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 RPISGLVGAARRIT LGGDLSVRVAPAVRRDEI GALATA RPLF QMTAA $\square G R I$ A DGELETEI PGVGRKDEI GHMASS VVRPVNRLAKATTELERGQYDVRL DVHRQDE: GEDARR $V V R P V G E L T A A M R R L A Q G D L G V A I P G S D R G D E I G A M A G A$ ITSPLRQMKETAHRIAEGDFHAEIP DRTTDEI GELAAS
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 $S \square T$ KPISQLSEAAQEI AKGNFN E RPIRTITGVMDRLANGDNEVAlPGIDRGDEIGDMSRT
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$\qquad$ K P
 RPLRKMTEATKRMAKGDFSSELTARRKDELGVLVQS IT DPISRLT T TMGVLADGNLDTEVPFAMRADE:GKMSRA TAKP LVQGLSAAARQUA DGDLEVVPVDATERSDE: GEMARC SLSRPLLALSEAAKRIAAGDLTDGRLSVRNRDEGGAAAS
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 RPI QKLSHATKKLAEGEYEDQL DIARKDEDGELAAN RPL GLLSVAARRVSEGDLDVHVPD LKRDDEVATLSRA VLRPI RSMTGAMRALADGDASVVVPARERRDEIGAMAGA SPLRQMTTAARAMAQGDYSIVRVATSR DEI GQLAVA RPVNELVTAARRITAGDLSARVTSPQSRDEI GTLASA
 LSRPI LDLTGKMKLLAGGDLSANVPFADRKDEIGEMAAA IARPI PVLSGVMGKI A QNEFDVEVPYTERKNEVGDMARA

TRPISGLTATMQRLADGDLAVDVAGTRRHDEVGSMAKA $R P V K E V V K L A G K I A S G D L N V E V K V T T R A D E I G E L A Q A$ LT DPI QKVTDAAQRFGGGDLSVRVEGVDGEGEVADLART R P I Q DLTAAAMRRLAE GDRTVVPVPGLARRDEVGAMAAA
 DTRPLHKLSAASKCIGEGNLDTRV EDNTTDEIQELGDT MTK K I E RLLNKA A R E I A K G K F DK T V Q G Y G R F Q E I E QLLA N S
 LTRPI R QLI Q STQRRVADGDYTTVMP DERNDEFGRLDQS
 K PLKAMKQAADRMSRGEFDI EFNWKRRKDEVGALAAS IT QPLREMKEAADQDAQGDYTVRVADRSLDEI GDLANT ITCOP L R K L K Q A A D T I R Q G D Y S T R $R P I R A I T E A M Q R L A G G D T N L N L P Y G G R K D E I G E M A G A$
 TRPI LQI GRDVRQUGRGDFSAKLDDRRKDEI GALARS
 $S V T K P L A G \| T A L T E R L A A G D S A F D V P Y T D R R D E V G G L A N A$

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SRPV VGKP
 TRPLTHLERGVREVAAGNKEVRVPVVESDELGSLAAS VIQRIKSIANTAQKVSTGNMHVDFTENSKDEI GAMAVA LISLATARISTGDSVAIGHQDRGDEVGTLARA SMTAPLREMTRAAARMASGDYTQRVTMADADDEVGRLARA SLALPLKRSTSAMRELADGNLDVEIRQTTRQDEIGEMIRA VRPIKALTQTAHTVSAGNFDAPFPVERTDEI GVLARA
 LVRPVGELVEAARRVANGDLAARVPDTRELDEVGVLSNA -TNPILKAVAMAKEIANGNLSVEKDKDKSKDEVGDLADA LIDQPLKKLHVSAGEIAKGNLEKQTDIVRRDEIGDLARA MTAPLREMTHAASRMAAGDHGQRV STRSTDEVGQLARA RPI GATTHSMNMLASGNNETSIPHTDRHDEIGEMAAA LTRPLTELARLMNRLNDGDKSIVVEHTGRGDEVGTMARA STVKP VAMTDAMTKLAAGDKSVLPAQGRGDEVGDMAAA LTRPIASLVADMRRLAGGDTA MDCAGQGRSDEIGBMARS

