

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

I. Mazzeo ^{a,b}, D.S. Peñaranda ^{a,b}, V. Gallego ^a, J. Hildahl ^b, R. Nourizadeh-Lillabadi ^b, J.F. Asturiano ^a, L. Pérez ^a, F.-A. Weltzien ^{b,c,*}

^a Grupo de Acuicultura y Biodiversidad, Instituto de Ciencia y Tecnología Animal, Universitat Politècnica de València, Camino de Vera s/n, 46022 Valencia, Spain

^b Department of Basic Sciences and Aquatic Medicine, Norwegian School of Veterinary Science, P.O. Box 8146 Dep, 0033 Oslo, Norway

^c Department of Molecular Biosciences, University of Oslo, P.O. Box 1041 Blindern, 0316 Oslo, Norway

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

Published in:

General and Comparative Endocrinology vol 178 2012 pp 338-346