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 TKAVLHYQRPDAAYD GWGLHTWGAAEPTDWSKPLEPV TKAVLHYQRPDAAYDGWGLHTWGAAEPTDWSKPLEPV E QVT L NV HYNRYDRNYEDWKLWLW
E QVTL $\mathrm{L} V \mathrm{~V}$ HYNRY D R N Y E D WK L $P$ E GKE G I S Y N F E $\begin{array}{llllllllllll}P & E & G K & E & G U S & Y & N & F & E \\ P & D & G & K & E & G & A & Y & P & F & T\end{array}$ $Q N V L R V R Y V R P D G Q Y T G W G L H V W E D T A A V E W A K P L A P T$
 E D GTAVI

 NKAVLHYHRADGNYDGWGLHVWGGAAPTDWSKPLTPV NKAVLHYHRADGNYDGWGLHVWGGAAPTDWSKPLTPV HYHRPDGDYEPWNL
KATLHYQRPGGDYDGWGLHVWGAANPTEWSNPLKPV TKATLHYQRPGGDYD GWGLHVWGAANPTEWSNPLKPV NT V A E DI L R V
A E
 K T K AVI HYHRADGDLTGWGLHVWGAATPTDWSKPLEPV HRFDGNYE GWNLWI WPVEP DFQEGRAYNFT
K

## $\frac{L I}{A B}$

 YYRYEGDYDNWSFWI WH Y L R E D H D Y Q D WG L H V WE D T T E V E WT R P L A Q S K A V HYKRADGNYDGWGLHVWGDAAP
TKAVLHYKRADGNYDGWGLHVWGDAAPTDWAKPLQPV KAVI HYRRADGDYTGWGLHDWGAATPTDWGNPLMPV KAVI HYRRADGDYT GWGLHDWGAATPTDWGNPLMPV
KAVi
TEVVI HYKEKSGNTKDWNLWVWGENA
ASTKVTIHYK PS ENLDE WDLWVWGDKAG G G G A Y Y A F D KAVLHYHRADGDYTGWGLHTWTGAADTEWSNPLKPA KAVLHYHRADGDYT GWGLHTWTGAADTEWSNPLKPA KAVLHYQRPDGAHDGWGLHVWGAATPTDWSKPLLPT KAVLHYQRPDGAHDGWGLHVWGAATPTDWSKPLLPT Y E NVK VTI H Y A R Y D K N Y K D WDL WV WP D GK S YENVKVTI HYARYDKNYK D WDLWVWP DGKS L P D D T AR
A T D T I T HYNRPDGDYEGWTLLHVWEDTSE GQAVQFK

G K TK A D Y HRPDGDYEGWGLHAWDAAAVTE WANP LPPD K T K A $\quad$ L H Y H R T D GA Y D G WG L H V W W A A T P T D WS A P L K P K K K A L H Y H R T D GAY D G WGLLHVWGAATPTDWSAPLKP K NTTNIVVHYFRPSGDYTDWNLWMW PENGDGAEYDFN $\begin{array}{lllll}Y A & V & H & Y K R T D G D Y D G W R L & K \\ Y & A & V & H & \text { K A DAEAEFS }\end{array}$ KTADAEAEFS LEKED G GTYDVQ $Y$ V W ENTAVIHWRRADGDYSGWGLHVWGAANPTEWTAPDQPA ENTAVI HWRRADGDYSGWGLHVWGAANPTEWTAPLQPA QNTAVI HYHRADGDYSGWGLHVWDGAATGDWGSPLPPA QNTAVIHYHRADGDYSGWGLHVWDGAATGDWGSPLPPA K A V L H Y H R P D GA Y D G WG L H V WN GAA A E T D WS R P L T P P V KAVLHYHRPDGAYDGWGLHVWNGAAETDWSRPLTPV R H Y V E G N Y N L G WL WD E I V GDK TLVIHYKRTNGDYDDWNLWLWQSRPDDKDGKEYSFT AQDTALI HWRKADGNYDGWGLHLWGAANPTDWAAP LKPE A Q D T A L I H WRKA D G N Y D G WG L H L W W A A N P T D WA A P L K P P E SERQVRFTYIRDDKAYEGWNI $S E R Q \vee R F$
$S E R Q Q R F$
$T Q A R I$
HYYRPDAQFAGWGL , HYHRFDNNYNGWNLWI WPHKPQSLEGHAYQFT
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EKTKVTVHYFRYDGNYEGWNLWVW
EKTKVTVHYFRYDGNYEGWNLWVW Y D DLLEVS FNYYRY DLNYD DWDI WVWT DK Y D DLLE EV S F N Y Y R Y DLLN Y Y AVVHYRRADGDYTGWTL YAVVHYRRADGDYTGWTL
NVARVHYQRADHAYAGWGLHAWEDTAVSDWAKPDEFT
 $N \vee A R V H Y Q R A D H A Y A G W G L H A W E D T A V S D W A K P I A Q A A$ Q A V V H Y K R A D G DY D G I T L K K S G DRTSK S V QAVV HYKRADGDYDGIT L YAVVHYRREDGNYDGWTL Y AVV HYRREDGNYDGWTL

KAAGQE
$T E R K V R F T Y$ REDQNFGEWNIWTWNTGVTDG


VAFT
$\vee$ A F T

Q $V \underset{ }{A}$| A | $F$ |
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| UniRef90-B7IGT3 | KIKDGKAEVWILQGVEEIYTTKP |
| UniRefoto-A4XHC3 | SGINGTKEVWLIEGEEQUYTSQP |
| UniRef90 12 22J1 | VA El WVIEGEEDFLTSP |
| UniRef90-D7BEV3 |  |
| UniRef90 F7YWUS | EIENGFAEVWILQGVEEI YRQRP |
| UniRef90'МЗЕАС | DLRANGHEVWLVSGQETYLLPQP |
| UniRef90 M 3 EA | DLRANGHEVWLVSGQETYLLPQP |
| UniRef90-UP100037FA376 | DLKANGHEVWLLAGQEKYLLPQP |
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| UniRef90 F2JLW4 | NGK1DI YLKQGEEKVG |
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| UniRet90-Q60HE9 | DVIJDGKAEI WL |
| UniRef90-E8UBD1 | Q ${ }^{\text {a }}$ |
| E8 | DPGQG REVLVRSGDFTYVTS |
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| UniF | KADGYEAWLLSGQEN |
| UniRef90-C5CF | P EGV |
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| UniRef90 Q82 | DLTADGHEVWLLNGQENHLLPQP |
| UniRef90-Q82AS4 | ADGHEVWL |
| UniRef90_A8F6 | NIKDNEEEVWILQNVEEIYTSKP |
| UniRet90_R1, | GDVTEVWMI QGTEK |
| UniRef90-LOA337 | FWIVSGKNEL |
| UniRet90-LOA337 | W |
| UniRet90-S15672 | DKADGHEWL SGQEDHLLPQP |
| UniRe90-SSIS672 | DGHEWL SGQEDHLLPQP |
| UniRet90_E4NAC3 |  |
| UniRet90_E4NAC | W1 |
| UniRef90-C2XUZ0 | N R DGRAEVWILSGDEKVYNSKP |
| UniRef90-UP1000377P | DLTSNGHEVWLLSGQEK |
| UniRef90-UPI000377F1AB | DLTSNGHEVWLLSGQEKY |
| UniRef90_D9VT87 | W |
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| UniRef90_UP10004732 | w |
| UniRef90_UP10004732E72 | DGSAEIWI |
| UniRef90 D7CVE | NLTES |
| UniRet90-A9KK | DTSLGD ELWISSGESTFSYEAP |
| UniRef90 UPI000289EC | DLTANGHEVWLLNGQEKYLLPQP |
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| UniRef90-UP10003C760AB | DLTANGHEVWMLAGQQKYLLPQP |
| UniRee90-UP10003C760AB |  |
| UniRef90-UP10004791432 | SLLEDYNQLWI REESDSTVYIS S |
| UniRef90-U2EDX4 | DLTKLTGHI WMTEGDPTI YYSE |
| UniRef90-U21 | NTENNEVHVWLLQGEEMUY |
| UniRef90-D9T4 | DFATAGREVWL |
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| UniRef90 UPlooo363AD71 |  |
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| UniRef90-G0V465 | EDGSAEI WLAQGDEK |
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| UniRef90-W1SFL6 6 | A DGK |
| UniRet90-E9UWA |  |
| UniRei90 C1CWAO | DLARGGEELFVKAGSTLVAYAKP |
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| UniRef90 C1CWAO | RG RELFVKSGS |
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SNRHVRFTYПREDQNYGTWNTWAWNTGTKND SNRHVRFTYIREDQNYGTWNI WA WNTGIKND SNRHVRFTYIREDQNYGTWNI WAWNTGIKND Q| NFE AENRAVLHYHRPDGDYAEWTLYHWSAEPSPGWNQSRPPD AENRAVLHYHRPDGDYAEWTLYHWSAEPSPGWNQSRPPD KLNHYYNFAQSYDTDEAYAW AGTEVGGSYPYV KLNI HYYNFAQSYDTIEAYAW AGTEVGGSYPYV QNKAII HWRKADGNYDGWGLHVWEGAADTDWASPLAPA QNKAI HWRKADGNYDGWGLHVWEGAADTDWASPLAPA
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PYGT APFA
PYG APFA
YAVVHYQRTDGDYDGWRLL
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KINVHYYNFDQKYDNVEAYAW
KINVHYYNFDQKYDNVEAYAW
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$A P S D G W P A D A T$

