

# Abstract

Haemonchosis is common parasitic infection of small ruminants caused by *Haemonchus contortus*. Parasitosis, as well as the other pathological states, can affect the activity of biotransformation enzymes, which can result in changes of drugs and other xenobiotics metabolism. The aim of this project was to study and compare *in vitro* flubendazole biotransformation in liver and small intestine of healthy sheep and sheep with haemonchosis . The objective of this work was also to investigate the influence of infection length and animals gender on the flubendazole biotransformation .

Experimental animals were divided into five groups (healthy males, healthy females, males diseased for seven weeks, females diseased for seven weeks and males diseased for eleven weeks). Subcellular fractions (cytosol and microsomes) were prepared from liver and mucosa of small intestine. These fractions were incubated with flubendazole. After incubation and extraction, flubendazole and its metabolites were analyzed using High Performance Liquid Chromatography (HPLC).

Parasitosis of the sheep caused by *Haemonchus contortus* influenced *in vitro* biotransformation of flubendazole. In livers and small intestines of animals with haemonchosis, activities of flubendazole reducing enzymes were lower than in healthy animals. *In vitro* biotransformation of flubendazole was influenced by the infection length too. In liver samples from animals diseased for seven weeks, the activities of flubendazole reductases were lower than in eleven-week-diseased animals. In intestinal samples from seven-week-diseased animals, activity of flubendazole reductases was found higher than in eleven-week-diseased animals.

In flubendazole metabolism *in vitro*, the significant differences between males and females were observed. Much higher activities of flubendazole reductases were detected in cytosol from rams than in cytosol from ewes.