## QUERY

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SASPTPPYLKWAESLHSLLDDQDGISLFRTFLKQEGCAD GSASPTPPYLKWAESLHSLLDDQDGIQLFRTFLRQEDCAD GS A S P T P P Y L K W WA E S L H S L L D D Q D G T N L F R S F L C Q E GCEED GSASPTPPYVRWAESLPALLEDQDGTSLFRAFLEQEDCVD S VIK P TP EA L K WG D S L D K L L T H K Y G LaA A F R A F L R T E F S E E


S P G P T S P Q

GEPP P T
EDVVRKWGESFENLLRDKNGLEAFRRF


E $\begin{aligned} & V \\ & V \\ & V \\ & \text { S S S W W }\end{aligned}$
STEEATRWAD S F DVLLL THKYGVAAF RTGFLKTEFS E E $G P S S P$ T P
$G S A S P A P$ $\begin{array}{ll}\text { E } \\ \text { E } & \text { KK } \\ \text { E VAR }\end{array}$ $P H L R W A L S$

SHE E


GGHPSPEEALLK
ASAP TR A
RPSPEEA RWAEAFDELLAANKYGRAAFRRAF
S LIRP T P E EA QWS D S L LE KLLL LDHPVGGRAS F HA F
GDMDSAK RVLSWAVSFEKLLLEDP CGVVHHFTAF
KPSPEFV QWAKSFDKLMKNPAGRNVFREFVKSEVSAE

E L L W W Q NF D KL MKAPA GRNLFREFLRTEYSEE

VTRWADSFDILLSNKYGLAAFRTFLKTEFSDE
PAS

## $G K D \square$ $G K D G$


SAKEVVL RWVG SRPS S
A $V$ V $P$ S


K P TEEEVRSWGQSSFDKLMCNPAGRNSFRRF
SELVSWANSFDTLMKTRVGRNTFQEF
$P C R E V R R W A F S$ L K E L L R D P A GRE E F M K F K P T P EEMVWSESVVSLLAHKSGQAAFRTFLKK

A S SVVS P E E
AVK
$S R L S L E D T Q Q W S Q S L E R L L D S K Y G L A T F R N F$
KPSTEEMRWAQSFDKLMKNPAGRNVFREF KRT GGDAQASSVVSWAVCFEKLLEDPMGVRYFKAFLRSEVGE GSASPDSPLSSRWNKSLHSSLLGD QD GALLLFRTFFL EREEKCVD

E E L E K WAESF D LLMMRSSSGQKTFREFLRS E STD QRVA G WS TCFERLLQDPVGVRYGS E $\begin{aligned} & \text { N S S P P Y } \\ & \text { S R N F S E DV } \text { K W E N N }\end{aligned}$ KPTEEI KQWAQSFDKLMKNPGGRNKFREFLKT

GKNKPTEECLRWKESTEKLLSSKYGGYAFTAF
 A MPSKRVDRWTFNFMELLNDPRGRKEFLQF T R V S P RISHWAVSFERLLEDPDGVIGYKEF TRVSPEEAVKWAESFDKLLSHRDGVDAFTRFDK STKPS TEEAKRWGESF DKLLSSHRD GLLEAFT R

PSEEVMRWAYSLEALLTNQYGVAVF
A MP TRRV ERWAFSFWELLGDSMGRTHF V A S WAVGFERLLYDP LGLACF

## GKTRPTME

SQEEVKKWAESLENLI HHDRGLAAFRA

STPSPEVVRWS OS FD K L M M H PA GRKV
$S$ L LP T L E D A R WS LLS F E K

## QUERY

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 CKEVNL DSYTRDHTKDNLQNVTRSSFDLAQRRIYGLM

 PKEV SWVNDS RVRELDNRDMPSRHVFDDAQLQIYTLM
 PREVNL DSRTRLETVDNLSAPDEHTFDQAQKRIEAALM

 PKEVSLD DSRVRDVEGNMPTPTPHMFDEAQMQIYTLM PKEVVSIDATVRET DNR NMSAPTAYVFNDAQAQIYALMM PREVNL $\square D A G T R E A T E R N N L Q E P T R T T F D E A Q H R I Y G L M$
 LSPVVNID
 TK $\quad$ R Q AEAPREINIDHKTREMDRRNMKTPTAVCFDDARRIVYGLM EKEVNL
 $\qquad$
 A RWVNIDSRTMERTLEGLCRPHRYVLDDAQLH Y Y VLIM PKE IINIDFQTKNTIIANNIQEATHTCFSAAQKRVYSLM

 | $P$ |
| :--- |
| $P$ |
| $P$ |
| $P$ |
| V |
| P |
| L | SSPVNID KKAWMDEEMLNSPTPDMFKVQQLQI FNLMM VEPVNIDSVTDRNDSSQVAAGSAP RDMFVAAQDHIVNLM LIHAVNDDD PKEVNLDFHTKEVIGKS $\quad$ AQPTPHCFDVGQTTVYRLM PREV SRQVNVDSASLDSRVREVVNRNMIEPHTFDEAQUQIYTLM PCPVNIDAKSMDAAREFFKEGLGVSSASWGAQEQ FNLM

 PKEVNLD DFQTKEVTSQNVEQPLITTFDAAQNTVYRLMM PKEVN $\square$
 TREVNL DSATREETSN PKEVSLDSRVRET INR N NMLEPTDH PREVSL DSHARLVVHKNLLKPSPQMFNEAQUQIYSLM ANCPINDDSKSYETSKKNMENKPKSRY DFDEAAGHVY LLMM PKEINIDFVTREATTRNT GTPTHSSFDMAQEVI YSLM PKEINIDHSTKQTI QKNI AQPTQSCFDAAQTKI YALMM RKQVNI DFHDRKSVAKKV K O Q A K K DNDDYQMREATAKKAQDPTHTSFDEAQKMVYNLM PKEVNLDFH TKEFTAQNDIHPTLNSFDAAQAKVYRLM

 PYAVNIDDTARVEEKDLLK PTPEMFDKAQKQI LKLMM
 PK EVVS L

 PKEVSLDDSRVREVINRRMQDPTPHDFEDAQLQDYTLM RWVNDDSRTMERTLEGLRQPHRYVLDDAQLHIYMLM
 PKEVNIDHFTKEVTMKNLVE VSPSAFDLDAQKRIHALM
 VMPVNIDSHGQQLAEEALT IEEPPHPD VIDNQQNQVYTLM PKEVNIDFHTKEVIAKSIMA AQPTDHSFDTAQSRVYQLM


$\qquad$ LGVNPAS
NAPHPNM KANMPVN DSRTMETLGGLRQPHRYVLDLIAQMH PKEV
PREVN
TKEVNL
GP NL D ADDPVNVDGVARSHTRMFLDNPTVDMFDVAQKQQi HQLMM PKEVSLDSRVRDQINKNMVS PKEVSLDSRI REGINKKMQE PKEVSLDSHVRDVINR N

| QUERY |  |
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| UniRef90-M4AJY2 | E EN T Y P L F L K S D L Y L E Y T R T G GES P K |
| UniRef90-S4RKD3 | E ENAYPAFLRSDVYLAYARSGGESPR |
| UniRef90-H2SBD7 | EKDSYPRFL R SELYSDLIN Q K K A S |
| UniRef90-H9GM79 | E EHS Y P LFL K S Di Y LEYARS G GESP K |
| UniRef90_UPI00046D857D | HRDSYPRFVNSELYHRVSRTHSGPPS |
| UniRef90_UPI00042C5857 | HRDSYPRFMNSALYKDLLRSLS |
| UniRef90-UPI0003316E62 | HRDSYPRFMSSALYRDLLQSLAD |
| UniRef90-M7AVG3 | KKDSYPRFLLKSELYRSLLAEAIVPP |
| UniRef90_L7MCQ3 | HRDSYPRFVNS PLFRKLAQLPSPSRK |
| UniRef90_UPI000265322C | EKDSYPRFLR SEE Y Q K L L RESSKK G K |
| UniRef90_UPI00042AE9D4 | HRDSYPRFMNSTVYKDLLKSLAER |
| UniRef90-S4RXK8 | E ENSYPAFLLKSELYLEYAR |
| UniRef90_K1PZT8 | EKDS Y P R F L E S DLYLQLLNNTPSSSK |
| UniRef90_A0A026X118 | HRDSYPRFVNSELYRKLAKSVPPSPS |
| UniRef90_W5M7P4 | HRDSYPRFLNSPLYQSLLRSLG |
| UniRef90-Q4V713 | ERDSYPRFLRSDLYQSLLHA |
| UniRef90_UPI000441ECC5 | EKDSYPRFLRSKI Y T D L L S Q |
| UniRef90-V9KML4 | QK D S P R F L K K I Y L L I Q A S S N P R |
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| UniRef90-A7RZM8 | KFDSYPRFLK S DLYRQCL MCEAE |
| UniRef90_H3AMG9 | EKDPYQRFLHSELYQDLI HPLQPN |
| UniRef90_UPI0003C8D10F | KKDSYPRFLLKSDLYKGLLEEAA |
| UniRef90-R0M626 | ENNSYPRFLESEFYQELCKKTP |
| UniRef90_UPI0003C29056 | KFDSYARFVKSPLYQACAKAES |
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| UniRef90-H2S6D8 | KMDSYRRFVRSPLYQS CTLASVE |
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| UniRef90_G1TZZ2 | HRDSFPRFLNS Q |
| UniRef90_UPI0003C115FB | KFDSYTRFVKSPLYQEC |
| UniRef90_UPI00026581F8 | RMDCYPRFLKSELYQQC |
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| UniRef90_UPI0003AFC48F | E T D S P R F L K S RLLY T Q L |
| UniRef90_B0WMV2 | K S D S Y S R Y L R S D M Y K E Y L N G S K K K VK |
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| UniRef90-W5LJ70 | K K D C Y P R F L A S D $\square \mathrm{Y}$ LS L TKKRKG |
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| UniRef90-W4WFX9 | KFDS Y PRFLRSELYRACLEAGS |
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| UniRef90-M3ZXF7 | EADSYPRFLK S HL Y A QLA N |
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| UniRef90-B5XEV8 | AKDCYPRFLRSPAYKDLIS LL |
| UniRef90-UPI00035116E9 | EKDSYRRFLKSPYY LDL $\mathrm{L}^{\text {L }}$ |
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| UniRef90_UPI000359C5CC | RRDSYVRFVKS DLYKKLMEEMEDKP |
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| UniRef90-L5JYC8 | HRDPYPRFLGSPAYRALLRGAPQSSH |
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UniRef90 F7DHK5 UniRef90-G7YG54 UniRef90-G5BXX7 UniRefolo- $84 K 7$ N8 8 UniRef90 B5X8Z0 UniRef90-U6IIY7 UniRef90-S4RSR6 UniRef90-G4VFL4 UniRef90_44A1D0 UniRef90-W5NEEO UniRef90_Q6DGR5 UniRei90- 7 UTIR21 UniRef90-G6CX78 UniRef90-T1JHY6 UniRef90-E9GYG22
UniRef90 M4A0A9 UniRef90-P49809 UniRef90-K7H5C3 UniRef90-Q6P961 UniRet90_H2TMW8 UniRef90-H3U972 UniRef90-L7MGE6 UniRef90-UPIIO0026572B3 UniRef90 UPIOOO45EOAC1
UniRef90_C1BXX6
 PKE TINIDHVTRELIKQNVHAPTKVCFDEAQRIVFGLM APRQVNIDSGTRTNITNSISEPTRSSFDTAQKMIFSLM PKE RNDYQTKDA DIQSL R RLP STCFLSAQKKVFNLM MEPVN VDSQARCMVERNLGIAGPDLFHPAQKQIFNLM PKEVNL DSTTREKVTRNLEEPSAFCFQLDAQERARSLM


