Abstract

Screening of Some Apiaceae and Asteraceae Plants for Their Cytotoxic Potential †

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Abstract: Terpenoids, especially sesquiterpene lactones (SLS) and furanocoumarins are diverse secondary metabolite groups which show a promising efficiency on different cancer cell lines. Therefore the screening of terpenoid and/or coumarin rich plants from the plant kingdom remains still importance. Breast cancer and lung adenocarcinoma are the most common cancer types leading to cancer-related deaths in the world. To investigate the cytotoxic effects of some Asteraceae plants [Jurinea spec., Ptilostemon spec., Circium spec., Centaurea spec., Tanacetum spec., Tragopogon spec., Pulicaria spec., Cyanus spec.] and Apiaceae [Heracleum spec., Pastinaca spec.] plant extracts, real time cell analyzer xCELLigence system was used. A549 (12.500 cells/well) and MCF-7 (5000 cells/well) cells were seeded in E-plate then approximately 24 h post-seeding when the cells were in the log growth phase, the cells were treated with the samples. Cell viability was observed during 48 h after treatment and IC50 values have been calculated. According to results, Jurinea macrocephala, Tanacetum parthenium and Pulicaria dysenterica MeOH extracts showed significant cytotoxic effects on both two cell lines. The IC50 values of those extracts on MCF-7 cell line were calculated as 17 μg/mL, 21.47 μg/mL and 27.05 μg/mL respectively after the end of the 24 h. To understand the secondary metabolite profiles of the extracts; crude 1H NMR experiments were performed. For each active extracts the major compounds and/or group of compounds were discussed.

Keywords: Apiaceae; Asteraceae; A549; MCF-7; SLS; furanocoumarin

Conflicts of Interest: The authors declare no conflict of interest.

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