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UniRef90－HOWMG
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UniRef90 F1OPTO UniRef90 UPI00045DF40D UniRef90－D6WCJ1

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10
AF TCy CPD $\prod^{20}$
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40 LDKDKQYDAFVSYSSDENFVDKLVPGLENGPTKYKLCL LDKDKKYDAFVSYSHDEAFADYLVPQLEHGPDPFKLCCI L LDKDKKFDAFISYSHDQSFVEHLVPQLEHGPQKFTLCV

$\stackrel{\square}{\square}$

$1{ }^{1} \mathrm{D}$ DSY S KD F V
位 DKLYYAFVSYCHDEEFVSTLVPRLETAPMNLKVCW DDKDKDYDAF SYSHDEDFVQN LLPVLEGGPQPYKLCL LDADKKYDAF SYSHDEEFVNTLVPGLESGDPKYRICL GO LDKHKTFDAFISYAHDADFVNHLLPQLEQCEPPFRVCT LDKDKTYDAFISYSHDEELI AQLLPKLENDLDSFRVCL
 DANKKYDAFISYSKDEEYVNTLVPGLECGEPRYRVCL EEKTYDAFISYSADQNWVRNLVPCLESDEYKFNI CV ERE

| $K$ |
| :--- |
| $Y$ |

\D QEENCKYDAFIST E QFHTVV
F
YDAFVSY
HQYDAFVS
DDGKEYDAFISY
GYKYDAFISYARDEDFYQLYPKLEEEMGFKLCM DSDENAVYDAFVSYSQDADWVMELLPELESHSPPFRLCV SDDRDKLFDAFVSYSKDEAWVNQVLAELERGDRPYRVCL DACKRYDAFVSYSHQEEVAKDLIPGLEK ERNFKLCW
 ED
RDKTFDAFISYSH
REYNYHAFISYS
KKYDFDAFV
－
FQYDAFIS QFHVFVS

PEM YDAFVS YDAFVF
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YDAFVI
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MPQF $\square \mathrm{GRDF}$

YEFHAFISYS
GRANRRYQYDVFVSY保 EFHAFIS
YQYDAFVS QYDAFVS
D N P D पQRT DQEEKYNYDAFVS YDAFVS
K N K N F LEGNFKYDAFV

Y $\square$
ESSKDFDAFISFSQDNDFVNDILPRLENHSPPWKLCI SAPDDKVWDAFVSYKSDEDFVDHKLQPVLEEQLGFRLCL R Y Y HAFISYSSDADWVRELLQRLESSSPPYRLCV DREKLYDGYVCYSKDEEFVLQLVAELEHGSPSFQLCLC DRDKL FDAFI AAFVSYSODAAWKNYAPNHEDPVR1CO MDKPYDAFLSYSHDLDFIQHDLPGLENREPPFRVCL IDKDRПYDAFICFQEDESFVEQIVNVLENGPNPYRLCL YDAFVSYNEDEEWVEEMLPALEDQQGWKLCL

UniRef90Ga3W9v2



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UniRef90＿I3J7X5
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UniRef90＿Q8T753
UniRef90＿F6UTM1
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UniRef90－J9K725
UniRef90－C3ZZ34 UniRef90－F8STL3 UniRef90－UPIOOO2659004 UniRef90＿UPIO003F0D763 UniRef90－T1J624 UniRef90 ${ }^{-}$B5DHL7 UniRef90－S9W8G2 UniRef90－UPIooo2246D9E UniRef90－UPI000359B0EF UniRef90＿B5E152 UniReffo－EOV9A2 UniRef90－C3XWT9
UniRef90 UPIOOO45DF72E UniRef90＿UPIOOO3F0C8A4 UniRef90－Q8T0X1 UniRef90－T1IMU8 UniRef90－UPIO003F18417 UniRef90－X5L4Q7 UniRef90－UPIOO03832396 UniRef90 Q33E93 UniRef9－UP10001CBAFCF UniRef90＿Q4LDR6 UniRef90＿－Q6TQI2 UniRef90－W4WI27 UniRef90－T1J4L4
UniRef90 $076 \mathrm{CT8}$ UniRef90－K01BB7 UniRef90－M4A1D2 UniRef90－B6ZK76 UniRef90－U3JPF7 UniRef90－K1RF19 UniRef90－K4FWE2 UniRef90－Q16P71 UniRef90－UPIO004433DC0 UniRef90－UPIO003291E35 UniRef90－B4MZ87 UniRet90＿UPIO0046C3007 UniRef90－UPIOOO44333F5
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GE DLPFQHAFISYSHDSEWVQNLVPTLEHSNPDLDRLC SAERGDTYDAFVIHSKDQEWVKELVEPLEGGTPPFHLCL LGEHEKYHVFFCYSSDAPWVEHMVQKLESDEYGFKCCI QFHAFTSYAHDSVWVNELIPNLETEDGSVLLCL


YHFDVFVSYCKDERWVDELLPNLEKRGPPFRLCL
保
PHQYDAFISYNHDEPWVDDKLLPKLEGEQGWRLCL s LDKDRLC YDVFVS

## DREK【Y

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FLYAAFAY
PE F F DDADKVY EKQKKF

## DKDRLY

 DAF SFDKQKK
KQKKFDAF SY DRHしL
$\qquad$
NDEFEYDVFLSHSKDVDWVTNVLRPLENPPYNYKLCL ENQKLYDAYVCYSDEESVVQSLVNELENGNPSYHLCL

## D $\square$

NGKlSENLV

PFEYNAF $\quad$ SYS
DDGRKYDAFVSVSPEEVFVYRTLPRTLEKKYNYK CV
$\begin{array}{llllllll}N & Q & F & H & V & F & l & S \\ E & F \\ L & Y & D & A & F & V & S & Y \\ D & R & L & D & C & Y & V & C \\ E & Y \\ \text { Y A F } & \text { D A } & F & L & S & Y\end{array}$ $Y$ D A F V $V$ S $Y$ D D D REYAF
$\square$ F FDAFVS
GGEDDNKEY
YDAFVSY
YDAF
YDA
Y
NEQHR
$\qquad$ GK QFDAYI DYPRNEYFVHHILPEVLEKKCGYTLCL DGDGKEYDCFLVACHDSHFVREYVERLEHGRNRLCLCF VD CEK QFHAFI S

YDVFVSY
GDVDGD NDGKLYOAYIDYS GED DE QEFQ YDFFVSHS
YDAFVS
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YDAF SYCQDRQWVDELLPNVEKSG DDISICL
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UniRef90-F6UTM
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UniRef90 G1R
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YDRNFKGGY ${ }^{50}$ VIQDTI HEAVVAC HYRDWVPGNWVPALIAHSVAQ
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 HYRDVNTNAYVTDAITEAAESAK
 $H E$
$H E$
, HNRDWRAGEFIVTATVVKSVEN
 HHRDLPCLRAAAPVVLEAAEA $P H R N D L A G L N T H S$
$Y L R D W L V G V I T$ HERDFQAK
$\qquad$ HERNFVAGKSIIENITNG DEK DYRDFIVGDTIADNIIDAVQK
$H Y R D I P H H G A Q Y M Q C A P P D V E T$

 HEGNSDPGKSIVEDIGNCMEKS


| HKRDFLPGHWI MDN: MSAMER HFREFPIMQTIGET:YRSMEG$H$$H$ |  |
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EGRDWLPGQPVFDNLSQSI QL
PWRDDLDGGSRYE VSAHM1 ATR

 YERDWLAGEPIPDCICHSVEN FERDVSPGGAVVDDVQSFIDK
 HERDFKVGVSILENIVHCMDR S HYRDMGAGSSVAEAVAEAADS



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HKRDFVPGKWI DDNDIDSIER
LERDVAPGGAYAADVVSVNK

SKCTVILMTKNFLKSVWG KCYKSUVFVSPNFVQSEWC

| $s$ |
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| $R$ |
| $R$ |

SRRTLTLLTENFIVESEWC SRRTIIVLSKNFLSSVWA SRRRTMVLSENFMNSEWN SRCLMLIVSESFLLSHWC SRRIILMTNNFLKSTWG SRKTICVVSRSYLQSEWC SKRVLVSRNFLQTEWS Q SRNVIAVISTDFLESKWC SQKTVFVLSRDFVNSKWC SKI FVLSPNFVQNGWC
 SRHTLCLVSRNYLRSKWC SRTVFVLSENFVRSAWC SRKTVCVLTRSFLRSGWC SRAIMLITSKRFLMSOWC SRRVIVVLSRNFIQTEWS SYKTIFILSKHFVQSEWC
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 SRRTLLILSPAFAK S Y YTL RRTLFVL RVLTVLTEHFVSSEWC SRRTVVLSESFLRSPWA SRRTI FVLSENFVQSDWC SRRLI IVLSENYMSSK V SKKTl FVLTKRYاK SGRF CRRTLVILSPDFLKSAAA SRTLLLVMSESFLLSHWC
 SRRTVLVLSENFISSVWL SRRHIFILTPQISHSKEF SRRTILVLSRNFLHGEWA SYKTLCLLTPNFVTOE WC CKKTLCVVSRHFLKSEWC
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 SRKTVEVLSENFVRSEWC SRYT L LSPRFVES

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UniRef90＿F6UTM
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 QFEMHLAQHRLLETRRDELI LVLLEDLPRRLSYLLKTKTY

 QFEFQAAHAQMLQDRANRVIVVLLDDVPPDIQHYLNTNTY



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$M Y E L$ HYEEL Y Y F A H H H K V V F H E G S



 KYELDFSHFRLFDENNDAA，LILLEPAVQRFCKLRKMMNT

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## UniRef90 I3N172

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UniRef90_UPI0003347646


## UniRef90 I3N172

 UniRef90-C3Y6F9 UniRefofo-O4W1E7 UniRef90-UPI0004419A80 UniRef90-P14719 UniRef90-K7EXA0 UniRef90-A7RYG9 UniRef90-W5MST2 UniRef90-K7FGL5 UniRef90_UPIOOO3837C29 UniRef90-V9LCK0 UniRef90-W4XQZ1 UniRef90-H3B6E0 UniRef90-D3ZRM2 UniRef90-UPIo003BD341E UniRef90-W5MUY8 UniRef90-HOXVE9 UniRef90-M3YLF6 UniRef90-G6CMS1 UniRef90-Q56R99 UniRef90-UPI000333E4D9 UniRef90_UPIO003337327 UniRef90-UPIO00388DDE6 UniRef90-F7EM25 UniRef90-D6WCH9 UniRef90-G3WMT2 UniRef90-UPI00021A6500 UniRef90-UPIO003344D6E UniRef90-UPIo003F1ADCA UniRef90-G1M314 UniRef90_UPIOOO440B8A6 UniRef90-UPIO0038C3F40 UniRef90-UP100046B81E2 UniRef90-X1Z4D5UniRef90 G3NIU9 UniRef90-G3NIU9 UniRef90_S5Z240 UniRef90-UPI0003C35A06 UniRef90-UPIO004418BA0 UniRef90 UPIOOO3EC1F8F UniRef90-V5TE02 UniRef90_UPIo00331796F UniRef90-IIVAM1 UniRef90-D6PVB8 UniRef90-L7MHO3 UniRef90-F1CGU5 UniRet90-H9G4B6 UniRef90-G3NQX9 UniRef90-H2ZUT7 UniRef90-R7TLB6 UniRef90-J9T0D4 UniRef90-UPIO003EA89E2 UniRef90-UPIO003C259E2 UniRef90-F1DI26 UniRef90-B4GD85 UniRef90-UPI0004571B72 UniRef90-G3Q7U8 UniRef90-W5UC36 UniRef90-M1 Q9S3 UniRef90-A0A023EZI7 UniRef90-W5LTA8 UniRef90-UPLIOOO3341233 UniRef90-V3ZVD2 UniRet90_R7UPC3 UniRef90-W5P4M0 UniRef90-K1PQH5 UniRef90 UPIOOO2657EEE
UniRef90- $\quad$ PIOOO3EA UniRef90 UPIOOO3EAA8B7
UniRef90- $\times 1$ YHH6 UniRef90- $\mathbf{x}$ YHH6
UniRef90
W4Z8B3 UniRef90-UPIOOO3870CBB UniRef90-Q9JLF7 UniRef90-G5BMI4 UniRef90-E2BUC9 UniRef90-J9K5Y3 UniRef90-O4SOD3 UniRef90-K7FT60 UniRef90-R7UQ67 UniRef90-V5QP52 UniRef90-K017H3 UniRef90-HOVTOO UniRef90-G3WFF3 UniRef90_V8NJV6 UniRef90-UPIO0046B44EB UniRef90-UP100023AE2DD UniRef90-UPIOOO441E3EF
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UniRet9o BowN
UniRef90BOWNK2