 GVVAEQMKPATRSYDRDS $K K Q R V D S A M F D Q A Q E E Q A A M$ SSQVNVEGQSRLSEDRNTLETPHPDMFQKLQDQAFNLM PREVNIDHFTKDMTDRNLVKLSHMT FDLDQKRIYALM
 PKEVN DHETRELTQKNLQGATTTCFDEAQGKTRTLM PCE TNNLDGKTMESVLKGLKNPSRFTFDSASEHDYMLL
PNP NDDSKIKDTTLR NMESPDRYCFEEAQEHI YHLM NMTQPTPHTFDEAQLQI YTLM TSPVNIDDRVRVEEKDV PKELILLDFNTRNADEQCLHAPTATSFHAAQKKVYSLM PKE INLDSKTRATTISNLTCPTRHCFQDAQKRVQALM A EEPVNVDSQAQQDAEENLDNPSRDGFGPAQKQUYNLM PRCPVNVDSKSMELARLAVSSESPPNRWCFDVAAAHVYHLM ASCPINVDCKSYEDTKKNMESQDRWSFDCAAAHVYHLM
 EKEVNL DSSTREETRKNI EDPNDTCFDEAQKKI FLLCM PKEDNDDFHTKDTDIQNLQVPMT SHCFNAAQKRVYNLM AKERWVNDDSKTMDKTLEGDKQPHRFVMDDAQLHMYFLM PKEVSDAADSRVRESSNMARPSCMFDAQAQYALM PKEVTDNDHKTRDLIRRNVKTPTTVCFDEAQRIVYRLM PREVNL DHETREATRRNLTVATSTCFEEAQAKTY DLM LNIRSETKRA IVERTK SDQVDSRПFEVAQSEVECAM LSPINDDKRAKAQLEEDVLNSPTSDMFKAQQLQUFNLM PKEVN PREVN DDYETRDTTQANDQSPTASCFDTAQYRIY TLM PKEVNDDHF TKSVTMKNLVEPSESTFDLAQKKVFMLM
C ARRWINTDGKTMETTKDNLQSVTHGCFDLDAKKRUFGLM PSA APRQINLDSKSYDKTTQNVKEPGRYTFEDAQEHIYKKLM
HSA NVDC
PWAKRCIN
PKEVS
DAETMAVTLEGLKSPHRYVLEAAQAH YMLM KASAITNDSHSYEKTSQNVKDPGRYTYEDAQEHIYKLM
 LNDDSQSREDSRK NMSAPDRWAFDTAAVHVYHLM
 PREINTDFTTTRORTSQNISE MLDTLKCFDDAQRLI YSLM M PSPVNVDSKSVELAKEAVKATGPPNRWCFDVAASHVYHLM PKEVN LDSDTRAATKAAMESGCKT DTF F SLA SSRHEQLM PKEVNDOYASKVADQKTMAS PTNTCFDAAQSKVYSLM PKEINIDFH TKND\SQSISEPTLRCFDAAQSSVYCLM
 AVREVNLDSKTRLETEAEIANPTIHTLDNAQKRIQALM A C $\qquad$ NSSDPVNVDSQARNLSDEKLASGDTDIDFAASQKQIFNLM QWEVNIDHITKDVTDRNLGRLTPMTFDLAQRQVFALM PNEVNL C DAAAREKTRQEVEKGSPSCFDEAQKLIYTLM QREVNLDC P TN DDSRUADLVRRQ DDDESNTPNRYCFEAAEEHIFHLM HNPVNVDCQTMELVRKRV ENNPTRFCFDEAQEHIFKLM ASCPDNVDSRSYEATKKNLEKPDQWSYDVAAAHVYHLM PKEVSLDSRVREGINNRLLEE PNCDMYNEAQLQ YTLM

PKEV
PC
AGQAVQTETRKAVEENVDAAVASVNVHVFDDAQMQMEEFL
TKEVN LDAETRLITLTNVQSNNPDLHAFDRAQRRDQHMM
PSS INLDSHSYEITSQNLKDPGRYSYEDAQDHI YKLM
ATSPVNVDCKVMEVTE DNLKNPNRWSFDEAADHIYCLM PKEVNLDSDTRAATKAALENGC KPDTFALAQSRVEQLM APRWINDDGKTMEDTVKGLGHPHRYVLDAAQTH:YMLM PREVNLDHA TKAITKENVEEPSESC CCKEVIDC ANCPINDDSRSYEDTKVNMQNPDRWTFDEAAWHVYFVM NCPDNTDSKSFEHTKTNVGGVC NRWTFEEAAAHVYQLM PREVNHDSATRETIMK NMMEPTQTCFEEEAQKDVYMHM

|  |  |
| :---: | :---: |
| UniRef90-A5WW80 | MYRSLLESVSNGDKV |
| UniRef90-F1QDH5 | TRD |
| UniRef90-B5XAS5 | ENNSYPRF\| |
| UniRef90-UP10003C37026 | KFDSYQRFL |
| UniRef90-UP100045722FB | E |
| UniRef90-A0A | KKDCYPRF\| |
| UniRef90-Q |  |
| UniRef90-V4B1L7 | HRDSYPRFLNSQIYKRLV |
| UniRef90-Q6DCK4 | EKDSYPRFLKSPI YNKLLQQ |
| UniRef90-W5L700 | EEKAYQMFLTSDIYLDYVHS |
| UniRef90-UPI0003 | KYDSYSRFLKSD |
| UniRef90 H2SJU1 | EKDSFGRFLR |
|  | ERDSYPRFLLSPLY |
| UniRef90- M9PHII | EK K SYPRFERSAAYRDL |
| UniRef90-H2XP89 | KSDSYARFLKSDQYKSFAANKSSSKD |
| UniRef90-U610G9 |  |
| UniRef90-E7FC | DSYTRFVR |
| UniRef90-13N3L88 | EKDSYRRFLKSRFYLDLATPSS |
| - | NSYRR H |
| UniRef90-4 ${ }^{\text {a }}$ | KDYPR |
| UniRef90-H2M5 | KKDCYSRFLKSS |
| UniRef90-80×6J3 | KSDSYSRYLRSD |
| UniRef90-D61 | DSYSRYLRSEMYKEFLNGSKKKTSV |
| UniRef90 UPIOOO46BD5A4 | EKDSYRRFLKSRFYLELL |
| UniRef90 W5MK09 | EKDSYRRFLKSKYYQDL |
| UniReef90 H2M5 | RDCYPRFLKSD |
| UniRef90 H3B254 | KKDSYPRYLKSELYKNML |
| UniRef90-K7FRF2 | HRDSYPRFLNSPLYKSL |
| UniRef90-C3ZCT2 | HRDSYPRFLNSKMFKDLLRQVSS |
|  | EKDSYPRFLRSN |
| UniRef90 UPIO000441888B | EKDSYPRF |
| (1) |  |
| UniRet90- ${ }^{\text {a }}$ | D SYARFAK SPLY |
| UniRet90-K7F | DSYPRFLKSTSYQDS |
| UniRet90_H3CNAO |  |
| UniRet90_F1R3 | YPRFLRSASY |
| UniRef90-G1KG87 | EKDSLPRFVRSS |
| UniRef90 UPI0003F1A77A |  |
| UniRef90 UPIO004571FF5 | KKDS |
| UniRef90-UP1000394607D | KSDSYPRFIRSSAYQEL |
| UniRef90_UPIO003EBE312 |  |
| UniRet90_UPIO003F0BC4D | DSYTRYLRSDY |
| UniRef90 UPIO003345800 | ERDSYPRFLKSEMYQK |
| UniRef90-S4R |  |
| UniRef90-W5JHN4 | HRDSYPRF NSPQFKT |
| UniRef90- W2SJG5 | QRDSYPRFLS |
| UniRef90-U6FU09 | EKDSYQRFLRAP |
|  | S |
| UniRef90-V4CNO9 | KKDSYPRFLRSDHYKT |
|  | AKD SPRF |
| UniRef90- T1GF14 | TKDSYSRYLRSDMYKEFLNCSRKKVK |
| UniRef90-A0A016S8W7 | AKDSYRRFLKDPLYDLLENGENSPK |
| B5 |  |
| UniRef90_UP1000393F340 | DSFPRFLRSEVY |
| UniRef90-H3B | KSDSYARFLR |
| UniRee99-F/ | D |
| UniRef90-G7YG54 | KKD |
| UniRef90 B4K7N8 | KFDSYQRFİRSDYKSC |
| UniRef90-B5X8Z0 | EKDSYRRFLKSNQYQE |
| UniRef | EKDSYRRFLKSKLLQD |
|  | EKDPYRRFLRSNLFLKLLNTSPNSP |
| UniRef90-S4RSR6 | KSDSYGRFLRSPIYQEVLLTRKKVPD |
| UniRet90-G4VFL4 |  |
| UniRef90--4A1D | + |
| UniRet90_K7J2P9 | DSYSRYLRSDL |
| UniRet90-W5NEE0 | HRDSFPRFLNSAF |
| UniRef90-Q6DGR5 | HRDSFPRFLNSSVYRDLLNSK |
| UniRet90-S4RFE | HRDSYPRFLGSSVY |
| UniRef90-G6CX78 | KKDCYPRFIRSDHFQRLLAEG |
| UniRef90_TIJHY6 | HLYPN |
| UniRet90_E9GYG2 |  |
| UniRet90_M4A0A9 | DSYPRFLRSN |
| UniRef90-P49809 | KNDSYQRFLRSEIYKDLVLQS |
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| UniRef90-Q6P96 | D SYR |
| UniRet90 H2TMW8 | KDCP |
| UniRef90_U4U972 | KKDCYPR R R EYYKTLANGVQ |
| UniRef90 LTMGE6 | RNDSYRRYTNSAM |
| UniRef90-UPIO0026572B3 | DSYP |
| UP100045E0AC1 | E |
| riRef90_C1BXX6 | DSYGRFLKSNQYQDI I K |

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UniRef Une hz
SKMSRKEVESWAKCLETLLASRVGFSVFEAFLRSEFSEE
SKMSLEEVLQWSQSFEK LMTTKYGPVMYKTYYKTEYSDE
$R V L$ RWGFCMDEVLKD SVGQEQF LRRFLQSEFSSSE
EVVA WARSFE LMMRSSEGRDDIFRQFLRSEYSEE
T NE



RQSFHELLLHKDGLCAFTTGLSSEYSEE
G C A
T P TERR
EK WK S S FS N NLV NN EVVGRAAAFTAAGLKS E F S Q E

## G C A



PRNYAEKWAQSFESLLGNHVGRHHFRDFLRS SHAEE S LE EALS WSRSFELML R S LIEGREVFREFLRSEYSED
SEPLKWKNGLADLL RNQTGQEAFAKFLKSEYS GE

TSR DAE WAKGFDKLLEDPDGVVCFQEFLKKE YADE
SENGTPPHLKWA QNLKY LLDD SEGGV E L F K E F MERE G G S E
PRVKRWSFSFQELLKDPLGRAKFQCWLEKEFAAA