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 SYDAFGAVFRVPVRADAAGLRFV $\qquad$ DQDAYGAFAYVKLKPGASNVGFLVIDKDGD SYEGGVASVNIAVAPEMKQFGFVLRTDNWDTADVSADRS SYEGGVASVNIA AVAPEMKQFGFVLRTD GDDGFGVYWSVPLAQGAPGLSHI GDDGFGVYWSVPLAQGAPGLSH| ETDDYGAVFHVGLKPGVTTAGFIIENGDADAKAEYEADFL ETDDYGAVFHVGLKPGVTTAGFIIENGDADAAAEYEADLT RIDSYGAVFEVPLAAGASSLSYI L GFNEYGAYWDIPY SGKGKLNFII Q RKDGKAMSKFEMAPDVTQVGFVLRK

| GDAYGVFWKLPLKNASAPVNH GVEGGWAYWLVPMKTDWKKLGF |
| :---: |
|  |  |

GVEGGWAYWLVPMKTDWKKLGF: GRDAYGAFAWVRVREGSDSVGYT EDSGGAE

## GRDAYGAFAWVKLPEGASTVPYTV

GRDAYGAFAWVKLPEGASTVPYTV
GRDAYGAFAWVPLDDSTGTVTYTVEKD

EKDAFGALFK, GLKEGVKTAGGYV
RIDSYGATFEI PLVPGATGVSYIV
SYDGGVAVAH: AVAPETKEFGFVLR


|  |  |
| :---: | :---: |
| UniRef90-UPI00047E | TDEQGNAEVWV |
| UniRef90-UP100047E40D5 | TDEQGNAEVWVVQGTER |
| UniRef90-UP1000380ED7F | DLTVA REAWVLA ETVAPVRP |
| UniRef90-UP1000380ED7F | DLTVA REAWVLA ETVAPVRP |
| UniRef90 D6KBY5 UniRef90-D6KBY5 | DVTK TGEVVWIEQGEDGVQTTTRP |
| UniRef90-s2 | QVNKNDTKAYI |
| UniRef90 | QVNKNDTKA |
| UniRet90_S2YKQ0 | QVNKNDTKAY |
| UniRef90 C6WQ68 | DVTGTGHEV |
| UniRef90-C6WQ68 | DVTGTGHEVWFA |
| UniRet90-R7RAH1 | KATDQThDVYVVEGNPTFWYDK |
| UniRet90-R7RAH1 | KATDQTLDVYVVEGNPTFWYDK |
| UniRef90-10H | AKAGREVWL |
| UniRef90-10HEC | DFAKAGREVWLLAGQET |
| $\begin{aligned} & \text { UniRef90-LOKBX7 } \\ & \text { UniRef90 H7CUK1 } \end{aligned}$ | K TDPNVTKVTVKSGVGEFF |
| UniRef90-H7CUK1 | KıDPNVTKVTVKSGVG |
| UniRef90-D2BD18 | TPA LQPDAYVGSGVAK |
| UniRef90-D2BD18 | Q |
| UniRef90-D2BD18 | A LQPDAYVGSGVAKVHPTR |
| UniRef90-UPIO003B76757 | TREMG NQAWIVSGKDAVSTTRP |
| UniRef90-UP10003376757 | TREMGNQAWIVSGKDAVSTTRP |
| UniRe990-H1Q774 |  |
| UniRer90-H1Q7Z4 | D'AQRTGEVWVEQGKEGQATTKP |
| UniRet90_B5GXE1 | D |
| UniRet90_B5GXE1 | RTGQVWV |
| UniRef90_B3CJE7 | PVRTG EVWIEQGED |
| UniRef90-B3CJE7 | PVRTG EVWI EQGED TWY |
| UniRef90-R9JgG9 | DLTDNTIDVYM |
| UniRef90 UPIOOO374E | NFSVSGREAWI |
| UniRef90-UPI000374E3DF | NFSVSGREAWI |
| UniRef90-E7RHX5 | QVNKNDTKAFVTSG |
| UniRef90 E7RH | QVNKNDTKAFVTSG |
| UniRef90 ETRHX5 | QVNKNDTKAFV |
| UniRef90-D5E17 | GGKDNVEW VGGQNRYYOR |
| UniRef90-UPIO00225B642 | KVNKNDTKVYi TSGTEEV |
| UniRef90-UPIo00225B6 | KVNKNDTKVYITSGTEEV |
| UniRef90-UPIO00225B6 | KVNKND |
| UniRet90-G2NH | TGQVWVEQGEDEQTTEAP |
| UniRef90-G2NH70 | DLAK TGQVWVEQGEDEQTTEAP |
| UniRef90-2MX79 | DARTG VWI AQGKDGQSDTAP |
| UniRef90 UPI0003620A | DLG RTGEVWITQGQDGQLDTAP |
| UniRef90-UPIO003620A76 | DLG RTGEVWITQGQDGQLDTAP |
| UniRet90_18UH2 | EDGSAEVWI |
| UniRef90_8UHZ3 | REDGSAEVWI |
| UniRef90 W2FO22 | VParopeay |
| UniRef90 W2F022 | VPARQP |
| UniRef90-S4G5E8 | NCASGLAEAWV |
| UniRef90-S4G5E8 | NCASGLAEAWV |
| UniRef90-UP1000 | KVNNNDTKAYITSGV |
|  | KVNNNDTKAYITSGVEE! |
| UniRef90_UP10002DCA02F | KVNNNDTKAYUTSGVEEI HYS |
| UniRef90-R7RQ36 | TKDDGSAE WLMOGDERUHYS |
| UniRef90-V6JQG2 | DLA RTGEVWI EQGAD |
| UniRef90-V6JQG2 | DLA RTGEVWIEQGAD |
| UniRef90-B0B0V7 | DFA ATGEVWTEENSTAVRTARP |
| UniRef90-BOBOV7 | DFA ATGEVWTEENSTAVRTARP |
| UniRet90 UPI0001E89CC0 UniRef90 UP10001E89CC0 | EMLQQYNQLFVKEGEDKV |
|  |  |
| UniRef90-C4L6B8 | LGTAKEI WLVEGDSTIYYSEP |
| UniRef90 B8Czl3 | PDPDKNKEIWCV |
| UniRef90-UPI0003675DBB | NPVEHAEVWLRQGDDTVHTSEP |
| UniRef90-E8WF | DLA RTGQVWIEQGKEG |
| UniRef90-E8WF | DLA RTGQVWI EQGKEGQSTEAP |
| UniRef90_UPIO003451E92 | TPEKGNQVWI VSGKTDLFTARP |
| UniRef90 UPI | NRNSGKTEVWIVDGDDTLYYSR |
| UniRef90-E8×6x | DPSOGSN FYQLSATSTITAP |
| UniRef90-E8X6X0 | DP |
| UniRef90 E8Q965 | DRDYGKTEVWLVDGDD |
| UniRef90-D4W3P8 | KVEDD TKI |
| UniRef90-IOJME0 | S |
| UniRef90-R6QZB5 | ETADGKVDПYVLQGQSEFGYTE |
| UniRet90_UPIooo368A9C9 |  |
| UniRef90_UPIO00368 | P |
| UniRet90_UPI000368A9C9 | P |
| UniRef90_P7098 |  |
| UniRef90-P709 |  |
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| UniRe990 UPIOOO35D0437 |  |
| UniRef90-UP100037FB846 | TLA RTGE |
| UniRef90-UPIO0037FB846 UniRef90 S3FJY4 | STA RTGE |
|  |  |