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| UniRef90_C3Y6F9 | L EWKDGRKQELF WRRLGAAV |
| UniRef90-Q4W1E7 | L D Y PRKNCQDYF WKRL |
| UniRef90-M1RB79 | 1 EYPDEYGDTVFWDQLV |
| UniRef90-UPI0004419A80 | I T WTSPTANKQFWKKLR |
| UniRef90-P14719 | I K WREDSLSS K F WK HVRYQMPVP |
| UniRef90-K7EXA0 | LEWTNPRSQCYFWQCLKNA |
| UniRef90-A7RYG9 | \|LEWFNEDVRPHFWERLRVA |
| UniRef90-W5MST2 | I K WKGKKSKSRFWKQLHVELPV |
| UniRef90_K7FGL5 | VTWKSSNANKQFWKYMRYHMPV |
| UniRef90-UPI0003837C29 | L D CPEPEMHDAFWDRLL |
| UniRef90-V9LCK0 | 1 K WR GVK S Q |
| UniRef90-W4XQZ1 | LTWPMEPGRNDFWVKLKTVLRAP |
| UniRef90-H3B6E0 | L R WPEELQDDWFLEKLAYL |
| UniRef90-D3ZRM2 | L R WKADKSKSRFWKNLLYLMPA |
| UniRef90-UPI0003BD341E | L E WPEEEKREEFWRSL |
| UniRef90_W5MUY8 | L E WP NPQAQHYF WLCL |
| UniRef90-HOXVE9 | I K WREDSLLNSKFWK HVRYQMSVP |
| UniRef90-M3YL | I K WRQDSLNSKFWKHVRYRMPVP |
| UniRef90-G6CMS1 | IKW GQNKFWDK |
| UniRef90-Q56R99 |  |
| UniRef90-UPI000333E4D9 | K WREDHTNSKFWKHVRYQMPVP |
| UniRef90_UPI0003337327 | 1 T WRGLKS S S F WA QVRYHMPM |
| UniRef90-UPI000388DDE6 |  |
| UniRef90-F7EM25 | LD WPGEEAKEAFWER\R |
| UniRef90_D6WCH9 | TRW GERRFWEKLRYAMP |
| UniRef90-G3WMT2 | LEWTNPQAHPYFWQCLK |
| UniRef90-UPI00021A6500 | LDYNRV GLYDFWGKLRDSVQV |
| UniRef90_UPI0003344D6E | UKWSESSLLNSKFWK QV |
| UniRef90_UPI0003F1ADCA |  |
| UniRef90-G1M314 | VT WRNSKSNSRFWKQMRYHMPV |
| UniRef90_UPI000440B8A6 | L A WPQKAEQDEFWER |
| UniRef90-UPI00038C3F40 | V T WR G L K S S RFWT QVC |
| UniRef90-UPI00046B81E2 | K WREDSLNSRFWKRVRYHMPVP |
| UniRef90-X1Z4D5 | L E WRDEHAKELF WAKL D D A L |
| UniRef90_G3NIU9 | L EWT NPQAQLYFWF SL R S VL |
| UniRef90-S5Z240 | \|L R WPEDYQDEWF L N NLS Y Q |
| UniRef90-Q70YG5 | VRWQGDKSSSRFWKRLRVELPV |
| UniRef90-UPI0003C35A06 | LKTTAVRGDRHFWEKL R Y ALP V |
| UniRef90-UPI0004418BA0 | L M WK R D S R HVF LR QLRSA |
| UniRef90-UPI0003EC1F8F | LKWKADKSNSKFWKNLLYL |
| UniRef90-V5TE02 | CDFTQTEMAEWVLERLI CALDRAP |
| UniRef90-UPI000331796F | LKWKADKSNSRFWKNLLYLMPA |
| UniRef90-IIVAM1 | LDFTRQNPYWDFWDKMKKSLDADP |
| UniRef90-D6PVB8 |  |
| UniRef90-L7MH03 | LRW GERRFWQKLRYALPDP |
| UniRef90-F1CGU5 | L EWPQDRRKGLFWANLRAALHV |
| UniRef90-H9G | V A WKGERSKSKFWKALRLALLPL |
| UniRef90-G3NQX9 | L T WR SVTPS SVFFWKELALA |
| UniRef90-H9GCL5 | \\| T WTS STPNKLFSKKL WYCMPV |
| UniRef90-H2ZUT7 | L D WT NPQAQHYFWQCLKNA |
| UniRef90_R7TLB6 | LQWTDEAGRRLFWERLK LLL R |
| UniRef90-J9T0D4 | VNFTNPMQREWVWPRVAATlK C P |
| UniRef90-UPI0003EA89E2 | L RWENSRGNTRFWKCLRCSMP |
| UniRef90-UPI0003C259E2 |  |
| UniRef90-F1DI26 | LLEWPDDDGQPRFWHSLRTA\KRP |
| UniRef90-B4GD85 | NRLL TCDRYFWEKLRYA |
| UniRef90_UPI0004571B72 | VK WRGTKSKSYFWKKMRYLMPA |
| UniRef90-G3Q7U8 | I K WRGPKSNELFWK QVVYEMPA |
| UniRef90 ${ }^{-}$W5UC36 | LEWPRPAAEPWFWQCLRNVIRL |
| UniRef90-M1Q9S3 | \|I EYPDDEGNAVFWQKMLEAVS A |
| UniRef90-A0A023EZI7 | L D Y T RKS Q L WDFWT |
| UniRef90-W5LTA8 | LEWRNPSAQNWFWQSLRNA |
| UniRef90-UPIOOO3341233 | L T WKAEESNSRFWKNLLYLMPA |
| UniRef90-V3ZVD2 | \\| D AKD K L F F K K L |
| UniRef90-R7UPC3 | L E WEDCDAQDLFWRKLSDAL |
| UniRef90-W5P4M0 | L R WP E D L D D WF L K L |
| UniRef90-K1PQH5 | L EYPGEES |
| UniRef90-UPI0002657EEE | I HYED KRFWEKL |
| UniRef90-UPI0003EAA8B7 | L E WNPVESDSKFWRDLKSAM |
| UniRef90-X1YHH6 |  |
| UniRef90-W4Z8B3 | LH WTDVRGQEYFWKALAKNLT |
| UniRef90-UPI0003870CBB |  |
| UniRef90- Q9JLF | R WPED\Q |
| UniRef90-G5BMI4 | I KWK GEKSQGRFWKQLQVALDPV |
| UniRef90-E2BUC9 | $\checkmark \vee W$ GEKRFWEKLRFAM |
| UniRef90-J9K5Y3 | VTW GEKRFWDRLRYLMPDP |
| UniRef90-Q4S0D3 | L D WPRAAAEPWFWQNLRNLLTV |
| UniRef90-K7FT60 | L D WPNPNAEGLIFWQNLK |
| UniRef90-R7UQ67 | \|LEWRDVYA QKLFWKKLVDTLDR |
| UniRef90-V5QP52 | LEWPNPHAEGFFWQRLKN |
| UniRef90-K017H3 | L Q Y S NGVGEKLIFWTALVVEGLRKP |
| UniRef90-HOVT00 | L EWPKDRRKGLFWANLR |
| UniRef90-G3WFF3 | L K WPED L Q D G WF L K K S Q |
| UniRef90-V8NJV6 | LTWRGEMATTRFWKNVRYQMPA |
| UniRef90-UPI00046B44EB | L QWPDPKAEGLFWQS |
| UniRef90-UPI00023AE2DD | L EATDSRFYPKVLRLLCQA |
| UniRef90-UPI000441E3EF | L RWPEDHQDEWFLS |
| UniRef90-UPI00046BD64C | VQWSGPCAKARFWKKVRYRM |
| UniRef90-M4VRN5 | L S Y T K R L GKR L F W |
| UniRef90-B0WNK2 | L D Y KRSEHLIFNYWDK LESSTKV |
| UniRef90_UPI0003347646 |  |

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UniRef90-F7GLKO
UniRef90-H9J034 UniRef90_UPIo001D540A8 UniRef90-R7T471
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UniRef90-K7E508
UniRef90
UniRef90-UPIOOO32907A3 UniRef90-UP10002C67EAA UniRef90-G3UQ87 UniRef90_UPIooo344830B UniRef90-U5PZB3 UniRef90-K1RU94 UniRef90-G319Z1 UniRef90-HOYQ12 UniRef90-G6D6F7 UniRef90-V4BDI1 UniRef90_UPIOO03332925 UniRef90-O6T855 UniRef90-UP10004574D5F UniRef90-UPIOOOOE45EAE UniRef90-S5LXY4 UniRef90-A0A024H9G8 UniRef90-UPIO004440FD0 UniRef90_UPIOOO42C4452 UniRef90-UPIO0042AD00E UniRef90-E5KCC6 UniRef90-UPIOOO38ECA98 UniRet90-F7ACB7 UniRef90-V4AP83 UniRef90_Q7Z2K4 UniRef90-UPI0003C4BF38 UniRef90_UPIO002038025 UniRef90-D2HJD6 UniRef90-U3KND9 UniRef90-UPIO0038ED63A UniRet90_M4VRN1 UniRef90-H3BAI6
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UniRef90 H2UQ85 UniRef90-UPIOOO45D7797 UniRef90-W4YZY7 UniRef90-13KJY8 UniRef90 W4Z460
UniRef90_K1PLB7


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 | P | D |
| :--- | :--- |
| P |  | QDSDKLYDSYVVYSHDNEFVGRLLGAGEDQHYGYSICL PDGKTYDAYVLYSRADAFVFK LPEVLEKQCGYKLF YDAFVA FDAFISYSHDQFIVNELIPTLEKACHSYKLCL

Vs DGkL Y

$\qquad$
DEDGKL DDEKYDFVLYAEDREFVEEMINRL
$\qquad$ NADY PADAPYDAF SY ADYOR
LLK NNEAYHLFVSYSSDSSWAHKFI EKLEADYSDLKICY
DNKDYDVYISYSEDEYFVLSTLRCVLENTFGYSVCH
MNDGKLYDAYVSYSEDRKFVNFILKPQLERRRGYKLFL DDGKIYDAYVIYPQSEYFVYQMMPDILENKCGLKLCV
 D G K I
E NEKLL
GSEFDSYKYDA

Y F C F
DDYFYDAF:AYDPSD
 YA
Y T
Y S
F K
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Y S



