

Table S1. Annotations and directions of response of the 175 genes that show common responses to heat stress in *M. californianus*, *M. trossulus* and *M. galloprovincialis*. The order of genes matches that of Fig. 3. A plus sign indicates induction and a minus sign indicates repression. An asterisk indicates genes with expression patterns plotted in Fig. 4. Data are from Lockwood, Sanders and Somero (Lockwood et al., 2010) and Connor and Gracey (Connor and Gracey, 2011).

| Gene annotation (BLASTx) | GenBank Accession | Direction of response |
|---|-------------------|-----------------------|
| heat shock protein 70* | ES391114 | + |
| heat shock protein 70 | ES735872 | + |
| cAMP-responsive element-binding protein-like 2* | ES404678 | + |
| sporozoite threonine-asparagine-rich protein | ES391808 | + |
| Sequestosome 1 | ES403532 | + |
| CCAAT/enhancer-binding protein gamma | ES738577 | + |
| heat shock protein 70 | ES407087 | + |
| glyoxylate reductase hydroxypyruvate reductase | ES400468 | + |
| Sestrin-3 | ES391506 | + |
| No Significant Hit | ES398477 | + |
| cathepsin c | ES399013 | + |
| Protein FAM195A | ES738750 | + |
| Toll-like receptor 13 | ES388151 | + |
| nf-kappa-b inhibitor | ES401131 | + |
| latrophilin 3 | ES391336 | + |
| small heat shock protein 24 | ES398112 | + |
| No Significant Hit | ES391539 | + |
| c-jun protein | ES405647 | + |
| No Significant Hit | ES392021 | + |
| transcription factor hes-1 | ES406050 | + |
| No Significant Hit | ES407069 | + |
| glycyl-tRNA synthetase | ES738115 | + |
| neuroendocrine protein 7b2 | ES391363 | + |
| BTB/POZ domain-containing protein KCTD3 | ES404701 | + |
| rna binding motif x-linked-like 1 | ES397376 | + |
| iq motif containing k | ES397389 | + |
| No Significant Hit | ES389407 | + |
| Protein bicaudal D homolog 1 | ES401580 | + |
| rtdr1-prov protein | ES393888 | + |
| pdz domain protein | ES405641 | + |

| Gene annotation (BLASTx) | GenBank Accession | Direction of response |
|---|-------------------|-----------------------|
| luteinizing hormone isoform cra_a | ES397159 | + |
| No Significant Hit | ES403660 | + |
| OTU domain-containing protein 4 | ES400572 | + |
| Endoplasmic reticulum resident protein 29 | ES396968 | + |
| Uncharacterized protein C2orf65 | ES396702 | + |
| wd repeat domain 12 | ES401411 | + |
| proteasome (macropain) beta 6 | ES393950 | + |
| PREDICTED: similar to AGAP010221-PA [<i>Tribolium castaneum</i>] | ES404749 | + |
| dre1 protein | ES398398 | + |
| ef-hand domain (c-terminal) containing 2 | ES404829 | + |
| ccaaat enhancer binding protein | ES399510 | + |
| cdc42 protein | ES389122 | + |
| No Significant Hit | ES394544 | + |
| No Significant Hit | ES396035 | + |
| calmodulin | ES404659 | + |
| heat shock protein 70 | ES393037 | + |
| norepinephrine transporter | ES407243 | + |
| dead (asp-glu-ala-asn) box polypeptide 41 | ES391493 | + |
| nadh-ubiquinone oxidoreductase ashi subunit | ES399520 | + |
| peptidase (mitochondrial processing) beta | ES389068 | + |
| e2f transcription factor 8 | ES402411 | + |
| histocompatibility 13 | ES736950 | + |
| gtp-binding nuclear protein ran | ES388802 | + |
| transmembrane bax inhibitor motif containing 6 | ES738513 | + |
| lin-24 (twenty-four) like family member (Intl-1) | ES394680 | + |
| No Significant Hit | ES396503 | + |
| cholecystokinin a receptor | ES738358 | + |
| hypothetical protein BRAFLDRAFT_74499 [<i>Branchiostoma floridae</i>] | ES395010 | + |
| peroxiredoxin 6 | ES397059 | + |
| actin-related protein 2/3 complex subunit 5 | ES406440 | + |
| mapmodulin cg5784-pc | ES389000 | + |
| glutaredoxin-1 | ES389121 | + |
| regulatory protein | ES401162 | + |

| Gene annotation (BLASTx) | GenBank Accession | Direction of response |
|---|-------------------|-----------------------|
| yip1 domain member 5 | ES394757 | + |
| tctex1d1 protein | ES738040 | + |
| octopine dehydrogenase | ES398049 | + |
| electron-transfer-beta polypeptide | ES736201 | + |
| angiopoietin 4 | ES738575 | + |
| No Significant Hit | ES389771 | + |
| No Significant Hit | ES393695 | + |
| ring finger protein | ES402785 | + |
| similar to Col protein | ES389368 | + |
| Headcase protein | ES407873 | + |
| No Significant Hit | ES403599 | + |
| briggsae cbr-nekl-4 protein | ES405475 | + |
| loc495409 protein | ES397215 | + |
| No Significant Hit | ES393811 | + |
| heat shock protein 25 | ES737726 | + |
| Carbohydrate sulfotransferase 15 | ES394067 | + |
| mgc80611 protein | ES407248 | + |
| Hillarin | ES394886 | + |
| proteasome subunit beta type 3 | ES405577 | + |
| sec13-like 1 (<i>cerevisiae</i>) | ES396393 | + |
| heat shock cognate 71 | ES390558 | + |
| glutathione transferase omega-1 | ES737628 | + |
| No Significant Hit | ES401889 | + |
| No Significant Hit | ES392870 | + |
| No Significant Hit | ES393542 | - |
| No Significant Hit | ES404473 | - |
| Serine/arginine-rich splicing factor 10 | ES388931 | - |
| No Significant Hit | ES405837 | - |
| No Significant Hit | ES400561 | - |
| fibronectin type iii domain protein | ES388402 | - |
| No Significant Hit | ES738178 | - |
| Disks large homolog 5 | ES403331 | - |
| No Significant Hit | ES388508 | - |
| No Significant Hit | ES406332 | - |

