**Supplementary Material**

**Table S1.** Experimental water chemistry.Mean (± S.D.) temperature, salinity, pHtotal, total alkalinity and *p*CO2 in experiments with yellowtail kingfish (*Seriola lalandi*) eggs and larvae. Water chemistry in broodstock tanks was measured in the week up to spawning. Temperature, salinity, pHtotal and total alkalinity were measured directly, *p*CO2 was estimated from these parameters in CO2SYS.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment CO2** | **Treatment temperature** | **Temp (°C)** | **Salinity** | **pHtotal** | **Total alkalinity (µmol.kg-1 SW)** | ***p*CO2 (µatm)** |
| Broodstock | Broodstock | 19.4 (0.4) | 35.6 (0.1) | 7.91 (0.02) | 2329.6 (6.1) | 589.4 (38.0) |
| Control | 21 °C | 21.1 (0.1) | 35.6 (0.1) | 8.00 (0.02) | 2318.8 (7.2) | 462.0 (42.8) |
| Control | 25 °C | 24.8 (0.4) | 35.6 (0.1) | 7.94 (0.01) | 2319.9 (7.7) | 538.3 (15.6) |
| Elevated | 21 °C | 21.1 (0.1) | 35.6 (0.2) | 7.73 (0.03) | 2319.0 (3.8) | 959.8 (57.3) |
| Elevated | 25 °C | 24.9 (0.4) | 35.6 (0.1) | 7.70 (0.01) | 2320.0 (6.2) | 1010.6 (30.4) |

**Table S2.** Primer sequences for microsatellite loci used in parentage analysis.

|  |  |  |
| --- | --- | --- |
| **Primer name** | **Sequence** | **µl added** |
| KFA9HH8 | aaacgagtggtgcctgtagc | 0.01 |
| KFA9HH8\_PT | gtttcttggtgtaaattatggagcctgga | 0.01 |
| KFAHU3C | tgcacagcttaaggctgaaa | 0.05 |
| KFAHU3C\_PT | gtttcttcatgttgtgttgccctgttc | 0.05 |
| KFB5VZ8 | aaatgtgaggacgcagaaca | 0.05 |
| KFB5VZ8\_PT | gtttcttacacatacccatgctgctga | 0.05 |
| KFBRHPH | catatggatccacgcagaga | 0.05 |
| KFBRHPH\_PT | gtttcttcctaccatgtgttccctcct | 0.05 |
| KFBTDL6 | gtcaggctgcagggaaaat | 0.05 |
| KFBTDL6\_PT | gtttcttcaccttctccagagctgtcc | 0.05 |
| KFCZJ0J | agacaggtggccactgaaat | 0.02 |
| KFCZJ0J\_PT | gtttcttagttcacagcgttgcatcag | 0.02 |
| KFDG0RM | catagcaactctccagggatt | 0.02 |
| KFDG0RM\_PT | gtttcttaagcggagagcagctgag | 0.02 |
| KFAJHR1\_NED | cacgtttagaaacgcttcttgt | 0.03 |
| KFAJHR1\_2xPT | gtttcttgtttcttatggacgaaactgcctcatt | 0.03 |
| Sequ230 | actctccagaaacgccacat | 0.02 |
| Sequ230\_PT | gtttcttcaaagcaaaccgcacaagta | 0.02 |
| Sdu21 | ctcaggacaatgttggtag | 0.05 |
| Sdu21\_PT | gtttcttgctaacaagttcacgacat | 0.05 |
| Sdu46 | gcagtgtgagccatacattac | 0.07 |
| Sdu46\_PT | gtttcttctacaggacaaaagccatt | 0.07 |
|  |  | 0.84 Total |

**Table S3.** Number of individuals for each family genotype present in fish sampled at 1, 11 and 21 dph. Genotypes grouped by spawning tank of origin. The first number in each genotype is the father’s identity and the second number is the mother’s identity (Father ID\_ Mother ID).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Spawning tank** | **Father ID\_ Mother ID** | **Number of fish per family** | | |
|  |  | **1 dph** | **11 dph** | **21 dph** |
| JA001 | 288\_359 | 326 | 146 | 327 |
| JA003 | 247\_757 | 2 | 1 | 2 |
| 407\_757 | 16 | 5 | 7 |
| 744\_757 | 9 | 7 | 2 |
| JA004 | 011\_507 | 13 | 5 | 3 |
| 382\_507 | 9 | 2 | 3 |
| 411\_507 | 8 | 3 | 2 |
| 916\_507 | 4 | 10 | 9 |
| JA006 | 765\_032 | 102 | 78 | 73 |
| 136\_032 | 85 | 155 | 206 |
| 765\_431 | 68 | 10 | 15 |
| 136\_431 | 91 | 39 | 60 |