

Online Resource 1 for

Capability of DHA biosynthesis in a marine teleost, Pacific saury *Cololabis saira*: functional characterization of two paralogous Fads2 desaturases and Elovl5 elongase

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Online Resource 1 Primers used in this study. Underlines indicate restriction site.

| Step                | Name             | Sequence                                                          |
|---------------------|------------------|-------------------------------------------------------------------|
| Universal           |                  |                                                                   |
| cDNA synthesis      | oligo (dT)       | GTAATACGACTCACTATAGGGCACGCGTGGTCGACGGCCCGGGCTGGTTTTTTTTTTTTTTTTTT |
| 3'RACE              | AdapterPrimer_R1 | CCATCCTAATACGACTCACTATAGGGC                                       |
|                     | AdapterPrimer_Rn | CTATAGGGCACGCGTGGT                                                |
| <i>fads2</i>        |                  |                                                                   |
| Partial CDS         | fads2_partial_Fw | TACACCTGGAAGGAGGTGCA                                              |
|                     | fads2_partial_Rv | TCGATTTGAAAGTTGAGGTGT                                             |
| <i>fads2a</i>       |                  |                                                                   |
| 5'RACE              | fads2a_5'RACE_R1 | AGGCAGAAGAACAACGGCTTCGTTC                                         |
|                     | fads2a_5'RACE_Rn | GTCTGTACGATCATCCGATTTTCTTCCG                                      |
| 3'RACE              | fads2a_3'RACE_F1 | CGGTGGAGTACGGGATGAAGAAGA                                          |
|                     | fads2a_3'RACE_Fn | ACCATGATTACCCGCCGCGA                                              |
| Complete CDS        | fads2a_Fw        | ACTGTGTGGCGTCTGGTCTTC                                             |
|                     | fads2a_Rv        | GAATGCAAAAGTGGAGAAAAGC                                            |
| Vector construction | fads2a_HindIII   | TTTA <u>AAGCTT</u> AAGATGGGAGGTGGAGGCCAGCTCAA                     |
|                     | fads2a_XbaI      | CCCT <u>CTAGAT</u> TATTTGTGGTGATATGCATCGAGCC                      |
| Expression analysis | fads2a_RT_Fw     | GCCAGGACCGGAAGAAAAATCGGAT                                         |
|                     | fads2a_RT_Rv     | GCACAGTAACGTCAGTGTCCAG                                            |
| <i>fads2b</i>       |                  |                                                                   |
| 5'RACE              | fads2b_5'RACE_R1 | GATCAGGATGGAAAGCAGCAAAT                                           |
|                     | fads2b_5'RACE_Rn | GGCATCCTCCCCAGCATAGT                                              |
| 3'RACE              | fads2b_3'RACE_F1 | AGGTTTTTGGAGAGTCACTGGTT                                           |
|                     | fads2b_3'RACE_Fn | ATCACGAGAACCACCAGGAG                                              |

## Online Resource 1 (continued)

| Step                | Name              | Sequence                                      |
|---------------------|-------------------|-----------------------------------------------|
| Complete CDS        | fads2b_Fw         | AAATAAAAAGGGGGTCTGTG                          |
|                     | fads2b_Rv         | TGCTATCGTGTCTTTCTGTT                          |
| Vector construction | fads2b_HindIII    | AAGA <u>AAGCTT</u> ATCATGGGGGGCGGAGGTCAGCAGAC |
|                     | fads2b_XbaI       | CCCT <u>CTAGAT</u> CATTTATGGAGATATGAATCCAGCC  |
| Expression analysis | fads2b_RT_Fw      | GTCAGGACAGCAACAAGAATTCCGGC                    |
|                     | fads2b_RT_Rv      | TGGGTGGACCTGGCTTGGTGGG                        |
| <i>elov15</i>       |                   |                                               |
| Partial CDS         | elov15_partial_Fw | TGGTGGTACTACTTCTCCAA                          |
|                     | elov15_partial_Rv | TCAATCCACCCTCAGCTTCTTGT                       |
| 5'RACE              | elov15_5'RACE_R1  | AAAGTATGAATGGCCGCAGGGGA                       |
|                     | elov15_5'RACE_Rn  | AGCATGGTGGTAGATGTGAAGAAA                      |
| 3'RACE              | elov15_3'RACE_F1  | CAGTGGATGGCTGTGGTTCC                          |
|                     | elov15_3'RACE_Fn  | CAGACCTACAAAAAACAAAGCG                        |
| Complete CDS        | elov15_Fw         | AAAGACAGAAAACACCACTCAG                        |
|                     | elov15_Rv         | AAATATAACCCCCAGCAGCA                          |
| Vector construction | elov15_HindIII    | GGGA <u>AAGCTT</u> AAAATGGAGACCTTTAATCATGAACT |
|                     | elov15_XbaI       | AACT <u>CTAGAT</u> CAATCCACCCTCAGCTTCTTGGCGG  |
| Expression analysis | elov15_RT_Fw      | CCCCGGAAGTGGACAACAAGGTCAT                     |
|                     | elov15_RT_Rv      | ACATGGCCACACGACTGCACAGATG                     |
| <i>actb2</i>        |                   |                                               |
| Expression analysis | actb2_RT_Fw       | CCCCGGAAGTGGACAACAAGGTCAT                     |
|                     | actb2_RT_Rv       | ACATGGCCACACGACTGCACAGATG                     |