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Synthesize of novel 1,3,4-thiadiazole derivatives as anticancer agents

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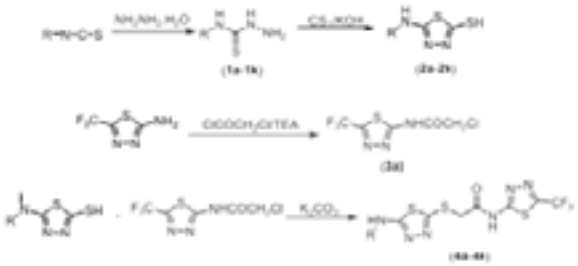
Cancer is a disease in which the cell or group of cells exhibits uncontrolled growth, invasion and sometimes metastasis. In these days, various anticancer drugs have been used in an attempt to cure of several malignancies. However, most of these used agents have high side effects and may lead to resistance development. The toxic effects of non-selective anti-cancer agents and drugs can explain resistance to drugs due to years of increased patient population. Therefore, the development of new drugs against cancer is an important condition for medicinal chemistry [1-2]. Moreover, thiadiazole is a five membered ring system comprising sulphur and nitrogen atom. 2-Aminothiadiazoles are in clinical trials for the treatment of patients with different tumour [3-4].

In this study, we present the synthesis of new bis-thiadiazole derivatives (4a-4k) as anti-cancer agents. IR, 1H-NMR, 13C- NMR, and HRMS analyses proved the structures of final compounds. The anticancer activity was confirmed by Cytotoxicity test, DNA synthesis inhibition assay, and Flow cytometric analysis. According to activity results, synthesized compounds showed anticancer activity against cancer cell lines. In the series, compound 4f was the most active derivative with noncytotoxic action towards heathy NIH3T3 cell line.



Biography

Derya Osmaniye is a research assistant in Anadolu University Faculty of Pharmacy, Department of Pharmaceutical Chemistry. She has completed her master's degree in 2017. She is doing her PhD now and is in the third semester of PhD. She has published more than 10 papers in reputed journals.

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