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Design, Synthesis and Screening of Benzimidazole Containing Compounds with Methoxylated Aryl Radicals as Cytotoxic Molecules on (HCT-116) Colon Cancer Cells

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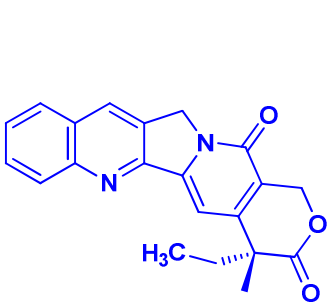
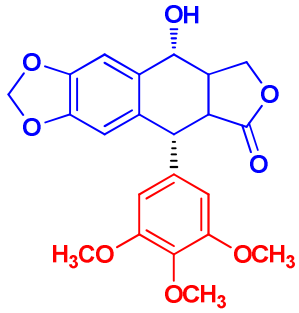


CPT



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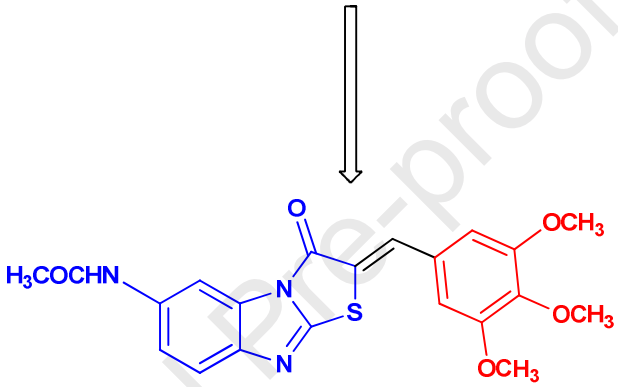

compound 11b

HCT-116 IC_{50} (μM)= 0.16, % inhibition of TUB Polymerization=67, Topo IC_{50} (nM) 21

Highlights

- the molecules were designed as dual antitumor and radiosensitizer agents .
- Compounds **11b** exhibited potent cytotoxic activity on HCT-116 cancer cells higher than camptothecin (CPT).
-*in vitro* topoisomerase assay correlated cytotoxicity of molecule **11b** to DNA synthesis inhibition.
-Compound (**11b**) could regulate the radio-sensitizing activity of the (HCT-116) cells by modulating the Chromosomal Instability of Multipolar Mitosis (MM), Mitotic Catastrophe (MC), Binucleated Cells (BN), Micronuclei (MN), Nuclear Bleb (NB), and Apoptotic Cells (AC).

Conflict of interest:

The authors have declared no conflict of interest.