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UniRet90-UPIO003793CAF UniRef90-W7IPW4 UniRef90-W7IPW4 UniRef90-UP10003605EB7 UniRef90-UPIOOO35C991E UniRet90-H3NDB6 UniRef90-H3NDB6
UniRef90 UPIOOO2 NiRe90- G4HNBE UniRef90-G4HNB3
UniRef90-J3A293
UniRef90-V6Z464
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UniRef90 O27GS8 UniRef90-O27GS8 UniRef90-FOVWS8 UniRef90-UPIO0046CCB09 UniRef90-UPIO0046CCB09 UniRef90 W1Q1W2 UniRef90- W1Q1W2
UniRef90 DOYTIO UniRef90-DOYTIO UniRef90-D5AET8 UniRef90-D5AET88 UniRef90-D5AET8 UniRet90-G5K404 UniRef90--10H117 UniRef90_10H117 UniRef90-R9BYI3 UniRef90-R9BY13 UniRef90_JoD5B1 UniRef9_JoD5B1 UniRef90-K9EZ90 UniRef90_A3CL46 UniRef90-A3CL46 UniRef90 W5IIN1 UniRef90-U6BBJ8 UniRef90-U6BBJ88 UniRef90-G5JMP1 1 UniRe90-G5JWK1 UniRef90-UPIOOO36AECBA UniRef90-B9DRS4



| UniRef90 T0V2G2 | $\text { LG D A P NE } \\| \stackrel{90}{\\|} \mathrm{WL} \text { VUE G D P E VVYY Y S K P }$ |
| :---: | :---: |
| UniRef90 U5PD21 |  |
| UniRef90-U5PD21 | ELSPKMNEAWL DDKFKVYSYQP |
| UniRef90-A0A024PF50 | PVT GEKEFWLVQGDSRVYVDEP |
| UniRef90-W4CIT3 | LTPGETKVYV |
| UniRef90-W4CIT3 | PLTPGETKVYVT |
| UniRef90-W4CIT3 | PLTPGETKVYVTS |
| UniRef90-L7VR04 | SLLHKYNHI WI RENDDTVYVSP |
| UniRef90_L7VR04 | SLLHKYNHIWI RENDDTVYVSP |
| UniRef90-R6FWY9 | SIIDPTIT KVTVTS GVGE |
| UniRef90-R6FWY9 | SI D P T I T K V TVT S GVGEFF |
| UniRef90-W4QRN9 | TI SPTETKV |
| UniRef90-W4QRN9 | TI S P TETKVFVKEGQ |
| UniRef90-W4QRN9 | TI SPTETKVFVKEGQ |
| UniRef90-W4QRN9 | TISPTETKVFVKEGQ |
| UniRef90-U5VUI1 | DLT RSREVWMLA G |
| UniRef90-U5VU11 | DLT RSREVWML |
| UniRef90 W6RYK9 | NLNNGEDNAYFLQGDENTYYYP |
| UniRef90-W6RYK9 | NLNNGEINAYFLQGDENIYYYP |
| UniRef90-D3E9K1 | PL Q P GEA |
| UniRef90-D3E9K1 | PLQPGEA |
| UniRef90-D3E9K1 | PLQPGEA |
| UniRef90-14M7G0 | NCASGLAEAWVTGGTGTTQFAAP |
| UniRef90-14M7G0 | NCASGLAEAWVTGGTGTTQFAAP |
| UniRef90_UPI00037DA053 | DLA A TGEVWI A QGED |
| UniRef90-UPI00037DA053 | DLA ATGEVWI A Q GED |
| UniRef90_14M0G1 | NCASGLAEAWVTGGTDTTQFTAP |
| UniRef90-14M0G1 | NCASGLAEAWVTGGTDTTQFTAP |
| UniRef90-10H8A2 | P ID S P QVWI RQGDPAVYTSPP |
| UniRef90-R4Z8G3 | DCTQGGAEVWIVDGDDNLYYSR |
| UniRef90_Q27GR6 | NPQQTPG I WL HQGDPAI SYQ |
| UniRef90-Q27GR6 | NPQQTPG I WLHQGDPAIS Y Q |
| UniRef90-K0JVC5 | DLNGTGHEVWFVS |
| UniRef90-K0JVC5 | DLNGTGHEVWFVS G S |
| UniRef90-R4L8G8 | DPS VTPEI WLQPGDPTVSTVAP |
| UniRef90-R4L8G8 | DPS VTPEI WLQPGDPTVSTVAP |
| UniRef90_UPI0003793CAF | NPARNG EI WL VQGKQDVHVSR |
| UniRef90-UPI0003793CAF | NPARNG EI WLVQGKQDVHVSR |
| UniRef90_UPIO003793CAF | NPARNG EI WLVQGKQDVHVSR |
| UniRef90-W7IPW4 | DPS VTPQVWLEQGAAEVFPSE |
| UniRef90-W7IPW4 | DPS VTPQVWLEQGAAEVFPSE |
| UniRef90-UPI0003605EB7 | NKAEGKTEVWIVDGDDTLYYSR |
| UniRef90_UPI00035C991E | ELLS D Y S ELWI FEGDTN |
| UniRef90-H3NDB6 | EI HKAMNEVWL GANK QVYTYKP |
| UniRef90-H3NDB6 | EI HKAMNEVWLGANK QVYTYKP |
| UniRef90-UPI0002E5A9C8 | NLNDTLTKVYVYS GQS |
| UniRef90-G4HNB3 | VTS PEMNEVWLKEGSDTVYLFEP |
| UniRef90-G4HNB3 | VTSPEMNEVWLKEGSDTVYLFEP |
| UniRef90-J3A293 | NCNPGKSEVWIVQGDDTLYYSR |
| UniRef90-V6Z464 | NKADGKTEVWVVDGDDTLYYSR |
| UniRef90-R5LUI8 | TLNGGGTVEVYI TS GV |
| UniRef90_UPI00040E639A | ELLPEQNEAWI AS DYSVSSYEP |
| UniRef90_UPI00040E639A | ELLPEQNEAWIAS DYSVSSYEP |
| UniRef90-UPI00040E639A | ELLPEQNEAWI A S DYSVSSYEP |
| UniRef90_UPI00040E639A | ELLPEQNEAWI AS DYSVSSYEP |
| UniRef90-Q27GS8 | DFAAG REVWLLD GV |
| UniRef90-Q27GS8 | DFAAG REVWLLDGVA |
| UniRef90-W4EAG8 | DCSGSGEQV |
| UniRef90-FOVWS8 | QRNSGKTEVWIVEGD |
| UniRef90-UPI00046CCB09 | NPSEN NEI WLFDDSEEVATSPP |
| UniRef90-UPIO0046CCB09 | NPSEN NEIWLFFDDSEEVATSPP |
| UniRef90-W1Q1W2 | A ${ }^{\text {T }}$ T NQMKQAWL |
| UniRef90-W1Q1W2 | AI TNQMKQAWL |
| UniRef90-DOYTIO | VPVPGRVDI |
| UniRef90-DOYTIO | $V \mathrm{P} V \mathrm{P}$ GRV D |
| UniRef90-D5AET8 | EISTKMNEAWF |
| UniRef90-D5AET8 | EISTKMNEAWF |
| UniRef90-D5AET8 | EISTKMNEAWF |
| UniRef90-D5AET8 | EISTKMNEAWF |
| UniRef90-G5K404 |  |
| UniRef90-10H117 | DVSE KSEI WL I A DERRV |
| UniRef90-10H117 | DVSE KSEI WLI ADERRV |
| UniRef90-E4L505 | ERAYGKTEVWLVDGDDTVYYSR |
| UniRef90-R9BYI3 | TIS NSLNEI WI K E G S D V HiLFEP |
| UniRef90_R9BYI3 | TISNSLNEI WI KEGSDTVHLFEP |
| UniRef90-J0D5B1 | PTDTAKAEI WIVSGDTTVYTSP |
| UniRef90_J0D5B1 | P T D T A K A El WIV S GDT TVYTSP |
| UniRef90-K9EZ90 | DASSGTAEVWI QAGSEETATRPP |
| UniRef90-K9EZ90 | DASSGTAEVWI QAGSEETATRPP |
| UniRef90-A3CL46 | ELSPQMNEI WF DTDYQPYTYEP |
| UniRef90_A3CL46 | ELS PQMNEI WF D T DYQPYTYEP |
| UniRef90-W5IIN1 | PKNTGKAEVWIVSADTTVYTNP |
| UniRef90-W5IIN1 | PKNTGKAEVWIVSADTTVYTNP |
| UniRef90-U6BBJ8 | YAGAKDI WLI EGDQTVYYSKP |
| UniRef90-U6BBJ8 | YAGAKDI WL I EGDQTVYYSKP |
| UniRef90-G5JMP1 | FS GDAPNSI WLVAGDDQVYYSK |
| UniRef90-G5JWK1 | DPGDTKREVWIVQGDDTLYYSR |
| UniRef90-A9SZF8 | S GKD\EVWLVSGRPTVFSQKP |
| UniRef90-UPI00036AECBA | SFASNIAEVVWFKANDCTAYTTLP |
| UniRef90-B9DRS4 | DFGDPKTEVWIVDGDETVYYS |
| UniRef90-D3HB38 | ELAPKMNEAWLDQ DHKVFSYEP |
| UniRef90_D3HB38 | ELAPKMNEAWLDQ DHKVFSYEP | UniRef90-Q9K6N1 UniRef90-UPIO0035DA90D UniRef90_U4PK53 UniRef90-U4PK53 UniRef90_UPIOOO371E49B UniRef90_UPIooo371E49B UniRef90-14LNY0

