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ANTI-CANCER EFFECTS OF WILD MINT'S CRUDE EXTRACT IN ADRENOCORTICAL TUMOUR CELL LINES

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Background: Mint (*Mentha longifolia* L.) is an aromatic plant that belongs to Lamiaceae family. It is traditionally used as herbal tea in Europe, Australia and North Africa and shows numerous pharmacological effects, such as spasmolytic, antioxidant, antimicrobial and anti-hemolytic. Recently its antiproliferative role has been suggested in a small number of tumour cell models, but no data are available on adrenocortical carcinoma, a malignancy with a survival rate at 5 years of 20-30% which frequently metastasize.

Aim: To study the effects of *Mentha longifolia* L. crude extract on 2 adrenocortical tumour cell models (H295R and SW13 cells).

Results: Chemical composition of methanolic extract of wild mountain mint was assessed by gas-chromatography/mass spectrometry analysis. Cell viability and vitality were evaluated by MTT, SRB and trypan blue assays in H295R and SW13 cells. The anti-proliferative effects of mint were more evident in SW13 cells at 72h. Combination of the extract with mitotane (approved drug for adrenocortical carcinoma) reinforced the efficacy of the herb. As control, human fibroblasts were treated with mint, though no effect on cell viability was perceived. Brine shrimp lethality assay showed no alteration of mortality at lower mint doses. Wright staining demonstrated the presence of both necrotic and apoptotic cells, more evident with combined treatments (mint+mitotane). Other experiments are in progress to expand the possible effects of mint extract.

Conclusions: The crude extract of wild mint can decrease cell viability, vitality and survival of adrenocortical tumour cell models, in particular of SW13 cells. These data show the potential of mint extract, still more work is needed to corroborate these findings

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