**Supplementary material**

**Table S1:** Physical-chemical parameters of the brine obtained on June 6, 2016, from the Coloso I desalination plant at Minera Escondida, Antofagasta, Chile.

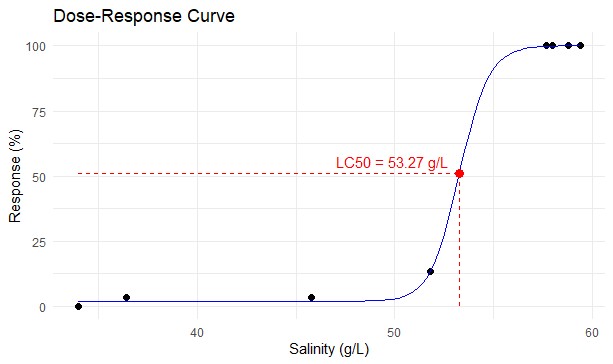
|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Time** | **Temp.**  **(°C)** | **ms/cm** | **TDS (mg/L)** | **Salinity**  **(g/L)** | **OD (mg/L)** | **pH** | **ORP** |
|  | 16:30 | 15.86 | 72.50 | 57.09 | 62.20 | 5.81 | 7.60 | 246.2 |
|  | 17:30 | 15.80 | 72.46 | 57.14 | 62.26 | 6.59 | 7.73 | 245.4 |
|  | 18:30 | 15.74 | 57.20 | 45.17 | 47.50 | 8.16 | 7.72 | 250.4 |
|  | 19:30 | 16.16 | 71.99 | 56.32 | 61.24 | 7.07 | 7.69 | 253.8 |
|  | 20:30 | 15.49 | 64.96 | 51.61 | 55.33 | 7.39 | 7.64 | 259.2 |
|  | 21:30 | 15.57 | 69.19 | 54.86 | 59.37 | 7.31 | 7.64 | 261.9 |
|  | 22:30 | 15.98 | 66.15 | 51.95 | 55.79 | 7.73 | 7.71 | 261.4 |
|  | 23:30 | 16.27 | 71.87 | 56.06 | 60.92 | 7.13 | 7.73 | 262.8 |
|  | 0:30 | 15.67 | 66.96 | 52.96 | 57.00 | 7.87 | 7.70 | 260.6 |
|  | 1:30 | 15.97 | 72.66 | 57.07 | 62.18 | 7.45 | 7.75 | 258.7 |
|  | 2:30 | 15.97 | 67.71 | 53.19 | 57.31 | 8.11 | 7.71 | 261.8 |
|  | 3:30 | 16.18 | 71.78 | 56.11 | 60.99 | 7.82 | 7.69 | 264.4 |
|  | 4:30 | 16.01 | 72.46 | 56.87 | 61.94 | 7.76 | 7.67 | 267.5 |
|  | 5:30 | 15.94 | 69.08 | 54.30 | 58.70 | 8.33 | 7.66 | 269.5 |
|  | 6:30 | 15.62 | 57.70 | 45.69 | 48.12 | 8.60 | 7.71 | 268.2 |
|  | 7:30 | 15.50 | 56.87 | 45.16 | 47.48 | 9.09 | 7.66 | 269.0 |
|  | 8:30 | 15.61 | 58.55 | 46.38 | 48.93 | 9.25 | 7.68 | 270.3 |
|  | 9:30 | 15.53 | 57.90 | 45.94 | 48.42 | 9.49 | 7.69 | 266.4 |
| **Container**  **1** | Final mix | 15.46 | 67.36 | 53.53 | 57.70 | 8.41 | 7.82 | 267.8 |
| **Container**  **2** | Final mix | 15.44 | 67.35 | 53.56 | 57.75 | 8.32 | 7.83 | 270.4 |
| **Container**  **3** | Final mix | 15.42 | 67.30 | 53.54 | 57.76 | 8.28 | 7.83 | 272.1 |
| **Container**  **4** | Final mix | 15.46 | 67.38 | 53.56 | 57.73 | 8.30 | 7.83 | 273.5 |
| **Container**  **5** | Final mix | 15.45 | 67.54 | 53.70 | 57.91 | 8.22 | 7.83 | 273.9 |
| **General Average Brine** | | 15.45 | 67.39 | 53.58 | 57.77 | 8.31 | 7.83 | 271.5 |

**Table S2:** List of genes proposed by Meng (Meng et al., 2013) for *C. gigas* responding to hyperosmotic stress, evaluated in *A. purpuratus* in this work.

|  |  |  |  |
| --- | --- | --- | --- |
| **Genes** |  | **EC Number** | **Oligonucleotide sequences** |
| *Cysteine sulfinic acid decarboxylase* |  | EC.4.1.1.29 | F: 5´-CAATGCTGCCTACCTGTTCC-3’  R: 5´-CAAAGCCCTGATCTCCCTTG-3’ |
| *Taurine transporter* |  | TAUT | F: 5´-CTCCCTGGAAAGGCAAAGTCT-3’  R: 5´-GCTTTGTGAATGGCATCTTGAA-3’ |
| *Serine Hydromethyl Transferase* |  | EC.2.1.2.1 | F: 5´-AAGGTCAGCCAGGCCAAAG-3’  R: 5´-CCATTCTTCAGGGGACAACC-3’ |
| *Δ-1-pyrroline-5-carboxylate reductase* |  | EC.1.5.1.2 | F: 5´-CTGGACGCTGTGACGGGACT-3’  R: 5´-TCTGGGCGGCTAATTTTGTG-3’ |
| *Carnosine synthetase* |  | EC.6.3.2.11 | F: 5´-TGCCATCTTGTCTGCCAAAGG-3’  R: 5´-GCACGCACATGACTCCCATC-3’ |

**Table S3.** Oligonucleotides designed in this work to identify putative genes involved in osmoregulation in *A. purpuratus*, using as reference the sequences obtained from *C. gigas* (Meng et al., 2013).

|  |  |
| --- | --- |
| **Genes** | **Oligonucleotide sequences (5’ – 3’)** |
| SHT | F: CAGTTCAACARTGTYTDGG  R: CTCTAGATGTCATTGSTGGDG |
| aP5Cr | F: GAAAAAGATAGACARATGARHG  R: TCTAGATGTCATTGSTGGDG |
| AGT | F: GTCATCCGAAGGTGACAGAAA  R: GGCTAGCAAGGCAAGTCTATTA |
| SS | F: GAGGATTCTAARTGGCARRA  R: TACCAGAACRTTWCCRAA |
| CS) | F: TGTCAACTATWYGAATTYAT  R: GATTTCTGTACAACAYTGAT |
| CSAD-1 | F: AGATGGAATGTTYTGTCCAGG  R: TGATGATCATTCKRAARAA |
| CSAD-2 | F: ACATATATGATGDCHGGAA  R: CGATTTCTGTACAACAYTGAT |
| TT | F: CTGGGAAACGTGTGGAGATT  R: GAAGTTGCTCACAGGGTACAT |



**Figure S1.** Lethal concentration (LC) of salinity (g L⁻¹) for *Argopecten purpuratus* after 94 hours of exposure, determined by laboratory bioassays designed to evaluate acute toxicity.