

## **Mechanisms of sex determination and the evolution of sex chromosomes in fish**

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Fish show a great variety of sex determination mechanisms ranging from temperature and other environmental cues to strict chromosomal control over this process. In the case of genetic sex determination this variability is linked to a similarly high variation of sex chromosome differentiation. The molecular regulatory network establishing the differentiation of testis, ovary or even hermaphroditic gonads from the undifferentiated primordium in the embryo is –in contrary to all other organs of the vertebrate embryo - also not very well conserved. Curiously, neither phenomenon follows any obvious phylogenetic pattern.

To obtain a better understanding of the biological meaning of the diversity of sex determination and the mechanisms driving sex chromosome evolution we are attempting to decipher the molecular basis of the primary sex determination mechanisms and the structure and genetic organization of sex chromosomes across a broad diversity of fish.