## QUERY

UniRef90_X2KT12 UniRef90_UPIO0028A2740 UniRef90_A8USG5 UniRef90-F2P8N7 UniRef90-K9ZDN8 UniRef90-KMRLZ2 UniRef90 B5YY99 UniRef90_UPI000367F99C UniRef90-X5JMR2 UniRef90_14FJ64 UniRef90-A6Q3M6 UniRef90_UPIOOO4693414 UniRef90-UPIO004714B89 UniRef90-B9KGD2 UniRef90 A6DBW7 UniRef90-R7XRZ2
UniRef90-Q7VJB9 UniRef90-N6WTM4 UniRef90-UPIOO046937E5 UniRef90-D3DKA5 UniRef90-D6TEX8 UniRef90-B6YT81 UniRet90-UPIO00310FD54 UniRef90 B8CMJ1 UniRef90-F8C5K2
UniRef90-W6EDD UniRet90-X1BPK3 UniRef90-A5D1K6 UniRef90-H5SP30 UniRef90-Q1Z838
UniRefo-UP100006F5AC2 UniRef90-W9VJN3 UniRef90-Q5JIIO UniRef90-M1WY55 UniRet90 A7H7N5 UniRef90-B8G3N6
UniRef90
WODC19 UniRef90_UPIO0046AF0DC UniRef90- S6COT3 UniRef90-K9T7J7
UniRef90 C8PGA5 UniRef90-A4SLV9 UniRef90-Q31DZ1 UniRef90-UP100035CDF67 UniRef90 W5W8Q UniRef90-C5A3E3 UniRef90-Q8TYR5 UniRef90-K9VFE4 UniRef90_O081V9 UniRef90-H8Z3U7 UniRef90-UPIOOO36E6874 UniRef90_O6AQR6 UniRef90-C3XIAO
UniRet90 E6WYB1 UniRef90_UPIOOO3468B82 UniRef90-F8IBEO
UniRef90-UP10003AD1319 UniRef90-D4H3D7 UniRef90-B8HTU2 UniRef90-UPIO0036B2EF7 UniRef90-C1DUE8 UniRef90-R7E1X5 UniRef90-M1QgX3 UniRef90-UP100034DAC53 UniRef90-GOHPC9 UniRef90-UPI00005DEA8F UniRef90_K9TTQ9 UniRef90-UP10002DDB5AC UniReffo-C6RFB9 UniRef90-A1HTYO
UniRef90 KONDB7 UniRef90-UPIOOO3770CA4 UniRef90-F8.J9J5 UniRef90-UPIo0047EF1ED UniRef90_F8KQ16 UniRef90-UPIO0045E8417 UniRef90-UPIO00393FEFF UniRef90-F8B250 UniRef90_DOIAG3
UniRef90 O478N UniRef90-Q0RPQ6 UniRef90-14EEC0 UniRef90-UPIOOO3793512 UniReffo-FOLME8 UniRef90_E4U2K8 UniRef90 O30QM5
UniRef90- X5TM

## 

## 

2

都

 MCLLA I P S K V I E I H G D G T A T V D T M G V K R K I S L E L M M E E V N

 M CLL A $\operatorname{A}$ V P S R I I MCL A V P A K V V E M V




N
M
$M$


## 

## 2 <br> 

\section*{| M |
| :--- |
| M |
| M |
| M |}

## M $M$

M

$M$
$M$
$M$
$M$
$M$
M
$M$ MCLATVAKVLEVNREKGTAWVDFGGVKREARRDGMPD VKK MCLAVPGKVIGGEDNRTGKVSFGGIDKEVSLAMVPEVK MCLSVPSKVVEIHDD ATVTVDTLGVKRRVSCHLI CDPLA
 MCLATPMRVTKVEGDNQTATVDVDGISKEILRLDVDHWPS MCLAHPSKVISI NKETNMATLDTLGVQREASLDLMQDNVA MCLSIPSKVVKIDKEKATAVVDTMGVQREVGDDFDEDEVK
 MCLALPGRVVEVKDQPYATVDVSGVRRKVNVELLQEGVQ MCLALPGE:VELMPDRPLATVDVTGVRRAVNIALLDGELAB MCLGTPGQI VETTDSVQLADVNVGGVKRQVNTAClVDEEH


 MCLG: PGQUTETDDNQLAMVNVSGVKRQAN:ACIVDDSC



 MCLGIPGCiVSI DNDDLVATVDVSGVRRQINTSCIVDEAK MCLGUPGRIVKIDDDKRLATVDVSGVKRQVNVACI I DETC

 MCLAVPGRVSSVDPLARTGRVDFSGVSREVSLAHVVE AK MCLGIPGRLVEIDAGQHLATVDVSGVRRTISTRLVADGPQ

 MCLGI PGQIVEI DEELQDAKANVAGVRRNINIGLVEDPAK
 MCLSIPSKVVSI DTEQNVATVDTMGVQRTAGLDLMEEGVA



## UniRef90_M1ZIM7 UniRef90_M1Q161

 UniRef90-UPI00034CFD43 UniRef90-E8WHM3 UniRef90-E7B3S9UniRef90-D4ZZW7 UniRef90-Q13HK3 UniRef90-E3GW82 UniRef90-C1F4L7 UniRef90_UPIo00466FF43 UniRef90-B4W4C0 UniRef90-H5WWD5
UniRef90-UPIO0036BAD3F
UniRet90-C6A4E1
UniRef90-G8NRP7 UniRef90-G9Y888
UniRef90 W8AZM2 UniRef90-W8AZM2
UniRef90_L8MOB3 UniRef90-L8MOB3
UniRef90-AOAO23WIN5 UniRef90-K9U5B6 UniRef90_UPIO00381334F UniRef90-C9PPV8 UniRef90-UPIOOO34980E2 UniRef90-UPIOOO366243B UniRef90-KgY8Q6 UniRef90-B3E957 UniRef90-UPIO0047ACE76 UniReffo-J9WJY UniRef90-H6UNY1 Unireigo
UniRet90_O1114W2
UniRef90-G7CIF0
UniRef90-R9T5E9 UniRef90-UPIO003067A9A UniRef90-H6SN16 UniRef90-K6V8T9 UniRef90-UPIIO00237AABE UniRef90-UP100046A50CB UniRef90-G7LQ20
UniRef90-D3RQM3
UniRef90-M9SJ97
UniReffo - K6X1777
UniRef90-T1DOHO
UniRef90_ME815
UniRef90_B7K183

## UniRef90_V3T838

 UniRef90-UPIO0036191DB UniRef90 UPIOOO369606A UniRef90-UP100046C975C UniRef90-B3EEL3 UniRef90_SOFRY9 UniRef90-A4JRG6UniRef90 ${ }^{\text {M1WPK }}$
UniRef90-O27686 UniRef90-WOSEZ7 UniRef90-L1QE63
UniRef90 $\cup P 100042$ UniRef90-F8A198
UniRef90-UPIOOO3468422
UniRef90-R5DE40
UniRef90-UPI0002F95450
UniRef90-UPIO0047645DF
UniRef90-UP10003B53DAE
UniRef90-H8GHZ2
UniRef90-V2QHQ4
UniRef90_G8QKV7
UniRef90-C1A5D7
UniRef90-Koz6z3
UniRef90-B5IBX2
UniRef90-B6BMV7
UniRef90 E4TEMO
UniRef90-A6QAT9
UniRef90-D6Y8W3
UniRef90-Q2W6T1
UniRef90-D3F8J4
UniRef90-F8JMF8
UniRef90-O01R79
UniRef90 E7AZY1
UniRef90_R9S173
UniRef90-UP1000413D89B
UniRef90-UP100036B7640
UniRef90_D2RGF6
UniRef9OOPIOOO36874EO
UniRef90-TOIBQO
UniRef90 K9UX69
UniRet90-Q65PE5
UniRef90-E3J6F7
UniRef90-UPIOOO47DED8E
UniRef90-A3QDS6
UniRef90-A5GFD6
UniRef90_W6MAT9
UniRef90_B5E8W9

UniRef90_B5E8W9
$M C L A V P G Q$
$M C L G I$
$M$

 MCLAVPGKLVSVSGDDPLGRVSFGGVDKEVSLAYVPE AQ




 MCLADPGKVVETKGGMLMARVQFGGIVREACLEYVPETBC MCLGVPGQVVAVDDDHQMATVDVCGVKREVNLALVCEGSP MCLAVPGRIISISEDPADGRVSFGGVDKQISLAYVPEAK MCLSIPSE:LEDDEDNN ALVQTGGVKRKVNLDLI DEPGK