EMYDAFVLYDQDDDFADQLLETMEK

EDGK YDA
INDGKLYDAYVSY
GTTE
SRED
DDFE

YHAFVVYCDDRKWVHQTFLPKIEQNEGIDKLC DGKKYDAYLCFSKDFEWVQRAFLMHLDSQYRFNLCF GTMDDGKLYDVFISYSSNREWVKNLLFELEKKRNDSVC DDKEYDVYISYAEEEEFVMTTLRDVLEKQCGYKLF GSKDEDY Y GKDKRF

RYDVFV
QFAAFI
Y N EEYMFDCYVVYSEDSAWVNELLPNLEKED
SARWKKDYDVCTCHSEDVTDVEELVSYLEGQQESWKLC DGFLYDVYLCFSSDMKWVERVLLKRLDSQFSLRCCF
D DGKGYDA
DGKTYDA
GSRWSKTYDVFISSHDE GSARWAKYOMCH保 ■NDGKLYDAY SYDADRKFVNFILKPHLENQSGYKVOL DGKMYDAY SYSEDRKFVNFILKPHLENKYGHKLLL DQYEFHLDNMFHEEEEWVERVMPALEERLPHLQNIV NDPQDDRLYDAYMVYSKDEEFVTQLAASLERSGYN DCL WDFFISYTTDQRWAEWI AWQLEEAEYS DVDRGEQYD四A MLDEDNEWVNQHLPALMERGQDFNRIV DGKIYDAY LYSSSDITFVFKILPEVLEKQLGYKLF MNDGKLYDAYVSYEHDRKFVNFLLKPHLENRYSYKLHL
PDGKLYDAYVSYSRAEMFALQVLPEVLERRYGYTLFV DNDGKGDAFVSYVSDSDDVEFVYKMLMEEKRERKMC

FEYGVFVMYDHVSEWVMNLRVKLEEEGDMYPLCL DGKLYDAYVAYTEVETFAIHNLPQVLEKACGYKLFI
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UniRef90-H9.J034 UniRef90-Q9ERS7 UniRef90_UPI0001D540A8 UniRef90-R7T471 UniRef90-V4ATL5 UniRef90-D2Z007 UniRef90-K7E508
UniRef90-H3D0X7 UniRef90-UPI00032907A3 UniRef90-UPI0002C67EAA UniRef90-G3UQ87 UniRef90_UPIO00344830B UniRef90_U5PZB3 UniRef90-K1RU94 UniRef90-G319Z1 UniRef90-HOYQ12 UniRef90_G6D6F7 UniRef90-V4BDI1 UniRef90_UPIOOO3332925 UniRef90_Q6T855 UniRef90_UPIO004574D5F UniRef90_UPIO000E45EAE UniRef90-S5LXY4 UniRef90_A0A024H9G8 UniRef90_UPIO004440FD0 UniRef90-UPIO0042C4452 UniRef90_UPI00042AD00E UniRef90_E5KCC6 UniRef90_UPI00038ECA98
UniRef90 F7ACB7 UniRef90-F7ACB7 UniRef90-V4AP83 UniRef90_Q7Z2K4 UniRef90_UPI0003C4BF38 UniRef90-UPIOO02038025 UniRef90_D2HJD6
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UniRef90 H2LMY4 UniRef90-P13504 UniRef90-W5LEY2 UniRef90_W4YRV0 UniRef90-M7BFY3 UniRef90_H2LVY8 UniRef90_NOAOT6
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UniRef90_UPIOO045D7797 UniRef90-W4YZY7 UniRef90-I3KJY8 UniRef90_W4Z460
UniRef90_K1PLB7

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$M L E F K L G G V M C Q N S \square A T K L I V V \mid E Y R P L E H P H P G \| D Q L K S F$ RMEFRTGAYQAMLVQSGEDKVILIECAELREALKHTIKLLTV LEAFSHAQSRCFSD $\square S S A D I M V V Y Q \square M K H Q D R G F V Q K Q Q Y$ TY LVVNFTQK DQ IENHTRKI I PI LYKPDMH I PQTLGDYTH QPQFRVALQSVI ENRRHKIVPVELVAMDPIMNLLIRTCTV SSEEHIVLYNALVQDGVKVVLLEYEKMPESIQFLKRKQGA





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## R


 QFEMTLAQKHVLNRAMEPLSVVLLEDDDSELNALLKTTTY L E A F S Y A Q N Q CLL S D L S S A L I MVVVV G T L S Q T V R G F I Q K R Q Y KMEFRTAHRNSMSEKRVRVDI GDI ENLLDSELLKAYLKMNTY KTAFYMAHQRLMDQNQDVVVLVLLESVLTRLRKRLCKNSV


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| :---: | :---: |
| UniRef90_UPI0003BBACEA | \|V S WK G E K S K H K F WK A L |
| UniRef90_UPI000440F91F | IK WP GP K S D S K F WK RLLQ Y E M P |
| UniRef90- Q6V698 |  |
| UniRef90_K7NB63 | LK WP E D LQ D G WF LS K L S Q H |
| UniRef90_Q28ZH2 | IK Y A GDSKLLY N F WD K L A R S L |
| UniRef90_Q17DZ2 | ACW GERKFWDKL R Y A L P |
| UniRef90_UPI00046BA99D | $\square \mathrm{I}$ R WS G D WA K T R F WK K V R Y H M P A |
| UniRef90_UPI0003F13759 | I QWS GQSAK T K F WK K V R Y H M P |
| UniRef90_W5NAU9 | $L \mathrm{~L} W$ P NP Q A Q G F WWHRLRCVL G |
| UniRef90_B0WN58 | L E R D D P F LWWQKLL Y A M P H |
| UniRef90_UPI0003991126 | \\| R WK G D S N T RFWK KVVRYHMP |
| UniRef90_G319Z2 | L EWP NPQAHPYFWQCLKNAL |
| UniRef90_F7GLK0 | L Q WK G D A K T K F WK NVR Y R M P |
| UniRef90_H9J034 | LKY T T S A T F NFWDKLLKQS L R |
| UniRef90_Q9ERS7 | I QWD G D CAK T K F WK K V R Y H M P |
| UniRef90-UPI0001D540A8 | I R WH G D CVK T K F WK TV R Y H M |
| UniRef90_R7T471 | L E WT ND N G Q L LF WE QMK Q F L |
| UniRef90-V4ATL5 | I DVND P R F DD R LR F S L |
| UniRef90_D2Z007 | L R WP EDE Q D EWF Y D R I S Q I |
| UniRef90_K7E508 | L DVS D $\square$ S V F Y E K FI K A L C |
| UniRef90-H3D0X7 | I RWQGDKS K ERFWK Q L Q LELPV |
| UniRef90_UPI00032907A3 | L D L P Q D R A N WMF WD QL R RR L K |
| UniRef90_UPI0002C67EAA | L L WR SVT P S S P WKEL Q L A L P |
| UniRef90_G3UQ87 | VKWKEQSSNSKFWKHVRYHMPV |
| UniRef90_UPI000344830B | LEAT D SRFYRKL GQLLCH |
| UniRef90_U5PZB3 | AEWT NK N G Q K $\square \mathrm{F}$ W N NVVQ V L |
| UniRef90_K1RU94 | IIEWT NEKA QEMFWERL A S ALLR |
| UniRef90_G3I9Z1 | L Q WP D P K A E HLLFWQ SLK |
| UniRef90_H0YQ12 | I K WKEES P S S R F WK QVRY HMPL |
| UniRef90_G6D6F7 | LRY GQKNFMERLKFML |
| UniRef90_V4BDI1 |  |
| UniRef90_UPI0003332925 | L R WP E DVQ D D WF LH K L |
| UniRef90_Q6T855 | $V K W G D P$ WFWD N |
| UniRef90_UPI0004574D5F | $L Y W P N P K A E D F F W Q C L R N A L$ |
| UniRef90_UPI0000E45EAE | MLWWT DED GQK LF WA QFEKSMRA |
| UniRef90_S5LXY4 | CDYTRPCTQA WF W |
| UniRef90_A0A024H9G8 | LD Y R R N S $\square$ F N F WGR LK S S $\square$ QV |
| UniRef90-UPI0004440FD0 | L L WR SVTP S S D F WK EL Q LA L P |
| UniRef90_UPI00042C4452 | V Q WS GQCAK T K F WKEVR Y H M |
| UniRef90_UPI00042AD00E | I R WS G D S N T R F WK NVRY H M P A |
| UniRef90_E5KCC6 | LSLK D N N F S K K L LR T L G R |
| UniRef90_UPI00038ECA98 | WE WPK DR R K G LF WA NL R T A I S A |
| UniRef90_F7ACB7 | ED Y F DVS Q GRIE WD K L R K R L R |
| UniRef90_V4AP83 | $\square \mathrm{K}$ |
| UniRef90_Q7Z2K4 | I K WH G P K C N K LF WK R L Q Y E M P |
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| UniRef90_UPI0002038025 | L M WR A S SP S S D FWK EL C L S LP |
| UniRef90_D2HJD6 | L R WP E DLQ D GWFLLH TL S Q H |
| UniRef90_U3KND9 | I Q WS GQAA T A K F WK KV R Y H M P |
| UniRef90_UPI00038ED63A | $V$ Q WRGDCAQSKF WKEVRYRM |
| UniRef90-M4VRN1 | L R Y Q T GVGE DLFWA A A I E T L R |
| UniRef90-H3BAI6 | L D WP NPDAERFFWQS L R NVI |
| UniRef90_UPI000155D46F | LKWP ENLQ D G WF LD KL |
| UniRef90-P14778 | $\square \mathrm{R}$ WS G D SAK T R F WK NVRYHMPV |
| UniRef90_A6M945 | FEWDD $\quad$ NERFWK NL 1 L L $\square$ D |
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| UniRef90_UPI000440AA9C | IR WK GEK SVP LFFWKEL Q L Q L P |
| UniRef90_A0ELU3 | AP F Y NVG $\square$ R D WQ WP RVAA A TI K |
| UniRef90_L9JHP9 | CMWPK QDERKDFWAWLGSRLLGRP |
| UniRef90_UPI0003EC5A01 |  |
| UniRef90-K1QZS6 | A T WK GK\VS K L F WD I V VA A IE K |
| UniRef90_UPI0003EBDF07 | LS WP Q AVQ H GVFFWQK』QQ ALLK |
| UniRef90_H3BEL2 | I D M T DKERR |
| UniRef90-Q6TQH8 | LVWPDD GQ DEWF Y D Q L |
| UniRef90_Q62929 | I QWD GDCAK T K F WK K V R Y H M P |
| UniRef90_G3T9V7 | I R WS G D S A T R F WK NVR Y H M P A |
| UniRef90_UPI0002C656F2 | I R W S G S A K T R F WK NVR Y Q M P V |
| UniRef90-Q9U6H9 | L K |
| UniRef90-UPI0004431ED7 | V D G N G P D |
| UniRef90_UPI000383247D |  |
| UniRef90-H2LMY4 | L T WR H N S P S S VF WKE L A L A M P |
| UniRef90_P13504 | I CWS GDSAK T RFWK NL R Y Q M P A |
| UniRef90-W5LEY2 | L 1 WG A HS P S S GF WK ELLALLA M P |
| UniRef90-W4YRV0 | I LWEDED GQELFWAQFERSMRA |
| UniRef90-M7BFY3 | I R WK GP S A N K F WK NVRYRMP |
| UniRef90_H2LVY8 | L EWPVQRERPAFHQKLLIDALGM |
| UniRef90_N0A0T6 | $L$ CWRD K R F WQKL RYSLLP |

