Polycystic ovary syndrome (PCOS) is a common endocrine disorder among women of reproductive age and a major cause of infertility. Possible rodent models of PCOS are:.

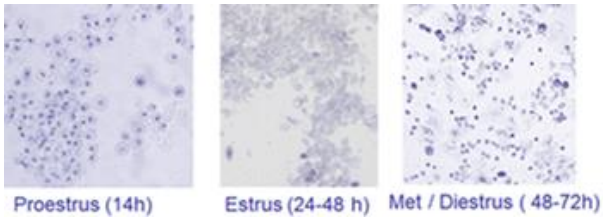
- Hormone-induced PCOS model that focus on the perturbation of the hypothalamic-pituitary-ovary axis.
- Spontaneous rodent model of PCOS, the Goto-Kakizaki (GK) female rat.

## Summarized methodology

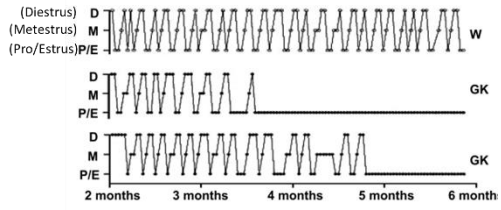
- The main method used to generate rodent models of hormone-induced PCOS is subcutaneous injection or implantation of androgens administered to animals pre- or postnatal
- The PCOS like phenotype is developmentally programmed in female GK rats: reproductive and metabolic hallmarks of lean women with PCOS at puberty and in adulthood, features of ovarian hyperstimulation syndrome following gonadotropin stimulation, similar reproductive signature of women with PCOS1.

## Pathophysiological features and measurable endpoints

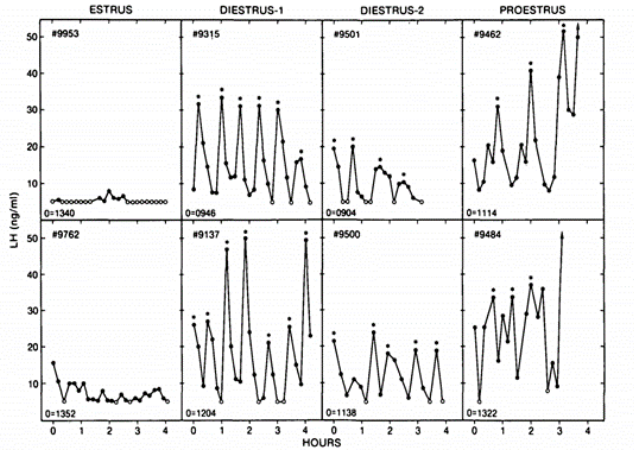
- Estrus cycle profile
- LH pulsatile secretion
- Quantification of steroids in plasma/serum
- Body composition and fat mass analysis
- Ovarian morphology




*Daily determination of the cycle with cresyl violet staining of vaginal smear.*




*Examples of estrous cycle profile of one Wistar (W) and GK rats showing the evolution of the cycle stage1.*




*The pattern of LH secretion (LH concentrations in nanograms per ml) during the 4-day cycle.*
*Blood samples are collected via venous catheters every 10 min for 4h. An asterisk indicates an identified LH pulse2.*


**Related Pelvipharm bibliography:**

[1] Bourgneuf *et al.* **Nature communications** (2021):12:1064

[2] Fox and Smith **Endocrinology** (1985):116:1485-1492


***NB: Pelvipharm will gladly study the feasibility to fit this experimental model to its client's needs.***