 MCLAMPARVAELQENDTAMVELGGVRKQISLALV DGVS MCLADPGEVLELLPDRPLAKVEVSGVRRNVNVSLLGRPPE MCIGUPGKVVAVDNHPQHAWVDVCGVQREVNIALVCQEAL
 MCLAIPGKIVAIDGDD AYIDFGGSKKTANVSMVD A MCLGIPGRVVDLDADNHLAKVDVSGVQRTDSVRLLADGVC MCLAVPMKVKSIEND MATVDYMGTETKACTAFLPE VK MCLAVPGQVISLTDDMRRGKVSFGGVDKEVSLAYVPD VQ MCLGIPGQVVEWASDRQLAWVDVCGVKREVNVALIVGDPL MCLAVPAQIVERED MVATVDVGGVRRQVSMMLLPEAK MCLGIPGK I KDADEKKLADVEUSGVKRQVNDSLIPPETC









 MCLATPAKIVELDPDDQARIDLGGVRKEVSLALVGDDVK
 MCLAIPGKIVE: RG MVAIVDYGGVRREARIDFVPDVK MCLSIPSKVVKIDKELNMATVDTMGVQRNASLDLMEDDIKK
 MCLGIPGRVVEDPEQHLAKVDVGGLQRTDSVRLLADDLR MCLALPALVVELLPDD SAKVNLGGVAKTVSLALVSD VK MCLAIPGQI A DDANRLAQVDVAGVRRTVNVGLLDGGVV MCLAVPGLLVVDTSGWNRTAKVKFGGVTRQVSLDFVPE VK

 MCIAIPGKVVEID YPFAVVDFKGTKRK円RIDLIDD AK MCLGIPGKIVSIEDDNLVGIVDVGGVKRAVNLSCIAQEOT MC G GK V BEDDNL MCLAVPAKIIERSEF $\stackrel{M}{M}$




UniRef90 HoQLR5
UniRef90-L8J8G1 UniRef90_UPIooo3677F4E UniRef90-LOHNV4 UniRef90-A0QUN8 UniRef90-A4BQ144 UniRef90-UPI0003F8A1B7 UniRef90-E1QGS8 UniRef90-D9XQG2 UniRef90-UPIOO0344B691 UniRef90-B8J3R2 UniRef90-UPIO003FFE3FA UniRef90-P31900
UniRef90 L8EW37
UniRef90 - L8EW37
UniRef90_C8WZU5 UniRef90-Q2LVX9 UniRef90-UPI0003B42A47 UniRef90-Q30ZF9 UniRef90-C6CEH1 UniRef90-D5WZZ3
UniRef90-UPIOOO262CBAB UniRef90-WOEO38 UniRef90_Q39ZF7 UniRef90-G4T2Z5
UniRef90-10GML6
UniRef90_V5C7B5
UniRef90-UPIO0040BB126
UniRef90-R8AQE6
UniRef90-13IG.J1
UniRef90-M2YBL3
UniRef90-C6BUHO
UniRef90
UniRef90-B6WTN2
UniRef90-K1JTA4
UniRef90-F7NIS8
UniRef90_Q3B2W6
UniRef90-B9L1W9
UniRef90-Q1J412
UniRef90 C9R9V7 UniRee90-UPI00037E1495 UniRef90-UPIO003AA8804
UniRef90-W9H307
UniRef90-Q60727
UniRef90_V6F549 UniRef90-UPIOOO3B3CBDD UniRef90_UPIOOO349306B
UniRef90-ІІв3Y0
UniRef90-UPIooo3B3EA6D
UniRef90-A1VNP2
UniRef90 G2DC24
UniRef90-G2DC24
UniRef90 O2SQS9
UniRef90-M1Z9T5
UniRef9-10KOA8
UniRef90-R8B4Z4
UniRef90_K4LSV9
UniRef90
WOL424
UniRef90-1015E4
UniRef90-A1UEX1 UniRef90-D5WTE1
UniRef90-BOTCN2
UniRef90-DOMFX8
UniRef90-D3EP78
UniRef90-KOC598
UniRef90 H5WMQ
UniRef90-G1WID2
UniRef90-E1PWA3
UniRef90_Q83WU8
UniRef90-A8ZNU7
UniRef90-UPIOOO464C424
UniRef90-S7T2H8
UniRef90-B3QTT4
UniRef90-UP100029A62D2 UniRef90-E6WJA7 UniRef90OUPIOOO37D3619 UniRef90_UPIOOO3B39882
UniRef90 B0TWC7
UniRef90-BOTWC7
UniRet90 F37314 UniRef90-AOLMH2 UniRef90 X1R219 UniRef90-H3KED9 UniRef90-F4L3Y6
UniRef90 $\mathrm{X} 1 \mathrm{BGT4} 4$ UniRef90_W6LQM4 UniRef90-H1XT40
UniRef90-Q7WXP5 UniRef90-19BTZO UniRef90-K2C9S1 UniRef90_K8WB68
UniRef90_H6UNYO

## 

 697EE7


1
 MCLSI PSQVVKVDEKSCSALVDTMGVKREVSTHLMTEPLS MCLSAPGQVVADDAKRKLAAVDVSGVKREVNDACDIGEDAA MCLADPGKIVKIEG NVADVDYGGIKKEARDDFVPD VR MCLGUPGKVVAVWDEARMSTVDFGGTTKTVCLAYYPDAQ
 MCLAAPAKVIELDEG MATVDVGGVLRRVSTVLAPEPLK

 MCLGUPARVESVFGEGMMARVRVGESQTNASVMLLPKEPQ


 $M C L A V P A E V V E L E G V A T C R V G E G S A T V K A S L L V M D E D V T$
$M C L A D P A E V N E L D G D M A K C R V G K S D T F V N V S T M L L E E P A A ~$ MCLGVPGKVVAVGPDLHYARVDVCGVQREVNDALVCEGDP MCLG| PGRIVDIVDVHALATVEVSGVRRQVNIACVVDASC

M
MCLGVPMQVVS
MCLAVPAKVAS: K

## N

MCLGVIPAQVVE
MCLGI PGRIVVA
MC GI PGEVI
$M C L G \mid P D$
MCLAIPAQVVELO GDGDIVAEID GGVRKEASLMLLDEEVK MCLAIPGQII RLA MCLAVPAKVIDI MCLAIPGKLI

 MCLGVPGRIVA $M C L G V P G R I V A R D G E$
$M C L A$ MCLAVPMQIVRLDGF
 $M C L G F P G K I D E M D E F G$ A ATVDIEGTKREVSLMMLTDEVA $M C L G P G Q V V E V R D N D Q L A L V D V A G A H R Q V N T G L L P G A L A$

 MCLAIPGKI ESIEQGEALGRIDFGGIVKEAWLSYVPEAK MCLAIPGKI VEMDPFVQTALVEVSSVKRRINI ELI DEDPK MCLAVPGRLISDDGEDPLGRVDFGGVIKSVNLAYVPE VQ MCLAIPARIVKIKG PVAEVDVGGNTKEINIVLTPE AK

 MCLAIPGRIVELDEEQQYAVVDVSGVRRTINGLLHEGMQ
 MCLAVPGKIISISGEKPLGKVSFNGVDKEVSLAYVPGQN
 MCLAVPGKILQLDPFGRATVDMLGVQREVSLRLVPTAQ
 MCLAIPARIT
 MCLA: PVRIE MCLAA A S K V M
 MCLGVPGKI I Al TDERQLAKVDI GGVRREVNLACVAEEAC
 $\stackrel{M}{M}$

## N



## UniRef90 M1P2L4 UniRef90_O28902 UniRef90 Q0FR97 UniRef90-B4WTD9 UniRef90_13CHR4

 UniRef90_UPIO0036D018A UniRef90-UPI0004121B10 UniRef90-UPI000361107B UniRef90-K2F3T0 UniRef90-W5TKP9 UniRef90-Q57653 UniRef90-UPI00036C8536 UniRef90-E1W693UniRef90-R5I175
UniRef90-B8DPD8
UniRef90_I3YEX9
UniRef90- UPIO00
UniRef90_UPI00025577F5 UniRef90-UPI0003757D60 UniRef90-H0PT34 UniRef90-R7BMI1 UniRef90-F8GKQ0 UniRef90_V4JG61 UniRef90_L1M8N7
UniRef90_D6Y8V9 UniRef90_UPIO0037BB722 UniRef90-D1A5C5 UniRef90_A0A014P3Q4 UniRef90-Q0YUV9 UniRef90-S4Y213 UniRef90_V6MEB3
UniRef90_UPIO0034CD745 UniRef90-H5V2T6 UniRef90-F9GWJ0 UniRef90_UPIO0036CE790 UniRef90-E5Y939 UniRef90- X1A6Z1
UniRef90_UPI000365F46D
UniRef90-M4ZAI7
UniRef90-XOSER2
UniRef90-K6WCE4
UniRef90_Q2Y8F9
UniRef90_F6DIP5
UniRef90-E8N5U9
UniRef90_UPI00036F64D3
UniRef90-R5ZNC3
UniRef90_W8ZXK5
UniRef90_A0A059MGV0
UniRef90-UPI0003796570
UniRef90_UPIO0035C54CF
UniRef9O-UPI0003AA1929
UniRef90_A7MF75
UniRef90-B9XAS9
UniRef90_D3SLP5
UniRef90_A0A059KNI8
UniRef90-X0UZC0
UniRef90_V7ELP9
UniRef90_UPI000347534D
UniRef9-B8GQG3
UniRef90 BOBQS6
UniRef90-H1Y5H2
UniRef90-A3PLP6
UniRef90-X0XVK6
UniRef90_UPIO003B44F23
UniRet90_G9EQL5
UniRef90_A6UVZ5
UniRef90_Q07S88
UniRef90_R6JGC1
UniRef90-B5EP20
UniRef90-B8KXU7
UniRef90-FOTBKO
UniRef90-B9MR88
UniRef90-UPIO0037D5C32
UniRef90-Q8KX19
UniRef90_G4E2X1
UniRef90-D5XEU0
UniRef90 A0LAJ7
UniRef90-S5AEX1
UniRef90-B3DXE1
UniRef90_UPIO0034CA18D
UniRef90_UPI00036B6685
UniRef90-V5FDD8
UniRef90-W6LRC5
UniRef90-A5EUJ3
UniRef90-D9SGE1
UniRet90-D9SGE1
UniRef90_K9S8X9
UniRef90-POAAM5
UniRef90-I7J502
UniRef90_B4SCQ2
UniRef90_E8XR88

