Synthesis of caspases modulators with flavonic scaffold

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Flavonoids represent an exceptional class of naturally occurring compounds that have been attracting attention of the scientific community because of their wide range of biological properties, being the antitumor activity one of the most studied. The antitumor activity of flavonoids is associated with, at least in part, to their ability to induce apoptosis by affecting the expression or activity of a wide variety of molecules involved in apoptosis pathways, namely the caspase family proteins [1]. Recently, as result of the searching for new caspase modulators by our research group two prenylated flavonoids have been identified as caspase-7 activators [2]. These results led us to develop this project for the thesis for Masters in Pharmaceutical Chemistry aiming to obtain new caspase activators. This project with a multidisciplinary character includes the synthesis of a library of small molecules with a flavonoid scaffold and the evaluation of their activity as caspase family proteins modulators. Innovative assays using Saccharomyces cerevisiae individually expressing human caspases-3, -7 or procaspases-3, -7 will be used for screening assays for the most promising compounds the results will be validated using human cell lines. In this communication, preliminary results concerning the synthesis of some flavonoids will be presented.

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