L V WP DERGQEYFWEELIRDLLTV UniRef90_G5C8W2
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UniRef90-Q8QFN4
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UniRef90_W5N8T7
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UniRef90_W4Z460
I RWS GDSSKTRFWKNI RYHMPA
LLWGSKSPSSQFWK S L VLEMP
L RWRRPSSNGHFWKCLRYHMP
I QAPKAQDNDRFWNKLDKTL
 L E WP K P A A E P WF WT T L L R R N V V K K V CLLWKNHRQKPRFWKEV RYHMPV YMWKGDERKDNFWAWLGGRLLRQP LL LWD DEDGQEFFWAKFEKSMRA L K WK K D Y S K R NF WT NLLRYHMP


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UniRef90 Q9BJD5 UniRef90-UPI000333E1EA UniRef90-UPIO0026530EC UniRef90-G6D720 UniRef90-A0A016U7V4 UniRef90-UP10003EA8FD7 UniRef90_K7G218 UniRef90-F8STK6 UniRef90_UPI000443EC93 UniRef90 A8L106 UniRef90-UPIO003725D98 UniRef90-G3P744 UniRef90-UPI0003FOBBEO UniRef90_E31U93 UniRef90-A7SFX3 UniRef90-UPI00037FAB44 UniRef90-UPI0003EE0965 UniRef90-F2Y134
UniRef90-H2UQS5 UniRef90-UPI00026548A3 UniRef90-UP1000393FA92 UniRet90_M4AWR4
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LIGAHETHHVFVSYSNDSAWSRNFIQSLETMGKNMKACY LIGAHETHHAFYSYSNDSAWSRNFHQSSLEMMPNLKACY DTDEQPYDVFLCFSKDYRWVEAVLKKLDSQDNTFRCCL

DYEFDLNVIYDDDENWI REHLPALAERLPQFQRNV
FLFDVFVSHCRDQGWVEELLPALEGFGLGLRLCL पNDGK■YDAYVSYADDRKFVNFIMKPQLENRHGYKLFM DFDYDAFVICNKDLEFANKLVDTMQASPYNLKLCA
YAYDAYII HSEDRPWVERSLDPLEDEKV
YDYDAFVIYNQDQEFVSLMTQVLTSPPYNLRLYF DGDKSFDAFLAYSHDDYVTREFDPRLEN ELKYRLCV DSDGKDYDAYVLYSSQVDFVLKVLPDVLEKQCGYSLFL
GEGREFQYDAYTIHAEDSRWVERVMVPLENEKCRF
DGKDYDAYVLYPKQDCFALKVLPDVLEKQCGYNLF Li
DGKLYDAYVAYSKDETFALLQTLPHVLEKACDYKLF
MNDGKLYDAYI SYSEDRKFVNFILKPQLERHRGYKLFL

DEGREYEYDAYVIRAEDSSWVERRLVPLENEKCQF $\qquad$ | $C$ |
| :---: | :--- |
| R |

 DFEFDLNNMFMEDDEWVQEHLRPVVKRLPNFNRNA
 GRDVKYNYDAFVVFDTSRDWVNELLVHLENSHRRFCLCLL GNTDDDPDWDFFVSYTADREWAEWISWQLEADGYRVLVQA EEFHYDAYV $\square$ HARDKNWVSKNF $\square$ SLENPRFQIRFCL


HKFDAFVIYAEDRDFVLHTMDTELETNRGHKLCVV EYDFFVSYASDRTWAEWVA WQLE DAGYRVLL
 GKVYDAYVLYTKSETFVRRTLVPVEEKDQTGYFC
 YTHDAFIVYSKDAMWVDN GEGRQFEYDAYVIHAEDGAWVERRLLPLENEKCKF
 DGK $\frac{L}{R}$ RWDFFLSYASDRAWAEWVAWQLESANYRV

FLSYSKDAEWVDELAKDLEDPRCGLRLCL DDYEFHVNIMFAEDEEWVRDRFRPLKELLPEYERNL YDAFVSCSSDRWRGDE LVRLME GKGYHVCY
 Q G LDRDRMY DVVY PDGKEYDAY SYSKDEKMVEGLCRPLEDEDYA R C CL EEYDAFVAFDAQADWVNEMVPQLEEKGRRFKLCL GNNMNNQHDAFVVFDTKRDWI NEML DNLESRGRKFRLCL
 DFFI SYSPDERWASWI AWQLETAGHR
GRDSQYRHDAFVVFDTQRDWVNELMVILENTGHRFSLCL
DYQFDAFI SHSKDEDWVYDTIQKLENPPYNYKLCL EFHYDFF $M S E T K D F F$
$Y K Y E A Y L S Y N R D K Q W A E W I ~ A W T L D E A G Y S V L I Q A$
$Y$ PEGKLYDAYVSYSQSALFALQULPEKLERQHGYTLYGi
$\square N D G K \square Y D A Y V S H A D D R K F D H F D V K P Q L E N H G Y K L F L$
REFEYDAYVDHAEDTRWVERRLVPLENETCRF CL



WSRDYDVCVCHSEDLAAVQELVAYLEDSPASVRCFL FHFDVYI SYCQDQVWVLELVPSLEKPGEGLRLCL

M D Q E K
KK
MDQEK
YDVFVSYCEDQAWVEEVPALEKMGEGLKGV
YAYNAYI DHSQDRPWVERSLDPLEDEKFHF F L
YHYDVFI SCCRDQTWVLELIPALEKPGEGLKLCL MHYEYDAFLSYSQEDMFVLHEVIPRLEVNKNLRLLI


## UniRef90 F6U8S1 UniRef90-UPI000350F374 UniRef90-HOXRB8 UniRef90-H2SG00 <br> UniRef90-A7SFW6 <br> UniRef90_UPIO003C422AF UniRef90 W4YQM0 UniRef90_UPIO0042ADF01 UniRef90-R7VA14 UniRef90-M7C2L5 UniRef90-K1PTW1

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UniRef90-K1RGI2 UniRef90-V8NK73
UniRef90-M3YII7
UniRef90_Q2NKL3
UniRef90-IOJOU2
UniRef90-UPIO002039F9C
UniRef90-I3KJZO
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UniRef90-H3ATI5
UniRef90-H3ATI5
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UniRef90 H2UQ86 UniRef90-A8LA46 UniRef90-V4CAZ7 UniRef90-W4Y4P0 UniRef90-T1G5J9 UniRef90_G3TZJ1
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UniRef90 $V 4 A D C 0$ UniRef90-B4S7V1 UniRef90_UPIO0038F13FC UniRef90-W0C076



 FGDEELVLGMHYLESVDYVVSHSYKTIVVLSRAAVHDHWF YGRNWLA DRNUDDECIVESLTQSRKTLMLVTNABAESPQWG DDKTILPNSEPSADLIMNVSRCRRLIVVLSYAYDEQDWC PWRNAGACSP NTRECTRDRCRKFLVVLSNNFYKSEEA
 YYRDFPDGGTlADTVASSINRSKRTILLVSKHFNDHEWR PGRDDLPGKAL LNVVDEAVMQSRRLI MILVPGLFSLEEA

DRDAVPGV
M1 PGRDDLPGKALVSVVDEA RRQSRRLIIILDPELPSDDEA AGRDCLPGQAMVDSVEENVQASRRVLLLYTASSFTTKRHT DDRDLLPRAE PSADLLVNNLSRCRRLVLVLSDAFLGRAWC
 ( EDRDSVAGMSQVESIVTNM KKSRKIMFVVTESLLKDPWC LGRDDLPGEAVI NVVDETDHRSRRIIIVLIPESSCYNED IGDDDLIPGMHYFDAVFYVIEKSFKTVLLLSRAAFQDNWF

E
HD DNEWSFYLNAIYDVIENS
E ERDWVPGLSCIVNLHNAVSSNSMKTVFVLSNDTVLE GVY WDFVPGSNWQI RMQQ GVQHARHTLAVLSGAYLTSIYG E ERDFEAGVSEFEATVNSI KMSRKII FVVTEHLLQDPWC


 EERDFEAGACKLEAIVNGIRRSKKIVFVVTRKLLEDPWC LGRDDLPGEAVVSVADETLKQSRRLMI ILGSETPSCCLED

 E $\square R D S N P G M S Q L E S I V N N I$ RNSRKILEFVVTETLLRDPWC

 HHRDFQVGDCDSDNII CGVDK YDDNDLPLGMHYYDAVHYVVEMSYKTVLVVSQNFLKSEWC HEKDF GGQSIAVNIVEAVGTFSKRVVCLLTSNFLKSTYC PERDFEPGKDVADNVADSMVGSRITIICVLSQALCTPRC
 FGDDDLVLGMHYLDSVDYVVSHSFKTVIVLSRAAVQDRWF HYRDLQHPENYLTEQITNAAESSKRILI FVSFNFLHNEWS $\begin{array}{ll}L & H R D G P A Y H S R L H A\end{array}$
 DEWEILAGDVLAH RLDAGVLGSTSGILVVSPHALSRPWV

 HCRDFEDGKA LDDNMAEFIGYKSRKDIAVMSTNYMSS RFC
 EERDFEAGDSEFEAI DNCI RR SRKI I FIVTEHELQDPWC RGRDDSPGEAVHDAIATVIRQCQ

UniRef90 F6U8S1 UniReffo-UPIOOOO350F374
UniRef90 HoxR UniRef90-H0XRB8 UniRet90_H2SGOO UniRef90_Q26476 UniRef90-A7SFW6 UniRef90_UPIo003C422AF UniRef90-W4YQM0 UniRef90-UPIO0042ADF01 UniRef90-R7VA14 UniRef90-M7C2L5 UniRef90-K1PTW1 UniRef90_U3LT59 UniRef90 K1 $\mathrm{KKT6}$ UniRef90-K1RG12 UniRef90-V8NK73
UniRef90 M3YIII UniRef90 M3YII7
UniRef90 Q2NKL3 UniRef90-IOJOU2 UniRef90 UPIOOO2039F9C UniRef90-I3KJZO
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UniRef90_W4Y4PO UniRef90-T1G5J9 UniRef90-G3TZJ1
UniRef90 Q9BJD5 UniRef90-UPI000333E1EA UniRef90-UPIO0026530EC UniRef90-G6D720 UniRef90-A0A016U7V4 UniRef90-UP10003EA8FD7 UniRef90 K7G218 UniRef90-F8STK6 UniRef90-UP1000443EC93 UniRef90-A8L106 UniRef90_UPIO003725D98 UniRef90-G3P744 UniRef90-UPIO003FOBBE0 UniRef90_E3IU93
UniRef90-A7SFX3
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| :--- | UniRef90_IзMYM5