B44F23

7D5C32
 M C l
 M C L A V P G K I I S I E G E D R T G K V S F S Gll L K T V S Li A Y V P E A A MCLLGI PMQVVEI NGFN ARCQAKGVERDI NLMLQHDMPV



 M C L
 MCLA I P A E I V E I N D GMAKCRVGKSETYLDNVSAMLLPERRPA M C L A I P A R I T T Q I D A A G E N A L V A I G A V T K E I




 MCLGVPARVVVDIH DTARATVVSISGVSRMISTDLMGEELA


 M C L A V P G R V V G I E D G T P M GRVVDFGGVVV DV C L A Y L P E I I








 MCLGI PMQI I EVVDGFN ALLCEAKGVRREVVLYLVDEQAA





 M C L $A$ M C L A I P A R V V E I R E G D H A I V




 ,
,
$M C L G I P M R I V E I D R F N$
M C L


## N

## 

## 

## 2




UniRef90＿COQQ50

## UniRef90－M5RZL3 UniRef90－P74095

 UniRef90－D3RZN5 UniRef90－FONP54 UniRef90＿UPI00037BD43C UniRef90－F2GG43 UniRef90－D8FAC4 UniRef90－H8YYY6 UniRef90－A0A031LL75 UniRef90－E2MUC9 UniRef90－F8EQR3 UniRef90－A1ASQ8UniRef90＿G8TLP8 UniRef90－R5EAG7 UniRef90－A1KC62 UniRef90＿A8LH33 UniRef90－X0VIA7
UniRef90＿V5AVJ8 UniRef90－WOEVZ5 UniRef90－C7N0Q0 UniRef90－B1Y5K0 UniRef90＿D6ZK57
UniRef90＿S5EPK0 UniRef90＿C0QLW5 UniRef90－D7CKD9 UniRef90－H5Y1U4 UniRef90－W9E1L0 UniRef90－I2K975 UniRef90－Q0EZVV8 UniRef90－T1VNF9
UniRef90 UniRef90－D1P2FO UniRef90＿Q1KZW3 UniRef90＿D3P8Z7 UniRef90－NOB2W8 UniRef90＿Q1LNV8
UniRef90 Q2FNQ3 UniRef90－A0A017RUD2 UniRef90＿UPI0003B32E4C UniRef90－D5CMH5 UniRef90－LOAJI5 UniRef90＿UPI00037E4F3E UniRef90＿F6B6H8 UniRef90＿X1L6R6 UniRef90＿A0A011PD09 UniRef90＿K2A03 UniRet90－EVVKL6 UniRef90－D3UI21 UniRef90－I1AUIO UniRef90－W7WJX1 UniRef90－B5Y918 UniRef90－K9GXN8
UniRef90 B5ERM5 UniRef90－X1FSI8 UniRef90－E7G015 UniRef90－W6KD96 UniRef90＿G8ANT7
UniRef90 Q2JBM1 UniRef90＿Q2JBM1
UniRef90＿UPI00036B6002 UniRef90＿R6KJS7 UniRef90－L1M864 UniRef90－XOZDM2 UniRef90－X1K6V2 UniRef90＿J7TDW6
UniRef90－B5JEL8 UniRef90＿UPIO004765313 UniRef90－UPI00047BC9F7 UniRef90－A0A059IMZ7 UniRef90－M1GG78 UniRef90－B1L5Z0 UniRef90＿A3KAG0 UniRef90－B816F3

## UniRef90－B8FII1

 UniRef90－UPI0003B6C0A8 UniRef90－T2GCW1UniRef90 D5V5A3 UniRef90－A5FVC1 UniRef90－H5VH34 UniRef90－R5BSW26 UniRef90－W0JD22
UniRef90－Q2BN40 UniRef90＿UPIO0037731FF UniRef90＿UPI0003FBF7A9 UniRef90－F2KNA1 UniRef90－M4ZDH9 UniRef90－A4WDT5 UniRef90－K2GNZ3 UniRef90－D5C012

UniRef90＿XORXK3

－
MCLISHPK ${ }^{10}$ $\qquad$ $\frac{20}{V}$

30 $\qquad$














 MCIGI P GQUVADLDQHQQHAWADVCGVQREVNIALVPKEAM









 MCLGI A MKVVEI Y D G GMNGVVEAGGVKRHCFFHMVD D LK









 M C L A I P S K V I A L K D N N MCLAI PGKI TDDMLED D MARVEVGGVGKEVS LALV E GAG




N

## 

ミミ33

## ミ





 MCLAFPGKI $\operatorname{Sil}$ ENNLQ ATVDFDGVQKHVSISLVPDSA




UniRef90 M8CWP6 UniRef90_B8FG29
UniRef90_A5FPQ8 UniRef90-UPIOOO46F8B81 UniRef90-S2YXX9 UniRef90_B11569
UniRef90 K9Z9V5
UniRef90-K9Z9V5
UniRef90 E8T2J6
UniRef90-F2NE66
UniRef90 O2OZZ1
UniRef90-Q202Z1
UniRef90
UniRef90-R5EWM7
UniRee90_UPI0003B3093D
UniRef90-GoEGV6
UniRef90-UPI0004679932 UniRef90-UPIOO0409B927 UniRef90-D6SLR0 UniRef90-TOMNF9 UniRef90-F4CS22 UniRef90-O43951
UniRef90-LOM227
UniRef90-WODHX6 UniRef90_UPI000380C165 UniRef90_UPIOOO401A671
UniRef90- UPIOOO37D2E50 UniRef90_UPIOOO37D2E50
UniRef90_UPIooo3A1A18D UniRef90-R6Z008 UniRef90-W4LH06 UniRef90-UP100035DB04A UniRef90-D3P2S2
UniRef90-D6Y5C5
UniRef90-UP1000346D41C
UniRef90-F8B254
UniRef90-X0WQ78
UniRef90-A1S672
UniRef90-Q1IOZ3
UniRef90-UPI000466E16D UniRef90-A0P442
UniRef90_R7KGR9 UniRef90-R6AGE7 UniRef90_UPIOOO3607672 UniRef90-A4XJQ1
UniRef90-B2KBC3
UniRef90-14CBO5
UniRef90 U5N989
UniRef90-K2EQMO
UniRef90-F8IBB3
UniRef90_R6MIII
UniRef90-A8IMU4
UniRef90 E8RCV4
UniRef90-Q2RGH2
UniRef90-N6YE08
UniRef90-F2C1Y4
UniRef90 K2EKX6
UniRet90 K2FH46
UniRef90-LODHD9
UniRef90-D6Z6H8
UniRef90-C7LT42
UniRef90-R4JWE5
UniRef90-S7UPG7
UniReffo-H5SEY8
UniRef90-UPIooo3B47BF8
UniRef90-C7MLP6
UniRef90 H2FWX8
UniRef90-H2FWX8
UniRef90-X7ZWM7
UniRef90-UPIOOO39F8E1E
UniRef90-UP10003B654E4
UniRef90-R8AQ28
UniRef90-B2TM79
UniRef90-UPIOOO34DF4D4
UniRef90_U2TDM2
UniRef90-B5YB74
UniRef90 R7BXJ8
UniRef90 D6E801
UniRef90-X1CW70
UniRef90-H1YZ48
UniRef90-H5V1S2
UniRef90 $\mathrm{O5N1} 0$
UniRef90-S2XBW2
UniRef90_E312G7
UniRef90-A1VCU6 UniRef90 UPIOOO364E359 UniRef90-UPIOOO37622E2
UniRef90- X1MOB0 UniRef90-UP10003FD52ED UniRef90 D8K271
UniRef90_R5PYQ8

