMAARGKAQHMELTI K ILGVLGGMGPAATVAFLARVQALTPARGDADHIRVVMD Hi GLI GGllGVAATVVYYQRLTAVMAARNDPDQMTIV
 TLGUTGGNGPESGRFLWSRUDECDRNHPGDDGLPRVVV TVGU GGLVWWS



KVGLGGMGPASASFAETVYTYNEKEEYHSPMLV RRIGGIGGMGPLASASFAETLYTTYNELKKEYHSPYVYML HLGLIGGDGPASTVVYYQKLTAALRALGQPLEDTVV
 KKTGTLGGDSHTSTTKYYQTLMNLYYERFGNYYYPEIIM TLGIITGSGPEAGLDMWAKILRHTQDMMGCDAPRLVAV HLGLI GGDGSAATEVYYRALVRAYAAADRRDADTIV
 MKKПG】】GGAGPEAGSLLFNMDIRKDQSEGKYNDHDFPED $\square G \square L G \quad \square G H R S T \square F Y$ LDADNKAYHEEEQGYSTCPFIL $R \| G V I G G M G N E A M V D L I E K I N G S D S A S D S D E M E V A F G$ PASTEMYYRELVKQYQVVNGY I S L E LT I R\G\|IGGMGNEAMVDLIEKI DA DKGSSKREFIAFGNAR
 $L G\|L G G V G P A A G L V L H Q A\| L R H T Q N H T D Q G H L D V H V S$
 $\square G L L \quad K \square G E R S T S Y Y \square S R \prod R A L L G A K \quad T V P V V V$


T LG $\square \square$ T GS GPEAG $\square D \square W A K \square L R H T Q A L M G P D A P R L V A V$ VMELAGQHLAGTATV VGVLGG GFHSTDQFLKRDREATAALEGDLLRADPMVLC WK P A LIP RYRKVI REY

MK $\square \mathrm{G} \square \mathrm{I}$ G G L S V

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| :---: | :---: |
| UniRe |  |
|  | DCVPMGRSMPA |
|  | M A P O |
| 90-D90FJ2 | MNPQVPDRNTRPGEDNAAEA |
| UniR |  |
| Unip | HTPMYGDLKQALKSGDNQSLAAFLADSUNRTAKAGAEFAI |
| UniRef90 UPI00037C7D61 | QVP |
| UniRet90 D35549 |  |
| UniRef90- A3KC | HADVQE |
| UniRef90-UPIO002FE3 | KNS |
|  | ASLSFAPVLADAERGRFDLVTAAFVAAGQGLAAAGAGVIG |
|  | SFPNЏGDRSEYLKGHSTVNPADALLEDTRQMESAGVTVVG |
|  |  |
| UniRef90-UPIOOO36 |  |
|  |  |
|  |  |
|  | SHGDUQTLIRNLADDRATQAELFARQERLL |
|  | LNT DFN |
|  |  |
|  | A |
|  | YaELSSASRGDMAADAR |
|  | GDAPT ANLAADRRAQQAA |
| UniRef90_A0A0 | EHGDVQTLIA |
| UniRef90-UPIO00035DD71A | CHAHASDLTRNIQSNAVSEQVKIFEVLANRL |
| UniRef90-A1TMR2 | AQVPVADRTQALRDPAAPQPLEGLVSALERLAAVGARAAA |
| UniRef90_UPIOOO3794 |  |
| Uni | C |
|  |  |
|  |  |
|  |  |
| UniRet90-D3HMX4 | YSEPLIGLSMNLRRHDNTVWNCLARTVRA1EPHVDVFT |
| UniP | NADANVLVKNNLADDRAAQAKVYAGLI DRLQAAGADCAV |
| UniRef90-I6AUU1 |  |
|  |  |
|  | L |
| UniRef90-R1DZU5 | FSFDQASVIELEFAQRWEEVGEQLARAGLALAAAGCEALL |
| iRef90 UPI0003723 |  |
| UniRef90-19C777 | NADAREMISNLEAGRAVEQAATFAGYVDQLIRAGGCDAAV |
|  |  |
|  |  |
| UniRet90_UPIO003696F8D |  |
| UniRef90-V6[ | A |
|  | HTFPLNQYIRYMEGDWENVASLMLSSVDVA |
|  | v |
| 0Z4F4 | V |
| UniRet90-A2U190 | YQUDF NRLNPYLPNNFEKLEPALIK\LEETNPLKIQRWL |
|  |  |
|  | Q T WLP TDLPELRKVYTAALRFMQYLGADVMG |
| UniRef90 A6E3D5 | EVMQTWLPTDLPELRKVAAFTLRFMOYLGADVMG |
| 31 |  |
|  |  |
| 6BAW2 | VDLNFK |
| 037 | NDMNF DLTNAHLPNHFSVLEPALRNGLNTLSCCDV JVV |
| UniRef90-UP1000409FCF7 | VSLNFKEINTLLPY EMDKVADLI TPALKYLDQQDIT S Al |
|  | G |
| 隹 |  |
| UniRef90-UPIO002EDB991 |  |
|  | DPN ASHHLG ALIQQREFLEDAGAKCI A |
| UniRef90_M4RJR6 |  |
|  |  |
|  | $1 \left\lvert\, \frac{A}{V}\right.$ |
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UniRef90 MOZIX5