DGVAAFRAFLKTEFSFE
S N S L P A Y A R WA R N L H S L L Q D P VGGLE LF K R Y L D Q E G HVD P TER VK R WG L SVVQELVK DPIGRQVVLETFGLESEFS S E
ELE GWRSSFERI MRSHTGRQVFRGYLKSEYSEE
RVAS WAVSFERLLQDPVGVRYFSDFLRKEFSEE
GSASPT DDEMKWKHDFHALLSSKYGVNQFQEFLRS QYGEE
A GPEKRSTKWAESFDGLLTDPDGLQELVFFLQGEYSD

AAPTKRVDRWGFSFR MHSPAGRGAFREFLRTEYSEE



 PTYEANPLGD SLLKTVLSQKS GRSAFRDFL K LEE F CE E PTVNQVRWATSSFDNL LWDPS GCQAFKTFFL EKEFSSEE
Q D L E T L L N T K S GLLQA FR G F

SKVSLLKEVLQWS QS FENLVTSKYVP I I Y K T Y PTKRVERWAFNFSELIRDPKGRQSFQYFLKKEFSGE

E V V S W G L S F E K L I E S K $\square$ G R V V F Q E H L
Q DLLE S LL T S K S G L Q A F Q A F L

SKEPS QRVKRWGFSIDEVLKDPVGRDQFLRFLESEFSSE

FLLKK
FFPEFLKK
$A G Q D T F R G F$
$L G I A S$
G R N F
$R$ VM K G S A Q L S H L LA H S LLG IA S F R N F L E K E HA GE
E E K P P Q DL E SLLSSKLGVVAFRWFLRSEFSEE

KPTPEEVRWSQSFDKLMKNPAGRNVFREFLRTEYSEE
A APTRRVEQWAFSFRELLEDPVGRAHFMDFLGKE
NPTEEVLSWSQNFDKMMKAPAGRNDGREFGRTEYSEE

SPTPTEEVSAWA QSFDKLMLTPAGRNAFREFRXTEFSED

HDTDDGPVV Y A A Y L K M E H S D E
$N L L R Q P Y G L L V F R E F L Q G E F S D E$

QRLD K L L N D PALRLLFRENL RETHCEE
$K W S G G D Y L L Q D S E G V A L F K S Y L Q Y E G C A N$


## UniRef90_T2MIM9 UniRef90-A3KPZ9 UniRef90-K7FI35 UniRef90 S4RYV4 UniRef90_W5UIL6 UniRef90_W5LJ76 UniRef90_UPIO002A47E1A UniRef90_UPI0001FE3427 UniRef90-E1G2C5 UniRef90-R4GM22 UniRef90-K7GTN7 UniRef90-Q568M8 UniRef90-E3TC00 UniRef90_UPIOOO2658373 UniRef90-H3АЗK4

 UniRef90-H2YE86 UniRef90_C1C4L7UniRef90 E3LRC4 UniRef90_Q4TI81 UniRef90-E4XA01 UniRef90-T1EDDT1 UniRef90-A8WU05
UniRef90_L016X9 UniRef90_UPI0003AFF8F7 UniRef90-UPI000359A436 UniRef90_Q4TC95 UniRef90-W6UHR7 UniRef90-A8XYG5 UniRef90_UPI000298AFC9 UniRef90_L9LAX4 UniRef90_A0A026WSX6
UniRef90-O17589
UniRef90-T1EJS7 UniRef90-V5HGF1 UniRef90-UPI0001D54EAE UniRef90-A7SU35 UniRef90_UPI0002A4B7A6 UniRef90_UPIO0034F34A2 UniRef90-W5LED7
UniRef90-T1KLI6
UniRef90-UPIO00393E29A
UniRef90-UPI0003C8E349
UniRef90_UPI0004402C45
UniRef90-E3LEW8
UniRef90_UPIO002B8E311
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UniRef90-H3C5F3
UniRef90-I1GEC9
UniRef90_V8NYK8
UniRef90_A0A044QLT7
UniRef90-E9HMA7
UniRef90_UPIO00462E709
UniRef90_W5P2Z8
UniRef90-F7DDW8
UniRef90-B8BXH3
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NLLMFWKACNDF $\square$ K L NLQFHVACEQYKN
 NL QFWVAVQELKRLPL NLMFWI ACEELKKE NLEFWLACCDFKKSKTSE $N L D F L L A C Q N F Q T L Q R P E$ NI SFWQACTRTLQRVVKPSADKH



 NL K F WLA CEDLK NTTKQK NLLFWLACEDFKRT
$N L R F W E A V V E F R S S$ $N L R F W E A V V E F R S S$
$N L L T F W L A C E D L K K E$ $N L D F W L A C C E D L K K E$
$N L T$ NLKFWEACQQVKKVPL NLGFLEAMERLKKMK NI K F WLAACKKYEGM Ni LF WQACEYFNHVPAH ELQFWFACQG[GKKKDDSD N L DF WLAVEREKQT
 NVEFWLACEDFRASGSADAN NLEFWLACEEFKKTR DADAKLVRNAES SHA PL NF WLA ACEGLKK R
 NMLF WL A I ED YRKV NI FFWVVCEQYRKM

 NL QF Y L A CQQYRH N EFWFACERYKND

 N LIF WSKMQTYKKLE
 QKNAEKI SQLVKL


PEMQAAKAK Q I F
 R E EGRDQMQKKAQH
$H K A N A M N N L G R V V$

NGDEKVEQFARGUYNEFLAA
 $K$ LEA LQGPRAEHPRPCSHQPCLQLGVGL N L L WWAVEELK TVCSSESRPEFERTVLEMFETFDASES
 NLRFWEAVVEFRGGPSAKNKSPAQLTAGKSCLNTVLAEG $N V R F W R D A Q G \square K S \prod P D$ EEVPTAVRRTYNTYFRKEA NI EFWLACEADKKIT NLEFWLACREYRS
 NI EFWLACEDFKTT N L LF WLA A C E D LK NES $N T E W L V C E A Y K K D$
$N$
$N$
$N$

 TSPDDLHRKAKE YSQFVNPEA NWPPGMVHRGVRTTGGWENPAEKLEGKGVGRQLTFLLGPE NMDFWLECEEFKKMKDGKKST NLLFYL NLDFWLACEDFKKTK NLKFWLACEDGYKDAPS SPTKRLSKAEN: NI HFWI DVKQFKDTPESNVSEASR
 NLSFDESFEKFKRMTSPAEKKQYVQEFFQK NVYFWQACERFQQDPASCT NVTFWKACERFQKLPAS CTEQLSEARK

 |  |  |  |
| :--- | :--- | :--- | :--- |
| $N$ |  |  |
| $N$ | $D$ | $F W W V A D V N D F G N A M F D D A$ |
| $N$ |  |  |

 SGAKRISKAQL



 CLSF WYACNGFRSCDDPEVKDQYMRS I I
 NFSFYQDVID FVRROI
NDEFWTACEDFRNVT
$N$ NI KFWMACETYKKI A NLEFWUACQKYKALT
 NLDFWLACEDYRKLR SNK S G DKLEEKARLL
 $\mathrm{N} L$ T FWKACERFQQ $\quad$ P PA
 SSNKFTLQRRAKMI LETYIMQSS

 T DQKKRQEEAAFIISEYLVSGA DKKELQYRAREIFSKFKSSKA

 LSCDTREKMAR Y LSCDERKMAAQDIYQKHLLAPG KKEVSDHS EDRESRRDMARMTYEDYVSTLS SSNKFSLQRRAKAI RATYI EPGS

 K K A A Q FKTFLAPG | $F$ | $K$ | $F$ | $F$ |
| :--- | :--- | :--- | :--- |
| $Y$ | $T$ | $E$ | $F$ |
| $Y$ | $P G$ | $S$ |  | NLI K K CIVVNLK C

UniRef90_T2MIM9
UniRef90_A3KPZ9
UniRef90_K7FI35
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UniRef90_R4GM22
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UniRef90_Q568M8
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UniRef90_Q4TI81
UniRef90_E4XA01
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UniRef90_LOI6X9
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UniRef90_A0A026WSX6
UniRef90_O17589
UniRef90_T1EJS7







PKEVVSL $\quad$ DSKVRELVNNNMGRPSVDTEKEAQQQUYT LMM
PREVNL DHETRTVTLKNMEQPTSSCFNFAQSKIYTLM
 A V S S RLIK P A T Q A Y I K D VLLK Q Q Q Y D L E L F D Q A Q LEEIQRAM






 PREVN DDFQTREATRKNMQEPSLTCFDQAQGKVVSLM




 Q N E VN
$N$ D Y Q LK S A PK E
P K E V $S^{\stackrel{N}{L}}$

## 

 EKEVNDDHDTR PKELSVDSKTLRVREVVNRNMVQPTPHTFDEAQLQ $\mid$ YTLLM ANNEVF


 | S R R | I | N | $V$ | $D$ | $H$ | $H$ | $V$ | $K$ | $E$ | $K$ | $I$ | $K$ | $R$ | $S$ | $L$ | $E$ | $K$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $P$ | $K$ | $E$ | $V$ | $S$ | $L$ | $D$ | $S$ | $R$ | $V$ | $R$ | $E$ | $I$ | $I$ | $N$ | $K$ | $N$ | $M$ | $V$ |
| $N$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## P




 QSAINLLDSHSYQVRTWMCLEIVEQCPSFLLFPQEHIMKLM

## 

V


 PKEVQMLT GSDYPTSKSPYSQKPQHPSSSH $P K E G Q P C T G D L T T C V A V T S A L Q R D D P R L P S T A A L E V L$ VKAPREVNDDFRTRQDTKQKLLE P DSSSLLNEDQAKVYS LMM
 P K EVVNDDHG $\qquad$


