Extended Abstract

Synthesis, Spectral Characterization, and Anti-Tumor Activity of Some Pyrazole Derivatives [†]

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1. Introduction

Cancer is a terrible disease that is spread around the world. Chemotherapy remains a significant way of treating cancerous diseases. Although some impressive progress has been made in cancer therapy, drug resistance and toxicity, the development of new anticancer chemotherapeutic agents is being sought [1,2].

2. Materials and Methods

Commercial reagents have been used in the synthesis of intermediate pyrazolic compounds. All synthesized pyrazolic compounds were characterized by IR, ¹H-NMR ¹³C-NMR, UV-Vis, MS, elemental analysis, and tested *in vitro* for their anti-tumor activity.

3. Results

In this study three series of pyrazole derivatives were synthesized in two steps with good yields:

In the first step, pyrazoles reacted with a aqueous 30% formaldehyde solution to give the 1-(hydroxymethyl)pyrazole derivatives [3]. In the second step, the 1-hydroxymethyl-pyrazoles reacted with, aromatic amines giving pyrazole Mannich bases [4,5].

The structures of all compounds were confirmed by ¹H, ¹³C-NMR, FTIR, UV-VIS spectra and elemental analysis.

Some compounds were tested *in vitro* for their cytotoxic activity on normal NCTC cells, and their anti-tumor activity in a culture of human cervix carcinoma Hep-2 cells at different concentrations of the sample for 48 h.

Some new benzimidazole Mannich bases was synthesized and characterized [6].

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