FASSBERG SEMINAR SERIES

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online

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Genetic approaches to study early lineage specification in human embryos

During preimplantation development human embryos are comprised of pluripotent embryonic cells, which eventually form the fetus, and extra-embryonic cells, which contribute to the placenta and yolk sac. The central question we address is what are the molecular mechanisms that regulate these early cell fate choices in human embryos. We are using CRISPR/Cas9-mediated genome editing, TRIM-Away protein depletion, dominant negative mutations and small molecules to dissect the function of genes during human embryogenesis. These methods have enabled us to uncover that the first lineage specification event in human embryos is the initiation of a placental program. By integrating signaling insights from human blastocysts we have also defined human embryonic stem cell culture conditions that more closely recapitulate the embryonic niche. The molecular basis of these early cell lineage decisions are of fundamental importance and have wide-reaching clinical implications for infertility, miscarriages, developmental disorders and therapeutic applications of stem cells.

Host: Jochen Rink

Thursday / 6.05.2021 / 13:00

zoom access data will be mailed before the seminar!