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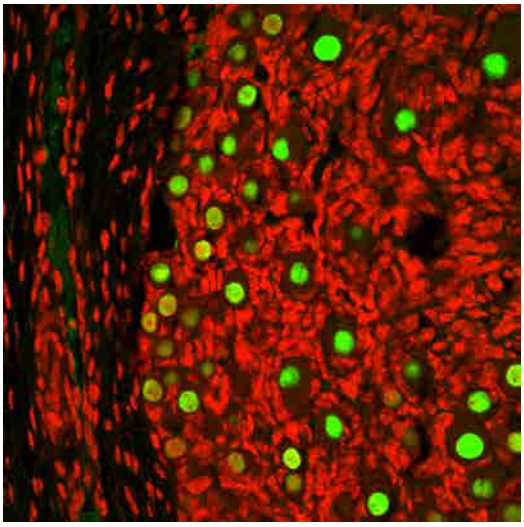
Female fertility and reproductive health are influenced by the number and quality of eggs stored in the ovaries in structures known as primordial follicles. Established in the ovaries before birth, the supply of primordial follicles is progressively depleted throughout life due to the natural aging process. The ovarian reserve of primordial follicles may also become prematurely depleted following exposure to DNA damaging anticancer treatments, leading to loss of fertility and early menopause. We are working to understand the regulation of primordial follicle number and quality in order to improve the health and fertility of women during aging and following anti-cancer treatment.

Research Projects

1. **Uncovering the molecular mechanisms that determine the length of the female fertile lifespan**
2. **Characterising ovarian damage caused by anticancer treatment**



Post-natal day 3 mouse ovary containing oocytes expressing TAp63 (green)

Selected significant publications:

1. Myers M, Morgan FH, Liew SH, Zerafa N, Gamage TU, Sarraj M, Cook M, Kapic I, Sutherland A, Scott CL, Strasser A, Findlay JK, Kerr JB, **Hutt KJ**. 2014. PUMA regulates germ cell loss and primordial follicle endowment in mice. *Reproduction* 148(2):211-9.
2. Liew SH, Vaithiyanathan K, Cook M, Bouillet P, Scott CL, Kerr JB, Strasser A, Findlay JK, **Hutt KJ**. 2014. Loss of the proapoptotic BH3-only protein BCL-2 modifying factor prolongs the fertile life span in female mice. *Biol Reprod* 90(4):77.
3. Kerr JB, **Hutt KJ**, Michalak EM, Cook M, Vandenberg CJ, Liew SH, Bouillet P, Mills A, Scott CL, Findlay JK, Strasser A. 2012. DNA damage-induced primordial follicle oocyte apoptosis and loss of fertility require TAp63-mediated induction of Puma and Noxa. *Mol Cell* 48(3):343-52. (Equal first author)
4. Kerr JB, **Hutt KJ**, Cook M, Speed TP, Strasser A, Findlay JK, Scott CL. 2012. Cisplatin-induced primordial follicle oocyte killing and loss of fertility are not prevented by imatinib. *Nat Med* 18(8):1170-2. (Equal first author)
5. **Hutt KJ**, Shi Z, Petroff BK, Albertini DF. 2010. The environmental toxicant 2,3,7,8-tetrachlorodibenzo-p-dioxin disturbs the establishment and maintenance of cell polarity in preimplantation rat embryos. *Biol Reprod* 82(5):914-20.