TGPI QQVARSAKKRGGGNLEERIGVSSKDEVGELADA KPVRALTRAARQLEQGNLTQRVQRRLDEIGDLAHA SQPIKRLEKSMQLVERGNLHMEI P IRRDDEVGRLSRR VTQPIARLADTMRNLDGNTEIGLYKDRPDEVGQUSHA RPVTQLSRATKNLAGGNYNVDNLDTGRRDEI GELSSS QPISTIATRMARLADGDLDAAVPYAGRKDEIGDMAAA RPLKRMTGAMGRLAEGDATVAIPGTGRRDE:GAMAAA IVNPIKHLAAVAKEI EGGNLDKTVDIISSHDEI GEMSEA VARPI RSLAEIMGRLAADDLDVAVNGSERGDEI GVMAAS
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| UniRef90-R1I7N4 | $F N Q M A G D L$ |
| UniRef90_K9HSN9 | ME $\square \mathrm{FKHN}$ |

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UniRef90_UPI00041E9215 UniRef90-A0A017HGG9 UniRef90-AоРЗМ6 UniRef90_UPIo00363B2B7 UniRef90-U2K5Y9 UniRef90-X1SsW8 UniRef90-UPIOOO3692519 UniRet90_LOGSC8 UniRef90_UPI0004263D47 UniRef90-ROE5Q8
UniRef90-D9R7V5
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UniRef90_BЗЕЗL1
 PLARLARVTRDVADGNLDIEI GSQNRGDEIGTMAKA KP NALRDLMAVLAGGNLDVDVEGTGRRDE:GKMAAA TMVPLSALTRGAERVAEGDLDVRLINVRRNDEIGFATTV IIKPLEQLNSAADKISKGEVHKRVGVQSGDEIGALANS VVRPVRALRRAMGDLSDGHLDVVVPGTEAGDELGDMARA

 LSGPILDLTAAKSVADGQFETDIPGRGRVDEVGEMADA RPI TRLTTATKRISKGRYDGKDNTWRRDEIGQLASH | $R P$ | $T R L T$ |
| :---: | :---: | :---: | :---: | VLRPLRRLTQLARAMAQGDYGARM HAGRSDEIGLLARG RP 1 RMSGAMKELAGGNLRVDVPGSGRLDEGGMACT


 SVTRPIDRIRQSMKRIADGDGEAELEFADRRNEIGAIAKT V VRPI RKITSSAEEI AAGNLAVEHIEVRTKDEI YALNKA RPLSALTTAMGELAAGNFSIVLPGLGRKDEIGDMAHA KPGGRDSASQRVGEGDDDVRVDEEEGDEIAALGRH VRPLVALTGNMSLLADGNTSUTVDGTDRGDE:GQMATA

VTRPVSQLVEAARRGGHGDYLGLVPVVEHHDELGQLAEA
SFTKPLDAMQKASKELGEGKLATRITFDQRSDEFGDLARS
TMLPLKKLSDSADEVADGNFDIVLPTAHYNDEGGDVIGA
VEKPLKELMSATEDVADGNDDFQU
VVRPLRADTEGMKQLAAGNTOVT IE
PLGEMTAASRAMARGDYGRRVGVARRDELGDLADA
RPI GQMTLRMQSLAAGELDEAIPGGERGDEIGHMASA
RPVGDLTTAMLRLAERDLSVQVTGGDRGDEI GDMARA


RPLDRISRHMTAMASGDLAQPVPHSGRKDEIGDIASA
TRPVEEVAKASQEVAQGHLDERLPVVGNDEVAQLATS
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IVRP EEMTRVARNTIQREFEGRVRUKAKDEVGQLASA
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RALKDLMLAARRIGEGNFEVKLPEDRQDELGTLAHA
$\square$ SAATRSLAAAMRRLADRDYTIDAGDNRGDEIGEMSRA

TRPK FMKASRK SAGDYTVAVP VETQDELGNLASE
MTSPLREMTGAARAMARGDYSRQI RTSSRDEVGQLASA
TTP DNLSKVANKDAHGNLEAQLPQYSSNDEVAVLYQS
LITKPLKELNEAAKKIAEGDLSVSLSHQTKDEVGMLADS
RPLGEVEATATRAARGDLQARPDTKYNDELGRLCGT
RPTKRTTEVMRTLSDGDLSVE:PFTDRTNELGEMARA
$T \mathrm{FKPLSQLSQDSRNIAAGAYDTRLPVSGHDELSEMAQS}$
TTLPLSELARATQRLDEGELDDAVDVKGADEVGRLASS