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UniRef90-K6TBL5
UniRef90-E7PYA7
UniRef90-G5KF01
UniRef90-R6PSP3
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UniRef90-B4U2G2
UniRet90_B4U2G2
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DHTVRIIHYERSDQSYHHWGLWTWKDVASPSEANPFSDE PDHTVRIHYERSDQSYHHWGLWTWKDVASPSEANPFSDE ENRVTVHFHSRYKNYFDLNLWQWRDF QEGKEAHFQ EVYVKIRYDRLDKNYRDWDI WAWE KGKDGEAVNFI EVYVKIRYDRLDKNYRDWDI WA WE KGKDGEAVNFI

I RMHFKKPSENTNSLGLWTWDDVEKGSWPTGFSEA
1 RMHFKKPSENTNSLGLWTWDDVEKGSWPTGFSEA MGVYПWGKDADGKEGTWHAFN KTKI AIHYKGSNNN MGVYUWGKDADGKEGTWHAFN ERRHVVVHYHRADGDYGGTLH TANGTTADFS ERRHVVVHYHRADGDYTGLTLH TANGTTADFS NNTVIVHYHSQAGKYFDLSLWQWQDGKDGND AYFS KNAIIVHYHTSHGNYSHKSLWSW WREGQLIGRDTFFT EGSI RMHFKKPSDNPASHGLWTWDDVQKGSWPTGFSEA EGS RMHFKKPSDNPASLGLWTWDDVQKGSWPTGFSEA NTVRVHYVRDDQAQGDFGLWLFNDVAAPSWPSGAAFQ
 D $\square T$ TRLHYFRDDGNYDGWNVWFW STSDGKQYDFD YVRDNHDYEGWNI WTWQTGVKDG QADFT YVRDNHDYEGWNIWTWQTGVKDG QADFT DNLLTVHFHSMHGDYSRYSMWKWLDGY WGEEAHFS DNQLMVHFHSKDGDGRHYSMWKWLDGY WGGQDASFS KNTLTVHYHSRSGNYFDFSI WQW WLEGQDGQDAYFT EGYFRLHFEGLDNELDQGGLWIWNDVAVDWPNGALSFG

Y R R
DNAVIVHYHSCKGHYFQLSLWQWRD AQGSIRLHFKTPSDNLDSLGLWTWDDVATPSSDNGAWPT
 A QGSIRLHFKTPSDNLDSLGLWTWDDVATPSSDNGAWPT KGS RLHFKPSDNLDSLGLWTWDDVAPSSDNGAWPT KTKIVIHYKQKYGDNRHMGVYIWGKNADGQEGAWHEFN ADGHMRFHFKNPSENLDSLGLWTWDDGQKGGWPTGFATA ADGHMRFHFKNPSENLDSLGLWTWDDGQKGGWPTGFATA KNQTTVHFHSRSEHYENYSMWKWLDGY WGEDAFFS I RMHFNKPSDDLSSMGLWLWEDGAWPNGATSFATA RMHFNKPSDDLSSLGLWLWEDGAWPNGATSFATA $K V I V H Y H N P K G D Y F S Y D L W Q W Q T D$ QWGKEAPFS

TLKLHYHRKDGDYQKWDAWMW PEGGEGAGYPFE
TLRVHYQRAAGDYDGWGVYAWPTTPSSGWPGSFVFT LGEDVVRIHYKKADGNYENLGLWLWGDGDAGEWPAATPFT LGEDVVRIHYKKADGNYENLGLWLWGDGDAGEWPAATPFT VTVHYRRADNNYTGWDI WQWADGVA DNTPAKFT ETVHYRRADNNYTGWDI WQWADGVA DNIPAKFT
NEYTI NYYRHSG YDDWNLWIW PLGKEGAGVPFT
NEYTINYYRHSG YDDWNLWIW PAGGKGAGVPFT AATD RMHFKTPSKDLASGGLWTWEDVAKPSEQNGAWPT KTKIVIHYKQKSGDNRHMGVYIWGLKDAQGDGAWHEFN KTKIVIHYKQKSGDNRHMGVYUWGLKDAQGDGAWHEFN TLKLHYHREDGNYDGWDVWMW AENTLRIHFKAPSEDLASLGLWTWEDVPSESWPNGLSNL AENTLRIHFKAPSEDLASLGLWTWEDVPSESWPNGLSNL AENTLB AENTLRIHFKAPSEDLASLGGWTWEDV T YRVV Y Y RYDGKQLN WDMWA W EGKALVHYQRNADDYDTYTLWLWGDGVGGQEGKEFGFT TVEVHYERPNGDYEGWNLWVWGNGVREQ RVNDD YVKI RYDRADKNYDGWNVWAWE KGKDGRQVNF YVKLRYDRADKNYDGWNVWAWE

