

# Identification and characterization of a novel immune-type receptor (NITR) gene cluster in the European sea bass, *Dicentrarchus labrax*, reveals recurrent gene expansion and diversification by positive selection

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**Table S1.** NITR mRNA expression examined by RT-PCR for four individual fishes. For each tissue sample expression data are reported as presence (+) or absence (-). Gene expression for NITR29 and NITR30 was assessed only in head kidney.

| NITR         | 1    | 2   | 3    | 4   | 5    | 6    | 7   | 8   | 9    | 10   | 11   | 12   | 13 | 14   | 15   | 16  | 17   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   | 28   |
|--------------|------|-----|------|-----|------|------|-----|-----|------|------|------|------|----|------|------|-----|------|------|------|------|------|------|------|------|------|------|
| Head kidney  | +++  | +-  | ++   | +-  | ++++ | ---  | --- | ++  | ++   | ++++ | ++++ | ++++ | -+ | ++++ | ++++ | --- | ++   | ++++ | ++   | ++++ | ++++ | ++++ | ++++ | ++   | ++++ | ++++ |
| Blood        | ---  | --- | ---  | --- | ---  | ---/ | --- | --- | ---/ | ---  | ---  | ---/ | -+ | ++/  | ++++ | --- | ---  | -+   | ---  | ++   | ---  | ---  | ++   | ---  | ---  | ---  |
| Gill         | -+   | --- | ++   | +-  | ++++ | ++++ | --- | ++  | ++   | ++++ | ++   | ++   | -+ | ++   | ++++ | --- | ++   | ++   | ++++ | --   | ++   | ++   | ++++ | ++++ | ++++ | -++  |
| Kidney       | -+   | --- | ---  | --- | ---  | ---  | --- | --- | ---  | ---  | ---  | ---  | -+ | ---  | ++++ | --- | ---  | --   | ---  | -++  | ++++ | -+   | ---  | ---  | ---  | ---  |
| Gut          | -++  | --- | ++++ | --- | +-   | ++   | --- | ++  | ++   | ++++ | ++++ | ++++ | -+ | ++   | ++++ | --- | ++++ | ++   | ++   | ++   | ++   | ++   | ++   | ++   | ++   | ++   |
| Spleen       | ---- | --- | ++++ | --- | ++++ | ++++ | --- | ++  | ++   | ++++ | ++++ | ++++ | -+ | ++   | ++++ | --- | +    | ++++ | -++  | ++++ | ++++ | ++++ | ++++ | ++++ | ++++ | ++++ |
| Skin         | ---  | --- | -++  | --- | ---  | ---  | --- | -+  | ---  | ++   | -++  | ++   | -+ | ++   | ---- | --  | ++   | ++   | ---  | ++   | -++  | ++   | ++   | ++   | -++  | ++   |
| Skel. muscle | -+   | --- | -+   | --- | ---  | ---  | --- | -+  | ---  | ---  | -++  | -+   | -+ | ++++ | -++  | --- | ---  | ---  | ---  | -++  | -++  | -+   | ---  | ---  | ---  | ---  |

/: not determined.