RPVTAA TAVMQKMAAGDNSIEI PGVGRKDEIGHMADA
ISRITGAMRALAGGDTQVRIADMNRGDEI GEMAKA
MSKPLTRIECAMTSVAEGSYDVDVPFTARGDEI GKISRR
DTRPLDAMSDTLTHLSEGRDDACIPYRDRRDE:GGIAKA

$R P V K K L T E A T H R$
KPI QQLKRATERLMHGNFDEVDHVTRKDEFGTLQYR
RKLQAMTRVMARLAKGVTSDRMPSTHRPDEDGELARA
RPGGHLTRGAERVQSGDLTEPVIVESNDEVGQVAQS
VLRPLNLTGAAGQVAEGRYDIALPVLHR DEIGRLTQS

|  | $\text { DNWN }{ }^{50} \mathrm{E}_{\mathrm{M}}$ |
| :---: | :---: |
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| UniRef90-A8MF80 | FNTMVNE |
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| UniRef90-K0J677 | F R |
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| UniRef90-W4DCP4 | FMDMSREL |
| UniRef90-B2J5Q4 | F NMAQ |
| UniRef90-D3 | FNRN |
| UniRef90-Q13 | VEVFKRN |
| UniRef90_S2LH54 | MEVFRDT |
| UniRef90-C3BGJ7 UniRef90 UPI000365 | FNEMADN |
| UniRef90-UP1000365 |  |
|  | LLVLRDSUREVI |
| UniRef90-UP100041E92 |  |
| UniRef90-A0A017 | FNQMTRQ |
| UniRe |  |
| UniRef90-UPIooo363B2B7 | DMARD |
| UniRef90_U2K5Y9 | DNQMADEL |
| UniRef90-X1SSW8 | FNKMAAS |
| UniRet90-UPIO0036 | LNQMTENLQNHD |
| UniRef90_Lod | F NAM |
| UniRef90-UPIOOO4263D47 | FNRMGRQ |
| UniRet90-R0Es |  |
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| UniRe990-Q31888 |  |
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| UniRef90_-FOQ5 |  |
| M3FAQ9 |  |
| UniRet90_R7KTU8 |  |
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| UniRef90- EOS 285 |  |
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| UniRef90-S5JV | FNEMASNLKAS |
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| UniRet90 J3C | VEVFRQSAQT |
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| 5RQ | - |
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| UniRef90_UP10002D39D2C |  |
| UniRet90_A7X5 | F NKM |
| UniR | FNQMAS |
| UniRe |  |
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| UniRef90-17K579 | LNYMANEL |
| B8ES |  |
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| UniRef90_Q166M2 |  |
| UniRet90_W9VB16 | A |
| Uni | VTVF |
| UniRef90-UPIOOO35E5CAO |  |
| UniRef90-LOHJG6 | FNRMTADLVQ |
| UniRef90-Q49ZT9 | FDKMR |
| UniRef90-UPI00016 |  |
| U6 |  |
| ВЗеЗL |  |

