In vitro male germ cells from embryonic and induced pluripotent stem cells: A promising treatment for male infertility

Silvia Sánchez Diez, Biomedical science degree, Bioscience faculty, Universitat Autònoma de Barcelona, 2015-2016.

Objectives
- Determine what artificial gametes are and delve into the future applications of these in vitro obtained germ cells.
- Acquire knowledge about the existing strategies for the generation of male artificial gametes from ESCs and iPSCs.
- Have an overview about the most important studies performed in the last years regarding the in vitro generation of male germ cells from ESCs and iPSCs, knowing the advances achieved and the limitations that have to be overcome.

In vitro male germ cells from ESCs and iPSCs are still in an experimental stage in humans and mice but these cells could be a future treatment for male infertility.

Further studies must be done in order to find the safest and most efficient method for generating completely normal male artificial gametes regarding to genetics and epigenetics.

Before a clinical application in humans, it’s crucial to confirm the biological function of in vitro generated human male gametes by creating human embryos and culturing them for a short term.

In vitro male gamete generation from ESCs and iPSCs is still in an experimental stage in humans and mice but these cells could be a future treatment for male infertility.

Further studies must be done in order to find the safest and most efficient method for generating completely normal male artificial gametes regarding to genetics and epigenetics.

Before a clinical application in humans, it’s crucial to confirm the biological function of in vitro generated human male gametes by creating human embryos and culturing them for a short term.