Variations in the gene expression of zona pellucida proteins, zpb and zpc, in female European eel (Anguilla anguilla) during induced sexual maturation

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Vertebrate eggs are surrounded by an extracellular glycoprotein coat termed zona pellucida (ZP). Integrity of ZP is critical for a correct embryo development. Two zona pellucida protein genes (zpb and zpc) from European eel were characterized, specific qPCR assays developed and their expression in immature males and females carried out. An experimental group of silver-stage eel females was maintained at 18 °C and hormonally induced to sexual maturation by weekly injections of carp pituitary extract during 12 weeks. Changes in zpb and zpc expression during sexual maturation were studied in liver and ovary by qPCR. In liver, no changes were recorded during hormonal treatment, while in ovary expression of both genes decreased during sexual development. These results are a first step in the characterization of ZP in European eel and in the understanding of the mechanism underlying egg envelope formation.

Keywords: ZP proteins, Screening, Sexual development, qPCR, Liver, Ovary

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