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2,5-Diamino-1,4-benzoquinones: Promising candidates against HT-29 human colorectal cancer cell line and as HSP90 inhibitors

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Herein is reported the synthesis of seven 2,5-diamino-1,4-benzoquinones to act as potent anti-cancer agents against HT-29 human colorectal adenocarcinoma cell line *via* MTT assay, fluorescence microscopy and flow cytometric assays. All the aminobenzoquinones show promising activity and 2,5-dibenzylamino-1,4-benzoquinone exhibits best results (IC_{50} 12.5 $\mu\text{g/mL}$). Fluorescence microscopic and cell cycle analysis have been carried out to study the pathway of their activity. Molecular docking analysis using Schrodinger software have been carried out to study the ability of these compounds to act as HSP90 inhibitors.

Keywords: Aminobenzoquinones, Fluorescence microscopy, Flow cytometry, Molecular docking, HSP90 Inhibitor