

67. INHIBIN IN THE MALE TAMMAR WALLABY, *MACROPUS EUGENII*

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The relationship between the gonadal peptide inhibin and other hormones is well understood in both sexes of eutherian mammals. Inhibin has been barely investigated in marsupials: the inhibin α -subunit gene has been characterised and its expression studied [1]. This study reports the results of two experiments examining the relationship between inhibin, FSH and testosterone in mature male wallabies. Experiment one ($N = 7$) determined the level of inhibin [2] in male plasma over 18 months, in relation to testosterone [3] and testis volume [3]. Experiment two examined the source of inhibin, its relationship with FSH [4] and testosterone, from non-breeding (May/June) to peri-breeding season (December) in sham-operated ($N = 3$) and castrated males ($N = 3$). Male wallabies are capable of inseminating females throughout the year, and seasonality is induced by female receptivity [5]. Inhibin levels rose gradually before the breeding season began (Exp 1), peaking in February and following a seasonal decline (March to May) with testosterone until November, changes unrelated to changes in testicular volume. Like Exp 1, Exp 2 sham males had depressed inhibin and testosterone from May to November, while FSH levels became elevated in June after being low in late breeding season. After castration (Exp 2) inhibin levels fell but did not vanish below assay sensitivity like testosterone, suggesting there are also non-gonadal sources. FSH levels rose quickly post-castration, remaining elevated. These data suggest the testis is a significant source of inhibin in male wallabies, and the role of inhibin in modulating FSH levels requires further detailed study.

(1) Vanmontfort, D., *et al.* (1998) *J. Molec. Endocrinol.* **21**: 141–152; (2) Robertson, D.M., *et al.* (1988) *Mol. Cell. Endocrinol.* **58**: 1–8; (3) Williamson, P., *et al.*, (1990) *J. Reprod. Fertil.* **88**: 549–557; (4) Moore, L.G., *et al.*, (1997) *Gen. Comp. Endocrinol.* **106**: 30–38; (5) Tyndale-Biscoe, C.H. and M.B. Renfree (1987) 'Reproductive Physiology of Marsupials.' (C.U.P.: Cambridge.)