KGKDGRQVNF
NHLRLHLKPKDQSLESLGLWVWDDVPSKDWPNPLTTA
NHLRLHLKPKDQSLESLGLWVWDDVPSKDWPNPLTTA
DNTVIVHFHSQHSNYFDMSI WKWRD GKMGKDAYFS
I KL HYHRADDNYD GWDVWMWGEGA D GAAYELA


 A Q TRLLVHYKPANAD DNRGVYVWGTDTSGSSAEHHAF AE GTI RLHFQEPSQDKS SLGLWTWDDGAWPT GATSFAEA AEGTI RLHFQEESSQDKSSSLGLWTWDDGAWPTGATS FAEA $R V L I H Y H N Q L G N Y A A Y N M W K W Q M \quad N K W G E E S T F S$ SQGHLRI YYERTENQYGDWELWLWDDVAEGSWPAGAAFS
 TLRLHFKTPA QDLS S LGGLWVWDDVET GGWPTGFSIAA
T L R R

## UniRef90_Q9K6N UniRef90-Q9K6N1

 UniRef90-UPIO0035DA90D UniRef90_U4PK53 UniRef90 U4PK53 UniRef90_UPIOOO371E49B UniRef90_UPIO00371E49B UniRef90 -14LNY0 UniRef90-14LNY0UniRef90-H1Q7Z5
UniRef90-H107Z5
UniRef90 M5PIJ4
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UniRef90-UPI00037F12D5
UniRef90-E017T3
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UniRef90-Q93UZ9
UniRef90-R6R5N7
UniRef90-UPIO0047CAB19 UniRef90-UPI00047CAB19 UniRef90-TOSSNO UniRef90-C4G9X3 UniRef90-UPI000363EFC8 UniRef90-UPIO00372C810 UniRef90-K0J7S3
UniRef9-KOJ7S3
UniRef90_K0J7S3
UniRe90-K0J7S3
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UniRef90-E3D7L7
UniRef90-NOCEC3
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R4VXS
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UniRef90 R4VXS 1
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 RSDDYYYIDIKMAEGPRDWWILKNDTSGQNITGDQGF GQDAFGKTYTVDADGTYGKVGFIITDNKNWNKDGDKDRYI GQDAFGKTYTVDADGTYGKVGFIVTDNKNWNKDGDKDRY KHDAYGYYLDVKLVNGNRHVGLLINNTSGEN KHDAYGYYLDVKLVNGNRHVGLLI NNTSGEN KHDAYGYYLDVKLVNGNRHVGLLINNTSGEN
 GLDEDGAVGEIRLPADA VNVIT $G V D D F G A Y Y Y V P L T G E G S N L G L V P$
$R M E N G R A V F R I V V R A S V Q R I G Y V V$ $R M E N G R A V F R I V V R A S V Q R I G Y$
$G E D E Q G K A V V E T T K E A Q Q L S F I V$ KKDDYGYY LDVKLAEKQKQUSY RFDSFGAVANLQFPATDSYAYL EEDGD HVATMEVTPGTTSVGF KQDSYGYYIDVKVDGNRQKVGLLINNANGENK KQDSYGYYIDVKVDGNRQKVGLLINNTNGEN KQDSYGYYI DVKVDGNRQKVGLLINNTNGEN KQDSYGYYIDVKVDGNRQKVGLLINNTNGEN GTDCW KQDDYGKTAELTFDGQYTEFGFIV KQDDYGVYLDVKLSSTPKKLSFLNNAAGTN QYDDFGl QGTLSYKSALNNVHVIV GEDDQGAYLDVALSAGAQKVSFIVVNRVTGDKD GEDDQGAYLDVALSAGAQKVSF:V

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| UniRef90_Q9K6N1 | A D L A N H P QLF\|l|R Q G D T V Y T N P |
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| UniRef90-A0A023VJ16 | DYGFGK T E I WLV V G DETVYYSR |
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| UniRef90-14MEZ2 | QI E D GVGEA WVI S G N A D TFAEPP |
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| UniRef90_UPI000429A85D | NLS PDMNEVWF DENYQANYYAP |
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| UniRef90_K6TBL5 | DLA A G DVVE T K I T Q G S G E |
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| UniRef90-F0VSA1 | NLS QEMNEVWFDENYA! ${ }^{\text {S }}$ Y Y EP |
| UniRef90-FOVSA1 | NLS QEMNEVWFDENYAI NYYEP |
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| UniRef90_FOVSA1 | NLS QEMNEVWFDENYAINYYEP |
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| UniRef90-T1ZV95 | LPP H L V T EVWI DEGDSQVYY S R |
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30
40
 T E $\qquad$ L NLHYLREDNTYTGWNVWLWSTG DGAEYKFE
LRVHYNRSDANYSPMGLWMFDDVAAPSWPAGFPQG
L RVVH NRSDANYSPMGGWMFDDVVAAPSWPAGFPQG A ENTLRRVHFKTPSDDLASLGLWTWEDVPSESWPNGLSNL AENTLRVHFKTPSDDLASLGGWTWEDVPSESWPNGLSNL
 A E N T L R V H H F K T P S D D L A S L G L WT WE DVVPSESNWPN GLLS N L LKENQVAI FYKRDDANYEGWGLHLWNDEACGSWDKPDPPE
 TKVII HYQ GDSSKWAPYVWGLKPNGGNGQQYDWT
$R V E V H Y E R A D G D F S$ GWNLWVWGTGDQDG$Q Q D F R$
I RMHY QKP S E D LA S S I GL WT WEDVVATP S WP Q GFS QA
I RMHYQKPSEDLAS IGGLWTWEDVATPSWPQGFSQA Y VPRSIEVVE Y ERPNQDYRGWNLWVWGSVLGH RQVDFE ADGTVVLHYRGPDDDHADLTL R PADGTPVPTS A DGTVVLHYRGPDDDHADLTLL $\quad$ RPADGTPVVTS ENTVVLHYRGPDDDHADLGLLHLWNDAARADGTPVPTS ENEALLYYKRTDENYSGWGLHILWNDAAAGEWSSPRLPD
 AEHHLRMHFKTPAGESLGLGLWVWGDVPSKDWPNGATKA A EHHLRMHFKTPAGESLGLGGLWVWGDVPSKDWPNGATKA

Y V S DH Y N R C DNN Y D G W G V H L WK D GP G DE WQKPMMP T QTRVVVHYKAADGD PGRGVYVWGSNTQSGDGAYHAFT QTRVVVHYKAADGD PGRGVYVWGSNTQSGDGAYBAFT

RTI ELL DYERADRQYS GWNVWVWGTGCRDGH
LEE E QI AL FY QREDANYQGWGLHLWNGEDCGDWGDPYPAD K V EVV H Y E R S D R D Y R G WN L WV WD T G I $\quad$ Q D G Q C D F R KVLV HYHNPTGDYFSYDMWQWQ 1 NQWGQ T A V E I E Y E R R D Q A Y E G WNVWVVWGT GVQ D G TI RV HYHRAQGDAARWGVYAWE GVPSSTWSDRFMFA QVLVHYHNPTEDY LSYNIWWWQ ENQDGKEASFS EAL $L$ YY QRADGDYNGWGPHQWWNTAAETSSWDQP LPPAA $K T K V I V H Y K P A D S$ AQRGVYGWATDKDGADGAHHAFT $K T K V I V H Y K P A D S \quad A Q R G V Y L W A T D K D G A D G A H H A F T$




