Transcription factor control of identity in pluripotent and germline cells

Summary

Pluripotent embryonic stem cells (ESCs) depend on the action of specific transcription factors (TFs) for their maintenance. Amongst these transcription factors, the cellular concentration of Nanog determines the efficiency of ESC self renewal. Here I will discuss features of Nanog and how these contribute to regulation of target genes in ESCs by Nanog. Pluripotency TFs, including Nanog also play a role in germ cell development. I will discuss how Nanog and other TFs including the Nanog antagonist Otx2 may interact during the early stages of differentiation to enable specification of cells into the germline.