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UniRef90-A0RCN8 UniRef90-A0RCN8
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UniRef90-B4CY76 UniRef90_l4N9R3 UniRet90_A4U446 UniRef90_131599 UniRef90-K5XSK5 UniRef90-U7GFF2
UniRef90_K9WUL3 SRMSAAMRRLAEGDFDVVLPGLERSDE:GGMARA
$\qquad$ P:AALVERMHR1TDNDPHVDIPGAGRKDE: GEDARA PLQQIAETSREMTSGDFNGRLPEKGR DEVAAMAHS $R P V V Q V S A A A Q K V A Q G D L Q V R V P V P E R Q D E I A A L V V A$ RPLFKLKEQMQQVMAGNLNAEVATTDSKDE:SSLSRT
S SVTGPVSALRGRMQSMAEGDTASAIPATANKSEIGEMART SIFRPIKHMAGVMRRDEQGEDSARVPAAGRDDELGQLARA $\square T R P$ TVQLAAYSNKMAQGGDFTQQL EDKGSDEVGQLAEAS TMMKRLSETNKSVKEDSSGNLEMHTP DSKNDEMGELAKN $\square T V P$ QELAEATRQVAEGNMNVQU NVRAEDEVSVLVDS RALDRLRASMASLSADDTALTVPGLNRRDEIGEMAGA LKAVTRLMTRLASGVTEQATPAVHRRDEI GSLARA KPLELLGSAADKI ADNDLDFEI HYDRQDELGRLCLS VVTPLTNLAQTAKLVGQGNFHVKVPAVDTGDELGUVTGT VNRPVRELAETMKEVERGNLEVRTRVRGR DELGRLARS TRKIRRLQEATQQI GQGNFDV VLDTSSHDEYGDLARD
 TSKP VT SNVARRIIANGDLSVNI EPTRSKGEI GLLENS VRPLKPLTATMLDLAKGDLSVQIPDTKTRDEVGELAGA RPLGLLI LASERVSKGNLDSNVPEGDRDDEVSSLSRA DGTP LLTLTKATRKMSAGDFSQRV E GNTRDEI QELGDA VLRPVQNLTAVAEELSMGKWNHTI AEVNLKDEI GTLARA QMTTAMSKLAGGDVSAAIPDVQRGDEIGQMGAA TTRPПHALTTAARQISRGNFDIKFlPVKTRDELKFLTDT VSRPLLHMETTAQALARGNNSLRVGDTKRRDEVGQLATA ITRPMQALTRVMQAMDKGDLAQQVPGMTRKDELGTMANT TRPLERLKNSMKEVERGNFEGTQVETEGNNEIAGLGKS
 RPIVKMSELSMRVASGELTVTVP V HNQDEVGRLASS
 VRPIKGLSAGMERLAQGSVDVEVVGALRKDEVGAMARS II IQPLAGMTAYMGRLAEGDYSQEPPMRERKDEVGEMAAA RPI QUITRSMAGLANGDTATABPYGVRKDE:GEMARA TRP RQLEGGVREAAGNFDKKLDHISTGDEI EKLAVS DSRPG1EMERATAKLKEGNLDVDLP VNRSDELGALARS ILSPLNRLKLSAQALAAGNYESSLPGARNDEGELSQA VSRPLNALVEAAQR GAGDYRTPV RVRSHDEFGLLARA KPI GRITAAMKAVAAGDRDVVIPYAGDRNEVGDMART MTRPLRKLRLLMNEVEKGRMDVTFP SKYGDEVGHLGRS KPLNNLVCISKDIAGGDLTNTHDDNRNDE:GVLANS RPLRVVERTASEIAAGDLDKRVPEWPQHTEVGQLASA TMTKPIEDMLDVTEKISSGDLTVDI ETDSTDELGLLAES DSRPLVEDRVAGEVAKGNFQARVRGVRSHDEGGELARR TKPIHTLGKAARQIEAGNLAVR SNTRGEDEVGSLGRS
 SSPIKSITSAMKALADGNKAIGIPGRDHGHEIGEMSSA LTKPVRELADGVRRIEEGELQQRVAVTSSDEIGELAEA
 RPIRRLTKATEQMAYGDYGDRV GTKARDEIGELSRR
 ISKPLNQVVDLVEKVADGDL TETNNDHTKDEIGGLAQS MKV LDNVGKDE GDMARA KPIKTLVHVTERLLATGDLTQEIVEIKRSRDEVGRLSAEA PLRELTAGVRRFAAGDYRASVP VRTHDEI GQLCSA RPIQHITTEMEILARGDTSVVVSGTERKDEIGAMAQA DTKP DAVTNAVKEAANGDHTVQMAVTSDDEGUQLAVA VTAPVRQMTDGMAVLAAGRI DAEI PRVDRRDEIGRMAAA $V$ TRPLKELTSSAAKMGRGDLKQRVEIKGKDEIAELGKA ITLIPIRKLSRLMKKVEKGQLEVTFP VNQWDEVGQLGSA SILEPI QALRTVSKELGEGKLDQVVPGVMSQDELGQLADA SLAQVQVLAQAAQR GDGDYQTA DLKRGDELGVLAKA S■AAPMAKMTS\|MSSLASGDSSVSVPEQTRSDEI GVMARG QPLNQLTAMAKRVSQGDFSHQVPIV SNDELGVLAST DTKPIQTIAATMKEIGTGDFTVEVPALRQQDEVGVLGQS


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UniRef90_K9WUL3

F NEMAHTVIE
VESFKTRAQ
$\vee V R F R D N$
FRLMADEVQR F NQMAET $1 \mathrm{~K} T \mathrm{Q} \square$
 F N NMVTEI
 FDALLDKL F NQM
FRTMSQQLKEMD
VNRMKVSGLDMAM

V NRMAKSLK ES
F SRMVSSGKMMM
VEVFRQALVQA
FNVFRENSRE
FEKMRRALR
FNQMVDSL
F NVMASALE
F NSM $\square$ A R Li
FDSMTQSL
FNNMKNNLK
FNTMVVALR
$\square E Q M I V N$ NLRMD