 DNEAI LYYKRPAGDYDGWGLHLWNDAAAGAEGVPTEWT ETKVIVHYQ GDGDTWKPYI WGADP GSNGQEYEWT AANQAVI YYKRQDGDYDGWGLHLWGDQMDETWSEPLAHD


 G L WL WE DVEKPSNGWPFKNA GL WL WE DVEKPSNGWPFKNA
NHMR $\square H$ Y DNGDTPPGN NHMR YYNGDTPPGN NHMRI HYDNGDTPPGNLGGIWYWDGAA V S S W WP GEERRFD NHMRIDHYDNGDTPP GNLGI WY WD GAAVSSWPGEERF D D K



$T V E V E Y E R R D Q A Y D G W N V W V W G T G V Q D G G Y V L T T$
TEAVIVYKRVDGQYEDWGLHLWS GDVETSWG
VTFYYHRDDKDYSDWFVHSWAE GATST QKLDFK

TEPTLVLHYERQNDDYLKWGFWDWTDGGGEEGQLFKLN
A D S K V I L F Y Y R P D GK Y A D WGLLWL WK T G G D G GP GK GNAVS
$T K V V V H Y Q \quad G D G S K W V P Y I W G K K P N G \quad N G N Q Y K W D$
TVRMHFRRAQHDESSWGVYSWWGNPSPAWDTGFMMT VKLHFHKQKGNYFAYDMWQWQDQV EGKSVSFS NTTKVVVHYQ G GDGTKWVPYVWGKNPNSTGVQYNWD ENELVI FYNRADNTYTGWGLHLWYDGAVVEWSAPVAKT LA A NQI AVFYSRDDENYENWGLHLWNGEGCGNWTDPYPAD V T I H Y H R LA D DY T S WDI WGWA D GV $\quad$ NGAAYPFT V TIH Y H R LA D DYT S WDI WG WA D GV EVVFYYHRDDKDYS DWFVNSWADGATSTQKLDFKDG

QTRLVVHYK PASDSDNRGVYVWGTDAGGSSAVNHPFT QAVI YYKRDDGNYEGWGLHLWNNATCDEWGSPYTWS VTLH Y H R A D G S Y D GWALHSWESLKGVT WF KPMQPA
$T V R L H Y S R P D A N Y A G W T L Y V Y N G E A L G G W P G R A P D$

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KADSYGYY 50 KADYGYYDVKLIEGQDKLSLLINNTKGDN ETDDNGVVTTVKLIEGQDKLSLLINNTKGD QLDSYGAFVDPPLQAAAAKVGTVVDRVSGEKDGGDKHVT QLDSYGAFVDIPLQAAAAKVGIVVVDRVSGEKDGGDKHVT KHDAYGYYIDVKLVNGNRHVGLLINNTSGEN VIGGEKVV KHDAYGYY DVVKVNGNRHVGLEINNTSGEN KHDAYGYYIDVKLVNGNRHVGLLI NNTSGEN SVTGGWATAI PRSNSNAHLNFI GHQTLGAYFLLNTK KEDDYGHYAEFNDD HSDKVGFLIKGQKDWSKDGKADRTV KEDDYGHYAEFNID HSDKVGFLI KGQKDWSKDGKADRIV YMEDGRAVAVVEVLPETRSFGYIL KADDYGLYLDIKMSEGPRNHKWLINNSKGEN K KTGDKS KADDYGLYLDIKMSEGPRNIKWLINNSKGEN
 GRDSFGAVFHIPLPPPTRTLRYTLH
GSDTYGAYYI PMREAGNCLNF
 KKDDYGYYLDVPLAAKHQQVSYLTN KKDDYGYYLDVPLAAKHQQVSYLINNKAGEN GKDDFGVYWHTKLDDYVGRVNYI

HNGDEKD GGDHRW
GELHHMNVEEWKWII GTDCWGKVYEQTFDGVYDDIGLIVTTSGWDK YGGDRKV
 YMEDGRAVATVEVLPETRSFGYILRVNDWEARDGSTDRF $K D D Y F G D Q G E L S F Q E P L D H A H V I I K R S D W S S Q S C D Y H D D L$
$R T D S G R A R A V Y Y A S G T D R D G C I V R L N E W E D R E G E N D W F I U$ GADAFGGFVDDPVNDDRSAMSFVVTDGAGNKNCGADQSA NFDYFGRIVTYQSETNLDYVHLIIKKADWSSQTIDYTПRI GTDEYGAFYRDPLTADASCLNLIM GTDSYGQVFTLNGAFAAGKYGVIMTDEQWNEKDV GSDYGAYYII DTTEADASCCLNFIM HKGDEKD $\vee$ G D N R M
 SVGAHGAIYKI PMKEGGSCFNYI M D GE G

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 <br> <br> }R
 KTDEFGKYLDi KTKTSAEKIGWLINK

HNGGDKEPG HNGGDEPGGDKl VGAGGIYKIPMKEGGSCFNYIMRHHNGGKIDGDRQW FKQALYKVPSNA
FKQALYKVPSNA DC GFVVRHEEWEKKDVAADRYV
NFFKKKDWGGEDGRRYV
NFKFKKGDWKGED GGGRIIV GTDCWGKVATLTFDGKFENFGFI TSSDWNK YGGDRSA GEDSYGKYASI TLD GNYKKLGLLIKDKNWGKDGSGNDRTV


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E DDEFGAKF TVPDKGEHGCM
GKDDF GVVWTIPAAEENGRVNYI I

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| :---: | :---: |
| ML V |  |
| M L V |  |
| M L V |  |
| F V I | R K |
| $F 1 \mathrm{~V}$ | R K |

N
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| :--- | :--- | :--- |
| $A$ | $N$ |
| $A$ | $N$ |
| $R$ | $L$ |
| $V$ | $V$ |

$N$ D A G G A $N$

| $R$ | $L$ | $D$ | $M$ | $L$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $R$ | $L$ | $D$ | $M$ | $L$ | $V$ |
| $R$ | $L$ | $D$ | $M$ | $L$ | $V$ |
| $R$ | $L$ | $D$ | $M$ | $L$ | $V$ |
| $R$ | $V$ | $G$ | $F$ | $V$ | 1 |

G|V|D A A G S Y WD|V|P|V|AS S A


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$T|V| R|L Y S R P D A N Y A G W T L V Y| V N G E A L L G G W P \quad G R A P D$ T LLRVRYHRDGSYAGWGAHAWGDVAPTTWDAPRAAT $R T V T$ L R Y E RED QHYE GWDVWVWG T A GMED GADRLE GL WI WG DVPSSNWPNGAIPA GL WI WGDVPSSNWPNGAIPA $T V K A H F K \quad N V T G W A L V H H W G G G D D G T E W P G V V D T T$ $T \vee K A H F K$ $N \vee T$ GWALHHWGGG』DGTEWPGVDVT E AVVYYHRSDANYAGWGLHLWNGGSCDSWGAPLSYT EAVI HYRRVD GNYD GWGIVH WNDVTS T G WA QPQAP V
T T R Y $T V R \square H Y L N$
TFNLHYYRYDGNMTNWDNWI F N
TFNL HYYRYDGNMTNWDNWIFN
NEDTVKI HYTRDDGNYDEWNVWAW
A A GYFRLHLKTPAGDDANLGLWWWDDVPEGKGGAQYDFT A A GRLHLKIPAGDIANGLWIWDDVSANWPMGLEDA

