

# ABSTRACT

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Title of diploma thesis: The efflux transport activity of P-glycoprotein-9.2 from *Haemonchus contortus*

Haemonchosis is a globally widespread disease affecting small ruminants. The causative agent of the disease is the gastrointestinal nematode *Haemonchus contortus*, which feeds of the blood of its host. The treatment of haemonchosis with anthelmintics is complicated by the worldwide spread of resistance. One possible cause of the development of anthelmintic resistance is a decrease in anthelmintic concentration in the worm due to increased expression of P-glycoproteins from ABC transporter superfamily. The study of the transport activity of these transporters could help to understand the mechanism of resistance development and make the treatment of haemonchosis more effective.

The aim of this thesis was to characterize the transport activity of P-glycoprotein-9.2 and its interaction with a selected inhibitor using a heterologous expression system. The adherent cell line HEK293 was transfected with a plasmid carrying the Pgp-9.2 gene of the *Haemonchus contortus*. Successful expression was verified by dot blot. Unfortunately, transport essays indicated the inability of P-glycoprotein-9.2 to translocate substrates across the cell membrane in the used cell line.