 PREEVNLDC
P K EVV
PKE


03EC0079

| UniRef90 T2MIM9 |  |
| :---: | :---: |
| Uniefo- |  |
| UniRet90-A3KPZ9 | MDSYPRFQSEMYET |
| UniRet90-S4RYV4 | KTDSYARFLRSNNYQELLAARKMSD |
| UniRef90-W5ULL6 | HRDSFPRFLNSSVY |
| UniRef90-W5LJ76 | ENNSYPRFLESDFY |
| UniRef90-UF | ENDSFSRFLQSEHYKVLTG |
| UniRef90-UP10001FE3427 | AKDSYPRFLRSDVYQNLIKSAA |
| UniRef90-E1G2C5 | SKDSYPRFLRSQUYRGVLSAAQQ |
| UniRet90-R4GM22 | ERDSYPRFLESKFYQQLLRTDSNDPSV |
| UniRef90-K7GTN7 | ARDSYPRFI S STMYREFIDS |
| UniRef90-Q568M8 | EKDCYPRFLKSTVY |
| UniRef90-E3TC00 | ETSYRRF |
| UniRef90-UP10002658373 | QTDTYPRFLRSEHFNNL |
| UniRef90-H3A3K4 | EGEAYPAFLKSQLCQEYTRVGMES |
| UniRef90-H2YE86 | HKDSYPRFLSSSLETAETL |
| UniRef90-E3LRC4 | RNDPYVRFLQSAQY配LLGKDKSS |
| UniRef90-Q4T181 | dSFPRFLNS |
| UniRef90-E4XAO1 | KADSYKRFLNSAIYO |
| UniRef90-T1 | KNDSYRYARSD |
| Unireeto-A8 |  |
| UniRef90-LO16X9 |  |
| Un |  |
| UniRef90-Q4TC95 | ETDSYPRFLKSRLY\QL |
| UniRef90-W61 | KSASYCRFLRSDIYRELFANSATKK |
| UniRef90-A8XY | QRDSYPRYVN |
| UniRef90 UPIIOOO298AF | ERDSCPRFLL |
| A0A026WSX6 | DSYPRF RSMMY |
| UniRef90- 017589 | AKDSYPRFVRSQIYKAVVTAAQQ |
| UniRef90-T1EJS7 | dor |
| V | Q |
| UniRef90-UP10001D54EAE | KFDSYTRFLKSPLYQECDLAEVE |
| UniRef90-UPIOOO2A4B7A6 | OTDCYPRFLQSTHYQTLMKS |
| UniRef90-UPIO0034F34A2 | ERDSYPRFLASNVYQNIV |
| UniRet90_W5LED |  |
| iRef90-UP10003 | FFRYK |
| UniRef90-E9C5C2 | KHDSYTRFLK |
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| UniRef90_UPIo003342F93 | HRDSYPRFLGSPAYRAL |
| UniRef90-F6RD | KKDSYPRFLKSDMYRGLLAE |
| UniRei90-A0А016т8T3 | EKDCFSRFVHTPAYKEVAKK |
| UniRef90_UP10003DF78 |  |
| UniRef90-K1QT35 | KKDSYPRFLRSEQYINLKEMAHNQP |
| UniRef90 F2URD4 | KRDTYPKFLDSKRYKKAV |
| UniRef90-UPI000395CCoC | ERGSYPRFLESQLYQKLKH |
| UniRet90-M3ZRK6 | S |
| UniRet90_U6HRZ4 | DSYAR |
| UniRet90_UPI0002A4951D | AKDSFPRFLR |
|  | HRDSYPRFINSPMYRKLA QLPSPS |
| UniRef90-UPI000393E29 | ERDSYPXLLESQFYQKLKHSLQTN |
| UniRef90 UPIOOO3C8E349 | AKDSFPRFLKSEMYKKLINS |
| UniRef90-UPIOOO4402C45 | KKDSYARYLKSPUYKEMLARSVEP |
| UniRef90 E3LEW8 | SKDSYKRFVSSVYKAAVKNAKHPVST |
| UniRef90_UPIO002B8E311 UniRef90 UPIOOO3C19077 | KKDSYKRFLVSSVYKAAVKNAKHPVSI |
| UniF | AKD |
| UniRef90-11GEC9 | RMDSYTRFKKSEIVKECLYAEM |
| UniRef90-V8NYK8 | KSDSYARFLRSNAYQDLLLAKKK |
| UniRef90-A0AO44QLT7 | ESDQFPRFK |
| UniRef90-E9HMA7 UniRef90 UPIOOOU62E709 | K Dry |
| $\begin{aligned} & \text { UniRef90-UPIO00462E709 } \\ & \text { UniRef90_W5P2Z8 } \end{aligned}$ | KFDSYARFVKSPQY |
| UniRef90-F7DDW8 | ERDSYPRFLKSEIYMNLLNALQAN |
| UniRet90-B8BXH3 | EKDKFARYKNSDDFKDF |
| UniRet90_ETF717 | AKDSFPRFLRSAFM |
| UniRet90-E7F3E22 | EDSC |
| UniRef90-T1GSW3 UniRef90-UPIO004545637 | HRDSYPR R V |
|  |  |
| UniRef90-UPIC | KKDSYPRFLKSDLYRDLLAEAVVPP |
| UniRef90 UPI |  |
| UniRef90-W5KWE |  |
| UniRet90-B7QH25 | ERDAYPKFLQSDLYVERVEQ |
| UniRef90- UPI0003C4605A |  |
| UniRef90-R4XC85 | A |
| UniRef90-G3NQW3 | ENDSYP |
| UniRet90-W6UWG9 |  |
| UniRef90-Q9PV13 |  |
| UniRef90_V8NBX8 | D |
| UniRef90-G2R404 | A SDSVPK |
| Un | Q T ALE |
| niRef90-H2Z1U2 | RKDSYKRFLTSPIYKEALNNAKHPCK |



## UniRef90 H3GN53 <br> UniRef90-F7D7X3 UniRef90 UTT344 <br> UniRef90-UPIO003C3A1C0

UniRef90 W2SXU7
UniRef90-H2TRY8
UniRef90 U6IZF2
UniRef90-K7FDZ6
UniRef90-G305F2 UniRet90-F1KSK7 UniRef90-A0A044TV07

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HyRRL
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70
PSYQTVDRSAKKIIYDKYLLNPNN NLCFWEACEEDRY GEQSKIASTVESVYQQFLAPG
 NI LF WWAVEELK TVCSSESRPEFERTVLEMFETFITASES
 NL LF WLACEDLKKE QQNKVIEEKARLI NLEFWLACEDYR

 NL LIFYLEVEDCKRL PNRSFVVNKRRI



 NLNFYVAVERFRDMQFNNESKSERASFARHE NVHFYLAVREFKKSFPFDDTTTKDDMAKI
 NLSFWLDVQDFKRRFQMEKHQQDLIAMAFVI LIQFWLVVEGYRMPFNDPMWTDSDRLDLAQU TLFFYKEVCEFQRLPHSQRQYDQMARARBI MLEFWLTADNFQSMLKTKMDNGSYNADAMI LVQFWDVVDGFRNTTDAPWTDADRTDLA Q


NIHFYLDVEAYKQVRG
GRRHKMATKI

LVQFWLVVDGFRNPSNDPMWSDSDRMDLQQINEQYLIENS MLKTWLAIENLKYV SQKDLLSNANDVYERFIISAA LVQFWLVVDGFRNPSNDPMWTSSDREDLGQI DHAYLSKPE NLDFWL EIESYRKQKSNKQL
NLDFWLACEDFKKTMRRSTKLASKANBI
 NLEFWLACEEFKKIKAPDSATK KYRGFVVOARK NLRFWLAVEDLKKNDEDGRPIREVPSRVQE
 LVQFWLVVDGFRNNDEQMPSQLPMWSDSDR NVLFWLACEDFKK $\quad$ QDKKQMQEKAKE

## 

 UniRet90 H91WH8 UniRef90-K3WXC3
## UniRef90_H3GN53 UniRef90-F7D7X3 UniRef90 UTT344 UniRef90-UPIO003C3A1C0 UniRef90 W2SXU7 UniRef90-H2TRY8 UniRef90 U6IZF2 UniRef90-K7FDZ6 UniRef90-G3Q5F2 UniRef90 F1KSK UniRef90-A0A044TV07 UniRef90_UPI0003AFD3EB UniRef90-Q17FL7

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UniRet90_W2PTW4 UniRef90-UPI0001584FBD UniRef90 R7UE19 UniRef90-UPIIOOO35A226D UniRef90-W3X8M9 UniRef90-F1KUH4 UniRef90-H2XUF9
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DDVLRAPHPDMFKEQQLQ

 KMEVALPGHIRQAD
STEPVNVDNSTSKRIRET
LGKPEENRKLVKMFKKETMQGGKYPRNTFDLAQYQIFHLLA DQQ QNDAGHLKRS ILKKQMNEGNVTEAMFDDC【RSIVELI
 SPCELNDDHNLRAELVAYMNQDTADKEAYERDQVYI FRDM
L K V S E EARR
RLELELP
SLPLGGDDVTRETRRDULWK PSARLQVDMSKTMRDEDFTRLSNPSVDMFKK SHVKNHLQRSTVRHMEAFMMGDKGPEAFWRAQTSALEVM SSLVRVDKAVLKSMEEFL RGDKGPDAFLIDAQKDVQKVL LDNDDHQLRNNLATRMTKAVGQDVAMDDTLHDAQNAVEKLLM PC QVNVDSRTLENTVKCLNDETVARRHAFSPAEEAVFTV PSEVVNS IDAKTRAATKSGDASSDSS@FDLAQERIVKLMM
 LKVS KASRDEVRAFLNAGKTATPEQYYRARRAILRAM
VNAPSE $\square$ N $\square$ DAGTRATTKSNMQKPDSATFD $\square$ A QVRVFLLM PREVR
LKVDEESRK IVKSFDRATPEQYWKARKAVLAAQSTVLESM FNLSQPMTQYMTS $\quad$ ADNVDRKDP $\square$ TSHLFDK $\square Q D V I Y R \square T$ PKEVRAPPMNLHH
PQQIGLGQAAVDE $\square R A A \square E H G S S A D A A \square F D V V Q A S V M S T M$
PSA IDNLDSKSYDKTTQNVKEPGRYTFEDAQMAVH
LKVSEESRRAVKTFKRATPEQYRKARMVVLTTQSAILEHL
SSQVNVEGQSRL
 SSQVNVEGQSREKMLEEPHPLMFQKDQDQDCAERRVHTKG
 LKVPPSVQEFLDAGSKAIPAQYYRARRAVLRAQTAVLDEM LNIDHQLRNSLTTRMSKAVSQDATITDTFEEAQDAVFKLM DKQVN DDDSTKELTWSRDATPSYFDVAQTH:FNLM PSA: N D DSKSYDKTTQNVKEPGRYTFEDAQEH:YKLM
PHELNIDGGDRQHMVQHMTNPVPDTCHLYDKDQDTIFRLM

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 PESGLYASEEDKNK $\square K N S K N D K \square L T A D \square F N E L Q Q N V A K I I$
 PNI E Y E I RTQ
 $\square N D D H N R A E L \square S Y M N Q V T T D K E A A A K G Q M S A E A Y \amalg F R \square M$ PREV
PSELNTDHSYMAKAVDEVKGNLTPNPDVAMPAADHTYRLM PSELNTDHSYMAKAVDEVKKNLTPNPDVAMPAADHEYRLMM PLEVNLEPKEAKLAVRDAYKSEVESTADQQERGLSDESFTRL