## 

3333333333333-
MCLAVPMEVTAA ND M

 MCLALPVRIEELLDE QSAVAC⿴GGLRKTINVALLDD LK




 MCLGVPALLLGVDAGRMTVTAEMLGERREVNLSCLAEAG





 MCLALPARVVRRDGDGMAVVDLGGVEKEVSVAMVPDAK
 $M C L A$ CLADPGKILKMK NHLAEVDFDGVQKDVNISLVD VE
 MCLGIPGRIVADDEDAMLAVVDVSGVRRTVDVVCVAQEAL MCLAI PMQVVAI QGDPQVALVESDGIRKEIRLEMADRVPA MCLGIVGKVIKVSAADETAII DVHGARREISIALL GQVK
 MCLGVPGQI I KIDANLQLATVDVCSVQREVNISLVCPADL MCLAYPGKIISVNG QQATADFDGVQKE: N:SLV EDK
 MCLAVPGKVVETENGLKMGHIDYAGADSRACLEYVPE VA MCLALPMEVLKIEGQNAAEVQVGGTRHVVRGDVSEFPE MCLAVPGKVLKID DYKGVVEIGGMKREVFMHLID MCLAIPARVIG DGDTAVVDVDGDRRECSLVLDAEDAA MCLA:PAEVVALDPDGQAEVVVGGTKQVVSTALL DAVA

 MCLGIPGRITEVWDGGRFARVRFPGEDKTACLAYRPD LE

 MCVAIPGQI EILGEESLDVKFGGIKKLINTSLVEEDN


 MCIAVPAEVLE $M C L G V P G K 1$ AVEEMHEDATVEVNGVQRQVNIALVCEDQP MCLAVPGQLLSI DGLFRSGRVSFGGADRAVSLACVPEAR MCLGA| PARVLAIVDGPLPMATVDMAGQKRQCSAMYVPELVAC MCLGIPGQVI HMLE GNQLALLVDVAGEQRKVNVGMLPDETG
 MCLAVPMMI AEDTEG LLACEVDGVRREASLMML EDA MCLGVPGLVEAITGNERMGKVRFGGIAREDNLSVPDAQ MCLA:PAK1 KI N K KNVAE: ESLGVKKEVDISLTPE AK MCLGIPAKILEI DGPLPSARLDIAGQERTCCLAYLPE AQ


|  |  |  |
| :---: | :---: | :---: |
| UniRef90_M8CWP6 | GDYVIVIHAGQAMS | E SLEEWRKLVD |
| UniRef90-B8FG29 | V GDYVLVHAGFAll SVI | DEAEAAQSLD |
| UniRef90_A5FPQ8 |  | DEKDALETLE |
| UniRef90_UPI00046F8B81 | VGA WVLVHVGFAMS R | NEAEAQETLRLLASMNE |
| UniRef90-S2YXX9 | PGDWVLVHVGFAlos M | D D |
| UniRef90-B11569 | TGEYLIVHTGYAIEKL | DVEEAQI RL K L We Ei L R D |
| UniRef90-K9Z9V5 |  | DEQEAKQT |
| UniRef90-E8T2J6 | EGDYVMVHVGNAIEKL | DPETAKE WDAL DEVLKA DD |
| UniRef90-F2NE66 | EGDYVLVHAGLAI A R V | DPEQASETLALLRKMLDEI Q |
| UniRef90_Q20ZZ1 | VGD Y V V L HVGFALTRI | DPDEARRTLALLGQL |
| UniRef90-D8HMQ8 | PGEWILIHVGFALSK | DEAEAAAAL DFLESI GKA E E |
| UniRef90-R5EWM7 | PGDFILAHAGMAI TRL | DSEEAEATLEDFRILADNL |
| UniRef90_UPI0003B3093D | P G DVVLLHLGFAVAV | D DAEAQRALS GLLELVGRPLE |
| UniRef90-G0EGV6 | PGDYVVVHAGVAVS RLL | D PQAAEEAL QAWRRLLDEMD |
| UniRef90-UPIO004679932 | LGDFVIVHAGFAI R R M | DRDDAMETI KL |
| UniRef90-UPI000409B927 | V GDYVIVHVGYALSKVD | D P D A R R T L L LD E |
| UniRef90-D6SLR0 | $V \mathrm{GDFVIV}$ VAGFALRCI | D RQEGLETLKL FQD |
| UniRef90-TOMNF9 | I GDYVI I HA GFAI QKL | S AEEGESTLELFKQ\LE |
| UniRef90-F4CS22 | V GDYTI I HAGFALTRL | D EESAMVTLA TM |
| UniRef90-Q43951 | VGDYVILHVGFALQKLD | DEAEARRTLALLA ELLGQLAE |
| UniRef90-LOM227 | VGQWVLVHVGFAMS | DEAEAQATLA AL |
| UniRef90-W0DHX6 | AGDYVILHVGFAINRLL | D EAEAERTLSMLREMG |
| UniRef90-UPI000380C165 | LD D YVLLHVGYALHK | S E E E AVR |
| UniRef90-UPI000401A671 | IGDYVIVHAGFAI SRL | DEAEAQAVLKEDAALEDV |
| UniRef90-UPI00037D2E50 | PGDYVILHVGYAI GRL | D A A A K Tha LM |
| UniRef90-UPI0003A1A18D | LGDFVIVHVGFAL GM। | DPEEAERTLALES |
| UniRef90-R6Z008 | VGDYVLVHAGFAI EVI | D A E E ARTIELVRELDELTE |
| UniRef90-W4LH06 | VDDYVIVHVGFAI S TVV | D EQEAARVFA Y |
| UniRef90-UPI00035DB04A | 1 GDFVLIHAGFAI QA | DEEEATLTNQ |
| UniRef90-D31 | PGDWVLVHLGFALSR | T EADARATLDLLRQLDEAED |
| UniRef90-D6Y5C5 | $\square \mathrm{\square}$ D WVLVHVGFALT | S AEEADAVRGYLEEMGRA |
| UniRef90_UPI000346D41C | PGHYVLVHAGFAI AVI | DEAEALKTLAS |
| UniRef90-F8B254 | VD D Y M M H A GFALTR]L | DRQSALHTLDVMRE |
| UniRef90-X0WQ78 | V G Y V L VHAGYAITL | DPADAHETFAILREMG |
| UniRef90_A1S672 | 1 G D Y V L H lig a M K I |  |
| UniRef90_Q1IQZ3 |  | DEAEATTVLGYLQQMGELGE |
| UniRef90-C9LVG7 | L GDYVLVHAGFA MQI | EEKDAEET |
| UniRef90_UPI000466E16D | L GQWVLVHVGFAMSVI | DEAEALDTLAALDQ |
| UniRef90-A0P442 | VGDYVLVHVGYALHKL | SEEEAERTLQLMAELAEELDE |
| UniRef90-R7KGR9 | EQEWVIVHVGFALNR | DEEEARKTME |
| UniRef90-R6AGE7 | LG D Y V V HAGMAI Q ${ }^{\text {LV }}$ K | KKDEAKDW |
| UniRef90_UPI0003607672 | V GDYVIVHVGYAI GQL | D AEEAARTLA |
| UniRef90-A4XJQ1 | VGDYI LI HS Glal EK | DQKEAEEIEKLIGEVQDA |
| UniRef90-B2KBC3 | KGQYVLVHAGFIMEI | DKS DAKER |
| UniRef90-14CB05 |  | DEQEAA $\square$ R L DLFREDAAA |
| UniRef90-U5N989 | I G D Y V I L H A GYALSR | DPEEARTTLEMFAQMSD |
| UniRef90-K2EQM0 | IG G YVMV HAGFAI EKM |  |
| UniRef90-F8IBB3 | PGDWV VI HVGFAMNKJ | N DHEAQSMLQEL H NL |
| UniRef90-R6MIJ8 |  | D EEEAKI |
| UniRef90-A8IMU4 |  | deeeat a TLKV |
| UniRef90-E8RCV4 | VGEYVII HAGFAl R T L | T EEEAEYNLSLMRRMAEVLE |
| UniRef90-Q2RGH2 | VGDYVLVHAGFAI EK | A EQMV |
| UniRef90-G2T714 | VGDWVIVHVGFALSRI | D A E E R VTL A L L D GVF |
| UniRef90_N6YE08 | V GDYVIVHVGYALNRL | D |
| UniRef90-F2C1Y4 | L G K WVLV HVGFAMSVI | DEDEAKKS |
| UniRef90-K2EKX6 | K GDYVIVHAGFAlEKL | S NEDA WIVLEEYEK |
| UniRef90-K2FH46 | K GEFVIVHAGFAI EKV | D Q Y A S DVD |
| UniRef90-LODHD9 | NEYVLVHVGFALSR1 | D EVEAKRVFAFLEE |
| UniRef90-D6Z6H8 | LGDYTVVHAGFALS ${ }^{\text {L }}$ | DEEEAAKSFAAWREDQAA |
| UniRef90_C7LT42 | V GDYVIVHAGFALTRLL | D REEAl A |
| UniRef90_G9Z775 | I GQWVLI HVGFAMS | A A E |
| UniRef90-R4JWE5 |  | DEEEAAKTLETI K E प S E |
| UniRef90-S7UPG7 | VGAYVIVHAGFALHVI | DE\VAMESLRLLREAGAAMD |
| UniRef90-H5SEY8 | V GDYVIVHVGFALTRL |  |
| UniRef90-B9R5J0 | VGDYVLVHVGYALHKV | SPDEAARTLQLMAE |
| UniRef90-UPI0003B47BF8 | MGEYVIVHVGFAI QRL | D EVS A L Q |
| UniRef90 | GDYVLVHAGFALEVV | DPQFAEETLDLVK |
| UniRef90-H2FWX8 | VGKWVLLHVGFAMALI |  |
| UniRef90-X7ZWM7 | VGDYTIVHAGFALTRI | DETAALDTLVTMRE |
| UniRef90-UPI00039F8E1E | SGTWVLIHMGFALERV | EQD GADRAMTGLEDMGR |
| UniRef90-UPI0003B654E4 | 1 G D Y V I V HAGFAIE KL | DEAAAQESLADCNEMAA |
| UniRef90-R8AQ28 | I GDYLLVQVGFAASRMS | S AEDAEASLSAMQA |
| UniRef90-B2TM79 | VGDYVLVHVGCAll ${ }^{\text {V K }}$ | EKEEAEATLE\FYELLK |
| UniRef90-UPI00034DF4D4 | VGDYALVHAGFALAIVV | DEWEAEQTLRDVQQMQA |
| UniRef90-U2TDM2 | VGDCVLVHAGFAMQV | T EKDIE ETNALLAEMNGA |
| UniRef90-B5YB74 | VGD YVLVHAGFS\SI | SNEEAEE\IS ALLEE |
| UniRef90-R7BXJ8 | HGDWVIVHVGFALQTI D |  |
| UniRef90-D6E801 | AGDFVLVHAGFAI EVV | DADYAQETI DLIK Q FPE |
| UniRef90-X1CW70 | VGDYVLLHTGYAI GIVVD | DEAEAKETLK |
| UniRef90-H1YZ48 | V GEFVLVHVGFAlQKL | S REDALQTRQ\\|FKEVYAAME |
| UniRef90-H5V1S2 | L DRWVLVHVGFAMSIL | DEDEARDMLSALENLTGE |
| UniRef90_Q5N1S0 | VGDYVIVHAGLALTVL | DAEEAERTLVITAAL |
| UniRef90-S2XBW2 | GDWVFVQNGFIMNVL | DEQEAKEALAA |
| UniRef90-E312G7 | PGEFVLVHVGYALHKV | SPDEAARTLAM |
| UniRef90-L0ITL2 | PGDWVI I HMGFVVEK | DKAGADAAMEG\ELMGSGSE |
| UniRef90-A1VCU6 | LGDYI I V HAGFALRKL | DKADAEETLRL |
| UniRef90-UPI000364E359 | VGDYVLIHAGFAI ER | DPEEAEKTLAVFREVLDA |
| UniRef90-UPI00037622E2 | VGDYVIVHVGDAI SQI | QEAEAERVFRYLDALDE |
| UniRef90-X1M0B0 | VGNFVIVHAGFAlQ ${ }^{\text {I }}$ - | NEEDATFUQNYW |
| UniRef90-UPI0003FD52ED | VGDYVLI QNGFAMSIMD | d T a s a Le Sla T |
| UniRef90-D8K271 | VGDYILLHTGYAlQVLD | D EADALETLNLFKEM |
|  |  |  |