FNRMTSQLASQ
F NVMSASVQ FNDMA
ISRLSNSVRLDAM VAVFRDN FFNMCRNDE FNNAMTEQLE
 VQIFKDN
FNSMSKQLDQ $\qquad$
 VKVF Q K A M
VQVFKDNLRTA
FNYMSENLLHQ
VSVFR
V EVFREA
VNSMSEDLK
F N S MA A All E T MV
TT Q LA K DL
VEIFKENAKR
FSHMA GQVERH
VQVFKD N
FNAMQSGI
$\left.\frac{L}{F} N M L D R Q \right\rvert\, N R L I$
FKYMSESLKSAI
VEMFKDNM

VKSMQNNLK
$M D D M V V G L$


FQKMSQAIRQ
VEVFRQSMIRA
FNRMAAA
पD $\square \mathrm{FRTN}$
FNHMAHSLRSLI
FDEMATAVEAS
F NAMVGDL
FNAMLQQQURLL
VNRMVVNLR
L V VF RDQ
FINMKDK ISSEQ
F GKMSGNMKQL
FNGMVEDLHQ
VQVFKTN
ANAMTTNLR
F NRMTKIIK
FHKMQQNLK
LGTLK Q
FNHMAEGL
F NKMVSRL
V S VF R D N
FNKMATKLRA
FNHMREG
LETLRK
F N L M S R S
FNRMTTQLAAQ
LQAMQTSI R



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| UniRef90_C7NLF4 | L N L M L A H\|V|E R S L |
| :---: | :---: |
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| UniRef90 ${ }^{-}$R5XZ39 | F D H M A E I |
| UniRef90-B3E8J2 | F NTM T S NL R HL |
| UniRef90-A5EQE8 | V Q VF K T N |
| UniRef90-F0L8R6 | LE S F R Q G I K Q R M |
| UniRef90-M0D9N8 | F E S MRENLLRQQV |
| UniRef90-UPI0002E2A612 | F N R M |
| UniRef90-UPI00036CFFB8 | F N T M A E K Le E |
| UniRef90-S9QH28 | F Q R M |
| UniRef90-E3IBE8 | F N Y M T S QVRE |
| UniRef90-B9K3G1 | VEVFR K E |
| UniRef90_Q9K669 | FDEMKSHLRSL |
| UniRef90-B1HZL7 | F NQMA V NLLK |
| UniRef90-UPI0003B613F9 | LQVFR D N M Q R A |
| UniRef90_U2ZC55 | F N R M T S DLQ M Q |
| UniRef90-K0J6P2 | F N N M A EALE |
| UniRef90_W5YGS3 | F NAMTEQLCTLL |
| UniRef90_C9PSJ2 | F D $\square$ F HQNV |
| UniRef90-B3E6P9 | F R TMLERLLRQS |
| UniRef90_D3NWG1 | M T $\square \mathrm{F}$ K ${ }^{\text {N }}$ |
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| UniRef90_UPI00025596DB | L E I L R |
| UniRef90-C0QHC1 | L E I L K E |
| UniRef90- Q1GMD3 | L R T M Q G D L Q R A |
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| UniRef90-E3HRB8 | F D A M A D RLK A |
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| UniRef90-A0NLH1 | L EIFVEEN |
| UniRef90-H0TZH7 | V EVFREN |
| UniRef90-S3H7R1 | FNDMTA QL |
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| UniRef90-H6SMH8 | LQVLH Q SLR D A |
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| UniRef90_D5RJ57 | L EVFFKRNAQEA |
| UniRef90_U2CP97 | F El M R T T L |
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 A K K ${ }^{20}$


40 R P V K A L T E A T D RVV A


 LS K P I G R L T S L L A K R I A D G D L R K S D DI I V I R R N R D E I I G E L A V S


 RP I K RLTTKAT QQMTTGDYSVVAVATTGGQDEIGELSRR IV D PI E DLTNAAKQMAEGNFTARAPK RYDDEVGTLAADT V V Q HL A RLA G VMRRLLAQKDYGFTLDATGRRDEVGDMARA


 $R P L N N V S Q A L A Q I A S G D L T Q R I \quad H V E N N D E V G Q L A N N$ S $\square \begin{aligned} & \mathrm{l} \\ & \mathrm{V} \\ & \mathrm{F}\end{aligned}$ GRWD $|$| $R$ | $P$ |
| :--- | :--- |
| $P$ | $V$ |
| $P$ | $Y$ |

