



# Melatonin Administration Induced Reactivation in the Seminal Gland of the Soay Rams During non-Breeding Season: An Ultrastructural and Morphometrical Study

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## Abstract:

Fifteen adult Soay rams were used in this experiment. Eight animals were given subcutaneous implants containing melatonin, while the other seven animals were used as control. After 11 weeks, the rams were killed and the seminal vesicles were examined by light and electron microscope. In contrast to the control grouped animals, the melatonin treated rams showed morphological, morphometrical, and ultrastructural changes as a result of reactivation of the glandular tissues of the seminal glands. The ratio of interstitial connective tissues to glandular tissues was reduced in the treated group. Melatonin induced an evident significant increase in number and height of principal cells that showed signs of increased secretory activity; apical cytoplasmic protrusions became well developed and covering the inner surface of the glandular end-pieces, also, the basal cells were significantly increased in number. The main cytological alteration in the principal cells of the seminal vesicles in treated animals was prominent increase in the concentrically arranged membranes of sER, secretory vacuoles and glycogen granules and appearance of numerous lysosomes and multivesicular bodies. Interstitial Cajal-like cells were significantly increased in number and formed a network around the epithelium and between smooth muscle cells in the treated group. The main components of these cells were mitochondria, rER, sER, and many caveolae. The cytological alterations were accompanied by subepithelial and intraepithelial nonmyelinated nerve terminals in the treated animals. The results support the view that melatonin activates and increases the secretory activity of seminal gland in sheep.

## Keywords:

sheep; seminal vesicle; interstitial cajallike cells; principal cells; nerve terminals

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