

# The long-term effect of hydro-alcoholic Aloe vera extract on serum levels of LH, FSH, inhibin B, anti-mullerian hormone, and testosterone in adult male rats

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## Abstract

Despite the medicinal properties of Aloe vera, several active compounds found in the plant raise concerns about its safe consumption and application, particularly concerning the male reproductive system. Previous studies on the impacts of Aloe vera on male reproductive hormones were limited to testosterone and gonadotropins, with conflicting results. To date, no research has been conducted on the effect of Aloe vera on the hormones, such as inhibin B and anti-mullerian, which could shed light on the plant's effects on the male reproductive system. The aim of this experiment was to evaluate the effect of hydro-alcoholic Aloe vera gel extract on serum levels of hormones including inhibin B, gonadotropins, testosterone, and anti-mullerian hormone. For this purpose, 18 adult male rats were divided randomly into three groups (one control group and two treatment groups). The rats in the first and second experimental groups received the Aloe vera hydro-alcoholic extract at doses of 100 and 200 mg/kg, respectively, for 60 days. In the end, the levels of reproductive hormones were measured in the serum samples by the ELISA method. Treatment of rats with two doses of hydro-alcoholic Aloe vera extract (100 and 200 mg/kg) resulted in a non-significant decrease in the levels of testosterone and LH and a non-significant increase in the levels of FSH, inhibin B, and anti-mullerian hormones in adult male rats. Therefore, it was concluded that long-term consumption of hydroalcoholic extract of aloe vera gel has no significant effect on the level of pituitary-gonadal hormones in adult male rats.

**Key words:** Aloe vera, Testosterone, Androgen, Inhibin B, Anti-Mullerian hormone

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