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# ZONA PELLUCIDA GENES IN CATFISH AND THEIR OVARY-SPECIFIC EXPRESSION AS MARKERS FOR OOGENESIS

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## Résumé

The F1 hybrids made from mating channel catfish female and blue catfish male is now the predominant genotype in the US catfish industry. However, reproductive isolation hinders the scale production and introgression-based breeding programs. The objective of this study was to identify genes that are specifically expressed in females to serve as expression markers for the analysis of oogenesis. Through RNA-Seq analysis, here we report the identification of zona pellucida (ZP) genes, their tandem gene amplification, and their specific expression in the ovaries, serving as expression markers for studies of oogenesis. There are one copy each of ZPAX and ZPD genes, but 21 and 23 copies of ZP3-like, and 12 and 19 copies of ZP4-like genes in blue catfish and channel catfish, respectively. ZP3- and ZP4-like genes are tandemly amplified on chromosome 2 and chromosome 17; they are highly expressed except for the pseudogenes. The ZP genes are only expressed in the ovaries. Analysis of RNA-Seq datasets available indicated that they are expressed in ovaries abundantly at 90, 100, and 135 dpf. Their expression at earlier dates will be tested. As ZP genes are essential for oogenesis and fertilization, their expression can be exploited as markers for oogenesis to follow development of oocytes for studies of post-zygotic reproductive isolation in the F1 hybrids.

**Mots-Clés:** hybrid, catfish, oogenesis, female, specific expression

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