ABSTRACT

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Title of diploma thesis: Impact of flubendazol on proliferation, migration and adhesion of cells of oral carcinoma *in vitro*

Flubendazol (FLU) belongs to the group of benzimidazole anthelmintics and is widely used for treatment of parasitic diseases in human and veterinary medicine. Molecular mechanism of FLU action consists in inhibition of protein β-tubulin subunits. It interferes with microtubule polymerization, eventually causing cell damage. FLU also inhibits the energetic metabolism of parasite cell which leads gradually to the death of the parasite. The ability to disrupt the production of microtubules leads to a theoretical possibility to use FLU and other benzimidazole anthelmintics in cancertreatment.

In this thesis we studied the impact of FLU on proliferation, migration and adhesion of oral squamous carcinoma cells *in vitro*. For our experiment we used two cell lines derived from oral squamous carcinoma DOK and PE/CA-PJ15 and cell line GF derived from gingiva of a healthy human donor. We treated cells by FLU in concentration range from 0,01 to 10 μM and after 72-hour incubation we measured the number of viable cells by the WST-1 assay. The xCELLigence analyzer was used to follow up the effect of FLU on cell migration and adhesion. FLU inhibited cell proliferation in all three tested cell lines with GF cell line being the less sensitive. FLU influenced the migration and adhesion depending on the concentration and type of cell line.