Assisted reproductive technologies (ART) such as in-vitro fertilization (IVF) have overcome several types of infertility. Nevertheless, about 10% of couples suffer from infertility due to problems with the female reproductive system, insufficient production of gametes, or the poor ability of sperm or oocytes.

Recently, attempts have been made to treat the problems with the female reproductive system in clinics using adult stem cells such as mesenchymal stem cells (MSCs) or hematopoietic stem cells (HSCs). The results were promising, but no clear mechanism has been investigated. Further, embryonic stem cells (ESCs) or induced pluripotent stem cells (iPSCs) could be converted into germ cells such as sperm or oocytes. However, a few laboratories can perform this technology.

This Special Issue focuses on therapeutic mechanisms for stem cell application in the field of infertility, including basic, preclinical and clinical studies, and the replication of current technologies.