Synthesis and Evaluation of Antitumor Activities of Novel Fused Uracil Derivatives

Samar A. El-Kalyoubi[1,*] and Eman A. Fayed[1]

Abstract: A simple one-pot synthesis of indenopyrrolopyrimidines and indolopyrrolopyrimidines through the cyclocondensation reaction of 6-aminouracils and ninhydrin and/or isatin in the presence of catalytic amounts of glacial acetic acid were described. On the other hand, 6-aminouracils undergo nitrosation followed by reduction afforded 5,6-diaminouracil derivatives which used as a direct starting material for the synthesis of indenopteridines and indolopteridines via the reaction with ninhydrin and isatin respectively. All the new synthesized compounds have been characterized by elemental analyses, IR, 1H-NMR spectra and Mass spectral studies. The new synthesized compounds were evaluated for antitumor activity against human hepatocellular carcinoma cell line (Hep-G2) as well as the half maximal inhibitory concentration (IC50). Some compounds showed a potent antitumor activity.

Keywords: 6-aminouracils, 5,6-diaminouracil, ninhydrin, isatin indenopyrrolo-pyrimidines, indolo-pyrrolopyrimidines, indenopteridines and indolopteridines