## QUERY

UniRef90_S9XBT4 UniRef90-UPIOOO22566B3 UniRef90-BOS585 UniRef90-Q4REK6 UniRef90-T1JN61 niRet90-H2MTM1 UniRef90-W5MEK1
UniRef90 A9NUA3 UniRef90-UPI0002C33F70 UniRef90 G3WQ48 UniRef90-T1H6J7 UniRef90-V4RWL1 UniRef90-G5DWF4 UniRef90-H2SJL1 UniRef90_W1PF67
UniRef90_Q7ZXP1
UniRef90 Q8LNH6 UniRef90_UPIO003C28B2D UniRef90-G1LD03 UniRef90 H2MSR7 UniRef90-D8T1L8 UniRef90-UPIOOO2B45066
UniRef90 B2LU37 UniRef90-BoWC63
UniReffo-A9S5A4 UniRef90 W5LCE6 UniRef90-Gзн9м9 UniRef90-UPIo0026538AB UniRef90 M0ZIW8 UniRef90-A7RFB4 UniRef90-UPIOOO32A5262 UniRef90 B4NPK1 UniRef90 UPI00042AFF28 UniRef90-C6HC72 UniRef90-H2TFC8 UniRef90 ${ }^{-}$V4CSO UniRef90- S2JSU1 UniRef90-UPIO0044164F1 UniRef90 G1XAP4 UniRef90 C3Y1X9 UniRef90-FOWQF4
UniRef90-G7YYZ6 UniRef90-FVY8 UniRef90_N1O8L2
UniRef90_UPIO000D5687D UniRef90_Q7Q988 UniRef90 G2RB69 UniRef90-W7HVX1 UniRef90-TTRID9 UniRef90-UPIOOO3F09706 UniRef90-F1L503 UniRef90_ULEYL2 UniRef90- AOAO17SD39 UniRef90-T11A44 UniRef90-G4VQH7 UniRef90 M4DNN3 UniRef90-Q4V903 UniRef90-F6SZW4 UniRet90_G1M4X1 UniRef90 Q7JZD3 UniRef90-UPIOOO223F3E8 UniRef90_G4ZTS6 UniRef90 A0A024U737 UniRef90-H9GDP4 UniRef90-A0A016TSW2 UniRet90 E9HF21 UniRef90-B3МТА2 UniRef90-V9KIY6 UniRet90-N1PBA6 UniRef90 C 1 L436 UniRef90-R4WD39
UniRef90
B9EMY8 UniRef90-10ZAQ8 UniRef90_B7PPL3 UniRef90-T1E810 UniRef90-S4PYI2 UniRef90 S5MOP1 UniRef90-Q6PA84
UniRef90-T1DIF6 UniRef90- UPI000258D9B5 UniRef90_T2M310 UniRef90-Q10113 UniRef90-K4BD91 UniRef90-Q7PNM5 UniRef90-D7TNA9 UniRef90_R7YNU1

10 NKO 20
ELTCQE
E QVYELEN

VSLF VVEFLDKVELKL
EIVVFFLVQIMDLKL
QUVQULNMWVNLGLKL
AYAEEITELKL
DTSAGSNQQNEELR
N
 Q
Q
Q
Q
PAYDEQTELKL
EEAAETME QLMDLK
QVVELMEQANVLKLTAEDLGKER



AETS QLT TEKEGTEKER


DPRLLELSQAEQNKATVGGLEREER AALQQKNAELMETVGGLERE

AALQQENNTLKEMVVGLERERTM AETTTLKDSVVGLERERDFYF ENEALSEANGLGGQUEGLEKERDFYF

IVS(Leke R

पQQEVATQKEA $\square \mathrm{GG}$ LEKER OF Y RDFY RDFYF EVALKQQFDQLKTTDEGLRER QVQALSKELTDLKGSYDHLGKER

DEVAEFMQQVNVWKLTVEDLEEKRS
WEKERDFYF
LRDPVESLEKER NS TCRSQLEGLEKE

MSSLEKR
EPADNPMAEFTRLSTLWQGLEKD

Q $\square$ T MEAE Q N K T D $\square E R \square L R E$
पsenovi a athlee
 RDYYY RDFYF RDFYFS RDFYF RDFYF RDFYF
QDt SLETQLYEVNetmpGLERER
DR $\square$ S A $\square$ S AE $\square$ NE $\square$ AM M M Q N $V E M S$ R $F$ Y EYYF