 A


K P I V R L GN A AK Q VA
K P I K R L $\quad$ S H D V K P TVLSEHMNKVSEGHMDTQYHVISR DEIGGQMGHA

 T R P L T TLVVALEAI A GGNLNTEISAAKRGREI GDDGRA
 I SNPI K E M DATARKMIA A GEM V D HMVVTESKDEEI GRLLSK S IF K EI N Y M L G M M Q EVVAQ GNLNI RDP IE YNDEIGRMAYN S R P L VQLRDAMRALSSGDLTIRRLPADSRDETGQVAAA


 S I S LPL QRLVSAMREAGSGDTTVRVERAG GDEI TVLSRK
 T V V S P V K K L R D AT H N I T
 $V L R P V V R L S D V V N R L A$

K P L RTLR L S A DALAA Q A YAVETPSFNQUDEI GDMAQA

 R P L R A I E D T A A A V A A A G A L D D QELAEATRQVAEGNLDVHL GQS GGDEI GMLISS RLEAGAVRVGSGDLSVRIPEGGR DELGRLVRA $T T P D A R L R A R M E A L A A G D T A S E V V G M D R K D E V G Q M A A T$ | $S$ | $R$ | $P$ |
| :---: | :---: | :---: |
| $\square$ | $L$ | $L$ |

 R P L K H MES T A R A I A E G D N A L R R V S D A S R R D EVVGALAA A $\square T$ T P I A S LRER M $\quad$ TTLA Q GETTALVVDGQDRKDEVGQMAKA

 $P L K R V A A D A E R I$ A A GELDVTVPASARADEVGMLMQA $P$ I R GIV VRALLK QLS D GNLLETKL Y GVGRKDEI GDIA A A
SK P NRLVYAKIFSTGDLSQAVNIQREDEI GVLANS

 PIKKIVKNLRDLAS GNLETKI FGTDRADEIGDIAD T

 S R PLQSMIVAMRRLRAGERDVAVMGEGRHDEIGGMA QA
 LVA P L N RLR R DRADAL RADDLDREGPGTARRDELGELALA $V$ S T A I R R L K T A T H K I A E G D F D Y D LTQLS S TA HEVAMMGNLDVPVLPVVCEDEVGVVTRS R R L HRI M D SA E QV A K G DL SLLEI QQANEHDEFGQLS S S R P L G QL S QVMTALS S G DLTAAVVAGAKRLDELGAMSRS VR RLV H L T Q A T D S L A A G DL SVRVND G S I DEI GHLARR
 S Q P I R RLER SMSKV E Q GVVFD DH I Q A Q G D DEVVGRLLSRR $\square T$ A PI S AI S S T F D DII SHGRQTPAI PGDDRQDEI GTLARS
 IT R P LARLSEAAGRVGHGEFTAPLPETGPE EIAGLTRT


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| UniRef90-K9PNT7 | F NQMAA QL K T S |
| UniRef90-A9B1I0 | F NSMSDQLQETL |
| UniRef90-J2GR98 | V L S F K D A |
| UniRef90-B8IOW8 | F S T M $\square$ Q NFK T |
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| UniRef90-L5MQP4 | FNYMAAEI |
| UniRef90-G1XZA0 | V D VF R T S M R Q |
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| UniRef90_A8IPN8 | T K Q L L E ELRQA |
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| UniRef90_A0A023VD01 | $\square \mathrm{R}$ \F R E N |
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| UniRef90-L7UHE4 | F NHMTSEMRA |
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| UniRef90-A6F2K0 | FNAMT Q Q L |
| UniRef90-U4Q3U5 | V S I F R D N |
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| UniRef90_E3IGU3 | F E EMRKNLSR |
| UniRef90-A0A011NRB5 | M Q A M V G K L |
| UniRef90-UPI000361714B | F N T M A ARLL |
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| UniRef90-M4XFX2 | F EHMADRLRAS L |
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| UniRef90-14DB95 | F HVMTN V L R |
| UniRef90-G7Z711 | V L V F R D |
| UniRef90-A9B046 | F D S MA Q Q Le |
| UniRef90-H6SK08 | VATFRDNLE |
| UniRef90_M5DI98 | FDKMAERLE |
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| UniRef90 F5T0B1 | A NLF K Q S |
| UniRef90-K2EYA5 | F N N M A A L Q |
| UniRef90-A4C8E3 |  |
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| UniRef90_B0TC96 | $\square \mathrm{H} \mathrm{Q}$ MVN NL R |
| UniRef90 C9NRL6 | $F N T F V G S M R Q L$ |