**Table S2.** Spearman rank correlation test for all possible pair-wise comparisons of NITR genes.

|        | NITR10 | NITR11 | NITR12 | NITR13 | NITR14 | NITR15 | NITR1  | NITR2  | NITR3  | NITR4 | NITR5  | NITR6  | NITR8  | NITR9  | NITR16 | NITR17 | NITR19 | NITR20 | NITR21 | NITR22 | NITR23 | NITR24 | NITR25 | NITR26 | NITR28 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| NITR10 | 1.00   |        |        |        |        |        |        |        |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR11 | 0.74** | 1.00   |        |        |        |        |        |        |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR12 | 0.67** | 0.54** | 1.00   |        |        |        |        |        |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR13 | 0.15   | 0.28   | 0.24   | 1.00   |        |        |        |        |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR14 | 0.28   | 0.28   | 0.33   | 0.10   | 1.00   |        |        |        |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR15 | -0.15  | 0.22   | -0.14  | 0.12   | -0.14  | 1.00   |        |        |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR1  | 0.43** | 0.55** | 0.38*  | 0.54** | -0.15  | 0.15   | 1.00   |        |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR2  | 0.15   | 0.15   | 0.14   | -0.12  | 0.14   | 0.03   | 0.22   | 1.00   |        |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR3  | 0.75** | 0.75** | 0.70** | 0.36*  | 0.18   | 0.19   | 0.52** | 0.17   | 1.00   |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR4  | 0.21   | 0.21   | 0.20   | -0.17  | 0.20   | 0.05   | 0.05   | 0.70** | 0.24   | 1.00  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR5  | 0.60** | 0.47** | 0.55** | 0.08   | 0.42*  | 0.16   | 0.17   | 0.20   | 0.45** | 0.29  | 1.00   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR6  | 0.64** | 0.51** | 0.47** | 0.17   | 0.07   | 0.14   | 0.15   | -0.14  | 0.60** | 0.07  | 0.62** | 1.00   |        |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR8  | 0.51** | 0.51** | 0.47** | 0.03   | 0.47** | 0.14   | 0.15   | 0.23   | 0.60** | 0.33  | 0.36*  | 0.33   | 1.00   |        |        |        |        |        |        |        |        |        |        |        |        |
| NITR9  | 0.56** | 0.42*  | 0.52** | 0.13   | 0.10   | 0.12   | 0.27   | 0.27   | 0.63** | 0.38* | 0.49** | 0.45** | 0.45** | 1.00   |        |        |        |        |        |        |        |        |        |        |        |
| NITR16 | 0.21   | 0.21   | -0.07  | -0.17  | -0.33  | 0.05   | 0.31   | -0.05  | 0.24   | -0.07 | -0.23  | 0.07   | 0.07   | -0.17  | 1.00   |        |        |        |        |        |        |        |        |        |        |
| NITR17 | 0.68** | 0.43*  | 0.51** | -0.01  | 0.12   | -0.22  | 0.22   | 0.22   | 0.65** | 0.31  | 0.17   | 0.28   | 0.54** | 0.54** | 0.31   | 1.00   |        |        |        |        |        |        |        |        |        |
| NITR19 | 0.63** | 0.37*  | 0.44*  | 0.09   | 0.18   | -0.17  | 0.27   | 0.17   | 0.50** | -0.02 | 0.45** | 0.34   | 0.21   | 0.36*  | 0.24   | 0.39*  | 1.00   |        |        |        |        |        |        |        |        |
| NITR20 | 0.68** | 0.55** | 0.51** | 0.27   | 0.25   | 0.15   | 0.22   | 0.22   | 0.65** | 0.31  | 0.68** | 0.67** | 0.41*  | 0.82** | -0.21  | 0.35*  | 0.39*  | 1.00   |        |        |        |        |        |        |        |
| NITR21 | 0.19   | 0.19   | 0.23   | 0.12   | 0.23   | -0.11  | 0.23   | 0.11   | 0.25   | -0.13 | 0.13   | -0.09  | 0.05   | 0.12   | -0.13  | 0.09   | 0.25   | 0.09   | 1.00   |        |        |        |        |        |        |
| NITR22 | 0.40** | 0.40*  | 0.31   | 0.16   | 0.03   | 0.27   | 0.28   | 0.12   | 0.45*  | 0.17  | 0.46** | 0.24   | 0.10   | 0.45** | -0.10  | 0.28   | 0.31   | 0.42*  | 0.48** | 1.00   |        |        |        |        |        |
| NITR23 | 0.35*  | 0.22   | 0.41*  | 0.28   | -0.12  | -0.15  | 0.43*  | 0.15   | 0.37*  | 0.21  | 0.22   | 0.12   | 0.12   | 0.28   | -0.05  | 0.30   | 0.24   | 0.17   | 0.19   | 0.40*  | 1.00   |        |        |        |        |
| NITR24 | 0.87** | 0.61** | 0.53** | 0.20   | 0.39*  | -0.13  | 0.33   | 0.13   | 0.64** | 0.19  | 0.51** | 0.56** | 0.42*  | 0.49** | 0.19   | 0.60** | 0.64** | 0.60** | 0.13   | 0.22   | 0.21   | 1.00   |        |        |        |
| NITR25 | 0.81** | 0.67** | 0.47** | 0.10   | 0.20   | -0.14  | 0.25   | 0.14   | 0.70** | 0.20  | 0.42*  | 0.60** | 0.47** | 0.52** | 0.20   | 0.64** | 0.44*  | 0.64** | 0.23   | 0.45** | 0.15   | 0.66** | 1.00   |        |        |
| NITR26 | 0.61** | 0.47** | 0.25   | 0.35   | 0.12   | 0.25   | 0.33   | 0.13   | 0.51** | 0.19  | 0.51** | 0.42*  | 0.29   | 0.49** | -0.08  | 0.33   | 0.51** | 0.60** | 0.13   | 0.51** | 0.34   | 0.58** | 0.39*  | 1.00   |        |
| NITR28 | 0.87** | 0.74** | 0.54** | 0.15   | 0.28   | -0.15  | 0.43*  | 0.15   | 0.63** | -0.05 | 0.47** | 0.51** | 0.38*  | 0.42*  | 0.21   | 0.55** | 0.63** | 0.55** | 0.33   | 0.40*  | 0.22   | 0.74** | 0.81** | 0.47** | 1.00   |

\*\* Correlation significant at the 0.01 level

\* Correlation significant at the 0.05 level