

An efficient synthesis of some new 1,4-disubstituted phthalazine derivatives

and their anticancer activity

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ABSTRACT

A novel series of phthalazine derivatives bearing isoindol-1,3-dione moiety were synthesized by treating ethyl{4-[4-(1,3-dioxo-1,3-dihydroisoindole-2-yl)-phenyl] phthalazin-1-yloxy}acetate (**3**) and {4-[4-(1,3-Dioxo-1,3-dihydroisoindol-2-yl)phenyl]phthalazin-1-yloxy} acetic acid hydrazide (**7a**) with various chemical reagents. The newly synthesized compounds were characterized on the basis of their spectral (^1H NMR, ^{13}C NMR, Ms, IR) analyses. *In vitro*, most of the synthesized derivatives were screened for their antitumor activity against MCF-7 cells using MTT assay. Compounds **16b**, **18**, **13**, **15**, **17** showed the most potent cytotoxic effect concluded from their IC_{50} values 50, 70, 150, 180 and 100 $\mu\text{g/ml}$ respectively.

Key words: Phthalazin-1-(2H)-One; Acid hydrazide, Isoindol-1,3-dione; Antitumor activity.
