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PS075

Examination of antiproliferative effects of the horseradish extracts

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Aim: The aim of the study was to investigate in vitro the antiproliferative effects of the horseradish juice and pulp extracts using different solvents for the extraction.

Introduction: Horseradish (Armoracia rusticana, Brassicaceae) is a perennial herbal plant, which is widely used in human nutrition, as well as in a traditional medicine. Horseradish is a rich source of bioactive compounds such as isothiocyanates, which have proved to be significant antitumor agents.

Methods: Samples were prepared by the Kupchak extraction method, and the antiproliferative effects of the horseradish juice and pulp extracts were examined on the human tumor cell line MDA-MB-231 (ER−, human breast adenocarcinoma). Cell growth was determined by measuring the total protein by colorimetric sulfurhodamine B assay. The obtained results (expressed as mean ± SD) were analyzed by Tukey HSD test and the differences were considered statistically significant at p < 0.05.

Results: According to the IC50 parameter (the concentration that inhibited the cell growth by 50%), as an important indicator of the antiproliferative effects, the most pronounced antitumor activity was observed for chloroform juice extract (IC50 = 5.52 ± 1.47 μg/ml). In addition, highly potent was chloroform pulp extract (IC50 = 19.44 ± 3.82 μg/ml), as well as the dichlormethane juice (IC50 = 26.50 ± 4.15 μg/ml) and pulp (IC50 = 28.07 ± 2.45 μg/ml) extracts. On the other hand, significantly lower in vitro antitumor effect was noticed for the butanol pulp extract (IC50 = 114.52 ± 0.28 μg/ml). IC50 values for butanol juice extract, as well as water juice and pulp extracts were higher than 500 μg/ml.

Conclusion: The obtained results suggest that A. rusticana is as a significant source of antitumor agents, especially liposoluble isothiocyanates and as such, it should be recommended for further use in a human nutrition and prevention of cancer.

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PS080

Contribution of the determination of numeric value of ADC map in early detection of prostate cancer

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Aim: To define the range of ADC values for the absence of malignant disease, as well as to determine the threshold of ADC values for suspected prostate cancer.