[additional file 5] It is important to mention the study of Anand et al., who discussed the restoration of spermatogenesis by testicular transplantation of donor-derived Sertoli cells into busulphan-treated recipient mice [140]. According to the authors, spermatogenesis in the recipient was restored from a pool of endogenous (recipient-derived) very small embryonic-like stem cells (VSELs). These cells survived gonadal ablation, proliferated and gave rise to spermatogonial cells, but were unable to differentiate because of a compromised niche. Therefore, it is critical to confirm thoroughly the donor-origin of restored spermatogenesis after Sertoli cells co-transplantation.