| UniRef90_L7LPE2 | VN A M\|LTVQQA A |
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| UniRef90-C8W3Q0 | L N S L S Q EI Q E |
| UniRef90_U5NEF7 | FADMRAAI A A |
| UniRef90-U1YDK8 | $\square \mathrm{NE} \mathrm{M} \mathrm{I} \mathrm{S} \mathrm{GLL} \mathrm{K}$ |
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| UniRef90-B9QX14 | M E VFVK N |
| UniRef90_UPI0004721721 | F NIM S D NLS HLL |
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| UniRef90_UPI000361D441 | FERMVA QL R |
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| UniRef90_UPI00046EAC47 | M N I F K Q |
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| UniRef90-B9M7S8 | F N R MVN AL |
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| UniRef90_C5EWK9 | F N Y M V D R L E K QV |
| UniRef90-D5EUN8 | F A T MLE SL |
| UniRef90-U5S068 | L N F M A D EI |
| UniRef90_N9WM69 | F N K M A S KLE E |
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| UniRef90_UPI000225C008 | V NTMKD N ${ }^{\text {Q }}$ |
| UniRef90-UPI0003B3E283 | L S VF R D NL |
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| UniRef90-K9GLW0 | LEDFRA |
| UniRet90-GOAQN8 | FNNMIDK |
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| UniRef90-W4Q7 |  |
| UniRef90-131J48 | MGVELQS QM |
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| UniRef90-F7QQ23 | VEVFKDS |
| UniRef90-K11HM | FAQMQDN |
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| UniRef90-D2RN | FNWMLGQ |
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| UniRef90-M1E910 UniRef90 U9QFQ | F F N Q |
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|  | Q M |
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|  | LGQMVSHLRELM |
| AOA |  |
| UniRef90 UPIOOO46AB449 | L |
| 90-M9 |  |
| UniRe990-R5JUT2 |  |
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niref90_UPI0003B77698 RPVDELTEAVEHVAREDLTVRIPEDDSDDEIARLSRS



 SRPVNALREAAEEVRDGRLDVHV DADQGDEIGQLADA IT C Y I E E I S E TLLNLVA T GNMMVTVI S DKRNDELGGDLAS N


 $T V L R P V R R L A Q A A K Q L G E G R L D T R L K A T G S$ DELLAELSRT SIVAPI RELKESMRQTEKGNW QHIDDEDGRTDEI GGLIHS $R P V R A L S K A T R R M A D G H F D V R L D V G E T D E L A D L Q A A$ $\square L A P L G T L A S R A E E V A R G A L S F E L P P A R F P D E V G R L T H A$
$P V E A L A T G A R G I A Q G H L H T R V P \quad V H G N D E L A Q L A R T$ $S L A Q P V Q E L A R V A R R I G L G D Y F T P I T \quad L Q R R D E L G S L A Q A$ PLERMS LTMKRVERGDLAARNGNIGRQDEIGQVARH RPI K LLLRRASRRLAE GDLSTRVPELNRNDELIELGAD K P L K Q TV QL M K QV Q R G K L DVVRVRVVYNDEI GLLGSH $T L T D P V L R L L A G V Q H V N A G D L S I Q V V Q T \quad T Q D E V G I L T Q H$

 $L V R K L H A L M A A A R R I A S G D Y T A R V G D E P G R E E L G Q L D R A$ R P I K R L M K N M T L V E Q G K F D N L P DVGG N DE I GLL SVR PLTALR RIATERIAEGQFDYQV DIHSKDEFEILGDS R P L GKLADNTTRLAN GDLDVVI DQGGKDEIGRMAAA





 SRPMRQLGEAAKRDA R P L G A L L S S V E QLLG Q G R F E H K V

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

RPITTIAQ GMRRLSQGKFGTRLPK NRNDELGQLQQD $R P V N D V A E A V Q R I A K G D Y A S E V A G T Q H G D E A G A G A R S$
 I T T P IKK SAQYLELVVANGDFSQEIIDFLARKDEVGAITNA IT R PVIA NLLK LAE K A G G D L S A S V V V V E R H D E L G QL T L A