LK QEVT TLKEMVVGLERERDFYFAKILRDI EVLIQE

| QUERY | NEGENDPVLQRIVDILYAT |
| :---: | :---: |
| UniRef90_S9XBT4 | NEGENNPVLQRIVDILYAT |
| UniRef90_UPI00022566B3 | NEGENNLVLQRIVDILYAT |
| UniRef90_B0S585 | KEGEGDPTL Q K I V D I L Y A T |
| UniRef90-S4RQY1 | HENDTDPVLQKVLDVLYAT |
| UniRef90-Q4REK6 | PESEHHPILSSKI MDILYAT |
| UniRef90-T1JN61 | QENDNLPVI Q K L L DVLYA T |
| UniRef90-H2MTM1 | NE N NPVLSSKI I DI L Y A T |
| UniRef90-W5MEK1 | KEGENDPTL Q R I V D I L Y A T |
| UniRef90-A9NUA3 | P DVEHLPVVAAV Q S I L Y A T |
| UniRef90_UPI0002C33F70 | P EI Q HL SVVGA I Q K I L Y A T |
| UniRef90_G3WQ48 | NEGENDPVLQRIMEILYAT |
| UniRef90-T1H6J7 | AEDEPHPLI QKI VDIL Y A T |
| UniRef90_V4RWL1 | P G I E H L P I V G A I K R I L Y A T |
| UniRef90_G5DWF4 | P EIE H N PVVEAI Q K I L Y A |
| UniRef90-H2SJL1 | HENDH P GI SRIMMDVLYAT |
| UniRef90_W1PF67 | PEVEHLP I V S AI QRIL Y A T |
| UniRef90_Q7ZXP1 | HGQE G D DL L Q R L M I L Y S S |
| UniRef90_G7K588 | P EVEHSAVVAA I Q K I L Y A T |
| UniRef90-Q8LNH6 | PEVEHLP I V N AI HKVLY A |
| UniRef90_UPI0003C28B2D | HESENSSVI A GIITTILYA T |
| UniRef90_G1LD03 | NERE L Q K MVDI LYA T |
| UniRef90-H2MSR7 | QGEENAPFVDRLMEVLYAS |
| UniRef90-D8T1L8 | PADENAPAVLAI QKILY A |
| UniRef90_UPI0002B45066 | H QI Q D SNVVRAI K K I L Y A |
| UniRef90_B2LU37 | $P E L E D L P I V \vee A V K K I L Y A T$ |
| UniRef90-B0WC63 | DEQNETPLI QRIL L NILYA |
| UniRef90-A9S5A4 |  |
| UniRef90-M4F7Q8 | PDTEHLPLLVGSI KRIL Y A |
| UniRef90-W5LCE6 | KEGEGDPTL Q R I VDIL Y A T |
| UniRef90-G3H9M9 | R GQENDDLI QRLMEVLYAS |
| UniRef90_UPI00026538AB | FENEPHS GITT RVLDDI L Y A T |
| UniRef90-M0ZIW8 | P D L E DVPMAMAV K K I L Y A |
| UniRef90-A7RFB4 | QEGEKPP\IERILLAVLYA T |
| UniRef90_UPI00032A5262 | PEADNDS $\sqrt{\text { S A A I KKI L Y A }}$ |
| UniRef90_B4NPK1 |  |
| UniRef90_UPI00042AFF28 | PEDE D S PMV |
| UniRef90_C6HC72 | LD K D D D S L V K H $\quad$ Q A I L Y S T |
| UniRef90-H2TFC8 | PESENHP【LSKIMMDILYAT |
| UniRef90_V4CS05 |  |
| UniRef90_S2JSU1 | QGDTDGECI KEI Q A I L Y R T |
| UniRef90_UPI00044164F1 | GQGQDDETLLKEI Q K I L Y S T |
| UniRef90_G1XAP4 | S QEDPA EVI KRVVHEILYS T |
| UniRef90_C3Y1X9 | HEGENHPALLLKIMMVLYA T |
| UniRef90_FOWQF4 | $\square E G E Q N A L V Q D L F K L L Y A T$ |
| UniRef90_G7Y5Z6 |  |
