ABSTRACT

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Title of diploma thesis: Defence mechanisms of lancet fluke against effects of anthelmintics

Dicroceliosis, helminthosis caused by *Dicrocoelium dendriticum* (lancet fluke), is worldwide spread infection of small ruminants. The only way of effective control of this parasitosis is in administration of anthelmintics. In lancet fluke, benzimidazole anthelmintic albendazole metabolism via enzymatic sulfoxidation was found but no information about albendazole oxidases is available.

The aim of this work was to identify enzymes involved in the metabolism of albendazole in *Dicrocoelium dendriticum* isolated from naturally infected mouflons (*Ovis musimon*). To determinate the involved enzymes some of the specific inhibitors were used. The only effective inhibitors used in this work were α-nafthylthiourea and methimazole, specific inhibitors of flavin-containing monooxygenases. Indole-3-carbinole, used as the specific inhibitor of the same enzymatic system, was without any effect. Other inhibitors were used: 3-amino-1,2,4-triazole for catalase, diethyldithiocarbamate and octylamine for cytochrome P450 and salicylohydroxamic acid and mercaptosuccinate for peroxidase and glutathion peroxidase. These inhibitors had no effect on enzyme activities tested. We concluded that the sulphoxidation of albendazole is mediated via flavin-containing monooxygenases.