Morphology and ultrastructure of pink cusk-eel (Genypterus blacodes, Schneider 1801) spermatozoa by scanning and transmission electron microscopy

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In this study, the morphology and ultrastructure of Genypterus blacodes spermatozoa were characterized through scanning and transmission electron microscopy. Findings revealed that the G. blacodes spermatozoa can be differentiated into three major parts: a spherical head without an acrosome (typical for externally fertilizing fish), a short mid-piece, and a long flagellum. The mean length of the spermatozoa was 57.6 ± 6.08 ?m, with flagella accounting for 56.2 ± 7.2 ?m. The head was 1.47 ± 0.2 ?m long, and 0.89 ± 0.06 ?m wide. The mid-piece had a total dimension of 0.72 ± 0.16 ?m, and was 0.31 ± 0.02 ?m in length and 0.6 ± 0.05 ?m in width. It was located lateral to the nucleus and contained 4 or 5 spherical mitochondria. The mitochondria were separated from the axoneme by a cytoplasmic canal. The main piece of the flagellum had short irregular side-fins, and the axoneme was composed of the typical 9 + 2 microtubular doublet structure enclosed by a cell membrane. The