| UniRef90_F7VY86 | LEEKQED GLI L A I Q A I L Y S T |
| UniRef90-N1Q8L2 | AEEDENSLLLKQI Q T I L Y S T |
| UniRef90_UPI0000D5687D | SEDA Q NPLI QKI LDVLY A T |
| UniRef90_Q7Q988 | DEQS Q S PFVQKIILEI L Y A T |
| UniRef90-G2RB69 | LEK QE D GLVVQI Q NIL S A T |
| UniRef90-W7HVX1 | ALEEEHDEVL RKV Q Q I L Y S T |
| UniRef90-T0RID9 | DETEHTETVVKSI F NIL Y A |
| UniRef90-R4X6C5 | NATETDPLVKQI QEVLYS T |
| UniRef90_UPI0003F09706 | HEEENHPGLQKIVVEILYAT |
| UniRef90-F1L5Q3 | NEQ $\square$ G TVEVVSRVL DIL Y E T |
| UniRef90-U5EYL2 | DEGNPTPLVVSKILEILLYAT |
| UniRef90-T1FK62 | HENDD】PFVK Q L L E I L Y A T |
| UniRef90-A0A017SD39 | A EKDD DS LVKHILQGILYS T |
| UniRef90-T1IA44 | HEGE SPVVLQRILEIL Y A T |
| UniRef90-G4VQH7 | NRK V DLLTK S I F E I L Y A T |
| UniRef90_M4DNN3 | P E L E D L P |
| UniRef90-Q4V903 | HEAESSPVISR\IDDLYA T |
| UniRef90 F6SZW4 | H |
| UniRef90-G1M4X1 | NKGEN K G |
| UniRef90-Q7JZD3 | ADDEAHP\IQKILDILYAT |
| UniRef90_UPI000223F3E8 | HESENSPVISS GI I GI L Y A T |
| UniRef90_G4ZTS6 | AEDETNPLAQAI FKVLYAT |
| UniRef90_A0A024U737 | DESQHTDII I K Cl FEVLY C |
| UniRef90-H9GDP4 | HESESSPIVA G I I GI L Y A T |
| UniRef90-A0A016TSW2 | NES $\square$ G TVEEV S R I L E I L Y E T |
| UniRef90-E9HF21 | $\square \mathrm{D}$ QED NPI I Q Ki L A KL Y A T |
| UniRef90-B3MTA2 | DCS QH T T I SEKI L D I |
| UniRef90_V9KIY6 | HGQENMDLVQRLTDVLYA T |
| UniRef90-N1PBA6 | NEDQS V VKS I M D I L Y A T |
| UniRef90_C1L436 | $N \quad Q K V E L T K E I E E I L Y A T$ |
| UniRef90-R4WD39 | HEGDT ELLVQKI LDI L Y A T |
| UniRef90-B9EMY8 |  |
| UniRef90-IOZAQ8 | DE@K NQPLVPFI ERVLYA T |
| UniRef90-B7PPL3 | CEQKNSEVI EKI LEI L Y A T |
| UniRef90-T1E810 | HGKENEEFCEKVFKILSA |
| UniRef90-S4PYI2 | EEQQNAP IVQKI LDI LYA T |
| UniRef90_S5M0P1 | KEDEGDPTLL C W 1 MDI L Y A T |
| UniRef90-Q6PA84 | S D SENVGVVLSKI I DI L Y A T |
| UniRef90_T1DIF6 | DEQGADTLVQRIL N I L Y A T |
| UniRef90_UPI000258D9B5 | Y DNNGDPIVQKI L EVLYA T |
| UniRef90_T2M310 | PENAGDELSERVLQI L Y A T |
| UniRef90-Q10113 | HPMSMENMLERI QAIL Y S T |
| UniRef90_K4BD91 | $P E \square E N \square P V V D A V K R I L Y A$ |
| UniRef90_Q7PNM5 | PEDS Q DGLCA KVKK I M M A S |
| UniRef90-D7TNA9 | PEVEDLPMS MAI K K I L Y A |
| UniRef90_R7YNU1 | Y DKK A V D L F K S I Q Ali L Y S |



