**Ocean acidification affects acid-base physiology and behaviour in a model invertebrate, the California sea hare (*Aplysia californica*)**

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**Supplementary Table 2:** Water chemistry parameters for acid-base and behavioural experimental objectives in Aplysia (*Aplysia californica*) exposed for 4-11 days to either control (400), 1200 atm CO2 or 3000 atm CO2. Values are presented as means ± s.e.m. PCO2 was calculated using values of pHNBS, TCO2, salinity, and temperature in CO2SYS using the constants K1 from Merbach et al 1973 refit by Dickson and Miller (1987), and Dickson for KHSO4 [1].

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|  | CO2 level (µatm CO2) | Salinity  | Temperature (°C) | pHNBS | *p*CO2 (µatm CO2) | TA(mol/kg) | TCO2(mol/kg) |
| Acid-base  | Control | 32.3 ± 0.5 | 15.0 ± 0.04 | 8.16 ± 0.02 | 426.1 ± 17.1 | 2293 ± 53.3 | 2096.0 ± 40.9 |
| 1200 | 32.2 ± 0.5 | 15.0 ± 0.05 | 7.76 ± 0.01 | 1234.4 ± 58.5 | 2393.2 ± 91.4 | 2342.9 ± 80.05 |
| 3000 | 32.6 ± 0.5 | 14.9 ± 0.09 | 7.41 ± 0.01 | 2878.1 ± 316.8 | 2411.2 ± 90.4 | 2474.4 ± 103.4 |
| Tail withdrawal  | Control | 32.9 ± 0.4 | 14.9 ± 0.05 | 8.17 ± 0.008 | 411.3 ± 18.0 | 2284.5 ± 47.9 | 2081.8 ± 47.0 |
| 1200 | 33.1 ± 0.4 | 14.9 ± 0.08 | 7.77 ± 0.006 | 1146.4 ± 23.7 | 2394.8 ± 41.2 | 2334.7 ± 39.8 |
| 3000 | 33.1 ± 0.4 | 14.9 ± 0.07 | 7.36 ± 0.02 | 3014.6 ± 64.6 | 2435.7 ± 23.3 | 2504.8 ± 24.7 |
| Righting  | Control | 33.3 ± 0.4 | 14.9 ± 0.1 | 8.18 ± .01 | 400.0 ± 24.9 | 2289.6 ± 56.2 | 2078.6 ± 58.1 |
| 1200 | 33.6 ± 0.5 | 14.8 ± 0.2 | 7.78 ± 0.007 | 1166.3 ± 37.7 | 2417.4 ± 54.1 | 2356.0 ± 52.3 |
| 3000 | 33.1 ± 0.1 | 14.9 ± 0.1 | 7.38 ± 0.005 | 2927.1 ± 40.7 | 2423.5 ± 22.1 | 2487.9 ± 23.3 |

[1] Pierrot, D., Lewis, E. & Wallace, D. 2006 MS Excel program developed for CO2 system calculations. *ORNL/CDIAC-105a. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, US Department of Energy, Oak Ridge, Tennessee*.