**SI Table1**

Linear mixed effect model results for log10 protein concentration (mg gm-1 F.W.) in spleens of northern leopard frogs (*Rana pipiens*). Significant terms are in bold. GORG=gorgoderids; ECH=*Echinostoma* spp.; OSW=*Oswaldocruzia* sp.; RHB=*Rhabdias* sp.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **DF** | **DenDF** | **F** | ***p* value** |
| Atrazine level | 1 | 4.745 | 1.1943 | 0.33 |
| Log10(GORG+1) | 1 | 9.21 | 0.44 | 0.52 |
| **Log10(ECH+1)** | **1** | **26.67** | **6.68** | **0.02** |
| Log10(OSW+1) | **1** | 141.89 | 1.13 | 0.29 |
| Log10(RHB+1) | 1 | 149.99 | 1.32 | 0.25 |

Linear mixed effect model results for thiol concentration (U.I. x 10-3 mg-1 protein) in spleens of northern leopard frogs (*Rana pipiens*). Significant terms are in bold. GORG=gorgoderids; ECH=*Echinostoma* spp.; OSW=*Oswaldocruzia* sp.; RHB=*Rhabdias* sp.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **DF** | **DenDF** | **F** | ***p* value** |
| Atrazine level | 1 | 5.77 | 0.10 | 0.76 |
| Log10(GORG+1) | 1 | 91.48 | 0.53 | 0.47 |
| Log10(ECH+1) | 1 | 138.94 | 0.29 | 0.59 |
| **Log10(OSW+1)** | **1** | **145.91** | **10.92** | **0.001** |
| Log10(RHB+1) | 1 | 143.67 | 1.57 | 0.21 |
| **Pesticide\* Log10(OSW+1)** | **1** | **145.96** | **7.96** | **0.005** |
| **log10(GORG + 1)\*log10(OSW + 1)** | **1** | **145.17** | **9.03** | **0.003** |

**SI Table 3**

Linear mixed effect model results for log 10 catalase activity (nmol H2O2 min-1 mg protein-1) in spleens of northern leopard frogs (*Rana pipiens*). Significant terms are in bold. GORG=gorgoderids; ECH=*Echinostoma* spp.; OSW=*Oswaldocruzia* sp.; RHB=*Rhabdias* sp.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **DF** | **DenDF** | **F** | ***p* value** |
| Atrazine level | 1 | 8.48 | 2.90 | 0.12 |
| Log10(GORG+1) | 1 | 25.74 | 0.28 | 0.60 |
| Log10(ECH+1) | 1 | 56.23 | 1.99 | 0.16 |
| **Log10(OSW+1)** | **1** | **91.01** | **10.35** | **0.002** |
| Log10(RHB+1) | 1 | 91.83 | 0.05 | 0.83 |

**SI Table 4**

Linear mixed effect model results for GST concentration (µmol CDNB min-1mg protein-1) in spleens of northern leopard frogs (*Rana pipiens*). GORG=gorgoderids; ECH=*Echinostoma* spp.; OSW=*Oswaldocruzia* sp.; RHB=*Rhabdias* sp.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **DF** | **DenDF** | **F** | ***p* value** |
| Atrazine level | 1 | 5.12 | 0.002 | 0.97 |
| Log10(GORG+1) | 1 | 116.90 | 1.84 | 0.18 |
| Log10(ECH+1) | 1 | 131.59 | 2.91 | 0.09 |
| Log10(OSW+1) | 1 | 130.74 | 1.81 | 0.18 |
| Log10(RHB+1) | 1 | 129.32 | 0.18 | 0.68 |

**SI Table 5**

Linear mixed effect model results for log10 lysozyme activity (U.I. mg-1 protein) in spleens of northern leopard frogs (*Rana pipiens*). GORG=gorgoderids; ECH=*Echinostoma* spp.; OSW=*Oswaldocruzia* sp.; RHB=*Rhabdias* sp.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **DF** | **DenDF** | **F** | ***p* value** |
| Atrazine level | 1 | 4.98 | 1.17 | 0.33 |
| Log10(GORG+1) | 1 | 86.42 | 0.60 | 0.44 |
| Log10(ECH+1) | 1 | 88.95 | 0.35 | 0.55 |
| Log10(OSW+1) | 1 | 87.93 | 0.47 | 0.49 |
| Log10(RHB+1) | 1 | 85.44 | 0.35 | 0.56 |