

Effect of Anionic Alkali Mineral Complex Barodon[®] on Body Growth and Testicular Development in Rats

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Effects of Barodon[®] on body growth, histological changes in seminiferous tubules of testes and serum level of testosterone and FSH were examined in juvenile rats from 5 to 38 wks of age. All rats supplied feed and Barodon-added water(0, 0.1, 0.15, 0.3 and 1.0%) available *ad libitum*. DNA distribution of testicular cells from control rats obtained by flow cytometry was characterized by 4 peaks representing I: elongated, II: round spermatids(1N), III: a variety of 2N cells and IV: 4N cells. Frequencies of 4 testicular cell types were calculated using cumulative DNA frequency distributions. Body growth from 18wk of age was significantly accelerated in rats supplied water with 0.15% Barodon compared to other groups. Testes weights tended to be greater in 0.15% Barodon-treated rats than in control, without significant difference. Diameter of seminiferous tubules advanced in 0.15-0.3% Barodon till 26 wk of age, but there was not significant different. Proportion of spermatids in seminiferous tubules was 48.4% at 6wk of age(round: 81.2% and elongated: 18.8% as proportion of total spermatids) and frequency of spermatids was higher in 0.3% Barodon group(57.1%) than in control(44.0%), but there was no significant difference. Serum testosterone of all groups significantly elevated at 18wk of age and level in 0.15% Barodon group was greatly higher than in others. Serum FSH at 10wks was greatly higher in 0.1-0.3% Barodon groups compared to control, but there were no significant differences. It is concluded that 0.15-0.3% Barodon treatment tended to induce precocious puberty in rats.

(Key words) Barodon, body growth, rat, testes development, testosterone.