Abstract

Introduction:
*Anchusa strigosa* - prickly alkanet from Boraginaceae known as "him him" or "lisam al thawr", is a herbaceous, perennial plant, about 1 meter long with stiff spiny hairs. Its leaves are oblong to lanceolate, crowded at the base, extremely rough and prickly. Its flowering time ranges from February until June. Its habitat includes roadsides, and fields in Ibrid, Ajloun, Jarash, Salt, Amman, Karak and Tafila. *A. strigosa* is a very adaptable and tenacious plant which tends to be a characteristic of most plants in Boraginaceae. This is a clear evidence of its ability to adapt to a broad range of habitats in Jordan from Mediterranean woodlands, to steppe vegetation, to true desert. The color of the flowers can range from pure white to deep cobalt blue. Various parts of *A. strigosa* are used in traditional medicine for treating several diseases or symptoms, such as abdominal pain, bronchitis, cough, and diarrhea.

Aim of the study

The goal of this study was to examine the cytotoxic effect of the crude extract of *A. strigosa* roots and leaves and their fractions against various tumor cell lines: adenocarcinoma MCF-7, human breast ductal carcinoma T-47D; human breast carcinoma MDA-MB-231; and colorectal carcinomas Caco-2.

Methodology

*A. strigosa* roots and leaves were extracted by different methods of extraction including the cold maceration, and the soxhlet apparatus, using a wide range of solvents with different polarities (chloroform, methanol, ethanol, petroleum ether, etc.). Furthermore, fractions were analyzed by preparative TLC to isolate the pure compounds, then the isolated compounds were identified by TLC and chemical reagents. Finally, the extracts and their fractions were tested by SRB assay to check their cytotoxic activity against (MCF-7), (MDA-MB-231), (T-47D), and (Caco-2) cell lines.

Results

The cytotoxic effect of the crude extract and its fractions against human cancer cell lines such as breast cancer (MCF-7), (MDA-MB-231), (T-47D), and colorectal cancer (Caco-2), was determined using the SRB assay, which showed that the proliferation rate was more than 50% in all tested cell lines.

Conclusion

The absence of any noticeable cytotoxic activity could be due to several factors, such as environmental factors, and soil type where both affect the amount of a specific component in any plant part. Moreover, the absence or presence of antitumor activity could be affected by the presence or absence of any specific component in the form of a pure isolated compound or impure within a total extract form.