**PROJECT RESUME**

**TITLE**: Interspecies comparison of TCF/LEF family members in mammalian embryogenesis

A few days after fertilisation the mammalian embryo forms a blastocyst comprised of inner cells mass cells, which will give rise to the embryo proper and the yolk sac, and the trophectoderm (TE) which will give rise to the fetal component of the placenta. Previous studies have shown that trophectoderm lineage initiation is conserved between human, mouse, rat and cow (Gerri et al. 2021). However subsequent development has not yet been fully studied. Here we seek to elucidate mechanisms regulating bovine preimplantation development. WNT signalling has been implicated in the regulation of bovine trophectoderm development, with inhibition of the pathway leading to an increase in the number of TE cells. The mechanism underlying this is unknown. In this project we will qualify the repertoire of WNT pathway transcriptional activators and repressors expressed across bovine TE development. This will inform our basic understanding of early placenta development in a model species.

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