Production and characterization of natural and synthetic compounds for treating hormone resistant tumors

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Abstract

From previous and on-going studies, natural compounds/extracts isolated from *Taraxacum hispanicum* (1), Ionic Liquids (ILs) based on ampicillin and quinoxalines emerged as potential anticancer. Although described as potentially antitumor compounds, the mechanisms undergoing cytotoxicity remain unknown. Therefore, production of these kind of compounds were carry out in order to have a better understanding of their bioactivity.

Several approaches were made according to the type of extracts/compounds that were studied. In the case of the Ionic Liquids Based on ampicillin (2), the buffer neutralization method was the methodology that we used to synthetize and that wasdeveloped and already described by us (2). The purity of the compounds was determined by ^{1}H and ^{13}C Nuclear Magnetic Ressonance and mass spectrometry. Regarding quinoxalines, the compounds were purified by reduced pressure sublimation, and thermal stability was verified by DSC (3). On the topic of the natural compounds, the leaves of *Taraxacum hispanicum* were collected from a producer in Vila Nova de Gaia (Portugal), and authenticated by a specialist. A characterization of the extracts was performed by High Pressure Liquid Chromatography (HPLC) and Diode Array (DAD), according to Schütz et al (4).

As expected the products were obtained pure, with good yields and in enough quantity to carry out the functional studies with cancer cell lines.

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Keywords

Ionic liquids, natural products, quinoxaline, hormone resistant tumors

Acknowledgements. This research is a result of the project NORTE-01-0145-FEDER-024156, supported by Norte Portugal Regional Operational Programme (NORTE 2020), under the PORTUGAL 2020 Partnership Agreement, through the European Regional Development Fund (ERDF) and by the Foundation for Science and Technology (FCT).