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Synthesis of some novel *N*-(6-substituted benzothiazole-2-yl)-2-(4-substituted piperazin-1-yl) asetamide derivatives and evaluation their anticancer activity

Büsra Ekselli¹, Gülsen Akalın-Ciftci¹, Asaf Evrim Evren² And Leyla Yurttas²¹Anadolu University, Turkey²Anadolu University, Turkey.

Cancer is the uncontrolled growth of cells combined with malignant behavior: invasion and metastasis and also is one of the most prevalent causes of death, after cardiovascular diseases.[1] Despite the increasing number of anticancer agents developed to date, the lack of selectivity and the getting of multiple-drug resistance account for significant problem for successful cancer treatment and therefore researchers have focused on the create of more specific and less toxic agents [1,2,3] Today's, cytotoxic drugs are used in a widespread because of raising in cancer incidence and one of these drug groups is benzothiazole derivatives. [4] Benzothiazole derivatives have a wide spectrum of pharmaceutical applications such as anticancer antimicrobial, anticonvulsant, antiviral, antitubercular, antimalarial, analgesic, antiinflammatory, antidiabetic, antifungal, antibacterial, antioxidant activity and etc. [5] For these reasons, the aim of this study was to synthesize and investigate anticancer activity of some novel *N*-(benzothiazol-2-yl)piperazine-1-carboxamide derivatives (**2a-1**) The structural elucidation of the compounds was performed by ¹H-NMR, ¹³C-NMR and LC-MS/MS spectral data and elemental analyses. The title compounds were obtained by reacting 2-chloro-*N*-(substituted benzothiazol-2-yl)acetamide with some piperazine derivatives. Twelve new compounds are evaluating for determining their cytotoxicities against A549 human lung adenocarcinoma cell line and NIH/3T3 mouse embryonic fibroblast cell line. After that the selected compounds will be evaluated to identify apoptotic cell rates. Activity studies are still in progress. Keywords: Benzothiazole, Piperazine, Anticancer activity, Apoptosis

Biography

Büsra EKSELLİ has completed his BD (Bachelor Degree) at the age of 22 years from Anadolu University, Pharmacy Faculty and she is still postgraduate student at Anadolu University, Department of Biochemistry.

eczbusraekselli@gmail.com

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