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New insights into the genital musculature of *Macrostomum johni* (Platyhelminthes, Macrostomorpha), revealed with CLSM

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Abstract

The genital system is the most thoroughly studied morphological feature in the genus *Macrostomum* (Platyhelminthes, Macrostomorpha), for two main reasons: 1) taxonomic identification and 2) understanding different mating strategies. In the present study the musculature of the genital system of the freshwater flatworm *Macrostomum johni* was visualized using phalloidin-linked fluorescent dye by confocal laser scanning microscopy (CLSM), and a 3D model was provided. In the female antrum, two muscular chambers are observed, both attached to the muscular body wall by muscle fibers. In the male system, three muscle sets associated with the stylet are recognized. Finally, we discuss about the interspecific variability of sexual musculature arrangement within *Macrostomun* and other related genus, and speculate whether there is a common pattern in the musculature of genital organs related to different mating-behavior.