

Synthesis and Antiproliferative Activity of 5-Phenyl-N3-(4-fluorophenyl)-4H-1,2,4-triazole-3,4-diamine Derivatives

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Abstract : In the present study, 2, 6-difluorobenzohydrazide and 4-fluorophenylisothiocyanate were used as the starting materials to synthesize 5-phenyl-N3-(4-fluorophenyl)-4H-1, 2, 4-triazole-3, 4-diamine. Further, compound 5-phenyl-N3-(4-fluorophenyl)-4H-1, 2, 4-triazole-3,4-diamine reacted with fluoro substituted benzaldehydes to yield a series of Schiff bases. All the final compounds were characterized using IR, ¹H NMR, ¹³C NMR, MS and elemental analyses. New compounds were evaluated for their antiproliferative effect using the MTT assay method against four human cancer cell lines (K562, COLO-205, MDA-MB231, and IMR-32) for the time period of 24 h. Among the series, few compounds showed good activity on all cell lines, whereas the other compounds in the series exhibited moderate activity.

Keywords : Schiff bases, MTT assay, antiproliferative activity, human cancer cell lines, 1, 2, 4-triazoles

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