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| :---: | :---: |
| UniRef90_H3GN53 | R S V V VP D F L D S R\\|F M ALV |
| UniRef90-F7D7X3 | K K D S P R Y L K S M M K NLL |
| UniRef90-R7T344 | D K $\square$ YF S S F L Q S P $\square \mathrm{Y}$ IKFL N |
| UniRef90-UPI0003C3A1C0 | R D N $\square$ Y P S F L C S EMY L LY I Q Q M S |
| UniRef90-W2SXU7 | EKDCFSRFV H T P A Y K EVAKK |
| UniRef90 ${ }^{-} \mathrm{H} 2$ TRY8 | AKDSFPRFLRSTQY |
| UniRef90-U6IZF2 | R T T A Y Q A F L K S D A $\square$ ¢ H $\square$ QE G S K P P |
| UniRef90_K7FDZ6 | NF Q M Y K S LI ES |
| UniRef90-G3Q5F2 | A K D S P PRFLRSPQCMEA $\square \mathrm{K}$ |
| UniRef90_F1KSK7 | K Y D CWP R Y L R |
| UniRef90-A0A044TV07 | K Y D CWPRYL R |
| UniRef90_UPI0003AFD3EB | K K D S Y A R Y L K S P $\square$ Y K E M L A K A $\square \mathrm{EP}$ |
| UniRef90_Q17FL7 |  |
| UniRef90-H3HCR8 | VK D S F P R F KKS MQFQNVV |
| UniRef90-T1EIG2 | K T N H Y P A F LT S D $\square \mathrm{F}$ I K F A E T E L E N S K |
| UniRef90_G4ZL00 | S EDMWPGFCRS Q E Y L D H |
| UniRef90-S3C9R6 | A S D SVPK F LR H P K Y E H T LR N |
| UniRef90-H2YFP8 | E S D S R R F |
| UniRef90 F7AVD8 |  |
| UniRef90-UPI00035A2164 | RRDSYVRFVKS D L M K N K L M E EME |
| UniRef90_V9DXB6 | VKDSFPRFKKSLHFQNIVDTL |
| UniRef90-A2QPX7 | QEDYYPK F K Q S DLY Y K Y L Q A GP Q S P K |
| UniRef90_H1V7T9 | A S D SVPK F LR S P K Y EHTLK C |
| UniRef90-T0Q9Q5 | ES K L WK S F EKS P K Y LELVVQMY K E |
| UniRef90-A0A016T5C8 | K Y D CWPRFLR |
| UniRef90_V5FUU0 | ENDYFPKFK Q S D L Y Y K Y LA S |
| UniRef90-X6MP00 | ERDSFPRFKQSVMF Q Q F L S VEN |
| UniRef90-X6LZ11 | ERDSFPRFKQSIMFQQFLLSSVEN |
| UniRef90-V9FWN8 | A T T LFPKFQQSEIY |
| UniRef90-Q6VTF1 | A T D SVPK F CKTELFLTTLTQQFSEYEK |
| UniRef90-N4VFC9 | QAQYFQSFKRSDLFYKCLASQEAS |
| UniRef90-B0XQ26 | Q TVYYP K F K Q S DL Y Y K Y L A S DEV S |
| UniRef90-H3H0P7 | ETRDLPKFRNS SLYQEMLDQ A A E S P S |
| UniRef90-A7SM89 | EEXFLPS F LQ SEl Y W Q Y S E RL N S |
| UniRef90_W2PTW4 | LQ D SLP R F VK S NYYKELRRDSKS T P |
| UniRef90_UPI0001584FBD | QDKFFPHFKRSDLFYKCLTS QEAS |
| UniRef90_R7UEI9 |  |
| UniRef90-UPI00035A226D | EDQYYPSFIVSDTYFQLAASQRE |
| UniRef90-W3X8M9 | A S D SVP K F L R N A K Y E N T L K N |
| UniRef90-F1KUH4 |  |
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| UniRef90-E9EDZ4 | QS Q H Y GFKKS DLYYKCLAS QES S |
| UniRef90-B3RYK8 | E ETFYKSFLLSSEFYVSMV |
| UniRef90_A0A010S564 | QA QFFQAFKKS DLFYKCLAS QEASAK |
| UniRef90_H2YTF7 | ERDS F P R F L L S K F P T VAT K T P N GPKL |
| UniRef90_R0KPV6 |  |
| UniRef90-F2SP36 |  |
| UniRef90-U9TLK2 | A $\square$ D S VP K F $\square$ R T K E Y LT Y V R N N VR S D S $\square$ |
| UniRef90_F7G209 |  |
| UniRef90-R1FWF7 | R M D $\square$ F P R F $\square \mathrm{E}$ S P D Y R A L |
| UniRef90_S9XZ14 |  |
| UniRef90-B6H781 | QD T Y Y P K F K S D L Y WK Y LA S DEA S |
| UniRef90_UPI00034F8B92 |  |
| UniRef90_G2XIX5 | Q GRYFQNFKKS DLF Y K CLA S Q E A S |
| UniRef90-H9K8K9 | N K Y Y LP T F L S S QL Y Y K Y L |
| UniRef90-UPI0003F12BE1 | F C T I Q P |
| UniRef90_Q54S99 |  |
| UniRef90_B6K693 | ERDYFNEFKNSEDYYRFLAQDVVSEH |
| UniRef90_G4ND33 | R $\square$ NHFQNFKKSDLFYKCLAAEEAASR $\square$ |
| UniRef90_G9NMX8 |  |
| UniRef90_J9MW10 | ATDLVPKFLLSNPMYQQQLR S |
| UniRef90_H2YLB5 | QT DSFTRYKR |
| UniRef90_F1S9G4 | K S D S Y PRF $\square$ R S S A Y Q E L L Q A K K K S |
| UniRef90-U9UMS7 | A TDSVPKFSKTEKY LIA HIR N S E |
| UniRef90-W4FEE2 | ILD HL NLFLQ S P E Y |
| UniRef90-W4FEE2 | 1 L D HL L L F L Q S PEY |
| UniRef90-X0KNC0 | A GDLVPPKFLS K P K Y Q Q Q LR S |
| UniRef90-A0A024UCS1 | RKDSFPRFKKTPFFKDMLA A |
| UniRef90-UPI0001584889 | A S D SVPKFMKS SKYEQTLK ${ }^{\text {V }}$ |
| UniRef90-T0QSX3 | TKDSFPRFKRTKFFTEML |
| UniRef90-M1WD47 | A S D SVPK F LR N GKYEQQLR N |
| UniRef90_L2G879 | QAQFFQSFKKSDLFYKCLA AEEAS |
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| UniRef90-U5ER69 | S Q T T Y P LF LQS D Y Y $\square$ Q HVQ L MQS |
| UniRef90_UPI0002653C4C | DQEHYPTFLVSEHYAKLCDELAA PK |
| UniRef90-Q4RZZ2 | AKDSFPRFLRS |
| UniRef90-F0ZWX8 | $R \mathrm{~V}$ G S Y K N F L K S P L F K E Y S S S L G D P Y K |
| UniRef90-S0DTC8 | RSRFFQSFKKSDLFYKCLAAEEAS |
| UniRef90_K0R8E9 | EQDNFSRYKQSRYFKAFKERLG |
| UniRef90_UPI0003F48EC3 | ATDSVPKFCKTERFLDNMRT |
| UniRef90-UPI0001A63819 |  |
| UniRef90-F4RKL0 | A T DQVPKFVRTERFLELLASQQPS |
| UniRef90-E9G660 | $R G D \square F R K F V E S D K Y T R F C Q$ |
| UniRef90-F4PZK3 | $R \mathrm{~V}$ D CFGRFI R S NVFKDLVQQVGDP |
| UniRef90_H2Y592 | A ADSFRRFLE |
| UniRef90-W7TTX0 | HQ T WYP AFLLS T T Y R S L L V $\quad$ LK N S |
| UniRef90-A1C6G2 | S S D SVP K F L R D P K A V V L Q E H |
| UniRef90-F7ARA7 | ERDSFRRF |
| UniRef90-H9IWH8 | K S D S Y S R Y $\quad$ R S EMY K E Y M N G S K K |
| UniRef90-K3WXC3 | R N I VVP D F L D S R I F M T L V |
| UniRef90_W3WK64 | QSKYFQPFKKSDLWYKCLASEEASKK |

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UniRef90 UniRef90 EOVIT2 UniRef90-M5GCG5
UniRef90
TORD74 UniRef90-F1KXC4 UniRef90-L8G4S2 UniRef90-I1CSF7 UniRef90_L5LEHO UniRef90 A0A024UEL2 UniRef90-G1NLS4 UniRefofo-ByYMN1 UniRef90-UPIO00265775F UniRef90_C3YDG6 UniRef90_N10910 UniRef90 STNG71 UniRef90-s88ANZ2 UniRef90-13JXQ4 UniRef90 UPI0003C48E56 UniRef90-E9H6B4 UniRef90_UPIOOO2B44DEE UniRe990 Q54LD UniRee90 ${ }^{-}$A0Ао24TYBO UniRef90-A0A024TYBO UniRef90_H3AC10 UniRef90 F4P8H9 UniRef90-Q9BRF5 UniRef90-H2WMX2 UniRef90-D6X0R7 UniRef90-ToR629 UniRefofo-EOV933 UniRef90 ${ }^{-}$K3X539 UniRef90-M7NPG6 UniRef90-UPIOOO4416C66 UniRef90 D2VVY4 UniRef90 - 33 CX 12 UniRef90-W4GS49 UniRef90_J9FLK9 UniRef90_Q61R78 UniRef90_C1H6N2
UniRef90 W4FE66 UniRef90-UPIO0038BE8B4 UniRef90 UPIO003BBA366 UniRef90_G3J3L4 UniRef90_Q29NL7 UniRef90 Q9U756 UniRef90 G5Al19 UniRef90-S7ZHH6 UniRef90 UPIo004412E07 UniRef90 Rol9G9 UniRef90-H2Z5E3 UniRef90-F7ARA1 UniRet90 K5WXNO UniRef90-V8P387 UniRefofo-KKKW18 UniReego Jox J57 UniRef90-GoRZV6 UniRef90_W4XE12 UniRef90-F6Z7K7 UniRef90 F4NTR9 UniRef90-K1WYJ4 UniRet90_W2SLPO UniRef90-K3VJT7 UniRef90-T2MJE6
UniRef90 G1KM72 UniRef90 F4PHW2 UniRef90 ${ }^{-}$W4FJS2 UniRef90-A0A024J7E1 UniRef90_UP100046B30F4 UniRef90 UP100042AF7BE UniRef90_E3QRF8 UniRef90-C5PJ41 UniRet90_W4FM11 UniRef90 HowYF2 UniRef90-G4TMR3 UniRef90_E9CB37 UniRef90 A0A034WHT9 UniRef90-A0A058ZEP4 UniRef90-X8JR41 UniRet90_V5GDG7 UniRef90- HoZ6Q4 UniRef90-A0Ао23ETE2 UniRef90_H2YU39 UniRef90 LOGFC7 UniRef90_G5BVX0 UniRef90-I1C216

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\begin{gathered}
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34 \\
66
\end{gathered}
$$

GSAHDSPKESN


 K VT D D I S NPVSCGYL LD F CQ K GYCA E
T D R L K F $\begin{array}{ll}1 & L \\ L & L \\ L & L\end{array}$ $E \frac{L}{T} L$
$\square$ R W A C
 -RWACDVKHVMQHPKAREYLVDFCKSEFS DE RSRETNDSWDAGLLALLSSEEGGLSFSHHHCTREFSSSE

GQNS GSESEERGEVTFDKI FNQK DGFLLFKDYCENEEPVP
GQNSGSESRKQQA S L R EVVIY DAAGLSYFMEYMDRQKLMK DKLLSHKEMMQH T T F PVSEIIE E E

TETVSRKRFSLLREVVIVYDAAGLGSYMMEYMDRAMLMA
 K D G S SLLYRAFLLREFSNE
$G$
$G$

EEA $\square R W$ WE
APMSPREDKY
Q NFKD LLDMP
APMSPREDKY
S P LLDDEAQK LE S GK S T P P T P P


 NFDKI FNQKL GYL LYK D F SENE D P V H
EK $\square$ AK G GF S
PEKKAHKES
SASNLPRTVRSSSGLV

$\qquad$ ASYDPEKKAHKES
F SLREVMY





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ATTTNPTSPP
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ATTNPTSPP
EERKE $\square$
A D RLH Y I L E QPRLRSMFREFE ERKE $\square$ T
FEDI L CNP SYREMF Q DYMMERMECERV

EERKE $\square T \mathrm{~F}$ E
$\begin{array}{c:c}L G K & L \\ F G Q K\end{array}$
F S V $V$ P K I L A D P I L Y D A A
GSTSSRPP

