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Flower extracts of *Filipendula ulmaria* (L.) Maxim inhibit cell growth of human tumour cell lines

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According to the World Health Organization, cancer is the leading cause of death worldwide and its mortality is expected to rise in the next few years. Despite all efforts, the current therapeutic arsenal is not sufficient to reduce these numbers. Therefore, it is imperative to identify new sources of anticancer drugs.

Filipendula ulmaria (L.) Maxim is part of the ethnobothanical patrimony of the Iberian Peninsula. For centuries, it has been used as a medicinal species due to its rich antioxidant content, which includes flavonoids and ascorbic acid [1]. Nonetheless, little is known about its antiproliferative activity in cancer cells. Thus, the aims of this project were to: i) investigate if different flower extracts of *F. ulmaria* have cell growth inhibitory activity in human tumour cell lines and ii) study the mechanism of action of one of the most potent extracts.

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Four flower extracts obtained by different extraction methods (decoction, infusion, methanol and methanol:water 80:20, *v/v*) were screened for tumour cell growth inhibitory activity in three human tumour cell lines: NCI-H460 (non-small cell lung cancer), A375-C5 (melanoma) and MCF-7 (breast adenocarcinoma). One of the most potent extracts (obtained by decoction) was further studied in the NCI-H460 cell line (one of the most sensitive), by investigating its effect on viable cell number, programmed cell death, cellular proliferation and cell cycle profile.

Results showed that all extracts have growth inhibitory activity in the studied cell lines, in particular the extract obtained by decoction (GI_{50} of 70.0 ± 8.6, 96.0 ± 12.4 and 63.3 ± 7.6 μg/mL in the NCI-H460, MCF-7 and A373-C5 cells, respectively). Further studies in the NCI-H460 cell line showed that this extract reduced viable cell number. Moreover, treatment with this extract resulted in a strong reduction of cellular proliferation, with a slight increase in the percentage of cells in the G1 phase of the cell cycle. No significant alterations in programmed cell death were observed, although results showed a statistically significant increase in the cellular levels of p53 and p21. Future work will confirm if this extract is non-toxic to human non-tumour cells.

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REFERENCES

[1] Barros, L.; Cabrita, L.; Boas, M.V.; Carvalho, A.M; Ferreira I. *Chemical, biochemical and electrochemical assays to evaluate phytochemicals and antioxidant activity of wild plants.* Food Chemistry. **2011**, 127, 1600-1608.