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## Novel triazole-based condensed derivatives as putative anti-cancer agents

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Cancer is recently announced as the leading cause of death worldwide. In the next two decades, the number of new cases is expected to rise dramatically. Chemotherapy is employed as a crucial part of the multimodal treatment of cancer. Unfortunately, the lack of selective and efficient agents constitutes a barrier against chemotherapy. Therefore research on the novel chemotherapeutics is receiving continuous interest. Widely-used Non-Steroidal Anti-Inflammatory Drugs' (NSAIDs)' cancer chemo-preventive effects are demonstrated. Besides this, there are diverse studies asserting anticancer activities of 1,2,4-triazoles and their condensed derivatives. These conclusions inspired us to design novel 1,2,4-triazole-based condensed derivatives incorporating with NSAIDs' structural motifs, namely 1,2,4-triazolo-[3,4-b]-1,3,4-thiadiazoles, which have been expected to have cytotoxic properties. The mentioned compounds were achieved by the reaction of an aminomercaptotriazole (1) derived from flurbiprofen with appropriate benzoic acids (a-j) in phosphorus oxychloride. Their initial cytotoxicity screening was assayed by NCI-Sulforhodamine B (SRB) test against human liver, breast and colon carcinoma cell lines. Compound 1h was further studied against enlarged hepatocellular carcinoma cell lines. Then, real-time cytotoxic effect of 1h was measured via RT-CES. For corroborating cellular response which 1h caused, cells were observed after staining with immune-fluorescent Hoechst dye. Furthermore, the effect of 1h was analyzed by measuring DNA content of the cell cycle phases with FACS method by using Propidium Iodide. Data showed that there was slight increase in Sub-G1 phase. These observations were helpful to enlighten possible mechanism of action of compound 1h triggered, and encouraged us for further studies.

### Biography

Birsen Tozkoparan has completed her PhD from Hacettepe University, Faculty of Pharmacy, and Department of Pharmaceutical Chemistry. She had completed her Post-doctoral studies from Westfälische Wilhelms University, Institute of Pharmaceutical Chemistry, Münster, Germany and North-eastern University, Department of Pharmaceutical Sciences, Boston, USA. She is a Member of Hacettepe University. She has published more than 40 papers, mostly about analgesic/anti-inflammatory and anticancer drug research areas, in prestigious journals. She is Deputy Director of Hacettepe University, Institute of Health Sciences.

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