## UniRef90 M4U9U7

 UniRef90-UPIOOO36BBE1CUniRef90-K4QSV2 UniRef90-K4QSV2
UniRef90 E6QTH8 UniRef90-K1ZQU3 UniRef90-A5IEY5
UniRef90 E6W5K2 UniRef90-G7WCQ2 UniRef90_B4S9.jo UniRef90-M5FHO8 UniRef90-B8D1S2
UniRef90- WOBHY UniRef90_UPIOOO365042E UniRef90-G2DWF3 UniRef90-B8ERW5
UniRef90-H2GF93 UniRef90-W0E2U6 UniRef90-Q20XQ6 UniRet90-G4KU74 UniRef90-Q3AT7 UniRef90-UPI0003FDA6FA UniRef90-F1Z416 UniRef90-A0A059MGU5 UniRef90-QOS7UO UniRef90-UPIO00371CC01 UniRef90-L8J8S5 UniRef90_UPIO002F5E441 UniRef90-A5FD01 UniRef90-H5WMQ8 UniRef90_A9KYZ7 UniRef90-W8KT30 UniRef90 F3YTW2 UniRef90-C7LNJ8 UniRef90-UPI0001D2E08B UniRef90-LOFBC3 UniRef90_UPIOOO3805015
UniRef90- UPIOOO3B429B7 UniRef90 UPIO003B429B7 UniRet90 NOB9LO UniRef90-S9SG16 UniRef90-UPIOOO3A47239 UniRef90-Q0A729 UniRef90-R7DEZ9 UniRef90_A8AA02 UniRef90-UPIIO0041E95B7 UniRef90-TOXU91 UniRef90 ${ }^{-}$W1TNF4
UniRef90
F0LUQ9 UniRef90-R715G5 UniRef90_UPIO00372AE84 UniRef90-B4F2X4 UniRef90-C6PTB8
UniRef90 A6FYB UniRef90-UPIO0039FEEBE UniRef90-D9SUL 1 UniRef90 - B8D3R6
UniRet90 - -6.51919 UniRef90-X5PXI7 UniRef90_-FOK8H1 UniRef90--9WJY3 UniRef90-K6WXX8 UniRef90-B2IJ41 UniRef90_UPIOOO3736676 UniRef90-13YGQ0 UniRef90-UPIOOO3B59EDD UniRef90-E8R9E8
UniRef90 DIPPE5 UniRef90OUPIOOO36A692D UniRef90-K4KRH2 UniRef90 13 VT63 UniRef90-DOYP 16 UniRef90_G4HU78
UniRef90-UP10003B6E5BF UniRef90-UPIOOO4124D00 UniRef90_R61090 UniRef90-U2CL89
UniRef90 O1LNU9 UniRef90-O1LNU9
UniRef90-K9D0F9 UniRef90-UPIOOO3727668 UniRef90-V5FDD5 UniRef90-A1SU78 UniRef90-A6C224 UniRef90-X1FQKO UniRef90-LOLQE2 UniRef90-J6LEB1
UniRef90-UP1000366FB85 UniRef90-UP10003B43E8D UniRef90-T1VMFO
UniRef90_EISV52
UniRef9O_O8RDA9


1 MCLLCIIPSKICAFHDDESLVTVDTGGVQRQ|IS\|HLIISEK $\square^{40}$

 MCLAFPGKIIAIVENQQATADFKG|GKKINVSLVD VE


| M |
| :--- |
| M |













 MCVAVPGK VE NGD TAKVDILGNIVEANVKLV SAK
 MCLAIPARIVS EDF MAKVDMMGNERVVGTHLVPD AQ




## N N N N

## N N N

##  <br> 


 MCLGVPGEVIGGUENNKTLRVRIGGVVREVISALLEDKVE
 MCLAVPGEVLKISD CRGVVKVGNLKREVFMHLVPE VK $M C L G P G Q V V A M L D G G Q L A L V D V V G E Q R K V N V G M L P E E T A$ MCLG| PGQVVRVLDGGQI ALVDVEGEHRKVNIGMLEGDCE


 MCOEVERDATRMAVDFGGVVKDVCLEYVPDMQ
 MCLGVPAQIVDFEKAAQI ATVSISGVNREISVDLMGETLD MCLGIPGRVVSVEGGGQLVLADVAGELRRVNIGMLPEETA MCLAVPGKLTEVNGNALGELD GVQRRIRVDLLREPK $M C$ GIPMQVTAVEPGH AVCEGRGERRRVNTALVGD VA $M C V A A P G K I L S I N G T T A T V A Y S G N R V P A N L G V V G K A Q$


 MCLAIPGQVISINQSASTAKVNFSGI TREVVVEWI DQVA MCLGIPGRVVRMLDGGQLALLVDVEGRERKVVGMLEDTVE MCVAIPYQVVEVK ENSWAEI ETAGVRHKVSMALVPE VN MCLALPVQVVELLPDNMAKVTLDGVLKVISIALV EDVT MCVGFPMRVIGGGEFAARCERRGAVEEVSL LLTGPOP MCLGDPMQVTADDPGHKAWCDGRLGRQRVRTALVGE VAA




