*proceedings*

MDPI

*Abstract*

# The Effects of Benzoxasol Derivate Compounds in Breast Cancer Cells †

**Funda Kosova [1,*], Özlem Temiz-Arpacı [2], Ercüment Ölmez [3] and İbrahim Tuğlu [4]**

[1] Faculty of Health Science, Celal Bayar University, Manisa 45000, Turkey
[2] Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Ankara University, Ankara 06560, Turkey; ozlem.temiz@pharmacy.ankara.edu.tr
[3] Department of Pharmacology, Medical of Faculty, Celal Bayar University, Manisa 45000, Turkey; ercumentolmez@hotmail.com
[4] Department of Histology and Embryology, Medical of Faculty, Celal Bayar University, Manisa 45000, Turkey; mituglu@yahoo.com
* Correspondence: fundakosova@gmail.com; Tel: +90-5335-573-629
† Presented at the 2nd International Conference on Natural Products for Cancer Prevention and Therapy, Kayseri, Turkey, 8–11 November 2017.

Published: 17 November 2017

**Abstract:** Breast cancer today is the most frequent cancer among women, and the second most common cause of cancer deaths among women. The aim of this study was to synthesize a new benzoxazole derivative, scan it for anti-cancer potential by MTT test using different breast cancer cell lines, and examine its effects on NF-κB and apoptosis related proteins by the western blot method. A newly synthesized benzoxazole derived compound was applied to cancer cell lines and its cytotoxicity was measured quantitatively by MTT test. Later, the level of its effects on NF-κB and apoptosis related proteins were examined. The structure of the compound synthesized in our study (5-amino-2-(p-bromobenzyl) benzoxazoleand 5-[4-chlorobutanamido]-2-(p-methylphenyl) benzoxazole were proved by elemental analysis. In the assay of the proteins by western, when heterocyclic compounds were added to the MDA and MCF-7 cell line, there was no difference from the control group in Apaf-1 and BCL-2 levels, but a reduction was observed in caspase and NF-κB levels compared with the control group. It is seen that this newly synthesized heterocyclic compound increases apoptosis by reducing the activation of NF-κB, and in this way has shown an effect of inhibiting tumor growth in cancer treatment.

**Keywords:** Heterocyclic compounds; NF-κB; APAF-1; cytochrome C; Caspase 3; BCL-2