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 KTSFKDAMKHVITTRRHRVFFILTTDLDVDFQSYLKNCNV TLQVKTSHQLFAKNRGKRVDAVLGELLDEEGGQVLRKNTC QHETGLLNALVDKKIQ। I I I QCEPFPEPLRLLVKSNGA
 HYELYFAHVNHTHGSSDYINLILLETI REEYAAMLTRA VAGQQRLIPVLED AE DPAFLASRVW
 YFEDEMVL
ESEWQAAHDADPRGFERRLVPVRVEDCPR
 QPEWAAAFAQDPQSMERKLIPVRVKECKPE GMLRSVVY
 NSSFREGLWRLLELSRKPI FIVFYRE円THPLKQHRSAVTL QFKAHHALQQVIEASRDSVVLIFLQDLSRSLRGMLRPSCV
RTTFHLAQQQLLEDKKDVVVLI LLEKMEKQLWKCLCKKTV
 RDEDNHAV RDFK KNKRLIPIVYQPVEQQVHEALGKLNW RYQMLQALSQAPGAEGRTIPLLVAGLARAAYPAELRFMYF NLELRFATYHLLASRTARLLLLFLDEPDDSYHRLARWLQK LLEFKAGHENMASKGTDKVILVQYKPIKKSKVKELRQLTV
,

|  | 40 |
| :---: | :---: |
| UniRef90_F6L | MEWP NPNTKSFFWQRMKNV |
| UniRef90_UPI000350F374 | LD TNDVV HFLDKVIKVICT P |
| UniRef90-H0XRB8 | L NWPHEER\NAFHHKLQVALG |
| UniRef90_H2SG00 | LT WP D P Q L L WF Y ERLVSLL |
| UniRef90_Q26476 |  |
| UniRef90-A7SFW6 | LD Y L N C Y VK P H F WE |
| UniRef90_UPI0003C422AF | I K WK GEK S K G R W WK QLQ VEMPV |
| UniRef90_W4YQM0 | $\square H W T D V R G H E Y F F D K L T K N L T I$ |
| UniRef90_UPI00042ADF01 | CLWWPQEEERKDFWA WL R S RLL G |
| UniRef90_R7VA14 | LRWTDEVGK G L W Wer L K Q M L R A |
| UniRef90-M7C2L5 | L LWRASSSPSSDFWKELCLAL P |
| UniRef90-K1PTW1 | L DVSNS R T R K WM WE QL Y L S L K |
| UniRef90_U3LT59 | LHWPLQRERPAFHQKLR S A I |
| UniRef90_K1QKT6 | CDYYKKELDVFVWDRLNSA |
| UniRef90-K1RGI2 | IS Y R D M C F WEQL Q Y K M G |
| UniRef90-V8NK73 | I R WK G D S A S S F WK KV R Y R M P |
| UniRef90_M3YII7 | L NWP Q K E R $\square$ S AFHHKL QVA L G |
| UniRef90_Q2NKL3 | L Q WP K EKS KRLIF WANI R A A |
| UniRef90_IOJ0U2 | L EWPEDK D V L F HQKLLIALLGM |
| UniRef90_UPI0002039F9C | $\square \mathrm{R}$ WK G D S A N N R F WK R V R Y R M P |
| UniRef90_I3KJZ0 | CWWKNQRTRSRFWKELRYHMPV |
| UniRef90_G5AXW8 | VDGS GP D R |
| UniRef90_UPI00042CCB2D | L L W K |
| UniRef90-UPI0003F12606 | VV H WS G D CAK T K F WK K VR YRMP |
| UniRef90-G3W1A7 | LHWPA QKERHAFYQKLEVALGM |
| UniRef90-A5JT13 | CDY T N P |
| UniRef90_UPI000393D970 | LS WP RAAENELIF WEKLRQA |
| UniRef90-I3JV98 | L D WPV VKERAAFHQKLLIALLGL |
| UniRef90_UPI0003C28B04 | I R WK G D S A T K F WK NVRYQMP |
| UniRef90-W4ZKB8 | LWWEDER GQEYFWNELI LT L Q |
| UniRef90-W4XNV6 | MWWT DEDEQELLFWAQFQRSMRA |
| UniRef90-H2LZG6 | LK WRKALLSNRHFWKNLKY Q M P |
| UniRef90_UPI00046B25FA | $L$ L WP QP S GQRSFWA QL GMALL |
| UniRef90-W4XC81 | L S WT DEEGQEVVFWAKVQKSMR |
| UniRef90-H3DC15 | L S WP NPKA Q P L F WNQVRMAL |
| UniRef90- Q2JBL6 | 1 D |
| UniRef90_UPI00038723FC | L NWPA Q K ERSAFHQQLVIA LK |
| UniRef90 D2B8D9 | V D |
| UniRef90-F7E2D3 | LHWPAYRERCAFHQKLK A A L G A P |
| UniRef90_UPI00035952FC | TEYPDDN $\square$ NKNFWDALS Q M $~ G ~ H ~$ |
| UniRef90_Q0RIT4 |  |
| UniRef90-M3ZZK7 | LS WR N P R A Q P L F WNQMRMA |
| UniRef90-H3ATI5 | L S WPA QRERVNFHQKFKVALG |
| UniRef90-H1A4Q4 | 1 R WK GDSANSRFWKNVRYQMP |
| UniRef90_UPI0002653F73 | LT WTEDEEQEYFWTKFVKLLKV |
| UniRef90_UPI00038EC50D |  |
| UniRef90_C3ZKZ6 | LT WP DVRKRPLFWKRLR D A L G D P |
| UniRef90-Q4SRZ0 | LYWPHKERVA AFHQKLLIALLGM |
| UniRef90_K1Q309 | ADFPRDAKEENFWNVLIDDAVHEP |
| UniRef90-H2UQ86 | CLWKNHRQTKRFWKEVRYHMPV |
| UniRef90-A8LA46 | I DLLF D A S P E S |
| UniRef90 ${ }^{-}$V4CAZ7 | 1 K |
| UniRef90-W4Y4P0 |  |
| UniRef90-T1G5J9 | IELLS S K WH QLFY S L P L |
| UniRef90_G3TZJ1 | HMWREDERKDDFWAWL GRRLGQP |
| UniRef90_Q9BJD5 | QHWTE DVGGHFFWNALVKNLT |
| UniRef90_UPI000333E1EA | R L WRDKE GKD DFRA WL G $\ddagger$ R L G |
| UniRef90_UPI00026530EC | IHWT DVRGQEYFWDKLTTTLTI |
| UniRef90_G6D720 | $L \square W \mathrm{GEKKFWEKL}$ R F L M P |
| UniRef90_A0A016U7V4 | I R Q R D H L F WQLL R S ALP |
| UniRef90-UPI0003EA8FD7 | V R WK D R K S E L F WK KL R Y L M P A |
| UniRef90-K7G218 | L D WP NPFAQPYFWHCVRARLL |
| UniRef90_F8STK6 | L S WP NPRAQP LF WN NL H $\square$ ALL |
| UniRef90_UPI000443EC93 |  |
| UniRef90_A8L106 | V D F R D |
| UniRef90_UPI0003725D98 | V D |
| UniRef90_G3P744 | L S WR N P R A Q P LF WN Q M R M A L |
| UniRef90 UPI0003F0BBE0 |  |
| UniRef90-E3IU93 | $\square \mathrm{D}$ L D D T A S R H L L D R VR H A |
| UniRef90-A7SFX3 | L D Y |
| UniRef90- UPI00037FAB44 |  |
| UniRef90_UPI0003EE0965 |  |
| UniRef90-F2YI34 | L NWPVQKER】NFHQQLMMALK |
| UniRef90 H2UQS5 | LT WRKASANRNFWKDL R CHMP |
| UniRef90_UPI00026548A3 |  |
| UniRef90_UPI000393FA92 | L V WR |
| UniRef90-M4AWR4 | L NWPPQKERPAFNQKLLIALGM |
| UniRef90_UPI00042C1F32 | LFWPKPCWQQCFGDKFRTALGG |
| UniRef90-T1GD01 | $V \quad R \square L T C D P Y$ F WQK LR Y A L P |
| UniRef90-UPI000382195F | LF F C D A R F VEMF GELVRS I |
| UniRef90-B2CRY0 | L E WP |
| UniRef90-G1PWM3 | V D G R G P D Q |
| UniRef90_UPI0004445400 | ED Y F D L S Q G K $\square$ Q WD Q L R K R $\square \mathrm{K}$ |
| UniRef90-V8N6H2 | $\square \mathrm{KWKGEKS} \mathrm{H}$ |
| UniRef90-V4ADC0 | L IWENHAS D N L F WR Q LGERM |
| UniRef90-B4S7V1 | I D L VRKERKD |
| UniRef90_UPI00038F13FC | ED YFDLH Q GREDWDQLRRRLR |
| UniRef90-W0C076 | LYWP L HRERPAFHQKLRSAL |
| UniRef90_UPI00045E4CFE | LQKEDQRSTEWFWEQLRRRLLR |
| UniRef90-K1QVT6 | I EYPKESAYDHFWNRLVRMM |
| UniRef90-UPI0002A4B0DE UniRef90_I3MYM5 | ID DSRNDRGH <br> $E D Y F D \backslash P Q G R V E W D Q \backslash R K R \backslash R$ |


| UniRef90 A8Y1F5 |  |
| :---: | :---: |
| UniRef90－E3J542 | QAKAWDAFVSYTRDRTWAEWVAWHLEEAGYSVQLCL |
| UniRefolo W4xJK2 | YDFDVYISTDDDENW |
| iReef90－13KJY6 | DAYVVYTEDRQFIDQTLPSVDEDKCGYRLFIT |
| （e） | PDGKDYDAYVSYSEAAAFALQALPEKLETRHGYSLY |
| Ref9－W4YC75 | VFVSYSHDSEAATHUVGVLKELDPSLRIFY |
| UniRef90－W4ZLA6 | QLNLMHDSDEWWVNDCMKPLEQRMPHLERVI |
| UniRef90－T1EJH4 | AFVSCAADRERADEMINMLES RGYKICY |
| UniRet90－W4XP15 | $\square N L M Y D E D D E W V D Q M K P L Q E R F P H L Q K V A ~$ |
| UniRef90－T1GVK5 UniRef90－B9V2R2 | MLY DAYVIYGNDDGFVNQLLANTLENDIGY |
| UniRef90－UP | R |
| UniR |  |
| UniRef90－UPIO00359F50A | DQS |
| iRet90－s9W8N2 |  |
| UniRef90－UP10003678 |  |
| UniRef90－M4QHL4 | DAFICYCKDLQFVQEMIRELEQTEFKLKDCV |
|  | KTDFFIS S STDERWATWVAEKLEN |
| UniRef90－UPIOOO46B1399 | LYDVFVSYCQDQA WVLELVVPTLEKPPP |
| UniRefoto－B7K910 | DIT MSYSRDKDFVRQLWTKLVEHNQNI C W |
| UniRef90＿U5PYN6 | FDAYISNAEDDK WVEQLLPELTEVHGDFKLYF |
| UniRef90－G1L966 | VVSYSSDAT WTHGLISRLEADLPGLRVCL |
| － |  |
| iRef90－C3Y152 |  |
| UniRef90－D3CSZ3 UniRef90－H9XP43 | F $\square$ S Y TADQQAAEWVAWHLEEAGYRV |
| UniRef90－W4Y6V1 |  |
| iRef90－AOAOH11P7N |  |
| K1REQ3 1GDT4 |  |
|  |  |
| UniRef90－B3QNJ9 | Ledagrd VVF |
| UniRef90－A8LG62 | WDFVSTDKAWG |
|  |  |
| UniRet90－Q0RPX4 | WDFFISYTADSPWAEWLAWQLESADY R |
|  | DFFVSFNKDRAWATWI A WVLEEKGY |
| PIO003A37AE5 | VFVVSYSRDMDFANQVVSM |
| UniRef90－E3J785 | WDFISYTADLI WAE WVA WHLEDAGYRVLVQA |
| UniRef90－UP10003169C76 | KEYDCFISYTGDQPFVNRLTQDLEDRGLY W W |
| UniRef90－B8HMW8 | YNRDKQWAEWI A WT L |
| UniRef90－AOAO11122 | 促 |
| UniRef90－W5LUX5 | HDAF |
| UniRef90 R71 | HHVFMSHSSDQERALE，LEKLESKKGFKCCY |
| UniRef90－V3ZXT7 | YKYDVYTSSNESTDTRLWIRDNLLKDKYGLKVYY |
| UniRet90＿ITY189 |  |
| UniRef90＿G3GZG | VNELRVRLEERGRG |
| UniRef90－A4UXDC | N |
| UniRef90－UPIO003FODCAE | DVFISHEKTVKFCKKL |
| UniRet90－M1 | ANYLYDAYVSYEERSVW |
| 46D55 | 俍 |
| UniRef90 D3CZZ0 | DFFVSYTDRR |
| UniRef90－UPIO002BCE88 | DVFVSHXRD |
|  | DAFVVFDKA |
| － | EYDAFISCASDRCRAIELVSTLEN RGYKVCY |
|  | AF |
| ef90 SOF1D1 |  |
| 3DE8AB8 | L LYAEDDKFANEMVDKLEK EYNLKLCL |
|  |  |
| － | EGFSHDFFVIYSKDREWVVH |
|  |  |

