

The Effects of Combination of Melatonin with and without Zinc on Gonadotropin Hormones in Female Rats

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Abstract : The present study was carried out to investigate the effect of melatonin (Mel) with and without zinc (Zn) on the gonadotropin hormones, also thyroid (T3 and T4) hormone concentration in female rats. A total of 40 adult female rats were randomly grouped into five treatment groups, each of 2 rats in a Completely Randomized Design (CRD) entire research time. Daily was treated by gavage with Zn and melatonin as follows: T1 (control1, basal diet), T2 (control 2, treated with normal saline) and other experimental groups, including T3, T4 and T5, were treated with a dose of zinc (40 ppm), melatonin (5 mg/kg), and combination zinc plus melatonin with the same level, respectively. Blood FSH and LH concentrations were measured. The result showed no significant differences between treatments in FSH and LH levels. The estrogen and progesterone and TSH levels in rats that received 5 mg of melatonin per day were higher than in other groups but not statistically significant ($P>0.05$). However, T3 (thyroid) concentration significantly ($P<0.05$) decreased in the group that received 40 mg/zinc per Kg compared to other groups. No significant ($P>0.05$) difference was detected among treatments in T4 levels. In conclusion, except for T3, had no significant ($P>0.05$) effect on another parameter in the female rats that received melatonin or zinc and a blend of melatonin and Zn.

Keywords : zinc, melatonin, hormone, rat

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