Biological characterization and in vitro culture of human spermatogonial stem cells

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ABSTRACT

In the male gonads of mammals, the germline stem cells belong to a subpopulation of undifferentiated spermatogonia localized in the basal layer of the seminiferous epithelium. While, spermatogenesis in rodents and primates, including humans, has been considered dissimilar with important biological differences in the identity and behavior of stem cells, recent studies from our laboratory and others recently challenged this concept. Expect for the existence of type Apale and Adark spermatogonia, and that Adark spermatogonia are quiescent not much is known about the spermatogonial compartment in humans. Clearly, there is need of new data in order to obtain insight in the regulation of human germline compartment. In this direction, a new re-assessment of the stages of the seminiferous epithelium (cellular associations), the analysis of spermatogonial behaviors in whole mounted seminiferous tubules, as well as development of spermatogonial stem cells lines are highly warranted. Feasibility of this proposal strongly relay on the availability of unfixed human testicular cells. In this direction, we have already obtained human testicular cells taken from healthy heart beating organ donors. Data obtained will be highly relevant to the study of molecular mechanisms regulating early step of spermatogenesis, for future applications on male infertility, and to unveil molecular mechanisms underlying pluripotency.

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**RELEVANT PUBLICATIONS (2008-2012)**


