In adult testis, there is a population of germline stem cells (spermatogonial stem cells; SSCs) needed for life-long production of spermatozoa and fertility. SSC maintenance is dependent on crosstalk between cell-intrinsic factors and growth factors produced from a stem cell niche. We have identified key transcription factors and growth factor signalling pathways involved in self-renewal and differentiation of SSCs. Through use of mouse models, we aim to define critical pathways regulating SSC function.

Projects will focus on characterizing mechanisms of SSC regulation with particular emphasis on components of transcription factor networks and their downstream targets. This work will involve use of mouse models, isolation and in vitro culture of SSCs, flow cytometry and cell/molecular biological techniques. These studies can have particular relevance to the stem cell and fertility fields.

**Research Projects**

1. **Transcriptional networks controlling germline stem cell fate**
2. **Signalling pathways regulating germline stem cell maintenance**

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**Selected significant publications:**