F
F
E G I K V N Y NRPNK D Y Q G WS L WN WI T G
 TISSLUYYRPD GSYA GWGVVHFWES FEKVQQWGNPMMP T
 A QTRMVVHYKPQDAD DNRGVYVWGKDSTGADMNAHPFT A QTRMVVHYKPQDAD DNRGVYVWGKDSTGADMNAHPFT

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LS D T Q A A I FY T RA D GE YE G WG L HLL WN G GD CNTWWDNPMPA T
$L S D T Q A A I F Y T R A D G E Y E G W G L H L W N G G D C N T W D N P M P A T$ KTRRLVVHYKPAKAD GQ R GVVYVWGTSTDDGTDDTA HP FT
 QTRLVVHYRPADAD DQRGVYIWGTDGTGMNAEHHAFD QTRLVVHYRPADAD DQRGVYIWWTDGTGMNAEHHAFD D NELVVVFYNRPDENYQSWVLHLWNNGGGTEWSVGQAQS
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 KTRLVVHYKAPAGD KARALWVVWGSNSNTSDGQQI EFS A D GYV A H Y Y R A D A N Y A G WGL H A WS R $\quad$ P G G Q WLT P L K P M A QTRLVVHYKPADEATANRGVYVWGKDSAGADMTAHPFT A QTRLVVHYKPADEATANRGVYVWGKDSAGADMTAHPFT
 FSNLINIKVVNYNRPNKDYEGWSLWNWITGGGPEGKEGLGN MHFKTPSDNLA S LLGLWT WDDVQQKGSWPT GFSTAA

 T NYHRIDNELNNWQLWMF GGLEPSGYHFS D R LI RINYK RDD GNYD GWGL WA WGDVAATWPTDA LDFT
 NNEFIVHYHSSKDSYDDLS LVWQLQDKKAD KELYFS
 A Q TRLVVHYKPADEATANRGVYVWGKDTTGADMTABPFT

RK ITQFNYD R S EK D Y D G WN L WY WS T G L V D S S D K A A L N
RKI QFNYDRSEKDYDGWNLWYWS TGGVDSSDK VALLN
 A E N EVVVIVYYKRD GS TY Y GWGL H L WN GE G GT D WDVDP Y E F K
 L N NK GQV G G G GVWEPYVWSEGAEEEPGKQYHWD
 A ENEVVI YYKRDGSTYDGWGLHLWNGEGGTDWNSPYEYD NTTDVTIHF NGDGTKWVPY I WGKKPNSS GTQYKWD

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K IVELEYERKD GKYE GWNAWVWGTGGV QD GSVPLSQ
$T K V V$ I H Y Q $\quad$ GD GTK WVVPYVWGKKPNGS GS QYN WD
D DELVVYYVRQDKKYEPWALWMWAM PGGDGGANWEYT NEKTITIHYHRDDANYSGYVLAIWDDEYNQGTDYDFK E NHLRRVHFES GDLNVEDVRLWVYEDVATGSWPNGMVFG ENHLRVVHESSGDLNVEDLRLWVYEDVATGSWPNGMVFG AEHHLRMHFKTPAGESLGLGLWVWGDVPSKDWPNGATKA A EHHLRMHFKTPAGESLGLLGLWWVWDVPSKDWPNGATKA A S DE V V I Y Y LR N DA K Y EP WGFWL WG G D GATVVWDK S KNLE ENQAVLFYNRPDDAYDGYRLHTWNNEACDAWSNGLIHD
 EAVIYYYKRADNEYA DWGLH $\square$ WWS GDVAT T WF DAFP LT ASDEFI I YYVRGDKNYEPWALWMWGDGAAAWDYTQYNLD E NEVVVI YY K R D S G DY A G WG L H

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70 way GW LDDYWATFDVELVSGASRVSVLI GKDGFGVYWQVPANEFNGKINYI QVGN AAEARFRVAPGLGHLGLIARLNEWEAKD KKDDYGYYVDFKLSEKQKQLSFLINNKAGTN PS
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| :---: | :---: |
| UniRef90-Q6PYZ0 | DVSAGTREVWLVSGYSCAFEQEP |
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| UniRef90-R9C5 | ADGKQDTEAWVIEGLETVFY |
| UniRef90-D1NSB6 | TVSKGTVELWVDGGDPTTLTEAP |
| Ret90 D1NSB6 | VSKGTVEVVDGGDPTTLTEAP |
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| UniRef90-R5NRK0 | DISENNVDVY'K S GEE |
| UniRef90-E6TTZ7 UniRef90 E6TTZ7 | NiSEEMNEVWVREGDVSL |
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TMTVI YYDATGDYEGWNI WTFGNGTDASKDGEVNYT

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 RI HYHRKNGEYDTYSF SEDEVVVYYNRDEGEYQDWGMHLWNGEGGTSWDEPYLAD
 NQD F I RI H F K T D S $\quad$ N L E D V K L WG WND FA D G NWPAD HR LT K GTVIVHFKAWDGNYENLGNWGWGGFDSKS

T NRDYSTNTLYLWNDKNSSWNDTSATPT
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ENQAVVI H L V

NEAVI YYNRPDADYDGYRLHTWNNDDSSDWANGHEFD AENEVVI YYKRDEAHYEGYGLHLWNGDGGTPWDEPAQAT N Y A R V Y M N T LD G D S N D F R L H V WN D GN D S A WP Gl NYARVYMNTLDGDSNDFRLHVWNDGNDSAWP
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K G F N R A D G E Y S D Y K M H N D NEAVL YFNKADGEYE GYRLHTWNNDACDSWDNGLVVHT K H Y VLVE YRRNNADYD GWNI YTWDS GYDDT

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 Y D Q A S L L Y V WN N D T C G D WG T Gll K P T
DNEA ILLFYNRTDANYEGYRLHSWNNDVCSDWENGHVHD VLF Y NRAD DNYE GYR L HS WN NDVVCSD WAK GHE Y D
 NTAAR L Y L N T Q D G D E S F F T L H HV WN E GE C S A WP GMA P S G

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 A A DEAVI YFNRQDQAYGDWVLHLWNSGCTGGWASQVTAT TADQAVLYYNRADPSYEGYRLHTWNNDADTDWANGRVHD NDETYTGYR L HTWNN DA DT DWAN GR E H T
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 NPNDARワYFNEGQTSTEYTLHVWNTEADTEWNYGLEPA $R Y$ VM E Y D R P A K D Y T G WN I Y T WN S GF G S D V TADQAVLYYNRADPSYEGYRLHTWSNDPDTAWDNGRVHT EKRWALV EY D RLDDGDYE GWNI YCWNS GS D GLDNVKVDEFN



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UniRef90 UPIOOO37 UniRef90-UPIO00375FC69 UniRef90-UP100047DD85A UniRef90-LOK815 UniRet90_C4ZGP6 UniRef90-10YY43 UniRef90-V5FJ40 UniRef90_Q3LB10
UniRef9O_G4QLM UniRef90-R5Z5M2 UniRef90-B5EAY1 UniRef90-UP100035D9C12
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 GTDDFGIFFKYENMPVQGELGFIAVKQDWNGK QTDDVKD SEDEYGLKMTFNFSGSSSDDGFTVKDDSVFPKD KKKYV GTDEYGPYDNDNVKNDKTKLNFTIAKNNWGERNVDGHRTD GFNTYGAYYDFKVDMNASDMNFI DHKGDEKAFGANHKA TTDGFGMTYNFPNSDDNAYTGVVVKEDSVF PAEDKRFV GVDNGFVYYDMLLKEDAQTVGFLVVNSDLGFQ GSDSYGPYWVIPLTKNEGCINFIVRDGN NNKLIDSDLKI
 TDDSEWVTFDVELSDGDGSVSVLTHKGE ПNSKTWGTFKKDGPVGDEDYGFIIRSRGSWDKDPGGDRIV
 G DDNYGAYWVLDLKDNFDNCNFIAHLGTDDAKELGGSDF GSDSYGPYWVLPGSKTTGCLNF:LR GQGNKLDDADMRD GSDDFGVYYDLSY G\DNYGAYWILNLKEGYGECGFIIHVGEGSGKALGGDFKM GSETYGAYYVIKYAPPHNCTNFIMHKGDGRPFGGGDMSF GSDTYGVYWD:PVNGTDNCLN:IPTKSNGDFQSANLKFEF
 GSDSYGPYWDLPLNKMTGC ITNFI L GSETYGAYYVLKVDPDAECMNF GNTDFGVAVYAPNE GDDNYGAYWIVKDKDGYNECNFIV ENDYFGAKFTVTSAERLDTLTFSVEIGEGKTKDYGDLKM AVDNYGAYWVLELK DGVAGVNFLI HTDDAGKEMGGGDQKL
K
GVDEFGAYWTLSYNQDSTQI