| Gene annotation (BLASTx) | GenBank Accession | Direction of response |
|--|-------------------|-----------------------|
| Myophilin | ES390846 | - |
| A-kinase anchor protein 9 | ES394182 | - |
| No Significant Hit | ES396191 | - |
| No Significant Hit | ES400419 | - |
| No Significant Hit | ES400506 | - |
| CD109 antigen | ES402037 | - |
| Spectrin beta chain* | ES392490 | - |
| appr-1-p processing domain protein | ES736599 | - |
| No Significant Hit | ES407863 | - |
| E3 ubiquitin-protein ligase RNF13 | ES737088 | - |
| No Significant Hit | ES391695 | - |
| adp-ribosylation factor-like 15 | ES399086 | - |
| PAB-dependent poly(A)-specific ribonuclease subunit 3 | ES399428 | - |
| CCR4-NOT transcription complex subunit 4 | ES390255 | - |
| nup205 protein | ES394577 | - |
| Dynein heavy chain 10* | ES400211 | - |
| RuvB-like helicase 1 | ES395942 | - |
| No Significant Hit | ES736674 | - |
| No Significant Hit | ES389174 | - |
| No Significant Hit | ES388486 | - |
| sterile alpha motif domain containing 1 | ES399580 | - |
| chromosome 2 open reading frame 65 | ES396695 | - |
| Transient receptor potential cation channel subfamily M member 2 | ES393487 | - |
| Autophagy-related protein 16-1 | ES401483 | - |
| DNA fragmentation factor subunit alpha | ES738725 | - |
| von willebrand factor a domain containing 3a | ES388760 | - |
| Chromobox protein homolog 1 | ES399636 | - |
| No Significant Hit | ES390971 | - |
| membrane alanine aminopeptidase | ES400562 | - |
| No Significant Hit | ES402090 | - |
| Uncharacterized serine-rich protein C215.13 | ES737098 | - |
| No Significant Hit | ES403820 | - |
| Protein SMG8 | ES390045 | - |

| Gene annotation (BLASTx) | GenBank Accession | Direction of response |
|--|-------------------|-----------------------|
| Cytochrome P450 CYP12A2 | ES400127 | - |
| No Significant Hit | ES406619 | - |
| No Significant Hit | ES397322 | - |
| nol1 nop2 sun domain family 2 protein | ES397429 | - |
| ciliary dynein heavy chain 7 | ES394142 | - |
| No Significant Hit | ES397211 | - |
| T-complex protein 1 subunit delta | ES391328 | - |
| No Significant Hit | ES402863 | - |
| pol polyprotein | ES389530 | - |
| Slit homolog 3 protein | ES388036 | - |
| No Significant Hit | ES395870 | - |
| No Significant Hit | ES397829 | - |
| structural maintenance of chromosomes 1a | ES397399 | - |
| No Significant Hit | ES396662 | - |
| No Significant Hit | ES398134 | - |
| No Significant Hit | ES396550 | - |
| No Significant Hit | ES391886 | - |
| centrosome protein 4 | ES389450 | - |
| No Significant Hit | ES404735 | - |
| ninein-like protein | ES389180 | - |
| No Significant Hit | ES398919 | - |
| kiaa1410 protein | ES401378 | - |
| dre1 protein | ES402685 | - |
| pol polyprotein | ES394531 | - |
| cg6729 cg6729-pa | ES392320 | - |
| structural maintenance of chromosomes 3 | ES393614 | - |
| No Significant Hit | ES394055 | - |
| No Significant Hit | ES397621 | - |
| PREDICTED: hypothetical protein [<i>Strongylocentrotus purpuratus</i>] | ES738872 | - |
| No Significant Hit | ES388431 | - |
| PREDICTED: similar to predicted protein [<i>Ciona intestinalis</i>] | ES391180 | - |
| Tripartite motif-containing protein 3 | ES391097 | - |
| Homeobox protein Meis1 | ES390651 | - |

| Gene annotation (BLASTx) | GenBank Accession | Direction of response |
|--|-------------------|-----------------------|
| No Significant Hit | ES392818 | - |
| Protein FAM50A-A | ES390376 | - |
| Polyadenylate-binding protein 2-B | ES393444 | - |
| kiaa1598 protein | ES395677 | - |
| cq098_human ame: full=uncharacterized protein c17orf98 | ES396423 | - |
| dna polymerase zeta catalytic subunit | ES394872 | - |
| No Significant Hit | ES391047 | - |
| 14-3-3-like protein 1 | ES405440 | - |
| leucine-rich transmembrane protein | ES390285 | - |
| cdk5 regulatory subunit associated protein 1 | ES403039 | - |
| Transcription intermediary factor 1-alpha | ES390925 | - |
| Serine/threonine-protein phosphatase 1 regulatory subunit 10 | ES407772 | - |