UniRef90－G3W1C0
UniRef90 W4XN12
UniRef90 D3D018
UniRef90－Q0RGM6
UniRef90 W4ZG58
UniRef90 R7VJM5
UniRef90－UPIOOO344419F
UniRef90－B4GR24
UniRet90＿U7QQJ6
UniRef90 M3Z149
UniRef90－UPIoo032902D1 UniRef90＿12EUQ9
UniRef90＿W5PC62 UniRet90＿U9VKL9
UniRef90－K1PIR8
UniRef90 W4XJN1
UniRet90－UPIO0047C864F
UniRef90－UPIO00359EAED UniRef90－F8B6H9 UniRef90－W4YAA5
UniRef90＿19КСК3

DDEGWVNEVMKPLQERFPHLQKVV
WDYFVSYTQDRRWAEWI AWQLEETG GFRVLL RWDFFVSYAADRGWAEWI AWHLEVAGYTVLV

EEQEWVDRVMRPLEERMPHLQNII AFMSFAWDDREAVRAIMECLEEEHGFSCCA MNDGKLYDAYVSYSEDRKFVNFLKPQLERRRGYKLF YD⿴囗十心 $D E K E F D V F V S Y Q S R E E P I E M W L P Q V L E D Q W G Y R V C L$
$Q F H A F I S Y S E D S A W V E L D C E R E D ~$
 DDFPFDAFVTYTEEDYPACCDPFYQALTSGGFKDS DQMTQMFISYSEEDMETQEKIRKRLMREGFTAWI EFDVYUSFSEEDKEVAKVIRESGAKDGVRIYD

DPGYYDTFLSYSHDSDKANRFVETFKSACAEGKMFF
UniRef90_A8Y1F5
UniRef90_E3J542
UniRef90_W4XJK2
UniRef90_I3KJY6
UniRef90_UPI0002E4CFF0
UniRef90_H3DE18
UniRef90_W4YC75
UniRef90_W4ZLA6
UniRef90-T1EJH4
UniRef90_W4XP15
UniRef90-T1GVK5
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UniRef90_UPI000360452A
UniRef90_UPI0002654989
UniRef90_UPI00042AE96C
UniRef90_UPI000359F50A
UniRef90_S9W8N2
UniRef90_UPI000367BDC6
UniRef90-M4QHL4

LH R D GPTYNHA\|SDELDAQMDSSQCLLIEVLITKHF|L|ENEWK
 HGRDDI PGEDRDELLVEECMNQSRRLMVILDWPASPQTSVMG




 HYRDTNANAY IT DAVIEAVDD S SK TVV E ER D WVP G L S C $\square D N L / H N S V N K \quad S K K T V V F V S S T E T \square N G D I$ HWRRGEN WVQRME EALDESDWMVALYSRVYFENKYS YGDRDLHLGMFY INA DNDALLDNSFKTVLLLDSNQSDS DA WC
HGRDFVAGEYDTANDVKAVSQ CRRTVVLLTKNMVDSYWC




 HERDFTPGRNVLENMAECIQH

ARQKVDTEAFWQDQMYDVVSK

 | $S$ | $Q$ | $K$ | $L$ | $L$ | $V$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $S$ | $L$ |  |  |  |  |

 $\begin{array}{llllll}S A R V V & T & V & L \\ S & R & R T V & L & L\end{array}$

VGDEDLVLGMHY LDSVDYVVSHSYK

 HHS DF I GGKTIT DNIN DAVNE SRKVIVGFTRNFVNS E Y C
 R A WD S VP G S H WV A A I D D G L Q R S D R T i A V L S D N Y L R S E L H

 QDWDFKGNFVLEMDKAH TQSRRTI A VLSPDYLVSRFT
 WDFVPGSNWSVRMQE GVTKAERTVVMDSAAY SDSVVY


 QAWDFAAGNNFVVLEMQRGASE
 D EA E $\square K V G E S L 1$ E K I R H GLLD T V EDRDW
 EHRDFTGGTELVDNYI EFDER SRRVLEFVLSNNYVKN QWM


 Q A WD FTPGMRWAS F L EKAVRSSERVI CL L S DA Y L A WA Y A E E R D WLP G K T L F E K X P G GP P P G H K T L F V L A H T D R V V G L L PERDF
 E ERDWMPGMPIMDNLSNSVRRQ


 WGDNN LI ISMFY S ALLHYATDNSFKTVLLI SYNS DDDAWF QA WDMVPGTN IVVGMQD GLT RAERTI AVLSDAYTYSDFS
 HDRDFHI AKPF LNQMGKS IDDDSRRVL CFLSSPDFVKS DFC LDD D R D L L R P R P R R E G L C RLL LE LT R R PI F I TF E
 HWEAAF TLGGVPRLKEFENAMVNSYRTLLI I SAAYLVDN S S

 D D R D L L P WA P P P L G HR S R L P R P R P S G L A R P R P R P R A P P X I P D K D F L LP GIISSEA E Q L L L K C M D Q S S R K V V I I V

 P A R D F GI G N D R M E S M I A S M H K S R S T L C V L T G Q A L A S P WC


## UniRef90 A8Y1F5 UniRef90-E3J542 UniRef90-13KJY6

 DFQ
QSEWQAAFAEDPTSEKSKLDVRWSD HKPKGLLKQUVY NLELRLAYHLVAKPGDTCLLLLFLEPDPRQLRGYNRLTRW MLEFKQTHEEDLKRGKKRLVAIMLEPVTEVVQKYDSTFTY GEELAYALKQKYKGKRLIPLVREEVPEKVHPELARLNW LLEADLSLF GYCLERKPVI PVLLRP SREDQMASFRDFDEQEDVLILLFLEEGSARMRKLLKRRTYY ALAFKASHQQMLKDKQRRIVVITLD
GAEWQSALLAADPDGFARSLLPIRFEDCDR PGLLR NYELYFAQQRAMKTHTSDVILVVKEPCDPKLKKMLRNKTY NLELRTAMDHVSDTLTEFVVVVFLEDUPDDEMPFLARLYY WYEQQEAFRKCTQDKRHCLIPVMLETVDEMPKLLRNLTY MMELHSTGDRLQRTRTRCMIPIALED
LDCFRMAMDEVADTQTEKVVVVFLQNDEEDMPFYVRWYPY VPEWETAMHSDPTGERGLLIPVIVR PHEDDGVMKRLAY GAAWGTAFGRDPGGRHRGLIPVRIEDCEP KALLGGVVY GEEWRAARAADPEGLARKLLPVRVENCDR PGVLRTVVS
 QAEWLAVQAADPLGFTRRLLPI RVEECPRPV

 EFEVAEASRKMYSEKKVTLIPLLMDVDVVDVPTSIKAVNC QRELDVAMNQEGSGRQVRVLPI LYHTCAEERGFLLGKFY KYELEFSHFRLFDENNDTAILLLLEPDEKE KFASCVALDEMLREKARVVM, EYQP:KDQ
 KQQWEDAYVADPDGFERKLLPIRVADCSR PGMLNKIQA RAGFLLAQQRLLEDRMDVVVLVILRPDARRLRQRLCRHSV LTEEGUSLQRNLEVKHKRLIVVDQKLLPNDMFNFLTTHHC
 AAEWSEAFSRDPTGKNRTLIPVRUDNVKP
SEEYDDALARYYLKDDVVVVPLYCGVKDDKDPAKFSA DPM QHESQAALTSALNKKSRSVIPIIKDVMGEEVRAYVKTHVS VFTFRSASEKSMREKCNHLLVVLVETMGEEVRAYVKTHVS
 AAEWQATFSADPSGFKRKLLVVRVEDC
QAEWEGAYQADPTGFARRLVPVRVEDCPR
MTKFRMALEHDNDSGLDKVILIGVEDIEDEKMPY隹NKPY VWEFDYAHKEDSDRGRRRLAVILLKPVSEVVKTYUSKFTY GQRRDPAHPALRL
QFEMYLAQHR
EFVDLLGQSYGLETASWPVTPLILYPVKGPGRLKTLTP VFVLESGVKALLQNSAFKMLLIWTRPLPKLVQRALKVLPS
 ПNELDVAMNFQПYE KVKVLP DMLKDC E DPGFLIGKLY TFEGGQRRDPAHPALRL GKRTLLVESTDRDTWQHRHLVTL
 QQELAYA MARYHKRI VLLVQSMDARLPRDLKYDWW DEQYNUADCCNRRALRDMLAPVYVDSVDEMMPTYMGLVQY RLEWMAALQAADRPETKLLLPVRVENVFPQ GLLAPITF NLELRLAYHLVARPGAAGLLLLFLEPLDRQYHRLSRWLQK


