

ABSTRACT

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Title of diploma thesis: Testing of the efficacy and toxicity of new potential anthelmintics OMK3 and OMK4

Haemonchus contortus is a parasite of smaller ruminants, mainly sheep and goats. It causes a disease called haemonchosis, the main symptom of which is anemia, which can lead to the death of the animal. Anthelmintics are used to treat this disease. However, these drugs have become ineffective due to resistance developing against them. Haemonchosis is thus becoming a significant global problem. Therefore, it is necessary to search for new anthelmintics with a new mechanism of action.

In this study, the potential anthelmintic effects of new derivatives of benzhydroxamic acid, OMK3 and OMK4, were investigated. The aim of this study was to determine whether these substances have an effect on eggs, larvae and adults of *H. contortus*, and to compare their effects on sensitive and resistant strains of *H. contortus* and to test their potential toxicity on sheep livers. For this purpose, eggs, larvae and adults of *H. contortus* were isolated, precision-cut liver slices from sheep were prepared, and the following tests were used: egg hatch test, monitoring of motility and determination of ATP concentration by bioluminescence method.

The result showed that derivatives OMK3 and OMK4 do not have ovicidal activity. A significant effect was observed on the viability of xL3 larvae and adults of the ISE strain of *H. contortus*; however, the derivatives had no effect on the viability of xL3 larvae of the WR strain and the motility of xL3 larvae of the ISE strain. The derivatives also do not have an effect on sheep's livers. However, the experiments need to be repeated and some tests need to be completed on the WR strain due to the low number of individuals obtained.