SLLTEILLLDPWTLLSAFMAY L S Q

R D T LL LL L H D K IA H R IIF K K F L A S R M K D H
A VP T K R VER WGF S F V Q E L L L
SPTTESLAWSENMDSLLANQGGSD DSEGDGN

D S L GHPKYMSNFKKYLAS QHAAE


TF DKIVA QKDGY L L F RDFAQAEEAKP

T F E E V M S S P M S R S F F L K Y Y L K K $\square$ I GR G T
AK WA A S LE NLLE D P E GVKRFR
$P$ TNE LLKESNSLLKAVLLDPHLRSLFRNFLSSNFCQE

## UniRef90 H2YF52

 UniRef90-W9HBT3 UniRefefo-Q2GSC5 UniRef90-K3X4P2UniRef90 - EOVIT2 UniRef90-M5GCG5 UniRet90-TORD74 UniRef90-F1KXC4 UniRef90-L8G4S2 UniRef9-IICSF7 UniRef90-L5LEHO UniRef90-A0A024UEL2 UniRef90-G1NLS4 UniRet90-B5YMN1 UniRef90-F0W608 UniRef90-UPIO00265775F UniRef90_C3YDG6 UniRef90 - N1 Q910 UniRef90_S7NG71 UniRet90_S8ANZ2 UniRef90-I3JXQ4 UniRef90-N1QNHO UniRef90-UPIO003C48E56 UniRef90-E9H6B4 UniRef90-UP10002B44DEE UniRef90-Q54LD1 UniRef90-A0A024TYBO UniRef90-A0A024TYB0 UniRef90-H3AC10 UniRef90-F4P8H9 UniRef90-Q9BRF5 UniRef90-H2WMX2 UniRef90-D6X0R7 UniRef90-TOR629 UniReffo-EOV953 UniRef90-T1HQV9
UniRef90
K3X539 UniRef90-M7NPG6 UniRef90-UPIO004416C66 UniRef90-D2VVY4 UniRef90-H3CX12 UniReffo-W4GS49 UniRef90-J9FLK9
UniRef90_Q61R78 UniRef90-C1H6N2 UniRef90-W4FE66 UniRef90-UPI00038BE8B4 UniRef90 UPIOOO3BBA366 UniRef90-G3J3L4 UniReffo- 2 Q29NL7 UniRef90-G5Al19 UniRef90-S7ZHH6 UniRef90-UPIo004412E07 UniRef90_ROOGG9 UniRef90 H2Z5E3
UniRet90 F7ARA1 UniRef90-K5WXNO UniRef90_V8P387 UniRefefo-KOKW18 UniRef90-C4JEU8 UniRef90-GORZV6 UniRet90-W4XE12 UniRef90-F6Z7K7 UniRef90_F4NTR9 UniRef90 ${ }^{-}$K1 WYJ4 4 UniRef90_W2SLPO
UniRef90_K3VJT7 UniRef90-T2MJE6 UniRef90-G1KM72 UniRef90-F4PHW2 UniRef90_W4FJS2 UniRef90-A0A024J7E1 UniRef90-UP100046B30F4 UniRet90_UP100042AF7B8 UniRef90 E3QRF8 UniRef90-C5PJ41 UniRef90-W4FM11 UniRef90-HOWYF2 UniRef90-G4TMR3 UniRef90-E9CB37 UniRef90-AOAO34WHT9 UniRef90-A0A058ZEP4 Uniinefo - 8 8JR44 UniRef90_V5GDG7 UniRef90-H0Z6Q4 UniRef90-A0A023ETE2 UniRef90-H2YU39 UniRef90-LOGFC7 UniRef90_G5BVX0
 NLSFYQEVDEFDRSCKVATRAAHRIAQAYRIYNAFISPCE MVQFWLVVDGFRNLQLLPPWTESDRLDLIA QI DAAYLSR NLNFFMAVDKFKDECRDPESVTTCKEMADRUWQDYLSGNS NLSFWLEVEDLKRRFQMEKHQDGLITKMAFVIFNTFRAHSS CVAF DDEVDEFNTDPGDEFMHH TAKKLYKKYVAE LVKFWLHVESFKASRNDEALITMTKNDAANIFAKYICSDA LVQFWIVVDGFRNPNLPPWTDADRLDDA QU HDAYLSKPE NLDF WIDYNTGRRKCRNQQKQKDLLEDAYDUWDTYLAPGS NVLF LMELQTY MAMATVGQRRSLARHIVDTYQQANA VLQFCLTVEEFNDRGLRPTEKMARHEEVQKIYKTYCLDES
 SLCFUYVCRGLRLL NDEKSEKRDRSAWALYRSCGKSG
 LVQF WMVVDGLRNPLEDDPWTASDRNDTGQVYEAYTSLPE EL FFWLTVEGYRVTAQQQLEAMQSWQKALGVYEQYLSDKA LVQFYLVVDSFRNPLEGDNDEAPASLAADQMYTEYLSKPE
 NLDF WLA VEEYKNSKPQK
$T$ NLLF WLDATTGKDLETNNYPRNRIRTLFLNMYGNYIANDC

 SLDF LEAVKNFKDQVKDT DNQEMVEMFSNQUQDNFYQPDS
$\stackrel{T}{\mathrm{M}}$

## N <br> 

 QLLK F Y E E E K E Y E K L D $N$ L S F Y F E S I Q F F Q L A E HA DD P DSS Q E KA Y DI Y NA F LVVE G S

 $V$ L Q F C L T V



 NL K C A R Q I R R F E E M A L Q M K A D DLL K D F A WN L Y $\operatorname{L}$ L $Y$ F F


 NLA FWMEVEDFKRKFAMEKHHEQLIQTASLI
 N A NKA E IVPQLVSQ




 $N$ N QF LLLACNAFELDNYDSLAADNDVL E DADDCI YDKY FSMA A
 I F D C WY S CK TY R K R LIP N K $\quad$ A A A K E V Y S R F V R DK D


 TLLE FTMDAE RYRNA Y Q Q I ITTNK H V C S L DWE K L M Q A Y
 $N L D F L E E V E E F R R L$ D L M C WI DI E Q F R RLI Y T N R N Q Q MEAK S I Y I K N K Y L N K K Y
 CLDF WTS AI NYRKSY』VADRDTDNATDAMUI Y E K F F S L Q

 LMEFYEEIKKYEKLD SEEERAARSRHI L E F CVTASHFRRSAENSQAQ $\qquad$


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S
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[^2] -





$N$ LD F WID Y D NLC R R CNPSAN QRLLLDEDAY LL | W

UniRef90 H2YF52 UniRef90-W9HBT3 UniRef90-Q2GSC5 UniRef90-K3X4P2 UniRef90-M5GCG5 UniRef90-T0RD74 UniRef90-F1KXC4 UniRef90_L8G4S2 UniRef90-I1CSF7 UniRef90-L5LEH0 UniRef90-A0A024UEL2 UniRef90_G1NLS4 UniRef90-B5YMN1 UniRef90-F0W608 UniRef90_UPI000265775F UniRef90_C3YDG6 UniRef90_N1Q910 UniRef90_S7NG71 UniRef90_S8ANZ2 UniRef90-I3JXQ4 UniRef90-N1QNH0 UniRef90_UPI0003C48E56 UniRef90-E9H6B4 UniRef90_UPI0002B44DEE UniRef90_Q54LD1 UniRef90_A0A024TYB0 UniRef90-A0A024TYBO UniRef90-H3AC10 UniRef90-F4P8H9 UniRef90-Q9BRF5 UniRef90-H2WMX2 UniRef90-D6X0R7 UniRef90-T0R629 UniRef90-E0V953 UniRef90-T1HQV9 UniRef90-K3X539 UniRef90-M7NPG6 UniRef90_UPIOO04416C66 UniRef90-D2VVY4 UniRef90_H3CX12 UniRef90-W4GS49 UniRef90-J9FLK9 UniRef90-C1H6N2 UniRef90-W4FE66 UniRef90_UPI00038BE8B4 UniRef90_UPI0003BBA366 UniRef90-G3J3L4 UniRef90_Q29NL7 UniRef90-Q9U756 UniRef90_G5Al19 UniRef90_S7ZHH6 UniRef90_UPI0004412E07 UniRef90_R019G9 UniRef90-H2Z5E3 UniRef90-F7ARA1
UniRef90-K5WXN0 UniRef90-V8P387 UniRef90-KOKW18 UniRef90_J0XJ57 UniRef90_C4JEU8 UniRef90-G0RZV6
UniRef90 W4XE12 UniRef90-F6Z7K7 UniRef90-F4NTR9 UniRef90-K1WYJ4 UniRef90-W2SLP0
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UniRef90_AOAO34WHT9 UniRef90-A0A058ZEP4 UniRef90-X8JR41 UniRef90_V5GDG7 UniRef90-H0Z6Q4 UniRef90_A0A023ETE2 UniRef90-H2YU39 UniRef90-LOGFC7 UniRef90_G5BVX0


 SKTPLDDPEHMHEF LTDNLEHVDRAYFHDAVAEVMDDML
APDKVE K V VRRRIESFLLGNSGPEAFYEVQENGVQLL
 PCELNLDYALKQSLADCMTTVVLNDNETMKNAQKQLLRLM P
 PKEVNLDSDTRAAT KAALENGAKPNMFSLAQTRIEQLM DDKURFDPFGVEEMKKLAEGPYLQTMCCLEEAYEHVLSSLL PCELNDEHALRNSLASRMTRAVGDDASMFELAQUSVFKLM
In








