SYNTHESIS AND CYTOTOXICITY OF NEW 1,4-ANTHRAQUINONES

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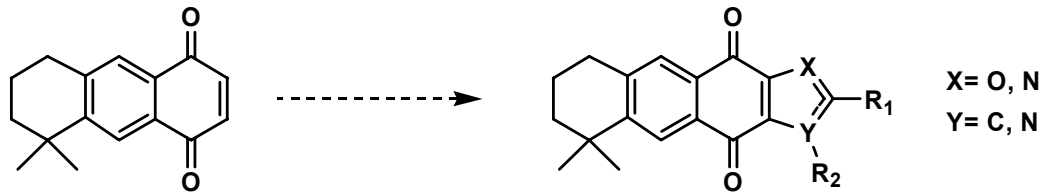
Many planar tri- and tetracyclic quinones have been found to display interesting antineoplastic properties and although the exact contribution of the quinone ring to their bioactivity remains uncertain, several studies have shown that the quinone moiety is essential for their cytotoxicity [1].

Among the different families of quinones [2], 1,4-naphthoquinones (1,4-NQs) and 9,10-anthraquinones (9,10-AQs) have been the subject of a great deal of biological studies. However the antitumor potential of 1,4-AQs has been little explored and only recently the antineoplastic activity of simple 1,4-AQs has been reported [3].

In the past years, our research group has been involved in the preparation of a large number of terpenyl-NQs that have shown high citotoxicity with IC_{50} values under the μM level [4].

In this sense, we present now our studies on a straightforward synthesis of new 1,4-AQs through Diels-Alder addition of myrcene and *p*-benzoquinones and their further transformations into new polycyclic systems, in which the 1,4-AQ moiety is fused to five-membered heterocyclic rings such as furane, pirrole or imidazole.



The prepared compounds are being evaluated against different neoplastic cell lines and the results will be presented in this communication.

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