

Abstract

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Title of diploma thesis: Antiproliferative and anthelmintic effects of fern extracts

Ferns belong to spore vascular plants. In this study, an antiproliferative and anthelmintic effects of selected fern extracts were investigated. The antiproliferative effect of the extracts was tested on the SW480 cell line. This cell line was originally obtained from primary adenocarcinoma of the colon. The anthelmintic effect was tested on L3 larvae *Haemonchus contortus*, the most common internal parasite of sheep and goats. Firstly, to determine the antiproliferative effect of the extracts, an initial screening was performed. Cytotoxicity was evaluated by measuring absorbance on a Tecan spectrophotometer. The four fern species that showed most promising antiproliferative activity were tested at three time intervals and four concentrations. *H. contortus* larvae L3 were exposed to fern extracts for seven days and the percentage of developed L4 larvae was detected by microscope. *Athyrium distentifolium*, *Dryopteris aemula*, *Davallia canariensis* and *Polystichum aeculatum* showed the highest antiproliferative and anthelmintic activity. In addition, *Dryopteris dilatata* showed significant anthelmintic activity.