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








 AP DNATINIDFSTRDLISRNIAEPTPKCFDEAQKLI YSLM



 $P \subset E$
LACSHPFSKSATEHVQSHLSKKQVPPDLFQPYDEEDCQNL TCPLNVSDKDRFLVEEGICSQDAGT DNCFEMPSRVI ERFL



|  | 30140 |
| :---: | :---: |
| UniRef90_H2YF52 | E S NLY K S FL ${ }^{\text {L S E K F Y E }}$ |
| UniRef90-W9HBT3 | AS DLVP K F L S N P K E Q Q L R S E |
| UniRef90_Q2GSC5 | R A RHLQNFKQSDLFFKALAAEDAS |
| UniRef90-K3X4P2 | QKDTLQRFLNS P Q Y NEMSAKVT Q |
| UniRef90-E0VIT2 | E $\square$ N Y FQS F L Q S Q L Y F K Y L |
| UniRef90-M5GCG5 | ATDSVPKFVKTRQFVQLRQ |
| UniRef90_T0RD74 | LR DSLLR Y F K S S T F A ELK |
| UniRef90-F1KXC4 | ENRYF GEF L S S VYY K K H |
| UniRef90-L8G4S2 | K GEYFD GFKK S DLLF Y K Y LT S Q E A S |
| UniRef90-I1CSF7 | A S D SVPK F VK T E K Y R R |
| UniRef90-L5LEH0 | R G DVFQK F I E S D F T R F C Q |
| UniRef90-A0A024UEL2 | AKDNFPRFKKAPQFRAMMAA |
| UniRef90-G1NLS4 | ENVFTPMFCHSDEYFRHLLR G A E S P |
| UniRef90-B5YMN1 | S R D S Y P R Y LA S K L |
| UniRef90-F0W608 | R NTVLPDFTDSRVF |
| UniRef90_UPI000265775F | T K T T F VRF\Q S D 1 Y $\square \mathrm{EH} \mathrm{V}$ Q |
| UniRef90-C3YDG6 | RGEDF QKFLESEKY TRFCQ |
| UniRef90-N1Q910 | K DVHYEAFKRS DLYY Y W WL |
| UniRef90_S7NG71 | EQDSYTRFLKS DI Y S DLVEGRPQRP |
| UniRef90-S8ANZ2 | QEHDLPGFKSSDLFYNYASSLESSSPRM |
| UniRef90-13JXQ4 | LR D Y Y P S F K Q S PL Y VR M L |
| UniRef90-N1QNH0 | KEKHYEAFKRTDL L Y Y K WL |
| UniRef90_UPI0003C48E56 | RGN】FQK F MES DKFTRFCQ |
| UniRef90-E9H6B4 | ERDSYLR F LQSELFLELAHPE |
| UniRef90_UPI0002B44DEE | E EN A Y Q M F L T S DI Y L E Y VR S G G E N P |
| UniRef90_Q54LD1 | NLS MF P L F M T S P L Y |
| UniRef90_A0A024TYB0 | RTELLWATFSVYPPYVDHTHEGELTPR |
| UniRef90-A0A024TYB0 | R TELLWATFSVYPPYVDHIHEGELTPR |
| UniRef90-H3AC10 |  |
| UniRef90-F4P8H9 | T V N H L R K F Q A S D L Y R |
| UniRef90- Q9BRF5 |  |
| UniRef90_H2WMX2 | Q D K Y LS HFLLR S S F Y H N Y L |
| UniRef90-D6X0R7 | EKEYFEAFLASSDYFCKY |
| UniRef90-T0R629 |  |
| UniRef90_E0V953 | KEKVYPNFVLT DFYNQFLQ H |
| UniRef90-T1HQV9 | RGEPFRKFLESEKY T R F CQ |
| UniRef90_K3X539 | A T T LFP K F Q Q E $\square$ ¢ Q |
| UniRef90_M7NPG6 | A R D SVPKFLQS |
| UniRef90_UPI0004416C66 | STDSVPKFI K T PK F A A L |
| UniRef90-D2VVY4 | K NDTYPRFTK SVQFNNFLKQKDE |
| UniRef90-H3CX12 | E K V Y LP GF LS S NLLY Y K Y L S DLIN S |
| UniRef90-W4GS49 | RKDSFPRFKKTPFFKDMLAA |
| UniRef90-J9FLK9 | AK D S M R F F K |
| UniRef90_Q6IR78 | ENVFTPMFCHSDEYFRQLLEGAESP |
| UniRef90-C1H6N2 | S S D SVP K F VR D P K Y |
| UniRef90-W4FE66 | QRD IM NRFIKS SQFSELVSRLSE |
| UniRef90_UPI00038BE8B4 | RDRYYPSFIVSSDLY ERLVTKEEER |
| UniRef90_UPI0003BBA366 | EQDS T R F L K S D Y S DLVEGRPQRP |
| UniRef90_G3J3L4 | K NQYFQAFKK S DLYYKCLA SQE |
| UniRef90_Q29NL7 | EQKYF A DF LK S H I F D N Y V N E LK |
| UniRef90_Q9U756 | RGDDLFNKFVESDKY T R F CQ |
| UniRef90_G5Al19 | LK Q D HKAFLQ |
| UniRef90_S7ZHH6 | S S D S VP K F L R D P K Y |
| UniRef90_UPI0004412E07 |  |
| UniRef90-R019G9 | QEDYFRRFKKSNLYYKWL |
| UniRef90-H2Z5E3 | EKRWLP LTF LA T E D F Q D R Q P P S Q |
| UniRef90-F7ARA1 | ERDSFKRFI |
| UniRef90-K5WXN0 | A T D SVPM K I K T P DF Q |
| UniRef90_V8P387 | K D R Y YPSFIVVSDLYERLIKKERTPAQD |
| UniRef90-K0KW18 | E ERDLA DFKNS DLF LKLL S S EA |
| UniRef90-J0XJ57 | E Q N Y K K R S A S P AFVK Y L Q K L |
| UniRef90_C4JEU8 | S S D SVP K F VR D P R Y A T ILQ E H |
| UniRef90-G0RZV6 | NDSVLAPFIA S |
| UniRef90-W4XE12 | K GE $\ddagger$ FQK FLES DKF T R F CQ |
| UniRef90-F6Z7K7 | SHDSFLRFQKYPGFMSYLES |
| UniRef90-F4NTR9 | T L N H L RKFVA S S $\square$ F R E A TEAK |
| UniRef90-K1WYJ4 | DESVLVP F L N S |
| UniRef90-W2SLP0 | R E K Y L GRFVQS P G Y Q Y Y L |
| UniRef90 ${ }^{-} \mathrm{K} 3 \mathrm{VJT7}$ | NDS L L V F L Q S |
| UniRef90-T2MJE6 | R DVCYPK F L K S DFFTFYCETNGQVAH |
| UniRef90_G1KM72 | LR D F Y P S F K Q H A LYVRML |
| UniRef90_F4PHW2 | ESDSYERFKRS |
| UniRef90-W4FJS2 | LQDSLVRYLK S P I H SEMKQ |
| UniRef90-A0A024J7E1 | KVRDLVNF K K S DLF LK F LAS |
| UniRef90_UPI00046B30F4 | K K |
| UniRef90_UPI00042AF7B8 | A K D S P PR F LK S E $\square \mathrm{Y}$ K K L V N S |
| UniRef90-E3QRF8 | NDSVLVP F I E S |
| UniRef90-C5PJ41 | S S D SVPK PVRDPRYANILQEH |
| UniRef90_W4FM11 | RQDEAPEFLDAPMFMVLV |
| UniRef90-H0WYF2 |  |
| UniRef90_G4TMR3 | DED FSDFERSDLWFFRAVHDME PK |
| UniRef90_E9CB37 | NQDVFPRFRKS QLFK |
| UniRef90_A0A034WHT9 | ERKYFQDFLKKSQLF Q N Y L NELK |
| UniRef90-A0A058ZEP4 | R DVLLP Q Y I R S R F Y R D L |
| UniRef90-X8JR41 | A T D SLP K F V K T P R F K D L |
| UniRef90_V5GDG7 |  |
| UniRef90-H0Z6Q4 | R G G $\square$ F Q K F $\square$ ES DKF T R F C Q |
| UniRef90-A0A023ETE2 | EKRYFQGFLKS QLYK Q Y L |
| UniRef90-H2YU39 | K S D HY P S FVVS D I Y |
| UniRef90_L0GFC7 | R G K $\square \mathrm{F}$ Q K F I ES DKFTRFCQ |
| UniRef90-G5BVX0 | KYDSYSRFLKS DLFLLKHKRTEEE |
| UniRef90-11-216 | A T D S $\square$ P K F V K T S K Y K R |



|  |  |
| :---: | :---: |
| iRef90 B6OPP6 | NLAFYQDVTEYVDNYRNYHKLQDYiAGVFGL |
| UniRef90-F6X153 | DVLFWVEVQKYKDFCHDHNDPVSTEDKVTSU DNCFISSHM |
| UniRef90-T1JM84 | IPQLKFYEEDK H Y K Lid TLEERRKNAREI YDNF |
| iRef90-S3C802 | A |
| Ref90-A0A0 | CIQFLLACNTFESSYD KLSSEELLEDAMCVYDRYLSMQA |
| UniRet90-UPIOC | GVLF WQEVQKYKDLCHSHCDDALVQRKITTAIDDCFINSAD |
|  |  |
| UniRef90_U9T1G8 |  |
| UniRef90-V9FJK5 | MVTFWISIEEFK EDGIDSKTLRSRAVN |
| UniRef90-EOW2L0 | LLQFCLHVEDFKKILNPELNESERESLAWD |
| UniRef90-B8LT | TLEFTMEAKRYRDSYRSVARM |
| UniRef90-W9RCJ4 | SVQFYDEVHEDGKD PLEDPVRRI YMARHI |
| UniRef90-O55V | LVQYWLT EGFKDPSTERNDHDTTIEDAQSL |
| UniRef90 A7SI | VPQFYEALKDYEKLKTQE SRWRVQKARE |
| UniRef90- B4JAC6 | CLEFWDTA】NFRKSYD |
| UniRef90_UP1000273D |  |
| UniRef90-H6C5N3 | NDQFYFDVTDFTNNYRQLEKSGMLEAAAYG |
| iRef90-E9 | NL LFYRTMTDLRA RQQAGEKDTAEDIQA |
| UniRet90-C5M460 | LLEFWEEVELIKAPLEGVGGEDDPLALVYQIYTKFIINGD |
| UniRef90-G4 $\begin{aligned} & \text { IRergo-G44 } \\ & \text { iRef90- UPI } \end{aligned}$ | Y Y L |
| UniRef90 F4PQ49 | N |
| UniRef90--s9W1 | LVQYWLTIEGFKDPPTERNDDDTTDEDAQSLYATYFSAPQ |
| UniRef90_V5HE | LLTFWQDVEE M MWLSNKDEWHQRGNEIYQRY KRPW |
| UniRef90 - S5MF $^{\text {ch6 }}$ | TLEFTMEAERYRVAYHQRDASDHLCGHWQKLINAY TPCG |
| UniRef90-W9XEW8 | NLQFYFDVSDFTSHYRNLQKSGKLDAAAYGL |
| UniRef90-L7M0E1 | LLS FWQ |
| iRef90_S7NEZ6 |  |
|  |  |
| UniRef90_B9R | NVHFYNEVHE RGK |
|  | Ks |
| UniRef90-TOPX42 | EAPSSGYQRSVAKHIYKKYIKHGA |
| UniRef90-L8G9F4 | TLEFTMDASRYRKHYPSTEGCEYVRMLWQKL |
| UniRe990_G7E3B0 | N |
|  |  |
| UniRef90 F9) | TLEFTMDAGRYKKHYAKMMDREYVAALWQRLVEAY |
| iRef90-D5G4B9 | EFTMDATRYRKYFNACKGPEYVRMLWRK |
|  |  |
| UniRef90 A0A023F |  |
| Unif | WLTVEGFKNLVSSP WDEGD |
| UniRef90-UP10003 | DLDC WTDLEQFRRI DFRDRNQREAKADDTKNKYLNNSP |
| UniRet90_T5AMM | SKERVCGWWQKL |
| UniRef90 UPIOOO3C91522 | D |
|  | TLDAKRYRETYNDCSESRH |
| iRef90-UP10004 | LVQFWLTVESFKDLLQAPADAVTVREDISMI YDLYFSSST |
|  | GVRFWQEVQKYKDLCHSHCDENTIQKKTTMITNCFTNSSI |
|  |  |
| UniRet90-P32865 |  |
|  | SLAFYEQADEITRDSKAMLETMELLSQAHVVFNTFLAPGS |
|  |  |
| UniRe |  |
| UniR | GV LF WQEVQKYKDLCHSHCDESVIQKKI |
|  | H |
| UniRef90-M2TJN6 | NLSFFLEVQQFNKQYKDAVNEKGE |
|  |  |
| UniRef90 R9) | NLQFVLMTDGF VVDHADTPVDPAVWNQTYDTFIRRDS |
| UniRef90-UPI000383 | GLDF WQEVQKYKDLCHSHCDDATIQK |
|  | RDSYHEC |
|  | TLEFCVSASHFS |
| UniRee990 UPIOOC | Y |
| UniRef90 N1JNZ2 | YLEFMMDAARYEKQYHKMHDTA |
| $\begin{gathered} \text { A8X } \\ { }_{1} \end{gathered}$ | (LYF A |
| UniRef90 F1SOP niRet90 |  |
| iRee90 ${ }^{\circ} \mathrm{U} 6 \mathrm{P}$ | CLQFLTACAAFET |
|  | Q |
| UniRef90-M4BWM1 | ELYF W |
|  |  |
| UniRef90-UPIO002A478F5 | Q $\mathrm{L}^{\text {Q }}$ |
| UniRef90-SoDRH7 | NLQFIQDASRYRDCYTERCDYDYLRALWED |
|  |  |
|  | DFMCWIDIEQFRRI LIMQDKKLREAKSTDIKNKYLNKKY |
| UniRef90-D3E | NLIFYLEDERYKKDAKED |
|  | SFFCWVE KEFRE |
|  | YLYFYLN EGFRVAEQQMSAHLNKLALNMYDQYLS K |
| UniRef90 Q6C8P6 | VIRTYADDDSMA |
|  | SLEFTLDSQRYTADFNEMDDHDRVCALWEK\MQVYITPCA |
| UniRef90-F9FDK4 |  |
|  |  |