GVDPYGAYWLLNLKDDHNECGFIIHKGTDDAGKGGGDFKM KRGPYGAYVDVPLKEDAKEDGF DVDNYGAYWVLQLKEGFGDCGFITHVGTDDAKEMGGDFKM GVDEYGPYWEVDLATLDGCFNYMIRDGA LNKVVEADLQL GVDEYGPYWEVD
GVDDFGAV:EICVDRSADKGAF CRTSQNGDYKDTEYDWS GTDDFGAVIEICVVDRSADKGAF:PISQNGDYKDIEYDWSU GSDQYGPYWVLDLNKTTGCTNFILRODGVKKLIDADTRGL
 GVDDFGAYWDLQVRSEATQUN: PRVGGAKPLGDF
 N Y SKTYGPYWDLPTNGRDNCI NVIPNNKTNGDYQTANLKL
 QVTNGVGYLKFKADNADGEIGFIRRPDSWDGQ TRDFIW NFGKYGAYUDVPLA DENELGFLLLDESKEAKDQPDNYIF SSESYEVYTDWGFGSSEKTVNLTIRSRDGTKDVDADRSV
GVDPYGYWVLNTGDASTCGNWIVHNTAGDNQ GVDNYGAYWI VDLDAGYACGNFIIHDGTDDAGKGGGDKRM GIDNYGAYWVVDEKPGYACGNFII HTDDAGKELGGGDFKM G 1 DNYGAYWILNLKEGYGACGFIVHAGTDDAKALGKNNLV GVDPYGAYWLLDLVEGHDDCGFIIHVGTDDAKEMGG FSPTYGAYWDLPINNNGDCDNLIATNGNGDYQ GNDTYGAYYIIPMRDGGDCMNFIM HKGDEKDLGNDKRW GEDANGPYWVLDDASDEGCVNF:VRQTDDSDQNGGAD DRL GVDNYGAYWILDLKPGYSCHNFIIHDGTDDAKEMGGADFR GEDEYGVYYDVMV NRNNFYFKFKDDGKKDDENNREY KM NGKMVAK】PVKDTTADMSFCMRDDEWADKDGGDHYSV G D ${ }^{\text {NGKMVAKI PVKDSKAKLSFCMRHDEWESKDGGDHYTI }}$ GIDTYGAYWVLELKPGYACQNFIIHDGTDDAQQPDDERFA
 GRDSYGFYYDLMLKN STFNFKFKDQKWEKEQ

UniRef90 A4XZT6 UniRef90-I1WA53 UniRef90-I1WA53 UniRef90-U4KN34 UniRef90-R7FN47
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UniRef90-H9ULI7
UniRef90 U2E658 UniRef90-C2BHB1
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UniRef90-V5F4D6 UniRef90-A4RRA2 UniRef90_U4KN95 UniRef90-E8JP99
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UniRef90 R6Y1R7 UniRef90 ${ }^{-}$K4KJ96 UniRef90-K6YSQ5 UniRef90-F4AS45 UniRef90_E8M1D0 UniRef90 A9L5S4 UniRef90_Q21NA5 UniRef90_C9P1U4 UniRego- W5YVY UniRef90-UPI000375FC69 UniRef90_UPI00047DD85A
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DTNSAKAEVWL QDDSTVYTAR DTNSAKAEVWL QDDSTVYTAR
DNSEL IAAGGGTVYY
DNSEL I AAGGGTVYY
DFSKADADVYLVTESKSVYYS
$P$ LD Q S VVKA A FilQ GEGIVYN
DKTTAGNAAFIFKGTDKVYYDP

D YAAGNKVAVFHGDP
RAKDGLAEVWLIDGDARTYNSP
DLTKDI SQIWVEAGKEKYK LE GP

RAKNDSRS: FGFHGSSQLYYEP
T DDSMNRNVYVQEGDPSVYHS
DPSDETVHI YVEQGTQKSSEENP
SFSDFSNRVSVIPGNYQDYGSR
F LGNAPNAL WVVEGDPTVYYSK
QLDQATAS LEGFHGSSEUYYEP
K VS D GKY HFY I I QG DVVVYS EVV
QASLVQDDETY
$T \square S P Q T T R V C F L Q G R E E L A L S$
SFSDFPRTVSTLAGSSKLYDTR
RSAHLGEEI WSMSDRHNIYNVRP
NYYPLLTEVWLLDGDDTVYYSE
PLKQDDEKFFTLHGTPSVFEYP
LLDDESKGLFGFHGSSELYYFP
DSTTAVGNI F I FKKGTDKI Y Y
RNDEQPTNVWLEVGGDDGYYYS
RNDEQPTHVWLVEGDDTLYYS
SFSDFTRTVSVI A GNSAVYDSR

SLG DPRREVTMANRHNVYNVRP
SFSDFPRTVSVLAGSSALYDTR
ELTKDGESVFGFHGSSELFYEP
DLSSNNKNGY ITAGDGRYYDS
NHYPLLTEVWILDGDETVYYSE
NLGPMKS E
PEGQES GEFWILQ
PEGQESGEFWILQ
DLTQLGENAYTQQGVAAVY
$D L T Q L G E N A Y T Q Q G V A A A V Y$
QLAHADHTVA VAGKDQUYGSR

P LK Q A
KI A A GMTKVVFEEGKG\|VSYYP NLTNYP
NLTNYP

TFSDFPRTVSVIAGSNTDYDTR
DLNER】HEAWITQGQA
$D L T Q N N A V Y T Q Q G V A A V Y$
$D L T Q T N N A V Y T Q Q G V A V Y$


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

PADQSVVKAVFTQGE
RMN FTFSGVPT $\square Y$
T F P
RPDKGMTE TVCRGDKAFVYPTDP NPALGG EVWSKAGWHNIYRVKP DFNQSDRTASYLSGDTKAKDSR


[^0]


FSDHPDRTVATVVAGNETFGS FEDHPDRTVAILAGKNEIFGSR FSEHPDRTVAIVVGKNEIFGSR PTTTSSDHIF $1 \vee Q G D S A V Y$ NFDD
VKANETVHVYIVQGSGNTTTEDP KD LDGDTKDI YLVQGASEYFDS DKTGETVHIYVVQGNAN VVADKTVHUYVFEGSNT KLQQPEDERFTFSGVATLY DI SNDNPSVTY $\square P G N Q T S Y A T R$ PLS QD D $\square D$ FF TFS GVASVF $\begin{array}{lll}\mathrm{P} \\ \mathrm{D} \\ \mathrm{LI} & \mathrm{S} \\ \mathrm{S}\end{array}$


B


[^0]:    lupas_21
    lupas-14
    lupas 28
    lupas_2
    conf
    conf
    sol25
    sol5
    sol0
    jhmm
    

    ```
    B B
    B B
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