**Supplementary material**

Table S1: Median and interquartile (IQR) and mean and standard deviation (±SD) of the concentrations in mM of the secondary stress responses of alive and deceased deep-sea sharks, subjected to crustacean bottom trawl fisheries.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Metabolites and electrolytes**  **(mM)** | ***Etmopterus pusillus*** | | | | | | ***Etmopterus spinax*** | | | | |
| Alive (n = 6) | | | | Dead (n = 15) | | Alive (n = 14) | | Dead (n = 1) | | |
| Median (IQR) | | | Mean (SD) | Median (IQR) | Mean (SD) | Median (IQR) | Mean (SD) |  | |  |
| Glucose | 4.36 (0.89) | | | 4.24 (0.53) | 1.71 (1.79) | 2.02 (1.33) | 4.55 (2.65) | 4.37 (1.79) | 2.64 | |  |
| Lactate | 11.33 (5.36) | | | 10.48 (3.92) | 12.87 (9.72) | 14.78 (7.44) | 8.06 (5.32) | 8.73 (4.31) | 9.22 | |  |
| Urea | 294.13 (129.69) | | | 335.24 (143.08) | 205.49 (57.91) | 192.95 (39.82) | 318.01 (76.78) | 314.62 (82.43) | 266.6 | |  |
| Phosphorus | 2.38 (0.49) | | | 2.54 (0.61) | 2.62 (1.60) | 3.52 (2.54) | 2.54 (0.47) | 2.44 (0.45) | 7.98 | |  |
| Magnesium | 6.92 (1.08) | | | 6.63 (0.97) | 6.83 (1.80) | 6.88 (1.42) | 4.75 (2.58) | 5.20 (2.01) | 5.55 | |  |
| Chloride | 326.36 (41.25) | | | 316.8 (34.81) | 273.68 (82.31) | 276.63 (77.10) | 276.49 (46.22) | 275.47 (34.39) | 411.7 | |  |
| Calcium | 4.25 (1.70) | | | 4.32 (1.00) | 3.94 (1.30) | 3.88 (1.00) | 3.99 (1.04) | 4.06 (0.82) | 2.77 | |  |
| Potassium | 4.80 (0.70) | | | 5.02 (1.37)\* | 7.4 (3.55) | 8.47 (3.85) | 4.55 (2.18) | 5.29 (2.32) | 12.1 | |  |
| Sodium | 339.20 (19.2) | | | 329.44 (30.80)\* | 272 (116.65) | 304.65 (87.06) | 287.75 (90.08) | 297.30 (62.53) | 449.7 | |  |
| **Metabolites and electrolytes**  **(mM)** | | ***Galeus melastomus*** | | | | | ***Scymnodon ringens*** | | | | |
| Alive (n = 13) | | | Dead (n = 8) | | Alive (n = 5) | | | Dead (n = 3) | |
| Median (IQR) | Mean (SD) | | Median (IQR) | Mean (SD) | Median (IQR) | Mean (SD) | | Median (IQR) | Mean (SD) |
| Glucose | | 3.58 (1.13) | 3.61 (0.80) | | 1.45 (2.10) | 1.80 (1.44) | 1.81 (0.24) | 2.24 (1.24) | | 1.27 (0.26) | 1.11 (0.29) |
| Lactate | | 16.28 (4.58) | 18.78 (7.71) | | 15.39 (2.84) | 14.49 (3.89) | 10.61 (2.70) | 12.62 (8.60) | | 7.00 (1.76) | 7.76 (1.77) |
| Urea | | 379.21 (46.84) | 362.47 (60.57) | | 304.51 (56.03) | 302.21 (40.08) | 422.49 (129.25) | 424.15 (104.70) | | 494.82 (84.49) | 451.15 (92.57) |
| Phosphorus | | 3.31 (0.79) | 3.79 (1.37) | | 4.05 (1.48) | 4.24 (1.33) | 2.019 (0.17) | 1.94 (0.34) | | 1.69 (0.23) | 1.72 (0.23) |
| Magnesium | | 3.83 (2.49) | 3.12 (1.90) | | 5.08 (2.98) | 5.53 (2.17) | 1.62 (1.75) | 2.61 (2.62) | | 1.52 (0.25) | 1.50 (0.25) |
| Chloride | | 243.30 (48) | 259.71 (107.17) | | 238.61 (26.91) | 256.14 (50.00) | 223.43 (21.00) | 235.58 (22.17) | | 288.30 (19.69) | 288.43 (19.69) |
| Calcium | | 4.27 (1.22) | 4.39 (1.07) | | 4.60 (1.40) | 4.81 (0.92) | 3.56 (0.24) | 3.65 (0.39) | | 2.95 (0.13) | 2.99 (0.13) |
| Potassium | | 5.70 (1.20) | 5.70 (1.08) | | 7.75 (2.53) | 7.73 (1.86) | 4.60 (2.40) | 5.14 (1.37) | | 5.30 (1.00) | 5.70 (1.06) |
| Sodium | | 265.90 (26.60) | 268.38 (25.14) | | 266.75 (16.58) | 266.76 (18.73) | 256.60 (72.90) | 290.28 (67.43) | | 329.90 (33.30) | 312.90 (36.41) |

\*Only 5 values

Table S2: *Etmopterus pusillus* and *Galeus melastomus* paired test among alive and dead specimens using stress secondary responses concentrations that arises from a parametric distribution (t Test which are the ones showing the degrees of freedom df) and non-parametric distribution (Mann-Whitney test, without df). The test statistic is presented, the degrees of freedom and the p-value where p<0.05\*, p< 0.005\*\*, p< 0.0005\*\*\*

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| --- | --- | --- | --- | --- |
| **Species** | **Stress responses** | **Statistic** | **df** | **p-value** |
| *E. pusillus* | Glucose | 5.448 | 18.95 | 0.00003\*\*\* |
|  | Lactate | -1.719 | 17.113 | 0.1037 |
|  | Urea | 80 |  | 0.007216\*\* |
|  | Phosphorus | 34 |  | 0.4135 |
|  | Magnesium | 39 |  | 0.6768 |
|  | Chloride | 1.645 | 18.472 | 0.1169 |
|  | Calcium | 0.926 | 9.2815 | 0.3779 |
|  | Potassium | 7 |  | 0.0088\*\* |
|  | Sodium | 0.94 | 17.735 | 0.3598 |
|  |  |  |  |  |
| *G. melastomus* | Glucose | 3.2655 | 9.6893 | 0.00885\*\* |
|  | Lactate | 64 |  | 0.4137 |
|  | Urea | 85 |  | 0.01592\* |
|  | Phosphorus | 38 |  | 0.3363 |
|  | Magnesium | -2.5875 | 13.415 | 0.022\* |
|  | Chloride | 51 |  | 0.9711 |
|  | Calcium | -0.959 | 16.706 | 0.3513 |
|  | Potassium | 20 |  | 0.0224\* |
|  | Sodium | 54 |  | 0.916 |