# Detection of positive selection in songbird spermatozoa

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Spermatozoa show very high variability in morphology and performance between species. Those differences are mostly driven by postcopulatory sexual selection and/or sexual antagonism. The molecular mechanisms underlying this variation are, however, still poorly understood. Here, we have investigated the molecular evolution of proteins expressed in spermatozoa across passerines, the largest group of birds consisting of over 6500 species. Passerine spermatozoa show a unique helical shape and swim by rapidly rotating around their longitudinal axis. Their morphology is also highly diverse among the species. Out of the 940 genes whose protein products have been detected in spermatozoa, we have found 22 which are evolving under positive selection. Gene ontology analysis has revealed an overrepresentation of biological process and molecular functions related to microtubule-based movement and microtubule motor activity respectively. Our results bring the first insight into the molecular mechanisms which might drive sperm evolution in passerines.