| UniRef90_A8Y1F5 | $\begin{array}{ll} 1!E M R S & 130 \\ H L L J F W T L L H S S S L 4 P \end{array}$ |
| :---: | :---: |
| UniRef90-E3J542 | 1 D |
| UniRef90-W4XJK2 | $V$ EWDDDE G Q K Y F WK R L E K C L S V |
| UniRef90_I3KJY6 | LKWPEGS G N S RFWKRVRYLMP A |
| UniRef90_UPI0002E4CFF0 | ADFTEESRYEDAFEKLVRSЏ |
| UniRef90-H3DE18 | L I WR K S S R N N F WR DL R C Y M P |
| UniRef90-W4YC75 |  |
| UniRef90-W4ZLA6 | L L WT EDEE |
| UniRef90-T1EJH4 | 1 K |
| UniRef90-W4XP15 | ML WT DED GQELLFWAQFEKSMRA |
| UniRef90_T1GVK5 |  |
| UniRef90-B9V2R2 | LTWRNPRAQPPFWNKMRTVL |
| UniRef90_UPI000360452A | A D |
| UniRef90-UPI0002654989 | MLWT DE DGQELF WA QFERS MRA |
| UniRef90_UPI00042AE96C | IK WRE D S L S S K W K HVR Y Q M P VP |
| UniRef90_UPI000359F50A |  |
| UniRef90-S9W8N2 | LEWP N P Q A P Y F WQCLK N A L |
| UniRef90_UPI000367BDC6 | VDLH Q S EQS WQRLIN A I |
| UniRef90-M4QHL4 |  |
| UniRef90-W4B962 | 1 D |
| UniRef90_UPI00046B1399 | L QKED |
| UniRef90_R7TCW4 | L D $\square \mathrm{K}$ D P D |
| UniRef90_B7K910 |  |
| UniRef90_U5PYN6 |  |
| UniRef90-G1L966 |  |
| UniRef90_UPI000443B210 | LR WS VQ H P G VF WQ NVQR A L Q A |
| UniRef90-UPI0002653673 | A D C E |
| UniRef90_C3YI52 |  |
| UniRef90 D3CSZ3 |  |
| UniRef90-H9XP43 | LE WP EPK H Q A F W WA Q $\square$ R S V M G K P |
| UniRef90_W4Y6V1 | 1 HWT E |
| UniRef90_A0A011P7N5 | V D |
| UniRef90_K1REQ3 | V D F L K A D |
| UniRef90-11GDT4 |  |
| UniRef90_W4YQH6 | VEWDD D E G K Y F WK RLLE K CL S V |
| UniRef90 B3QNJ9 |  |
| UniRef90_A8LG62 | V D F G R P R D V A R F |
| UniRef90_D3D0X5 | 1 D |
| UniRef90_Q0RPX3 | $V$ D |
| UniRef90_Q0RPX4 | I DLFED D D A R D L L T QVR G A L |
| UniRef90-B8IXX4 | V DLVGSSEEE |
| UniRef90_UPI0003A37AE5 |  |
| UniRef90_D3JVR6 | $L$ S WP N P R V P P L F WN N L R V A L |
| UniRef90 E3J785 |  |
| UniRef90_UPI0003169C76 | A D F R E N Y H |
| UniRef90-B8HMW8 | A D |
| UniRef90-A0A011Q2V4 | V D |
| UniRef90-W5LUX5 | L S WP N P Q A Q P L F WN DLLCVA |
| UniRef90_J7Z129 | TD |
| UniRef90_R7TF48 | IEMRKA GWF DR L I G L K |
| UniRef90_V3ZXT7 | I K H E Q L I K R D D W S KL R Y El |
| UniRef90-I1YI89 | ADFTEEKNYPA A L K R L VES I GV |
| UniRef90_G3GZG1 | LFWPQPS GQGSFWA QLSTAL |
| UniRef90_A4UXD0 |  |
| UniRef90-C3Y119 |  |
| UniRef90_UPI0003F0DCAE | LK WEP N A G Q $\quad$ K F WK NLLF Q L P |
| UniRef90_M1RJ59 |  |
| UniRef90_UPI00046D55DB | AD F R N D |
| UniRef90_W4YRE7 | LYWT DVR G Q E Y F F D Q L T K Y LT I |
| UniRef90_D3CZZ0 | FDLDEREARD L L L E V R N AL |
| UniRef90_UPI0002BCE883 | C L WP KEDEK DEFWAWL GSRLLGQP |
| UniRef90_UPI0003C8CDC1 | LLWPQPGGQGRFWAQLGTAL |
| UniRef90_T1FRM5 | 1 DLLK N N WT N Q L F Y S L P 1 |
| UniRef90_A0A024MJU9 | I R M N D P L F WNLL H S AL P I |
| UniRef90_S0F1D1 | L EWP GPAAQRWFWHHLKRAI R |
| UniRef90_UPI00037AE630 | $\square D$ H N T P E G H A A N KLS Q G $\\|$ R L |
| UniRef90 UPI0003DE8AB8 |  |
| UniRef90_V4A2X4 | $\square \mathrm{D} \square \mathrm{Q}$ Q D K D N K L Q Q L VE Y $\square \mathrm{KH}$ |
| UniRef90-V4AIR9 |  |
| UniRef90-K1QQ84 | LK V V E K G F $\square \mathrm{R}$ R L L NA A L |
| UniRef90_G3W1C0 | L K WKA DKSNSRFWKNLRYLMPA |
| UniRef90_W4XN12 | MLLWTNKDGQELFWAQFEKSM |
| UniRef90_D3D018 |  |
| UniRef90_Q0RGM6 |  |
| UniRef90_W4ZG58 | MLWWT DED GQELF |
| UniRef90-R7VJM5 | LKA D D P |
| UniRef90-UPI000344419F | L L WR S VA P S S D F WKELQQLALDP |
| UniRef90_B4GR24 |  |
| UniRef90-U7QQJ6 |  |
| UniRef90-M3Z149 | L Q WS T D A A T R R F Wl S L Q K A M P |
| UniRef90_UPI00032902D1 | LE WTEKS K Q G LiF WA Ni RA A |
| UniRef90-I2EUQ9 | ADFKDENEYESSFKRLLNT\GV |
| UniRef90-W5PC62 | LL WK SVT P S S DFWKELRLLALSP |
| UniRef90_U9VKL9 | ADWQD YRAKGL |
| UniRef90-K1PIR8 | $\square \mathrm{RWP}$ D GNE NDLF WEE $\square$ A A A $\square$ R |
| UniRef90-U9VIX3 | I D F S S LA S D $\square$ HF |
| UniRef90-W4XJN1 | V D |
| UniRef90_UPI00047C864F | V D |
| UniRef90_UPI000359EAED | EDYF D L S Q G EVEWD Q $L$ K K R L R |
| UniRef90- F8B6H9 UniRef90 ${ }^{-}$W4YAA5 | VDLT D P R A R EL L L K K V S D A L R |

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UniRef90_UPI0004626C69 UniRef90-V8NGB2 UniRef90 Z5DZR0 UniRet90_UPI0003FOD149 UniRef90_O31R1
UniRef90 W5NA34 UniRef90 W5NA34 UniRef90-K9EGV0 UniRef90-13BSF5 UniRef90-K1QSL8 8 UniRef90 B7PGK0 UniRef90-A8L102
UniRefolo- 3 UJGT2 UniRef90-K1Q4E2 UniRef90_13BWZ3 UniRef90- F1PYO7
UniRef90 G3GBT2 UniRef90-H1H6A2 UniRet90_W4YZ84 UniRef90-W4ZLEO UniRet90-X8LMG3 UniRef90-LSNO11 UniRef90-UPIOOO1758235 UniRet90_S7Q2G8 UniRef90-W5KKD5 UniRef90-M1R4W2 UniRef90-UPIOOO4446331 UniRef90-UPIo00470A168 UniRef90-B4WORO UniRef90 14 ECV 5 UniRef90-UPI00046F5B24 UniRef90_UPIO003826DE7 UniRef90-O52292 UniRef90-F8B0S5 UniRef90-F6X906 UniRef90- x1L3J8 UniRef90_UPI00021A784E UniRef90-A0A059BNH5 UniRef90-UPI0001CBB176 UniRef90_U4ULX3
UniRet90 L9JKA6 UniRef90-T5PIQ0 UniRef90-UPIO003F81FB4 UniRet90_W5UJS3 UniRef90_K9FH75 UniRef90-W7NHC2 UniRef90-B7KD29 UniRef90_UPIO00414B63A UniRef90-A8UX53 UniRef90_UPIOOO444019C UniRef90-UPIOOO3FOEOE7 UniRef90_K7LK72 UniRef90-B4TVM3
UniRef90 N9AWQ UniRef90-U9VYT5 UniRef90-K1P2E7 UniRef90-UPIO0036660EC UniRef90_UPI00035DF2BC UniRef90 W4M222 UniRef90-UPIOOO29B2989 UniRef90-K9Q5L4 UniRef90-A8L235 UniRef90_UPIO00359D617 UniRef90-K1R6V7 UniRef90_UPIO00328C517 UniRef90-S3KOH1 UniRef90-L7RMB8 UniRef90-D3D8S4 UniRef90 UPIO002C2F7AA UniRef90_UPIO0032A6B24 UniRef90-Q0EWQ0 UniRef90-K9WQJ2 UniRef90_K015W5 UniRef90-F5T7S8
UniRef90-W4YRT5 UniRef90_12Q6G7 UniRet90_A8LGL3 UniRef90-UP100037C77CA UniRef90-UPI0003717F69 UniRef90-A0A024Q4U6 UniRef90_R7TE68
UniRef90_AOA011PTV6

DQEFTWDCFUSFNSD ${ }^{10}{ }^{20}$ GARRUADLLL ${ }^{30}$ RRAGYRVVFW ${ }^{40}$ ANDLPFVQEMIQELEQAEHKMKLCV
EYDVF L S H S GKKYDFFAVFSEDADWVWY TL LPKLEKELELKGC MYDAY SSYARDGDWARALADRLRAGGGVRLFF DFFLSYTQDRAWAEWI A WLLEEDGYTVLVQA
FQYDFSTWYCEDDADATA LHEMLVACGFHGYV
 EKTKEKRVVISFAEDRAVAESMASNLVTRGDNVFYDE QYDAFVVFAAVTDWVNDLRVNLEDKGRRFKGCF
QFHAF SYSEDSAWVNELDPNLEKED
DRUCL NRMTDIF ISYSRDQQWVAKLAKALEDVGYS VWW
 FFVSYTGDEAWAEWI AWVLEEAGYTTRLQV GEKWDFFVSAAEDANWADWISWQLAEDGYTVRL D DEEPHQYD YYVSHYEHDQWVKKFLRKLEENQKRFKVFY VNDGKMYDAYVSYSEDRKFVNFVLKPQLERRRGYKLFL LTDGKTYDAFVSYGEEHAFAVETLPRVLEKHFGYKLCI EKKYDFFISHASEDEIVRELAKALNESGFEV
PEDYEYQ
DYEFDVTI DYDDDEEWDRELRPALEERLPQFQR DEDQLKEYDVF: SHSANDKFVNDLAEALKDANVSVGWCD

DGKTNDVLLLYSKDSELALGTLLPGLESRYNYKCV
 VFISYSRDSDFARKLNDTLQIQN GK D D E E K E F D

Q N K NYEYDVALSFAENRAYVEEVANSLRLRGVKVFYDL MYDVGLCHASEDKIVKPLYDELKELGLSVFL NDPAQDKYHGIFLSHTGDKPFVRRLRNDLIAHGVQKVWL SLAAERRYDAFLSYADDPDFRQALVDGLDRAGR RVWF
 NDGKECDALVCYHEDSSLVIGIVIPTLESRHRYKCTA GKEYEFKYDVFGLSFGEDKNFVDHLNYHLQRKGGVAFKDD DGKTNDVLI AYSEDTELANGILPKLETRSYTCT

EKYDVF TISHATEDKFVRPDAELLKN RGDKVWY NDEYPWDVAVSFAEDRPVVLEFVKKLEEKGDFPFYDF

 MKYEYDVALSFAEQREYVREVAKALKK Y YNLKVFF GEDKQFPYDVFVSHCRDQA WVQELLPALEGCGWGLCLCDCD

PKKYDIFI SFGEDIRFIGHLRSAL SGPNIKAYA V FI S Y S H DKA WVLTLATRLE GNGVAV T L DVT PEPEYDLF S HASEDDFVRPLAETLQ G GLGLKVWY LQEDKRYDVYGLSYSEDYPWVRELIDDEWETEENNYKMYC

$S \square Q Q D V K Y D V V V M Y Y$ V


 MNDGKLYDAYVSHSEDRKFVHFILKPQLERRGGYK ESKEYDFFI SHASEDKIVRELALALQSE GLKVWY EADFHYDVFVSYNADRSWVLDHLLPNMEGVSQINLCLL WDFFVSYARDRAWAEW A GQLVAA GHRV DDGFTYDVFISFGEDTRFTGHLWKTL NDKGVRTFM MGNLFDAFi SYADSKAFATKLHAHLLEQ GLLNVW KSYDAYISFDDERQWVTRKLKKRLEEKKQ ELED

 $\checkmark F$ SHSSDKTFARWGGTDLKAAGH FISHQHDKEFVGDI AQTLSDDFGEEKVFF

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Y GRDVLP
$\mathrm{N} W$
$G E$
$G$

 FDQESISF
$Y E R D Q L L_{1}^{L} A$ Y D R DFVAG WDFGP $\qquad$ GSRFVDQMHQAAQQAQRTVAVLSDAYGGSRFG F E S WDDLVA G L A G D DDRDLLPRAGTAGPAPAP

## F


F GDS GLHPGSFYLNAIVDVI ENSYKTVLLLSNQSVEDTWF


 DERDWLP

RKGLFEN
TDRSKLSSSVANTENTQLQESKS
FDQESI A S GTN F E Q E IIYRGGIE S A N N F L F I I S P K S $\square$ S S P Y C
LERDIL P G GAY T NDVVLTIINRSRMLI CVLSAKYFASSNA F D Q E S I A S G T E F QL E $\quad$ GY R G I
FEETNLWGKNLYEY LSE $\square Y$ QN R ARY TVV LIIS GFYNQK VWT

