Early mammalian development and embryonic stem cells.

Embryonic stem cells are derived from the preimplantation mouse blastocyst. They can be manipulated and propagated in culture and retain the ability to resume normal development when placed into a host embryo. The relationship of ES cells to embryos has been scrutinised both functionally and molecularly. This information has been utilised to explore the existence of an equivalent state within the human embryo. We recently derived naïve pluripotent ES cells directly from human blastocysts. Using the mouse chimaera system we are currently trying to understand the interactions between cells within the early embryo that establish and regulate the proportions of each founder lineage in preparation for developmental progression.