

# Supplementary Materials: Ocean Warming May Enhance Biochemical Alterations Induced by an Invasive Seaweed Exudate in the Mussel *Mytilus galloprovincialis*

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**Table S1.** Results for two-way ANOVA analysis on biochemical biomarkers responses in the gills of *Mytilus galloprovincialis* with *A. armata* exudate exposure and water temperature as factors.

| Biomarker. | Factor      | df    | F    | <i>p</i>         | % of Total Variation |
|------------|-------------|-------|------|------------------|----------------------|
| CAT        | Exudate     | 1, 24 | 0.95 | 0.33             | 2.94                 |
|            | Temperature | 1, 24 | 2.02 | 0.16             | 6.22                 |
|            | Interaction | 1, 24 | 5.47 | <b>0.03</b>      | 16.85                |
| GST        | Exudate     | 1, 24 | 0.28 | 0.60             | 0.88                 |
|            | Temperature | 1, 24 | 4.66 | <b>0.04</b>      | 14.80                |
|            | Interaction | 1, 24 | 2.55 | 0.12             | 8.10                 |
| tGSH       | Exudate     | 1, 20 | 6.35 | <b>0.02</b>      | 18.91                |
|            | Temperature | 1, 20 | 8.67 | <b>0.01</b>      | 25.8                 |
|            | Interaction | 1, 20 | 0.15 | 0.70             | 0.45                 |
| LPO        | Exudate     | 1, 24 | 4.45 | 0.08             | 14.11                |
|            | Temperature | 1, 24 | 0.27 | 0.27             | 4.05                 |
|            | Interaction | 1, 24 | 0.19 | 0.45             | 5.69                 |
| PC         | Exudate     | 1, 24 | 0.01 | 0.91             | 0.04                 |
|            | Temperature | 1, 24 | 0.30 | 0.59             | 1.13                 |
|            | Interaction | 1, 24 | 2.54 | 0.12             | 9.45                 |
| AChE       | Exudate     | 1, 23 | 157  | <b>&lt; 0.01</b> | 43.75                |
|            | Temperature | 1, 23 | 0.09 | 0.77             | 0.21                 |
|            | Interaction | 1, 23 | 0.68 | 0.42             | 1.63                 |
| HSP70      | Exudate     | 1, 24 | 2.76 | 0.11             | 10.17                |
|            | Temperature | 1, 24 | 0.27 | 0.61             | 0.98                 |
|            | Interaction | 1, 24 | 0.10 | 0.76             | 0.36                 |

**Table S2.** Results for two-way ANOVA analysis on biochemical biomarkers responses in the digestive gland of *Mytilus galloprovincialis* with *A. armata* exudate exposure and water temperature as factors.

| Biomarker | Factor      | df    | F     | p                | % of Total Variation |
|-----------|-------------|-------|-------|------------------|----------------------|
| CAT       | Exudate     | 1, 23 | 0.02  | 0.89             | 0.07                 |
|           | Temperature | 1, 23 | 4.59  | <b>0.04</b>      | 16.24                |
|           | Interaction | 1, 23 | 0.83  | 0.37             | 2.92                 |
| GST       | Exudate     | 1, 24 | 0.83  | 0.37             | 2.69                 |
|           | Temperature | 1, 24 | 3.82  | 0.06             | 12.32                |
|           | Interaction | 1, 24 | 2.33  | 0.14             | 7.53                 |
| tGSH      | Exudate     | 1, 22 | 6.98  | <b>0.01</b>      | 23.46                |
|           | Temperature | 1, 22 | 1.26  | 0.27             | 4.25                 |
|           | Interaction | 1, 22 | 0.11  | 0.74             | 0.38                 |
| LPO       | Exudate     | 1, 24 | 2.80  | 0.11             | 9.85                 |
|           | Temperature | 1, 24 | 1.55  | 0.23             | 5.45                 |
|           | Interaction | 1, 24 | 0.10  | 0.75             | 0.36                 |
| PC        | Exudate     | 1, 24 | 5.55  | <b>0.03</b>      | 13.32                |
|           | Temperature | 1, 24 | 7.51  | <b>0.01</b>      | 18.02                |
|           | Interaction | 1, 24 | 4.61  | <b>0.04</b>      | 11.06                |
| AChE      | Exudate     | 1, 23 | 4.99  | <b>0.03</b>      | 10.36                |
|           | Temperature | 1, 23 | 18.62 | <b>&lt; 0.01</b> | 38.64                |
|           | Interaction | 1, 23 | 0.58  | 0.45             | 1.20                 |
| HSP70     | Exudate     | 1, 24 | 0.11  | 0.74             | 0.44                 |
|           | Temperature | 1, 24 | 1.02  | 0.32             | 4.01                 |
|           | Interaction | 1, 24 | 0.22  | 0.64             | 0.88                 |

**Table S3.** Results for two-way ANOVA analysis on biochemical biomarkers responses in the muscle of *Mytilus galloprovincialis* with *A. armata* exudate exposure and water temperature as factors.

| Biomarker | Factor      | df    | F    | p           | % of Total Variation |
|-----------|-------------|-------|------|-------------|----------------------|
| LPO       | Exudate     | 1, 24 | 5.96 | <b>0.02</b> | 17.47                |
|           | Temperature | 1, 24 | 0.51 | 0.48        | 1.49                 |
|           | Interaction | 1, 24 | 3.64 | 0.07        | 10.68                |
| PC        | Exudate     | 1, 24 | 8.38 | <b>0.01</b> | 23.93                |
|           | Temperature | 1, 24 | 1.54 | 0.23        | 4.39                 |
|           | Interaction | 1, 24 | 1.08 | 0.31        | 3.10                 |
| LDH       | Exudate     | 1, 24 | 2.39 | 0.14        | 8.78                 |
|           | Temperature | 1, 24 | 0.33 | 0.57        | 1.23                 |
|           | Interaction | 1, 24 | 0.47 | 0.50        | 1.73                 |
| Sugars    | Exudate     | 1, 24 | 0.11 | 0.74        | 0.38                 |
|           | Temperature | 1, 24 | 4.99 | <b>0.03</b> | 17.06                |
|           | Interaction | 1, 24 | 0.17 | 0.68        | 0.59                 |
| Lipids    | Exudate     | 1, 24 | 6.30 | <b>0.02</b> | 19.41                |
|           | Temperature | 1, 24 | 1.90 | 0.18        | 5.87                 |
|           | Interaction | 1, 24 | 0.25 | 0.62        | 0.76                 |
| Proteins  | Exudate     | 1, 23 | 0.30 | 0.59        | 1.25                 |
|           | Temperature | 1, 23 | 0.01 | 0.94        | 0.02                 |
|           | Interaction | 1, 23 | 0.95 | 0.34        | 3.91                 |
| Ec        | Exudate     | 1, 23 | 0.07 | 0.79        | 0.29                 |
|           | Temperature | 1, 23 | 0.24 | 0.63        | 1.01                 |
|           | Interaction | 1, 23 | 0.17 | 0.68        | 0.72                 |
| Ea        | Exudate     | 1, 24 | 2.76 | 0.11        | 10.17                |
|           | Temperature | 1, 24 | 0.62 | 0.62        | 0.93                 |
|           | Interaction | 1, 24 | 0.77 | 0.77        | 0.32                 |