|  |  |
| :---: | :---: |
| UniRef90-H3CAW |  |
|  | P SLDDDSAEMAEKIIEKRKEN |
| UniRef90-T1 JM84 | s |
| Ret90- ${ }^{\text {S3C }}$ |  |
| iRef90-A0A016VSF3 | PLLVSDNVRRNVEETCSDTGRPLHTSFLSAKQFC |
| UniRef90-UP10003955908 | PA LQIDIPPEQAKKIVEHRKELGPY\\|FREAQMSI |
| UniRef90-GOMRG4 | A |
| UniRef90-u9T1G8 | YHVVVVEEGLVEQCVTEILK APSSNCFMMLQEYVFVVL |
| UniRef90-E5R4Q0 | PNELNIDHGLRTQLATRMTRAVGDDAAMFEKAQNSIFKLM |
| UniRef90-V9FJ | ПKVITAAQRKKDKKADTTPGKKM S S S Y Dilot |
| UniRef90-EOW2L0 | PDS HFPSNVVDQMKQNSGPSNLVNNPVLFMAYEVAYSIL |
| 8L | AAMEVNDSRSRE\ITTSNDADP |
| UniRef90- O 55 VH 5 |  |
| UniRef90-A7SMJ7 | WK Y 1 SEKELPSDLFEPYMLEURDS |
| UniRet90_UPIO003AD9 |  |
| UniRef90_B4JA |  |
| UniRef90_UP1000273DCC5 | A RWVNIDSRTMEQTLEGLRQP HRYVLDDAQLHITYMLM |
| UniRef90 H6C5N3 | PSELND DS |
| D4D432 | Sovil |
| UniRet90-C9CEK8 |  |
| UniRef90-G4ZY6 | AKNDLYGATASRAFDEKLQAPQPVAKAALFKAQQEIGFAML |
| UniRet90-UPIod | - |
| UniRef90-F4PC | M |
| 5 |  |
| UniRef90-V5Bb33 | A |
| UniRef90 B5MF76 |  |
| UniRef90- W9XEW8 | A DDESMRDLFELAQSAVF |
| UniRef90- $\mathrm{C7}$ | E |
| Unil | PYQQDQIMSLLCGGWGKTLLHEQLDPPPVFVEVQKHVLKRI |
| UniRef90 S2K60 |  |
| UniRef90 B9RMQ6 | A |
| UniRef90 UPIO0032AE | ASVYQQNQLMRLSGGWGRLLHDQLDASVLVE |
| UniRef90 H9KQHo | AMALGGLASDMVEQYDELIKVIDDGPSFFAPUQKMCFDDM |
| UniRef90-L8G9 | EVNLPSDVRDRLVSAPSHFTPPHPSQ |
| UniRef90 G7E | DHNLRGDVVTFQKIQQDSGAPKRHHYERIQG |
| UniRet90-UPIO0022 | SPASQQDQIMHLSGGWGK\\|LHEQLDAPVLLEIQKHVLNRL |
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|  | PKECNFSQDTREVFEKCYANNKVPGDVDVLRA |
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| UniRee90-T5AMM7 |  |
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| 6T4 | MKIKLPSDLVKTTLQNITNRVLSE DV |
| 5B125 | - V S |
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| UniRef90-UPI00046B136B | Y\| FREAQMT F GVL |
| UniRef90_V9K7T7 | SPRVHVDDNLVAKLAEKLNHEDPTPEIFDDUQRKVYDMM |
| UniRet90_M2TJN6 |  |
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| UniRef90-LOP |  |
| UniRef90-R9) | Q TVPPQE |
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| UniRef90-K9FG | PRENNLSSEVRDALLQYTNVPAPPVPEILDSAVNRIHDLM |
| UniRef90-BoW518 | SVK K So |
| UniRef90 ${ }^{\text {N1JNZ2 }}$ | P REVNLPGEVRDHLVSLSNNTTSPDPKELVVA |
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| niRef90_E9FS41 | KNQMKSIVYASATERLRTSST |
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| UniRet90_UP1000443269E | 咗 |
| UniRet90 D3BKK8 | S |
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| UniRef90-T1JAB6 | D |
| UniRef90 Fow244 |  |
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| Un | Q |
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| UniRef90-GOMRG4 | KTDFFPAFKKSQAYVKML |
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| UniRef90-V9FJK5 | Y Q G V Y VRYL |
| UniRef90-E0W2L0 | D D N Y Y PLF Y L DEYF L L K K K K S P |
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| UniRef90-L7M0E1 | EERYYHSFLVSEAYHSMV |
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| UniRef90-L8G9F4 | E ESVLVPFLN |
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| UniRef90-R9XKX6 | E DAYTKFHR |
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| UniRef90-D2W3W3 | V N DTFSRFLSSK $\square$ F R D |
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##  <br> 




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 F DNTNDAKRVE DKKA LESNPNSENDSSVFDEVLNEVMSTV $P P P L Q D D \square P Q E Q A E K I L D K R P K E M G P Y V F R E A Q L T V F R V L$ PALISUSRKYVDD $\quad$ R EFARDEGLPSRRSVMLAQRQVEMDM
 A I T RVPLDESVIAKFILARVRNDEPCDFWFEQDQEKVIEIL GAISEKHVDAIRSFSSADEDNPSPDRRSVMLAQRQVERDM SLDTAVNADKGICMHEVYSCS TPDFEPWDEVPYEVYDMM

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## 





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



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| UniRef90-W5N028 | LR DFYPSFKQHPLYVRML |
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| UniRef90_UPI00042BE85C | EEK WFKMYQ DLY |
| UniRef90-A0A026W0U1 | E $\square$ T C L P S F H H S Y QLY K L L |
| UniRef90_T1JST0 | E ETYFQQFLSSQTFFSFLDEA $\square$ K A L Q $\square$ |
| UniRef90-F0WS94 |  |
| UniRef90-Q21696 | RGR\FDKFLLESDKY T R F CQ |
| UniRef90-D2VMG3 | K N HI LP LF L E S S R F E N Y L |
| UniRef90-V8NYA3 | ENVFIPRFCHTEQFQE |
| UniRef90_H6C8W2 | A M D $\ddagger$ Y P R F VR H Q M TMS A VK A LIA D |
| UniRef90_J7RA52 |  |
| UniRef90-U4LGZ5 | ERDAFPGFLRS |
| UniRef90_L5KQ19 | RGDVFQKFI ES DKFTRFCQ |
| UniRef90_UPI00038373B9 | E A QWLP LFLLSSAEFRR |
| UniRef90_UPI0003F061F5 | RTYWVPRFLHSEFFKKFLTTEDEEN |
| UniRef90-UPI00042B6440 | K T NLAK D Y WS S M F $\square$ RFKEEAS |
| UniRef90_Q7Q0B8 | E EKWFKQFSKTSEYFS LV |
| UniRef90-M5FXU3 | EG AFEEFKRGELWWLKAVAAGGN |
| UniRef90_H2UYK9 | EKTSVAS Y K N M Y F L R F V Q |
| UniRef90-G7Y328 | R NF V Y P Y F $\square \mathrm{K}$ S D H Y K Q Y TMA H $\square \mathrm{HS} \mathrm{D} \mathrm{K}$ |
| UniRef90_J9K645 | Q NSYWDEFHNS DEYFSWl |
| UniRef90-Q6DJH1 | KENTFQQYKESKYFSKFLQ |
| UniRef90_U9SR30 | E V S FAR F $\quad$ R S P M |
| UniRef90_T0S973 | T R E E LP R F L K S T E Y LEMLQ |
| UniRef90_J4GT57 | EQD FEDFQRSELLWF |
| UniRef90-E4WXA4 | T T DMYPGFRKSEFY ${ }^{\text {P }}$ Q |
| UniRef90-T2M518 | E ES $\square$ YPEFVLSSHDYTQFVCQLES |
| UniRef90_G0NB96 |  |
| UniRef90_A0A044R248 | RTED Y N SFKKS S I Y I K M L N |
| UniRef90-Q7PZQ1 | R GEPFRKFLES DKY TRFCQ |
| UniRef90_G3BCF5 | EYD FKDFTTTDRYRDLVQSVSHS |
| UniRef90_Q17BW9 | KNEFLNNFYQSS GYKQLLREL |
| UniRef90_A0A017S1J2 | HDSLLLPFLRS CVNQEREQPR |
| UniRef90_K2SP72 | ERDAFPGFLRCKAFGNLV |
| UniRef90-UPI0002C3F365 |  |




[^3]

UniRef90_E9FXK3 UniRef90-R7Z4U6 UniRef90 V5H212 UniRef90-F1KUC9
UniRef90_W9J7K7
UniRef90 ${ }^{-}$A0A058Z7N2
UniRef90 E5S9Y2
UniRef90_UPI0002C3F3DB
UniRef90-F4Q4G1
UniRef90_U4U3W6
UniRef90-F7C5A3
UniRef90-A0A024FUF7
UniRef90-UPI0003F08CD0
UniRef90-F4PUG9
UniRef90-W4YYL5 UniRef90-M1AQC5 UniRef90_D7G3H0



UniRef90_E9FXK3 UniRef90-R7Z4U6 UniRef90-V5H212 UniRef90-F1KUC9
UniRef90-W9J7K7
UniRef90 A0A058Z7N2 UniRef90_E5S9Y2 UniRef90-UPIO002C3F3DE UniRef90-F4Q4G1 UniRef90 U4U3W6 UniRef90_F7C5A3 UniRef90-A0A024FUF7 UniRef90-UPIO003F08CDC UniRef90-F4PUG9 UniRef90-W4YYL5 UniRef90-M1AQC5 UniRef90-D7G3H0

130
AGEPFKDFENSMYFHRYLQ 140
YTD ITYPRFVR
ETMWLPQFFHSNEFYSY I
QHDYVVPFCQSDCYLGHL
EDS LIPGFMNS
EKDFY L S FKRSYSYVKLLAELKLLP
KKNVFENFQKSAYFKPLIN
K S D S Y S R Y LR SEMYKDF LNGSKKKTSV
RGK $\square$ FQRFIESDRFTRFCQ
EASRYDRFCKSNLYK IVLR
EKSSVKK

K
VLGPFPRFV

lupas_21
lupas_14
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jnet conf sol25 sol5 sol0
jhmm
jpssm


[^0]:    

[^1]:    

[^2]:    

[^3]:    lupas_21
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    lupas_28
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    sol0
    jhmm
    jpssm