 PLNNLVAASERI ERGQFDTPAPDTALPNELGQLSRA
 KPLVNLTHAANKDSKMNF TEVCETEREDEIGGSLAKS
 P L N QL RLAA VRRLGE GELLDLSFPRLDSSAEI GQLAAAQ PVKRLVDGTHQLAAGKFSTRVEVGSEDELGQLARD
 IT S KI GKVMTVMSKAANGDMTVEVVEVKSNDEIGGKLALS I VR P L K Q TAD ALLK D IS E G DLT QRLP VETRDEVGDVAAN
 I T GPI A HI T NAMSRLATGDTA $\square$ SVVGVVDLTEEGEMARA SLTR PI S SLTNTAFQIRNGDLSAR SGVRGSDELGRLGET


STTRR $\square \mathrm{D}$ ALVSATQRIAEGDLEVHLGSQRQDELGMLDTS R K MRLLA T H Q S I A A
PLDKLMKKANK\SEGNDNAN



AETSQKLASGDLEVRIPEKGEDVI ATLARS
$T G P \square Q Q L I V K T K A V S A G D L T V R A E S K S K D E V G D L T R D$ R R K K K A T H R I A E G DF D Y D P Q I R P G DE I G DLA G D
$\square N Q L M Q G T E R L A R G E L D Q E \square K V S S G D E L G Q M A L Q$ R P L TALSNTAHEVAKGNLDVPQLPIVMDDEVGVVTRS $R P L R H L A S G M E R V A A G D H A I V I G Y E Q D R S E I G H L A R A$

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R S

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E4RMG

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KRVQKAAQQASGDTGEEVKVRGRDEGARASS P RKI TQUANELAHGNLSTQ TNIHQKDE: GQLAYS $\square T \square P L A R L V R H T R L V A E N L Q Q D K M T G S D E L A Q L A R G$ PIRSUIKKANQUQNNLNERIPLTKPNDEIGQLSDA
 SLASVIANITGTISRLAANDLSATVDNGNRPDEI GAMARA $M V Q P$ GSLVGSLQALTAGDLERADDGTERKDEVGDMARS VTKPVEALADAVQHAENGDYSVRSNDTHS DE GN ARS ISDPARRIADSMNKVSSGDLDVRLEAKDSF EFGELEEA

QP GRMREASTKTSNNDLDFNUQHDDSEDEMGQLCRS

#  

RPITADMKKQAQAMAK



KPI QVAVDAAEKVAQGNLATVIGEMDRGDEVGLLYDA
PVRKVSAAAQRIS
$T \mathrm{LT}$

PLRQMVEAARALRGGRFDTRL
 PADMRRQAVEMRKGNFSRK KVYSDDEVGQLAYA

KPI QELMRGINEMSRGNLDVRLEREGKDELGQVNAK
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 PIKRLKLAAQNI QAGNLDFELPVEYSGDEIASLTKD QPIVRLMEEMKKVAD
$\qquad$
VTGpLNG1 ARAMGDMA
SVAQPIEALRDQMTRMADGDLDREVPHTDLTDEVGADSNA SLTOPLSRATKAAEA AKGDLOPVADADRGEDGEMAGA



TRTMKNAARR1 E

## R P

 RQLNSVTEK A A EQLQQSMLADVTKGDFTMRYE ITRPLKTVTEHLQHODGDLTKQLSGPLGKVAHLVNQVAD
S
S
S
SRKINGLLTATRR1 DGGDYSQA:

$$
\begin{aligned}
& \text { D N } \\
& k
\end{aligned}
$$

EVKSDDEDSFLAKM
NHFHDEGEADK S
DTETMDETGDLIRS VVDGKDEGGQLSVQ
$\qquad$
RPVAKMSDTATEIGQKGDFSKRIV
K


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F NGMLDRLEEA
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F NAMLDKIRTLI
FNTMTQELRRQ


M D QLLA I E L R
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TNKMLDRLESAL
FNTMAAELAR
LNEMAQRLSDTM
AQVLKDNAARKA
Y NRFMEAL
F N H MAQDLE
$F N N M V V G L K E A$
LVNMQESMR
FESMRAALERQM
FNVMVEQ
YNLMVQRDKSLI
$\square \mathrm{A} V \mathrm{I}$ R D N
FNNLTKKLQEA

| $\square$ | N K M A E D |
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| F D K A $\square$ R | A A S |
| I | K Q L M |

F GEM
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