UniRef90 UPIO00372EA5D UniRef90-UPI00031414DF UniRef90-UPIO0037A9EEF UniRef90_UPI0003733BC1 UniRef90_A4CGN6 UniRef90_Q13BY4
UniRef90_W2EQYo UniRef90-Q3ABW3 UniRef90-F6ENF8 UniRef90-R9CHJ7 UniRef90-K1YNH6 UniRef90-X4ZYZ1 UniRef90_UPI00035FF7C6 UniRef90-F7XLC1 UniRef90-C5CEU4 UniRef90-IOIS60 UniRef90-LOLQE8 UniRef90-UPIO003741678 UniRef90-M3AZU4 UniRef90_UPIO0047B357D UniRef90_A1VNQ1 UniRef90-S5SUK7 UniRef90-DOYPB8 UniRef90-S9TL60 UniRef90_Q20ZY3 UniRef90_Q21R07 UniRef90-D0D931 UniRef90-D3P5V0 UniRef90_C4SQ46 UniRef90-D5VRV2 UniRef90-M3A830 UniRef90-C0GED1 UniRef90_R6ZU92 UniRef90_P31899
UniRef90 Q45252 UniRef90-R7XRY5 UniRef90-A7FUN9
UniRef90 A6LXR7 UniRef90-A6LXR7
UniRef90 UPI00047CC0EA UniRef90_UPI0003641474 UniRef90-F1W4V4 UniRef90-X1RHH1 UniRef90_W7LDH9 UniRef90_W1IB36 UniRef90_A2SJN6 UniRef90_UPI0002F2D78A UniRef90_V4J4Q6 UniRef90-UPIO003131229 UniRef90-I0A1Z5 UniRef90-G7ZE42 UniRef90-I3BNI9 UniRef90-S5S5N5 UniRef90_A0A037ZB56 UniRef90_F6ENG0 UniRef90-I3BNG2
UniRef90-IOHV92 UniRef90-UPI0002D51909 UniRef90-C8S1A9 UniRef90-V6F545 UniRef90-R5T4N8 UniRef90_UPIO003452366 UniRef90-H5WQP4 UniRef90_C4T348 UniRef90_UPIO003737411 UniRef90_UPI00040FB64D UniRef90-I7KDV8 UniRef90-T1CALO UniRef90_C2GEQ9 UniRef90-T1C4F6
UniRef90-M3FXT6 UniRef90_UPIOOO3B77226 UniRef90-A5UKW3 UniRef90_W4MC56 UniRef90-UPIO00465EDE9 UniRef90_D9QVE5 UniRef90-W1JX84 UniRef90-U8MN44 UniRef90-EORUV7 UniRef90-G8LX11
UniRef90-Q0W6P8 UniRef90-F9MQRO UniRef90_F6DME2
UniRef90_A4JRF7 UniRef90_UPIO003720DC0 UniRef90_A9KS79 UniRef90_UPI000369ECC5 UniRef90_UP100037ED877 UniRef90_UPIO004700025 UniRef90_Q2BN50




 $M C L A V A G K D E K \square E G D \quad I G V V D L G G V R Q P V S L I M V P E \quad A K$ $M C L G I P G Q V Q R M L E G D Q L A L V D V E G E L R K V N$ GLLDSDVS


 $M$
$M$



 $M C \operatorname{Cl}$

 $M C V G \prod P M R I L S V D G D A A R A T G D E G$ $M C L A V P A L V T A L L P D$ $R \quad A T V S L G G V T S$ GT A $M C \square A \square P C K V \square E \square E N G V K F A D A E Y K G V R Q K A N L S L L A E N V K$ MCMAVPSRITAADD NGDATVEAFGASRTTSLMLLEDEVA $M C D G M P C E V I E \quad N S G M W G T V D Y C G N R M E V M M T L V M B A V A$

 MCLGVPGQI REREEGALLAARTDFVGEERVI RLNYLPD L


 $M C V G V P S K V I G R N K A L I S Q A G N T K$



 MCWATPALVKSVSSDNLKAJVDYGG■QREVINAIPDENIQQ $M C L G V P A R I L A V A D A A Q M V I A B M L G E Q R E V N L S C L D A B A W$ $M C L A I P M M Q V I A V D D S G L V V R C E A R G D E R E A G G L M Q G E E D A$ MCI GI PMRVV


Y G 1 KK E ERDGT $\mathrm{MC} \square \mathrm{G} \square \mathrm{PMQQ} \square \mathrm{MA} \square \mathrm{D} D$ $R \mathrm{R} A L C R E G G Q Q E T$ I D I S L L C D LDK $M C$ L A L P A QV I H L L



M
M

 $M C L A T P G R I V G I D P$ KFPDVASVDFGPVVKSAQLVYLPE AQ





 MCIDA 1
 $M C V A L P G K D V E L N G \quad N L A T V D F N G N K V V A D S G L V V A D$



$M C V A V P G K V V E D N G D$ MATVDFGG





UniRef90 UPIO00372EA5D UniRef90_UPI00031414DF UniRef90-UPI00037A9EEF UniRef90-A4CGN6 UniRef90- Q13BY4 UniRef90-W2EQY0 UniRef90- F6ENF8 UniRef90_R9CHJ7 UniRef90_K1YNH6 UniRef90 Q21R12 UniRef90_X4ZYZ1 UniRef90_UPI00035FF7C6 UniRef90_F7XLC1 UniRef90-_IOIS60 UniRef90-LOLQE8 UniRef90 UPI0003741678 UniRef90 ${ }^{-}$M3AZU4 UniRef90_UPI00047B357D UniRef90_A1VNQ1 UniRef90 S5SUK7 UniRef90_D0YPB8 UniRef90_S9TL60 UniRef90_Q20ZY3 UniRef90_Q21R07 UniRef90-D0D931 UniRef90-C4SQ46 UniRef90_D5VRV2 UniRef90-M3A830 UniRef90_C0GED1 UniRef90_R6ZU92 UniRef90-P31899 UniRef90-R7XRY5 UniRef90_A7FUN9 UniRef90_A6LXR7 UniRef90_UPI00047CC0EA UniRef90-UPI0003641474 UniRef90_F1W4V4 UniRef90_X1RHH1 UniRef90_W7LDH9 UniRef90_W1IB36 UniRef90_A2SJN6 UniRef90-V4J4Q6 UniRef90_UPI0003131229 UniRef90_IOA1Z5
UniRef90 G7ZE42 UniRef90_I3BNI9 UniRef90_S5S5N5 UniRef90 F6ENG0 UniRef90-I3BNG2 UniRef90_IOHV92 UniRef90_UPI0002D51909 UniRef90_C8S1A9
UniRef90-V6F545 UniRef90-UPI0003452366 UniRef90_H5WQP4 UniRef90_C4T348 UniRef90_UPI0003737411 UniRef90_UPI00040FB64D UniRef90_I7KDV8 UniRef90_T1CAL0 UniRef90_C2GEQ9 UniRef90_T1C4F6 UniRef90_M3FXT6 UniRef90 UPI0003B77226 UniRef90_A5UKW3 UniRef90-W4MC56 UniRef90_UPI000465EDE9 UniRef90_D9QVE5 UniRef90_B1KSZ7
UniRef90_W1JX84 UniRef90_-U8MN44 UniRef90_E0RUV7 UniRef90_G8LX11
UniRef90_Q0W6P8 UniRef90_F9MQR0 UniRef90_F6DME2 UniRef90_A4JRF7 UniRef90_UPI0003720DC0 UniRef90 A9KS79 UniRef90_UPI000369ECC5 UniRef90_UPI00037ED877 UniRef90-UPI0004700025 UniRef90_Q2BN50
 PGE Y A IV V H V G F A L L L K L D E E S A R R T L E L VG D WLL I F L DAARRERLD A QRAS E DD S T L R L L E A A L EGDYVLVHVGVAMSIVDEEEAKRTMDFL
 PG D WI L I HV G F A L S KI D E D E A K A A L D F L E GI GAA Y D EGDYVLI

I G D Y V M I


## P

V

I G D Y V L L V H | $V$ | $G$ | $T$ | $Y$ | $V$ | $V$ | $V$ | $H$ | $V$ | $G$ | $F$ | $A$ | 1 | $T$ | $T$ | $V$ | $D$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $V$ | $G$ | $D$ | $Y$ | $V$ | $I$ | $V$ | $H$ | $A$ | $G$ | $Y$ | $A$ | $L$ | $S$ | $K$ | $V$ | $D$ |

A G D WL L V F LD S A QE CI D A QRA QE $\square N A T L D L L E A V L Q$ VG D Y V L I Q N GFA M S LL TVVEEAE Q S L E T WV D L G
P G T A L L V H L G S A V R V L D D D E A R LI D D A L D G V A A A A E