## UniRef90_D2XDW9 UniRef90-UPI00023

 UniRef90_D9QFJ2UniRef90_A3X7K6 UniRef90_A5G0P7
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UniRef90 UPI0002FE3E4B
UniRef90-I3TU25
UniRef90-TOMHPO
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UniRef90- UPI00036789A5
UniRef90_C2YJQ0
UniRef90-C9D2E1
UniRef90_UPIO002557A91
UniRef90_UPI000255836D
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UniRef90 UPI0003795E46
UniRef90-UPI00034A256B
UniRef90-A6GDZ4
UniRef90 F5TCC6
UniRef90-UPI00029A9FA0
UniRef90-D3HMX4
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UniRef90 UPI00046A59B8
UniRef90-ı6AUU1
UniRef90-UPI000219620F
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UniRef90-R1DZU5
UniRef90_G9XS33
UniRef90-UPI0003723485
UniRef90 19C777
UniRef90-W9A5K2
UniRef90_E8Z743
UniRef90_UPI0003696F8D
UniRef90 ${ }^{-}$V6DKN0
UniRef90-X1UF49
UniRef90-M7MID4
UniRef90-W6FX65
UniRef90_DOZ4F4
UniRef90-A2U190
UniRef90-A3USA8
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UniRef90_UPI000317B56F
UniRef90-W4FAI9
UniRef90-X0XBB8
UniRef90-X6BAW2
UniRef90-UPI00037104A0
UniRef90 UPI000409FCF7
UniRef90-UPIOOO4215855
UniRef90-M1NUA9
UniRef90_I3TIZ1
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UniRef90-D8SNH7
UniRef90-M4RJR6
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UniRef90_UPI000311CCAA
UniRef90_UPI0003B7888C

90
MPCYDSHSWHDEVVALGSSVIPVLHMAECVAKELLKEAN CPDNTAHLA LDDPGPALALDGL H DAEVVAAEAAARG DT SLGGHFCYDETVPLSPLPLISAVKP
MPCNTAHA
TT S LGGHFCFDETVPLS SLPLVSAVSPDDGYLAAQG I S AVAPH A $\square$ S D TRVARVPLI S LDAVPAGLAAAG ISANTPHVAFNDIVAQSNIPVLSLLDVAANHCKRQG MPCNTAHAQAGGI RAACGLRFI DMI
IIACNTTQYFVDDI REVCGAQFVSVVEATAAALADEG MPCHLSHAWHDQ SEDCSLLFLHVGECVARELREA VTSLGGHFCFDELQA DSPLPLI SAV
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I P CNTAHAVYE QELDAKTNI K CL HLLVENETDSYMKA



## VT S N T GSVIAEG VAFEALRR <br> $A G \square D$ $A$ $V$

TIACNTLNWFAPKTEMGVSARLVSFQSVVASE\|RRSG VTSMGGHFCDGELEAISALPLLSAVPA
LACNSAHELFRRILPNIPVAFVDMINQTATSLQQ
CPCNTLHDLQDRUEEADDSQFVSVVDCVMABCSDSG
 CPDNTIHQAFDLVVKKSPDAWLNDAEE
 I GCCLA HYSLPEI PEHLTEKVI SLIKIA DQELQQ

 LACNSAHELFRKLLPDVPVTFVDMLHRTAHTI A CNTLNWFAPRI AS GLPAEFVSFPGVVADWVASSG LACNSAHEDFRKLLPDVPVTFVDMIHRTAHTL VACNTFHAFVAAAASEESVTLLHMLQETVRMVAE
 I PNMTDHETFDRLAPRAAVPVIHBVDETLAHLKK LVNNTMHKA I ACNTATSVAAAVREKYDLPDLGMIEETAD
LTANTTHIVFDRLAESSPIPLISSUDSTRRAVTEAG
I ACNTLNWYAPRIDA
LTC S S I S HFAAPVGEAVGDPVLRDDEAMADAAVQAG L PCPS SLR WF T CLDSGSSAKLLNVVDSLVEELLHRA I S S DA A HFCDAEFDALSPDLPIISIIPPGESELKK LGSTTMHQAAEYLAERLPVPLVN
MACNTACTAFPKALDNVDVPVIDDIDVTSRAVVQHG VACNTASAFADADRDDFDIPI G GVIEAGAKVAAAR VACNTATSVAKDLRASFDVPILGM

[^2]


[^0]:    

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

[^2]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol5 sol0 jhmm

