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Synthesis and anticancer screening studies of benzothiazole-based piperazine derivatives

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This lecture will cover our study on benzothiazole-based piperazine derivatives and their cytotoxic activities. Target compounds were synthesized according to reactions shown below in reaction scheme. Structures of compounds were clarified with IR, ^{1}H-NMR, ^{13}C-NMR, mass spectroscopies and elemental analyses. *In vitro* cytotoxic activities were screened in comparison with camptothecin (positive control) and 5-fluorouracil (reference) by sulphorhodamine B assay against breast cancer (MCF-7), hepatocellular carcinoma (HUH-7) and colorectal carcinoma (HCT-116) cell lines. The most potent compound against HUH-7 and MCF-7 cell line was compound 1d; IC_{50} = 3,1 μM and IC_{50} = 9,2 μM, respectively. The most potent compounds against HCT-116 cell line were compound 1a; IC_{50} = 4,8 μM and compound 2a; IC_{50} = 4,5 μM.

Biography

Mine Yarim has studied anticancer drug design and authored several peer-reviewed reports. She has served on numerous review committees for the National Science Foundation in Turkey. She has served on the editorial boards for the *Pharmacologia*. She is a member of the QSAR Society.

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