PGSWVLVMAGLADQQI DLQDAEETLALLKEL


I G D D Y


A G D Y V
1 N D Y V L L H A G Q A M T I I N E E Y A R E S I E E WR Ni DD
GTWVLVF LGA AREVMTP EFAEQARQAALNAL GEVM
PG D WL L V F I D S A Q E RLTT T E R A R E DD A T L D L L E A V M
 V G N WV LVV H L G F A L S R I G E A D A L A A F I D ML

 $V G B Y V I V H D G F A D Q R L D E E S A M K T L A E F E Q L G$
 VG D Y V V V HVGGA $\quad$ G L L D P E EAA R T
A G D HVLVVQSGHVTAKVVEAEAAAT WALVYEDFQA
V G D Y L I L G A G F A A E K VV P E E T A A A A D D

 V G D WVLV FLD S VRERI DARRAAEI


IGGDYVLVQNK DAMTLMNEEEAQECIDELLNA
PGDWVLV HVGFAMSK
A GD WV LV HVGGFAMA R IDEHEAASTGDALKKMGQAY K G D R V L V HA G C $\square \mathrm{MQ}$ K V V E S E A E E $\square \mathrm{E}$ R LIF K E L A A IGGD YVLI HA GYAIDEKLS

$V$ G $\quad$ G Y V V G N Y V L L H S G C A I E K D Q K Q A E D TLLKL L R S L A I D D Y V L I HA G C A I E K I D Y E
PG D Y V L V H V GH A L A K I D P A EA ERT L K L L QE L G R A


V G S Y V L V H A G Y A V E V V K R E L A E E L S S N L F A D L E DV L
V D D WV L V H T G F A I QRI D E K EA LEEMDK I MNEIA E
PGDYVMVHAGMAIAKITNNETDETDDILEDL




VGQ WVLVHVGFAMSRIDEAEA HETLRLLGAIGE


UniRefi90 B2JX89 UniRef90-P95497 UniRef90_D8GKM6 UniRef90_W6KFE2 UniRef90_V4JB78 UniRef90-F8JI05 UniRef90_UPI0003B79DCD UniRef90_D5U195 UniRef90-G1Y4W0 UniRef90-X1FH04
UniRef90-M1Z380 UniRef90_M1Z380 UniRef90_UPI0003B52D41 UniRef90_W9GW58
UniRef90_Q1LN55 UniRef90_Q9AGW4 UniRef90_G7V639 UniRef90_V4JEG0 UniRef90_F0T201
UniRef90_X2GR22 UniRef90_I3TG14
UniRef90 D1Y5N3 UniRef90-D3FUD0 UniRef90-UPI00035FA60A UniRef90-X1FIX8
UniRef90-G3J1B0
UniRef90_A7IHC8
UniRef90_X1IL33
UniRef90_UPI0003B6789F UniRef90-I1AUH2 UniRef90_UPI00037A8D6C UniRef90_F6D5K9 UniRef90_R7KF31 UniRef90-E6MDY3 UniRef90_W5Y0T5
UniRef90_A3DKG7
UniRef90_E1IE25
UniRef90_B3QGV1
UniRef90-E3I2G1
UniRef90 G7ZV70 UniRef90_A0A023XXF4 UniRef90_A4YF88 UniRef90_UPI00035EDC14 UniRef90_UPI000372780F UniRef90_H0TX68 UniRef90_V6J4B5
UniRef90_M5DP59 UniRef90_UPI0003612324 UniRef90_Q8TRN5 UniRef90_UPI00036C2D7D UniRef90_A0A031LJDO UniRef90_UPIO00465962B UniRef90_UPI00035C95CE UniRef90 E2Z9G0
UniRef90_UPIO00464C0D6 UniRef90_R5CBL9
UniRef90-H2C1C1 UniRef90_UPI00035E7797
UniRef90-R7BYM2
UniRef90-Q13BX5
UniRef90_UPIO003729EAD
UniRef90-Q83WU3
UniRef90-T0PCX4
UniRef90_S5ZMP5
UniRef90_X1EYR7
UniRef90_K0UHW8
UniRef90_UPI0004654AD1
UniRef90_W5Y7M4
UniRef90_N6VSL5
UniRef90_G6YIX3
UniRef90_S6ABD9
UniRef90_D3L2X8
UniRef90_D5WZY0
UniRef90-W9VXU3
UniRef90_UPI0003B642A4
UniRef90_F8BQP1
UniRef90_H6RNI2
UniRef90-I5ASK2
UniRef90_H6SN22
UniRef90_R6T4S8
UniRef90 C8S274
UniRef90-WODLZ0
UniRef90-S6BVH3
UniRef90-R6FZ83
UniRef90_R7IDP8
UniRef90_UPIO0047DFD5A
UniRef90_Q1PUX5
UniRef90_F7KBM7
UniRef90_UPI0002DDFA09
UniRef90_J7QHN2
UniRef90_F0NP51

1
 $M C I G I P M R V L A V E P G N A L C L \quad G R G G Q R R I S T I L V G E C B R$
 MCI A I PMQVIETADG WAWCDDGGQRQQVDLLRVGEQP




 $M C L G \square P G Q D I E D T N N H K L A L V N I G G V K R E V N I A C I V D E Q H$

 MCI GVVPAKVI KDKAEK ALVVDVMGSKMFVGIVFVPEVVQ





 MCVGI PMRLLGID GDAGSATGDEGDALI IDLSLTPD AK



 $M C V G L P M T V I S T E E G S A L G V V$ R R G E HRSVVSTMLIDGE AQ
 $M C L G L P M T V V E T D G V$ T A L C CEYGNEQRRISVVVLAAD VR


 $M C L A L P C R V V E L R P D D M A V I D M A G V G K E I S L A L V D D V V V$












 MCI GLPMNVLADVRPGAALCS DRQGQQRWIDTVLVDECA

 M C L A I P H R I E EV L D S S R A VAR T G S L R V E V R T D L V D E I N
 $M C V A N T G K V I D S D N E K N D A L V D F H G S R D D E A R T G G M M D$
 $M C V A L P$ GEVIEVVKGAD MADVVDVRGVRREACLVYVAD A S
 MCLGVPMQLLAVDG $\quad$ GAGQAS DGVNMQLLDLSLTPDAQ $M C L G V P M Q V V E$ S GEFTALLCERRGEQRRLNMMLV$G A Q P$








## UniRefi90 A8IMS5

 UniRef90_D5EG36 UniRef90-T0Y7K6 UniRef90-A177M4 UniRef90_Q478N5 UniRef90_D5XDPOUniRef90_C5A3E2 UniRef90_HOTX77 UniRef90_IOHV83
UniRef90_J7Q5C7 UniRef90_J7Q5C7
UniRef90_Q0A720 UniRef90-D3T3Q7 UniRef90-N0BB41
UniRef90 P40592 UniRef90-LOGYU2 UniRef90-X1S2A2 UniRef90_UPIO00466163C UniRef90-G0A2L2 UniRef90-H5SEX5 UniRef90_UPI000378002D UniRef90_UPI000477373F UniRef90-W1I8P1 UniRef90-M5TD09 UniRef90-Q46BF3
UniRef9- W7KV90 UniRef90_W7KV90 UniRef90_UPIO0045EB884 UniRef90_A4WKD4 UniRef90-T1BV80 UniRef90-UPI00035C763A UniRef90-UPI00045EADE7 UniRef90_R716R0 UniRef90_A0A059KN80 UniRef90-G8ANU3 UniRef90_UPIO00478E1A1 UniRef90_UPI000364BD10 UniRef90-A3MWG6
UniRef90-E3CWB2
UniRef90_UPIO0036F6A53 UniRef90_UPI00037B43A3 UniRef90-X1F8V3 UniRef90-S5AAG9 UniRef90-F2LXG7 UniRef90_UPI0003A35F13 UniRef90_A4YF87 UniRef90-R5ZK83 UniRef90_A0A031LIK7 UniRef90-V4R1K5 UniRef90-E6UG76 UniRef90-V4PB50 UniRef90-K2A4A4
UniRef90-X1C8P3 UniRef90-K9PC02 UniRef90-UPIO0041451BE UniRef90-E1QQS3 UniRef90_D2Z2K1
UniRef90-B2IJ33
UniRef90-X1LV31
UniRet90-S2ZGH9
UniRef90-X8IP73
UniRef90_UPI0002EE1EB9
UniRef90-J6UA33
UniRef90-D2TXR9
UniRef90-F8IAU1
UniRef90_UPI0002002403
UniRef90_UPIO004771EEC
UniRef90-K2A5N6
UniRef90_K1KF09
UniRef90-A3Z0T9
UniRef90_C9KK62
UniRef90_UPI0002E20CEB
UniRef90-B0JKE8
UniRef90_U2TJH2
UniRef90-E6N727
UniRef90-R4KDN6
UniRef90-F1Z425
UniRef90-UPI0003A5D3E0
UniRef90-A6E4C6
UniRef90-NOAVP1
UniRef90-W6LQI2
UniRef90-W1BPU5
UniRef9O-RODET5
UniRef90- R6G4B9

