

# **91. EFFECT OF GONADOTROPHINS ON OVARIAN FOLLICULAR DEVELOPMENT AND OOCYTE MATURATION IN SOUTHERN HAIRY-NOSED WOMBATS**

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Ovarian stimulation with exogenous gonadotrophins enhances follicular development, oocyte maturation and ovulation. The aim of this study was to compare the effect of porcine follicle stimulating hormone (pFSH) to pregnant mares serum gonadotrophin (PMSG) on ovarian follicular development and oocyte maturation in the southern hairy-nosed wombat (SHW), *Lasiorhinus latifrons*. Twenty-three SHW, caught in September 2002, were allocated to one control and two gonadotrophin experimental groups. Group 1 ( $n = 10$ ) was given pFSH ( $8 \times 25$  mg) (Folltropin-V, VetrepHarm, Canada, Inc.) and group 2 ( $n = 5$ ), PMSG (150 IU) (VetrepHarm, Canada, Inc.). Experimental groups were administered 25 mg of porcine luteinising hormone (pLH) (Lutropin-V, VetrepHarm, Canada, Inc.), 12 h after the final injection of pFSH or three days after PMSG. After euthanasia, 24 h after administration of pLH, ovaries were removed and antral follicles measured. The left ovary was fixed in 10% buffered formaldehyde and the morphology of antral follicles determined. Oocytes were aspirated from follicles of the right ovary, fixed in 10% gluteraldehyde, stained with DAPI and viewed by fluorescent microscopy. Although no oocytes (0/32 oocytes) from controls had undergone GVBD, approximately 40% (35/75 oocytes) of pFSH and 90% (14/17 oocytes) of PMSG treated animals had GVBD. There tended to be more large ovarian follicles ( $>3$  mm) in animals primed with pFSH ( $7.4 \pm 2.3$ ) and PMSG ( $3.8 \pm 1.8$ ) than controls ( $0.9 \pm 1.4$ ). In addition, in all females administered exogenous porcine gonadotrophins (but not controls), some of the mural granulosa cells of large tertiary follicles had markedly enlarged granulosa cell nuclei (ca.  $\sim 14$   $\mu$ m). This study has shown that administration of both exogenous porcine gonadotrophins and PMSG to SHW results in an increased number of large follicles with some of the granulosa cell nuclei becoming enlarged, possibly due to polyploidy. Furthermore, exogenous gonadotrophins resulted in GVBD of many of the oocytes.