

## EFFECT OF PHYTOECDYSTEROIDS ON ENZYMES OF THE INITIAL AND FINAL STAGES OF CARBOHYDRATE HYDROLYSIS

**Kimsanova G.A.**

**Associate Professor Andijan State University, Uzbekistan**

**Nematova M.T.**

**Master Student Andijan State University, Uzbekistan**

**Eraliyeva G.A.**

**Master Student Andijan State University, Uzbekistan**

**Topilova F**

**Researcher Andijan State University, Uzbekistan**

**ABSTRACT:** It is known that the period of transition from lactotrophic nutrition to definitive nutrition is critical in the life of mammals. At this time, significant changes take place in the quantity and quality of incoming nutrients, which determines the further course of development of the organism. [1, 2, 3]

**KEYWORDS:** turkesterone,  $\alpha$ -amylase, sucrose.

### INTRODUCTION

**Purpose:** identify the nature of the influence of phytosteroids (turkesterone), obtained from the Turkestan tenacious, enzyme systems for the hydrolysis of carbohydrates in a growing organism. Experiments were carried out on growing outbred white rats. The activity of pancreatic  $\alpha$ -amylase was determined by the method of A.M. Ugolev (1969), and the activity of sucrose by the glucose oxidase method of Dalhqvist (1984). Turkesterone at a dose of 5 mg/kg body weight was administered once intramuscularly on the 10th and 30th days after birth of rats. Enzyme activity was determined 24, 48, 72 and 96 hours after administration of the phytohormone.

**Results:** it turned out that a single administration of turkesterone leads to significant changes in the activity of both pancreatic and enteral enzymes involved in the digestion of carbohydrates. Thus, the administration of turkesterone to 10-day-old rats does not change the activity of amylase, which is involved in the initial stage of starch hydrolysis after 24 hours. Some increase in enzyme activity was observed at the 48th hour of observation; the maximum inducing effect of the exogenous hormone was observed at the 72nd and 96th hours of the experiment. Enzyme activity during these periods in experimental rats increased 3.5 and 4.2 times, respectively, compared to control values. In 30-day-old rats, the effect of the hormone appeared only 24 hours

after its administration. At later stages of the 4-day observation, the effect of the hormone was absent.

The nature of changes in sucrase activity in response to the introduction of a phytosteroid was identical to that of pancreatic  $\alpha$ -amylase both in time and in age aspects, i.e. the effect of the hormone was well expressed in rats of the lactotrophic feeding period (10 days) and sharply weakened and disappeared after the transition animals for self-feeding (30 days).

### **CONCLUSION**

A single administration of exogenous  $\alpha$ -turkesterone causes premature induction of pancreatic  $\alpha$ -amylase and enteral sugar activity in growing animals. The effect of the phytohormone is well manifested during the period of milk feeding (10 days), but is absent after weaning (30 days). Consequently, phytoecdysteroids, in particular turkesterone, can be used to enhance the hydrolytic ability of the small intestine in case of deficiency of carbohydrate digestion enzymes.

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