Spermatogonial stem cells gene expression in different media condition

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Published on 23 Oct 2010

**Introduction:** Spermatogonial stem cells (SSCs) are unique cells in testis that can proliferate, differentiate and transmit genetic information to next generation. However the effect of different media and feeders on gene expression of these cells is not well known. So in this study, we compare the in vitro effect of adult sertoli cells, fetal sertoli cells, mouse embryonic fibroblast (MEF) and SIM mouse embryo-derived thioguanine and ouabain resistant (STO) as different feeder layers with or without GDNF, GFR- α1, bFGF on gene expression of SSCs.

**Materials and Methods:** For this purpose we isolated SSCs from 3-6 day mouse by enzymatic digestion, and then SSCs were enriched by magnetic activated cell sorting (MACS) against Thy-1 antibody. The purity of the isolated cells was assayed by flow cytometry with α6-integrin and β1-integrin antibodies. Adult and fetal sertoli cells were isolated by DSA lectin. For isolation adult sertoli cells we used 8-12 week male mouse and for fetal sertoli cells we used 14.5 day male embryos. For MEF we used 13-16 day mouse embryos. Identities of cells were confirmed by fluorescent immunostaining against vimentin for sertoli cells and alkaline phosphatase activity for SSCs. After enrichment, SSCs were cultured for 7 days in different feeders and media. The expression of specific genes for SSCs (α6-integrin, β1-integrin, DAZL and stra-8) was studied by RT-PCR.

**Results:** The percentage of SSCs purification was 85-90%. Expression of these genes were higher significantly (p<0.05) in sertoli cells group compared to other.

**Conclusion:** Our findings suggested that co-culture with sertoli cells had a positive effect on in vitro culture of SSCs and had best effect on SSCs gene expression than others.

Key Words: Spermatogonial stem cell, Proliferation, sertoli cell, feeder.