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Determinism of spontaneous masculinization in XX rainbow trout females

GUYOMARD René⁽¹⁾, GUIGUEN Yann⁽²⁾, CHARLET Aurélie⁽¹⁾, DECHAMP Nicolas⁽¹⁾, HERVET Caroline⁽¹⁾, KRIEG Francine⁽¹⁾, QUILLET Edwige⁽¹⁾

¹ INRA, UMR 1313 Génétique Animale et Biologie Intégrative, F-78350 Jouy-en-Josas, France

² INRA, UR1037 SCRIBE, IFR140, Ouest-Genopole, F-35000 Rennes, France

Correspondance : Edwige Quillet (edwige.quillet@jouy.inra.fr)

Tel : 33(1) 34 65 23 93 ; Fax : 33(1) 34 65 23 90

The major mechanism of sex determination in rainbow trout (*O. mykiss*) is a genetic system (XX female/ XY male). The occurrence of spontaneous phenotypic males in all-female double haploid (DH) gynogenetic populations suggested that mutations in minor sex-influencing loci could exist in trout as previously found in other species (tilapia, common carp). In order to get further insight in the genetic determinism of this unexpected masculinization, we crossed a DH XX spontaneously sex-reversed male with a normal female. Two F1 females were then reproduced by mitogynogenesis and their HD progeny (n=168) were genome-scanned with 277 microsatellite and SNP markers. Data were analysed using multistate and binary systems to code the sexual phenotype. Several putative QTL regions have been identified suggesting that more than one mutation could be involved in the observed deviation from the strict XX/XY sex determinism system.