

Bis-isatin hydrazones with novel linkers: Synthesis and biological evaluation as cytotoxic agents,

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Abstract

Many bis-isatins and isatins with hydrazide extension were reported to have a potential anti-proliferative effects against different cancer cell lines and cancer targets. In this study, four series of bis-isatins with hydrazide linkers were synthesized. These compounds were investigated for their antitumor activity by assessing their cytotoxic potency against HepG2, MCF-7 and HCT-116 cancer cell lines. Compound 21c possessed significant cytotoxic activity against MCF-7 (IC₅₀ = 1.84 mM) and HCT-116 (IC₅₀ = 3.31 mM) that surpasses the activity of doxorubicin against both cell lines (MCF-7; IC₅₀ = 2.57 mM and HCT-116; IC₅₀ = 3.70 mM). Cell cycle analysis and annexin V-FITC staining of MCF-7 cells treated with 21c suggested that the cytotoxic effect of the compound could be attributed to its pro-apoptotic activity.

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