|  |  |
| :---: | :---: |
| UniRef90_UPI0003F1BF5C | $V E G G N N P V L Q R L M Y V L Y A T$ |
| UniRef90-W6MGW9 | ITEENDSLVKEFQEI L Y S T |
| UniRef90-UPI00021A5676 | NGE LPVLES ILAI MYET |
| UniRef90-D8RTQ2 | SDVEGPEII PAI QKILYA T |
| UniRef90-B4NJP9 | HDVAVQPFIE K I M SLL Y |
| UniRef90-J9VH56 | VEGEESDVMTKI Q DI L Y A T |
| UniRef90_G7JQX9 | PEVED $\square$ PVTVAI K K I L Y A T |
| UniRef90_UPI00035A175A | NESEAH V K DVMDVLYAT |
| UniRef90-D5AC79 | P E L E R L A V V M A I QKI L Y A |
| UniRef90_L7LQX4 | CEQKHSQVVDQI LEELYAT |
| UniRef90-W5MGA6 | QGQDSA QFVEQLMEVLYAT |
| UniRef90-C4WST3 | QESEH PLFSKVLEILYAT |
| UniRef90-B3S246 | D T A HDSPI 1 AQIL L E I MYA T |
| UniRef90-R4G5G4 | YEGET P I Q Q L DVLYA |
| UniRef90-L1IYJ0 | NEGEVKELVDDI Q $\mathrm{Cl}^{\text {I L Y S T }}$ |
| UniRef90-B7FVS3 | Y DGDQNNLVDDVFKILYAT |
| UniRef90_F1M120 | SEGENDPGLQRTVDSLYAT |
| UniRef90-G3Q1C2 | QGEENAPFVDQLMEVLYAT |
| UniRef90-K3WSI4 | TEGDTNPLAQNIFKILYAT |
| UniRef90_UPI0002657C8E | F EAKEDPALEQI LEIL Y A T |
| UniRef90-A5DB68 | AKNSDSELI AEI QAI L Y K T |
| UniRef90-Q8MY61 | EEGEVPELVKQIT TAILYAT |
| UniRef90-A0A022RWX8 | P D IE K S PVMEAVKKILYAS |
| UniRef90-T1K167 | NEEEDASLIEKI L N I LYAT |
| UniRef90-P40013 | NGGALLRFVKKVESILYAT |
| UniRef90-G3NVC5 | DK DNP■LNKI LDVLYAT |
| UniRef90-A9V243 | PEDQRGSTIERVFEVLYA |
| UniRef90-C1BSE5 | EEDGGEFSQKALSVLYAT |
| UniRef90-S7RKK2 | AEGQSDETLKK】QE L L Y S |
| UniRef90_UPI0003B5DA14 | R D R G D |
| UniRef90-UPI0004621295 | QEEKDDPVLRDDQK\LYS T |
| UniRef90-M4AXB2 | E RIVSKLVLRNLMKV |
| UniRef90-A2DQM1 | NES D DMVK KILEIMYET |
| UniRef90-EOVWC6 | EDDVDSP@INK!LEVLYAT |
| UniRef90-D2VEZ6 | EQEQLT FMRDMQKILYAT |
| UniRef90-E1ZE96 | PELQEI PA】R\VEKI L Y A |
| UniRef90-UPI0002B4B13C | SELEDLPMTAAI K M |
| UniRef90-11F5T5 | NGE LPVLESILLAIMYET |
| UniRef90-H2WPB2 | NES $\square$ GNVEVGRVLEVLYET |
| UniRef90-X6MP98 | Y G D Q L P L L E K I Y S SLY Q T |
| UniRef90-M2X121 | FEESHSDVAKAFQQVLYAT |
| UniRef90-M7ZDX0 | PELEHLPVTKGIRKILYA |
| UniRef90-Q84TR5 | $V C E L P I$ MKRVQEI L Y A |
| UniRef90-M5GE45 | QEGKDDDVLKEI QKI LYS T |
| UniRef90_H0XMQ4 | NQGENSPAL GRIVDILYAT |
| UniRef90-Q0CNK2 | LE K E E D S VK HI QGI L Y S T |
| UniRef90-M4B8M6 | DESDTNPLVQAVFKVLYAT |
| UniRef90-C8KHZ1 |  |
| UniRef90-E5SP89 | CAEAGEGMADTVLEVLYAT |
| UniRef90-Q6BRS1 | DESEVNEF\EKVQSILYST |
| UniRef90-G8JN37 | DPQELNRLI GKI NQI L Y S T |
| UniRef90-J3M1W5 | E HLPMSKAI KKI LYA |
| UniRef90-J0XKQ4 | AEGSPTVSRDEI LVILYE |
| UniRef90-J9J4V1 | NPSQANPLTENILKKILYAS |
| UniRef90-K5WI48 | AEGKEDPTLRDI QKILYST |
| UniRef90-A0A022R7Z2 | PELENFPMSMAI K K I L Y A |
| UniRef90_UPI0003D6F286 | HESENSPVISGI DGILYAT |
| UniRef90-N1JFK7 | IEK Q E D GLI K HI QTILYST |
| UniRef90-C5K784 | VDKSTGELKKMVQSILFAS |
| UniRef90-H3EKS8 | DETGQVPPI A RFLEILYET |
| UniRef90_UPI0001DEB981 | NKGGKQHClA VTVDILYAT |
| UniRef90-E4X3G5 | PESETYKVTKKILDVLYAT |
| UniRef90-D5GBK5 | AEEDEDGLVKHI QAILYST |
| UniRef90-W5KJR1 | KGENVDPTLQTILSILLYA |
| UniRef90-M1VCl6 | HPEPELPLI KAI QAVLY |
| UniRef90-J7SB43 | NEGELNKFLNKVQTILYAT |
| UniRef90_W4GC08 | DESQHTDVIKKI |
| UniRef90-V9DRU2 | AEKDENGLIKNI Q T I LYS T |
| UniRef90-A4S7S9 | PEFENNPLKNVVERILYHT |
| UniRef90-N1QMF2 | AEEDENGLLKQI QTI L Y S T |
| UniRef90-G8Y0H3 | LK S LDDEPLID KI QLI L Y S T |
| UniRef90-G3AGA7 | YEFADLDIJFKKI QTILYAT |
| UniRef90_C3Y1X8 | DPTKPI D T SKI LAVLYAT |
| UniRef90-F6X0F3 | VEQQELPF NKI TTVLYAT |
| UniRef90-U1HL26 | LEKDDNGLVKNI QAILYST |
| UniRef90-FOVLK3 |  |
| UniRef90-A0A015NKQ6 | QVEPDNQLL K EI Q T I L Y S T |
| UniRef90-B8LNI1 | SELLEDPAI R TII QRLLY |
| UniRef90-Q6CVJ5 | NDKELRPFLNRI QQi LYAT |
| UniRef90_O17509 | LD REDKELSEKVTEI L Y A T |
| UniRef90-U6MML7 | APGQTALLSEELLQAILYA |
| UniRef90-S8BZM3 | P EVEKVALLATAA K K L L Y S |
| UniRef90-B4M808 | NRDENPDVVKKI L E |
| UniRef90-D8PYW7 | QTEEEDETLKE\\|QKILYST |
| UniRef90-U6HQJ1 | GMGDNAFAKKFLDILYAT |
| UniRef90-T1G515 | VVGGDEQMVQQ\|LDILYET |
| UniRef90-W2TS75 | CAENENPDKDAILAAILYES |
| UniRef90-K5VM58 | GESKDDVTLREI QKI L Y S T |
| UniRef90-R1EMY5 | PELLEDDTILKNI QTILYST |
| UniRef90-V2YBK4 | ADGKEDHVLKQI QQILYST |
| UniRef90_U4LQZ6 | LE Q E E G L V P S I Q A I L Y S T |

