

Synthesis of Novel Indole Chalcones as Potential Cytotoxic Agents

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Abstract:

Cancer is the second leading cause of death in the world and its incidence and mortality rates are ever-growing. Nowadays, the clinical use of conventional anticancer drugs like Taxanes and Vinca alkaloids have been limited due to their drug resistance and neurotoxic effects. Therefore, much more attention has been paid to the discovery of new antitumor agents. Indole and chalcone scaffolds are found in many naturally occurring compounds and recently their derivatives have received significant attention not only because of their simple structure and ease of production, but also their biological activities, including antioxidant, antimicrobial, anticancer and anti-inflammatory activities. In this work, we have designed and synthesized different indole chalcone derivatives as a new series of potential cytotoxic agents. Desired chalcones were synthesized via the reaction of different aromatic aldehydes, in basic condition, with chlorobenzyl-1H-indole derivative. All the synthesized compounds were characterized by ¹HNMR, ¹³CNMR, LC-MS and IR spectral data. The target compounds were obtained by optimized condensation reaction between different aromatic aldehydes and desired ketone with good to excellent yields.

Keywords: Synthesis, Cancer, Cytotoxic Agents, Indole-chalcone

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