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THE BOOK OF ABSTRACTS

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The authors have full responsibility for the originality and content of their own papers.

ANTIPROLIFERATIVE PROPERTIES OF HONEY FROM SERBIA, KOSOVO AND BOSNIA AND HERZEGOVINA

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ABSTRACT

Honey is a natural sweetener produced by honeybees using nectar. The type of honey is determined by the type of pollen, i.e. nectar, insect secretions, as well as climatic conditions and soil composition. The health benefits of honey, used for centuries for therapeutic purposes, derive from its antioxidant nature, antimicrobial and antiproliferative activity. With the aim to assess the antiproliferative activity of different types of honey characteristic for the region, nineteen samples (acacia, linden, heather, sunflower, phacelia, basil, anise, sage, chestnut, hawthorn, buckwheat, lavender and meadow) were collected from different locations in the Republic of Serbia, Kosovo and Bosnia and Herzegovina and examined. Honey samples were also tested for physicochemical parameters (moisture, pH value, electrical conductivity, free acidity and HMF) to ensure that they meet the requirements for honey quality. Based on the obtained results of honey physicochemical profile, it was concluded that all tested samples were in accordance with the regulations of national and EU regulations. The antiproliferative potential of honey samples was assessed by in vitro tests using tumor cell lines: HeLa (cervical carcinoma), MCF7 (breast epithelial adenocarcinoma), HT-29 (colon adenocarcinoma) and MRC-5 (normal fetal lung fibroblasts).

The highest antiproliferative activity was obtained by linden honey sample 1 ($IC_{50}^{MCF7} = 7.46 \pm 1.18$ mg/mL and $IC_{50}^{HeLa} = 12.4 \pm 2.00$ mg/mL) and meadow sample 2 ($IC_{50}^{MCF7} = 12.0 \pm 0.57$ mg/mL, $IC_{50}^{HeLa} = 16.9 \pm 1.54$ mg/mL and $IC_{50}^{HT-29} = 23.7 \pm 1.33$ mg/mL) towards breast (MCF7), cervix (HeLa) and colon (HT-29)

cancer cells. Active components other than sugars contributed to cell growth activity. Probably, antiproliferative activity was achieved by polyphenols.

Keywords: honey, antiproliferative activity.

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