30
M S
 RDFYYDKLRRVEDFCQK RDFYFNKLREVE LVQT RDFYFDKLRD: ELLEQE RDFYFAKLRDI ELLVQT
E QFNADTQEKDD TVRMQTVEMERDYYYQKLTQUEDLSEE RDFYFDRLRAA RNFYFEKLRRIEDMCND RDFYFSKLRDIELLVQQ RDFYFAKLRD

##  <br> $M S A H L E G \square E K E R$ $U E S E R$ $V D Q A R L E R$ <br> $M S A H L E G L E K E R$ $U E S E R$ $V D Q A R L E R$ <br> QHVESER $\square$ NEASMLDADSLES E <br> E QVQS $\square$ S E S $\square$ A E R DLI I S G $\square$ K S D R $R$ $R$ $R$ $R$ $R$ $R$ <br> $\square$ NNNEDA $\square$ QQVEKE <br> - L L




## V D

R DFYFNKL DFYF SKLRDI

RDFYYTK L R R
RNFYFNKLREI

RDFYFGKLRDV

RNFYFNKLREI




KDFYYNKLRKI
T D T S MVVEEYAMEAQQMQSER RDFYFAKLRD
RSFYFGKLRDI
RNFYFNKCRD
RDFYFGKLRDi
NTE $\square E K$ K KKS $\square E \|$ VDKERMFYFNKLRA E E YA DDAQQMESERNFYFNKLARA


## C C C C C C C C C C C C C C C C C C C C C <br> C C C C C C C C C C C C C C




lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