UniRef90_Q03005
UniRef90_G2TF23
UniRef90_A0A031LK94
UniRef90-W0E5A1
UniRef90-M3F629
UniRef9- B5IPB5
UniRef90-B5IPB5
UniRef90_E6PP35
UniRef90_V5RSI7
UniRef90_V5RSI7
UniRef90_UPIO0040BFE54
 MCL L AVPHTIERILGDHNTVLATAGSVQVEVRVDLI DSAD
 $M C$ LS DPKRDVEWEGSGEFAWVERDGERERINMMLI GPQP $M C V A T V G K V V E V R G K R A V C S F R G V L R E V S D S L V P R V K$
 $M C L G V A M Q V L S V T P G R \quad A G A G R G R T Q P V E T A L V G E V A$




 MCI GI PMQVLETRGESALCVVYRGETSVIDMMLVGEQP MCLGVPMQVVESQGWRALCRGD DGATAWIDCVLVGGPQP $M C$ CLPAKVVQDNG $\square$ VAFVDYGNGLVEPVINNVDD VIK
 $M Q V M K \square N G Y Y A S C E A R G S S R D V S L L L I Q E E \square K$ $M C \square A \square P G K V K S W V E N$ TATIDMGGICRDVNMDLMGGESQ $M C W A V P A K V V S V D S D V V A T V D L G G N T L K$ KVAIGVENLN $M C L G E I V R L V E V G A D G A A V A Q R G S R T V P V S L I T L G A P A T$
 $M C V G F P M T V V E$ GDAFEAQCERRGERHAISMALV GAQP MCLGLPMRI ERLLEG PYALCAAEGREDRVDLSSVPE A G M C I A $\operatorname{I}$ P M K V V S


 $M C L A V P H E L T E L L D D H R \quad A R A T A G T A Q V T D R T D L L D E P B R$
 $M C M G L P M Q V L E M R G T \quad Y A L C E A E G E Q Q Q L L D M L L V G E Q P A$






 $M C L A D P A L I$ KLI EDKE A EVVE I G GI A R RVVSLWLTPE AK
 $M C D G I P M Q V V A A E S F Q A W C K$ GAEGEAMVDMLVGSQP $M C W A V P A V V L E D D E R N S L A Y V D \square G G V P R P V V I G I S N E R \square N$ MCLAVPHVI I DLA QDG SAMAKAG

 $M C V G L R A K V A N J E D$ N M AVIDDAGGVVRRVSAELI S D LAA
 MCIALPRKIVEVLDRERAMVDQTGTADAVSVALLAEEAM




 $M C L A I A C G E L I R D E D R R R M G L V E F S G V R R E V S D A C V P E A V$


 $M C L G I P A A L V E V V P D K L W A I I D V E G I R R K V G V H L V G E V V$




 MCI GLPMQI LATRPGAALC I DRHARQRWI DTALVGECA






[^0]$1010 \quad 30 \quad 30$


 MCLGVPMRV TDGDDMSALCEGAGRSERISMLLI GAQP MCIALPCKIVAVADSAMMAVAAEGESAHEVSAALLVSPQR $M C$ GVPMQVI E A GPYWAWCQGPGERDQVDTRRLVGAQR $M C L G V V G R V E E D M D G M V A K V N D G G A D V E V D N A D A B C D$




 $M C L S \square P M Q I V A L E N E S G F A \square V E R R G E R E R V N L M L I D R Q P$

 $M C V G D P A R V R R A N G \quad L R A Q C E S R N G P C M V D L D S D T M P L A$


 MCIG I P L R L TA VD G I VGRAEDGSA V D L S L VPE A G



 $M C L G D P M Q V I E T G E F Q S R C R G R N G \quad E A W D D M L V G G T Q P$ $M C L G I P V Q V I E C \quad G E H F A R C A G R N G E V R V D L S L V G Q Q L$
 $M Q I I G Q R G E \quad M A V C L Y R G L E N L I D M M L V G E Q P$ $M C L S D P L Q L V A L E D E N A D A E R R Q G N A L R R V N M M L I$ GRRP







 ME $\square L S V D G \square S A M A S G A E G$ $G A K R Q V S A E L L D G L D$

$B$ B B B B B B B B B B B B B B B B

UniRef90 D3P4A6 UniRef90-UPIOO0378E885 UniRef90-A1KC53 UniRef90_LOVTT5 UniRef90_Q20XQ3 UniRef90-UPIOO036348F2 UniRef90-E0SNL1
UniRef90-V7EP52
UniRef90-K9GZN4 UniRef90-UPI000470325D
UniRef90 X5PYM1 UniRef90-XOSCLO UniRef90_14BUU1 UniRef90 T0Z8A8 UniRef90-A0A011QY35 UniRef90-H2C1C0 UniRef90 X1DY18 UniRef90 A0A058Z148 UniRef90-B2JX97 UniRef90-H3KCA5 UniRef90_G7CIE UniRef90-I4ED30 UniRef90-W1JZA5 UniRef90 A0LAK8 UniRef90 G7ZE60 UniRef90-A0A011MCQ6 UniRef90_UPI000364E9DA UniRef90_UPI00036E71E2
UniRef90 K2A8Q1
UniRef90-I0IS53
UniRef90-A2BKU7
UniRef90 G8QH09 UniRef90_UPIO0036225D2 UniRef90-UPI00040C2F4C
UniRef90_Q478L9
UniRef90 F2L631
UniRef90-X1GHA6
UniRef90-S3LKI3
UniRef90 UPI00035CE668 UniRef90 A0A011PTD8 UniRef90_G9TT49 UniRef90 A3PLN8 UniRef90 D6TEY0 UniRef90_C7RPY9 UniRef90-ㄴ4EEC1 UniRef90 R5PQY2 UniRef90-W1YF05 UniRef90-K2F1R8 UniRef90-A0P1N6 UniRef90 D6Y8W0 UniRef90_F4CS23 UniRef90-A3KAFO UniRef90_G9YIZ2

PGAWVLGFLGTARRPLLDPVEAAQ\| LDALTAMSAALD AGDWLLVHLDSAVERLT
PGTWLMCFLGAAREVI DADTAQR

PGAHVLVHLGTAMRV

VGDLVIV HA GLDADEKISRE
PGDWLLVFLGAAREDMTEAEA DATARALDGLRALM
GG WVLGFLGAAHSVLTAEEAAQVADALLEAV
TGDDVLVFL GLARA QLSAQEAARI RAALLESVAA
GTWILAFLDTARETVTAETARLI ADALIEATERAL V GDYVLL
VGDUVLVHAGFADEK
PGDWLLTFMGSAREADDAGHAALINSALEAL
PGTWILASLGLAREVLDDRE

$V G D W V L T F L G A A R E V I T A D E A Q K \square S A A L D G L R S L M$ PDTWVLTFLGAAREVIDEARARDUESALASL PGTVLSVFDDQALRTMTEEEAEETDRALGALADVM PGDWVII HMGFALERTDEQ
AGNYVLLDRGMVIDVISAEEAQEMLSFYTDLGDML
VGSKVLVSIDTAVRLLDDDEARLIACADDALHADL
VGQWVVNYL GSAREVLEEADALRI
PGDWVLGFLGAARRLLEPEEAAQI


PGTWVMAF LGQARQVLTEDEAMEDNLALDALEAA
PGDMVMVHAGVIIEKV
VGTWI LAS L G L GKEVVEE E ERLLI EDALAA LA E S LDE PGDWVLIHVGFAMSKVSEEQAQAQLRLLAMLDEEAQ PGSWVLTFLDAAREVLEPER
PGDLVMVHAGVIIAKVDLSTLRESMEMWKQMAREL

 LGS WI L A S G GAR EVLDD
GAWLLTFGGAARREMD
PGDWILSFLGTARAVIAADE
PGDMILVHGGTG】SR
LGTWVL AS LGGMAREVVDDD
$P G D M L L V$
$V G A W L L V$
$V$
VGDF VLVQQN I IFEKQDKE $\square$ SQE $\square F D M \square$
GTWLMVFLGAAREVLSEETAKQTADALEALSMAM
PGDLVLVHAGTADSRIDEEEAR
$P G D L V L V H A G D A I S R I D P E E$
$V G C H V L T F D G A A R E V I T A D E A A K \square A S A D A G L R S L M$
$P G D Y V M V H A G V A \square A K I T A D D V D E T D \ L L E D L$

[^1]
[^0]:    lupas_21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    jhmm
    jpssm

[^1]:    lupas 21
    lupas_14
    lupas_28
    jnet
    conf
    sol25
    sol5
    sol0
    jhmm
    jpssm

