proceedings

MDPI

Abstract

The Effects of Wortmannin and EGCG and Combined Treatments on MDA-MB-231 Breast Cancer Cell Lines via Inactivation of PI3K Signaling Pathway †

Elgin Turkoz Uluer [1,*], Melike Ozgul [1], Tuna Onal [1], Kemal Ozbilgin [1] and Sevinc Inan [2]

[1] Department of Histology & Embryology, Faculty of Medicine, Manisa Celal Bayar University, Manisa 45047, Turkey
[2] Department of Histology & Embryology, Faculty of Medicine, Izmir University of Economics, Izmir 35040, Turkey
* Correspondence: drelginturkoz@gmail.com; Tel.: +90-505-369-8978
† Presented at the 2nd International Conference on Natural Products for Cancer Prevention and Therapy, Kayseri, Turkey, 8–11 November 2017.

Published: 15 November 2017

Abstract: Epigallocatechin gallate (EGCG), a major polyphenol in green tea, has been studied as an agent against carcinogenesis and Wortmannin is a microbial steroid and it inhibits phosphatidyl inositol 3-kinase (PI3K) pathway. The aim of this study was to investigate the effects of PI3K inhibitor Wortmannin, EGCG and combined treatments on PI3K pathway on human breast cancer cell line MDA-MB-231 using indirect immunohistochemistry method. MDA-MB-231 breast cancer cells were cultured in RPMI-1640 medium containing 10% FBS, 1% L-glutamine and 1% penicillin/streptomycin. Anti-PI3K, anti-AKT, anti-ERK, anti-NFkB, anti-c-jun and anti-EZH2 primary antibodies were used for indirect immunohistochemistry after 24 h administrations of Wortmannin (2.5 μM), EGCG (100 μM) and combination of them. The mean values of the staining intensities (mild, moderate, strong and very strong) and percentage of positively stained cells were calculated using H-Score. The results of this study showed that the combined treatment of Wortmannin and EGCG is more effective on the decreasing of immunoreactivities of PI3K pathway molecules than single administrations. The combined use of these drugs is thought to be advantageous in enhancing the development and efficacy of existing cancer treatments.

Keywords: breat cancer cell line; Wortmannin; EGCG; PI3K

Conflicts of Interest: The authors declare no conflict of interest.