

[DOI: 10.20472/IAC.2015.015.179](https://doi.org/10.20472/IAC.2015.015.179)

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# **EFFECTS OF SINGLE DOSE ADMINISTERED NANDROLONE DECANOATE ON SERUM CYTOKINE LEVELS AND SOME BIOCHEMICAL PARAMETERS IN MALE AND FEMALE RATS**

### **Abstract:**

**Purpose:** The aim of this study was to determine the effect of single higher dose nandrolone decanoate (40 mg/kg) on serum IL-1 $\beta$ , TNF- $\alpha$ , IL-10 and IL-6 levels and some biochemical parameters during 24 hours in male and female rats.

**Materials and methods:** The blood samples were taken from 5 male and female rats to obtain their starting values. Then the blood samples were taken from 6 rats in sampling time at 1st, 2nd, 4th, 8th, 12th and 24th hours following the nandrolone decanoate administration.

**Results:** There were significant increases determined in the serum IL-1 $\beta$  levels, numerical increases in the TNF- $\alpha$  levels whereas decreased IL-6 levels were determined. IL-10 levels did not change during experimental period. While serum GGT and BUN levels increased towards the last hours of the study, increased ALP levels were observed only in female rats. There were no significant changes determined in the other biochemical (ALT, AST, CK-MB and LDH) values.

**Discussion and Conclusion:** As a result, increased IL-1 $\beta$  and TNF- $\alpha$  levels, proinflammatory cytokines and some biochemical parameters may reflect that long term use of nandrolone decanoate causes organ damage and affects immune system function. However, the effects of long term use of nandrolone decanoate on the immune system and organ functions should be detailedly evaluated.

### **Keywords:**

Nandrolone, Cytokines, Organ Damages