 DREAMPNCGTTF GQEDR QADETSSDRLDLELAGPAAAMS S G Y V WDFRPGENFVVGMQKATA LE LS QLN Q N WGVVE GP H A V S HDRNLLRGKHLKPELLGALEK SRRVIVVLSPESLGNVWN
 ,
 FGRDSLPGQAMADMVEETMNLCRLLLLLGYTSSSLSRAESS NRTDIVRVGGEQTEINKGDEEAS
,

## 

 KERDHLPGLD I A N N I I Q SAE S R
 D D L QKGQE WP SLCQA QQD SHFAIVVFSENYAESKWC DEF S M RV GD S L L R R K I D S G L
SDRDSHHGKSELLENMCEN ILL WDSPA GENFVLDWDSEQMAA D S Q DVK G GVD FREAVQE G $\square E H$ $F D Q G Q L R L G D S V L R S L E D G L E H S$
 HQR D LGPGYLDQQQFLDAIVAS WR

## ,



##  <br> LQ A WE ETP VVP YWST GMF EGTA Y A

D

## D

D
F G D E D VVLGMHVLESVVDVV SHSYKTVVVLSRAAVMA H WF
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ADEVAYAAS $\square \quad N K R F D P L L Y Q S V D Q Q L P P E L A K \square H W$
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\LKFRTTMDHVSDTLTEFVVVVFLEDIPD
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SAA YQA

 V FVL ESGVKALLQNSALKMLLIWTRPLPKLVQRALKVLPS
 A DEEVEYA

 F E LQQAAVNDAL


 MLEFK LGV MCQNS $\quad$ ATKLIVVEYRPLEHPHPGILQLKSF E Y E L N GLTAREMNGENKVIL PI WHEVSKSD
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 LDE ELDRYAVSL
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$C F S Q E A A \square K N L D D T S T D R L I D V L I H L E K N E I P S A L K T L T P$
EYE $\square$ N GM $\square$ TKEMNGHKVILP $\square$ WHKVTKNEV
QFEM
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MHEFSA $\square A D G D \square S N R Q S R V I P V L I D G \quad S S V P Q Y D A R Y V Y$ EAEWAAAWARDP $\square G \square H R R L L V L R V G E C E Q \quad P G L L R$
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HYDAF
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VFLSHNHDKPFTRRLAGDLRKAGH TVWI DVYEYQAYLSCSVDEAWVRQLLCAIENPPYEDKLCF

FTYDFSI WYCPDDD AASRIERL RKEGFRGYA
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YDYDVFINHGPDVKFASDLYCRLRS GIHGMRV
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QDYQYGVY पGYaANDHWFCH【VRAYEESGGDTVCL
NVEKS LEYDVFTSHSSEDKFVRPLVIEDQQ पGПRVWY DKEF FLSYSKDKATAARLVDMFTEA NVDVWV EKKYKYDAFLSYRHDQSVAKQVHHMLETEKPPVKEY PRKYDVFLSF RGEDTRRTIVPYIYHQKREIETFM

KYDVFLSFGEDKNIVSHLHKQL VDKGVVTFK NDGKECDALVCYHEDSNLVVGIVIPTLETRHRYKCAS GNEYNAYISCSNDEAWVRHLLSATENPPYELKLCCF DADDPGKDVESYGHDDDLREELVTHLANLKRQGKDAW $K$ F DVVFS F GEDSNFTSHLHMAL GESAEYKYDVFI SYRHDADTARSLHRLLETFPDPKSLSF

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A

EERDWLPGKTLFENGLWASVYSSRKTLFV

D 1 WN LRPGGDLQDAGGEESANDQTVAVFI GSAGDGSWQGE DVWDWRAGDNFVHHMDHALETADAVVALFSKSYFAPERWT FEEVNLWGEDLAI YFERLFQRESKYVVIFISQYYRHKEWT D $\begin{aligned} & \text { Q W WGMN } \\ & \text { Q }\end{aligned}$


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RDWSLGPGDDLPHFMEQNLA I ADRVLMI CTENYVKKGGV DEVVSRPGGGVRVHTVVETAMLRASAHGLLVESPTSMRSGWV DDRDLEVGDAISSPTLLKAI EE SRFAIVVLSPNYASSTWC DFNDIPLAVDFQNQIDDGI EKASHAFLFIIAAPHSVNSPYC

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 E $\square$ KFFII REF ${ }^{A} E R$

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 HGDER1 P PVL EEPDESFPQALK LNELEKITECMATNDQQIILPIFYHVDPSEVR

LDE
LMK I M M M M LEELRMLMKLQ REKNIAVIPVFYEVDTSDVRNGRSGFGL LDELVMLLERKR■SADHVVLPVFYDADPSDLRK SQVWTGAL MFEFEKSLQRNMEKNKERLIVVDKKKDPRHMFNFLKTHTY SQELDAHMVECSRRSVDKVILPIVFDVDPYDVKPF R R GLLY WMERQVGMHQALLEGSLKVALLEMDEVPSSLPESVRLLKR QAETHWALEH QYELDSLINRAVYDDNKIILPIWHNDNAQEVSKY

| UniRef90_UPI0003B3C619 | $K T Y T C D Q \\| A 1_{L}^{130} L F A K Q L I K R L^{140}$ |
| :---: | :---: |
| UniRef90-1419G2 | VD F R G S Q A D P |
| UniRef90 L8TV11 |  |
| UniRef90_UPI0002C32BD1 |  |
| UniRef90_UPI0003C4C375 | LLWP Q P S GQ S SFWA Q L G VA L |
| UniRef90_B4WW38 | V D F R S $\square$ P D P L |
| UniRef90-J2JXI9 |  |
| UniRef90_19P966 | LD |
| UniRef90_W4MEL6 | ACWDSS D T A RLVQNLQNTL |
| UniRef90_D3D3G2 |  |
| UniRef90_UPI0003594D28 | M P Y P N T G S Q R M F WD K M A R D L |
| UniRef90_D9SG68 | GDF T D S S Y DEMLLALLVRKLPAP |
| UniRef90 N9REN6 |  |
| UniRef90-C3YUR5 |  |
| UniRef90_E4X0N6 | $\square \mathrm{Q}$ Y P VE R Q T F Y F WD A L R A S $\square$ |
| UniRef90_A0A021W9T4 |  |
| UniRef90_J7G0R5 |  |
| UniRef90_K9SKT8 | VD F R R E D P H P |
| UniRef90_C5ADB1 | LDFSRP DQMELAF D D L I R A |
| UniRef90_A8L8F6 | P ERVD S T G D A R |
| UniRef90_UPI00037B9A5F | A D R R |
| UniRef90_UPI0002C35645 |  |
| UniRef90 B4VS12 |  |
| UniRef90_R7VID5 | LE WP D D S GQK LVLLAK LTE S |
| UniRef90_M0ZV73 |  |
| UniRef90_B2S8Z8 |  |
| UniRef90_U5FHF5 | AEAFDKHEEERFEEK L R K A L |
| UniRef90_G1MNF1 | LE |

VDFRTGLDDAAAFKRVAGワK ADFTDPDAYPEMFQLLLRTLG LVWTDVA DRPSFWMKLRRSL LQY QTEFFFERLLSSLR 1 EWWD NDDSVGWDRLR!AL IDFSQPGEYEAFDDLLRNILGKP

VD Y S Q S CRE

LLYSE NQRFWERLLDDVRH
AVKQTDGTESMAWEEV
!D MR
GNFNNDDSFEHEYEK $\square$ RELLN $\square$ P
ADFRNDYQSGL
RDFRHVDG


UniRef90_S3WSR6 UniRef90_UPI0002C365BE UniRef90-I8QSR8 UniRef90-D3D4X8 UniRef90_V7C5I8 UniRef90 UPI0003FDEF1 UniRef90-M4E4C8 UniRef90-F6YU40 UniRef90 UPI00035FEC6 UniRef90 UPI00032A3A79<br>UniRef90-A1BG03<br>UniRef90-19CRR3 UniRef90 Q8BJQ4 UniRef90-L9JDM1 UniRef90-Q66WJ1<br>UniRef90-K7KXK<br>UniRef90-UPI0002E217Fs<br>UniRef90_UPI000419D8D4<br>UniRef90 Q947D9<br>UniRef90-G7KQB9<br>UniRef90_UPI00036D94C8<br>UniRef90 W1YWJ5<br>UniRef90_G7JY83 UniRef90-K7MDD0<br>UniRef90-W5LLV4 UniRef90_T9GRA0 UniRef90-R5G6V3 UniRef90-W5PSM8 UniRef90_UPIO0042A3724 UniRef90 UPI00023C2B67 UniRef90-UPIO0046E25ED UniRef90-K4BR04 UniRef90_UPIO00420A533

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| UniRef90_UPI0002C365BBUniRef90_I8SR88UniRef90_D3D4X8UniRef90_V7C5I8UniRef90_UPI0003FDEF19UniRef90_M4E4C8UniRef90_F6YU40UniRef90_UPI00035FEC62UniRef90_UPI00032A3A79UniRef90_A1BG03UniRef90_l9CRR3UniRef90_Q8BJQ4UniRef90_L9JDM1UniRef90_Q66WJ1UniRef90_G7LF47UniRef90_K7KXK1 |  |  |
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| UniRef90_S3WSR6UniRef90_UPIO002C365BBUniRef90_I8QSR8UniRef90_D3D4X8UniRef90_V7C518UniRef90_UPI0003FDEF19UniRef90_M4E4C8UniRef90_F6YU40UniRef90_UPV00035FEC62UniRef90_UPI00032A3A79UniRef90_A1BG03UniRef90_19CRR3UniRef90_Q8BJQ4UniRef90_L9DMM1UniRef90_Q66WJ1 |  |  |
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UniRef90_S3WSR6 UniRef90 UPI0002C365BE UniRef90- I8QSR8
UniRef90-D3D4X8
UniRef90-V7C518
UniRef90 UPI0003FDEF19
UniRef90-M4E4C8
UniRef90-F6YU40
UniRef90-UPI00035FEC6
UniRef90 UPI00032A3A79
UniRef90-A1BG03
UniRef90-19CRR3
UniRef90 Q8BJQ4 UniRef90-L9JDM1
UniRef90-Q66WJ
UniRef90 G7LF47
UniRef90 K7KXK
UniRef90_UPI0002E217F9
UniRef90-UPI000419D8D4
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UniRef90-G7KQB9
UniRef90-UPI00036D94C8
UniRef90 W1YWJ5
UniRef90 G7JY83
UniRef90-K7MDD0
UniRef90-W5LLV4
UniRef90 T9GRA0
UniRef90-R5G6V3
UniRef90-W5PSM8
UniRef90-UPI00042A3724
UniRef90 UPI00023C2B67 UniRef90_UPI00046E25ED UniRef90-K4BR04
UniRef90_UPIO00420A533

AFVEHEQRFGDQTERLLRK VD

LDFSNDDEFEAVIDDLVRA】 $\square R W K P G M N S N \square F K E S \square A Y A \square P$ Y VW

VSFVNESDNKQELEK LKKSA $\square R$ LKLETQEDNEQFLNDLVK

D F S D P S
lupas 21
lupas_14
lupas_28
jnet conf sol25 sol5 sol0
jhmm
jpssm

VDGRGPER
NFSREDEYELQFDNLLREI


[^0]:    lupas 21
    lupas_14
    lupas_28
    jnet
    net sol25
    sol5
    sol0
    jhmm
    jpssm

[^1]:    lupas_21
    lupas_14
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[^2]:    lupas_21
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    jhmm
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