

Trophoblast Stem cells: Monday 2nd July 14.00

Trophoblast stem (TS) cells are a distinct stem cell type that can be derived from the trophectoderm and extraembryonic ectoderm of early murine embryos. Reflecting developmental decisions that have been imposed onto the first cell lineages by this stage in development, TS cells recapitulate the full developmental potential of trophectoderm cells and can differentiate into all cell types of the future placenta, but are excluded from contributing to embryonic cell types. As such they represent the developmental counterpart of embryonic stem (ES) cells that can form the embryo proper, but not placental trophoblast.

TS cells are a vital research tool to study the earliest processes of trophoblast differentiation. They are amenable to genetic manipulation, thus allowing to investigate gene function and epigenetic mechanisms that provide differentiation cues. This session will provide practical information on the properties and cell culture requirements of TS cells and examples on how TS cells can be exploited as a model system in contemporary approaches in placental research.

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