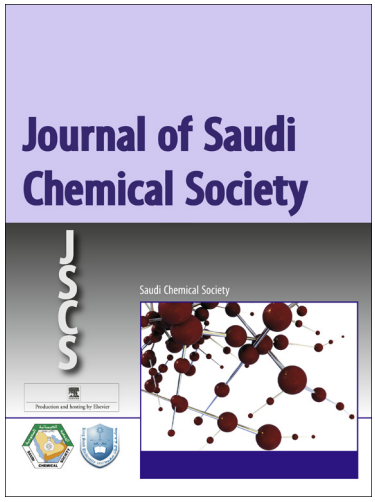


# Facile synthesis of indole-pyrimidine hybrids and evaluation of their anticancer and antimicrobial activity

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# Facile synthesis of indole-pyrimidine hybrids and evaluation of their anticancer and antimicrobial activity

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**Abstract**

The paper describes the facile synthesis of new *N*-cyclopropyl-1-methyl-1*H*-indole-2-carboxamide derivatives bearing substituted 2-amino pyrimidine moiety at position-3 of the indole ring. All the intermediate and title compounds were characterized adeptly by $^{1}$H NMR, $^{13}$C NMR, ESI-MS and elemental analyses. These compounds were evaluated for their *in vitro* anticancer activity against HeLa, HepG2 and MCF-7 cells. Three among 22 molecules, showed more than 70 % growth inhibition against all three tested cancer cells. The nature of substituent group on the pyrimidine ring ($R^2$) affected significantly the anti-proliferative activity of the molecules. The anti-microbial evaluation of the title molecules revealed the significance of fluoro/chloro groups ($R^2$) in enhancing their inhibition activity. Eight molecules which contain fluoro/chloro groups showed potent anti-microbial activity. In addition, the active molecules displayed negligible toxicity to benign Vero cells.

**Keywords**: Indole, Pyrimidine, HATU, Claisen-Schmidt condensation, anticancer activity, antimicrobial studies