

Influence of 17 β -oestradiol, nortestosterone and dexamethasone on the adaptive immune response in veal calves

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Accepted: 30 April 2007.

Available online: 22 June 2007.

Abstract

In veal calf production androgens, estrogens and glucocorticoids are used to stimulate growth. However, sexhormones and glucocorticoids also influence the function of the immune system. From studies in humans and mice, androgens are known as immunosuppressive, while estrogens stimulate the production of antibodies and glucocorticoids also enhance the T-helper 2 response. To investigate whether the adaptive immune system is influenced by hormone administration, calves were treated with a hormone cocktail containing androgens, estrogens and glucocorticoids and vaccinated against *Mycobacterium avium* spp. *paratuberculosis*. The activity of the adaptive immune system was measured by using an antigen specific elispot assay (ES), lymphocyte stimulation test (LST) and an enzyme-linked immuno sorbent assay (ELISA). The results showed that the hormone treatment did not lead to significant differences in the function of the adaptive immune system between the hormone treated and the not hormone treated group while growth was stimulated in the hormone treated group.

Keywords: Veal calves; Steroid hormone; Adaptive immune system; *Mycobacterium avium* spp. *Paratuberculosis*

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