

4th International Conference and Exhibition on

Food Processing & Technology

August 10-12, 2015 London, UK

Side effects of antioxidant quercetin over cancer therapy

Zafer Akan¹, Garip A I² and Talha Muezzinoglu¹

¹Celal Bayar University, Turkey

²Marmara University, Turkey

The phytochemical quercetin is one of the most abundant dietary flavonoids widely present in many fruits and vegetables. Previous *in vitro* studies has shown that quercetin acts as an antioxidant and anti-inflammatory agent and it has potential anti-carcinogenic properties as an apoptosis inducer. In this study, it was examined apoptotic effects of quercetin on the K562 erythroleukemia cell line. K562 cells were induced to undergo apoptosis by hydrogen peroxide. Cell viability and apoptosis level were assessed by annexin V and PI staining methods using flow cytometry. Viability of K562 cells was increased by low dose of quercetin (5-100 μ M) for 3 hours. Meanwhile, the toxicity of high doses of quercetin utilizing was proved in the conditions of 100-500 μ M, 24 hours and resulted in decreasing of K562 cell viability as expected ($p < 0.01$). As a result, 100 μ M quercetin was defined as a protective dose. Also, K562 cell apoptosis due to hydrogen peroxide was decreased in a dose dependent manner. As indicated in previous studies, reduction of superoxides by free radical scavengers like quercetin could be beneficial for prevention of cancer but consumption of such flavonoids during cancer treatment may weaken effects of chemotherapeutics and radiotherapy. Especially cancer patients should be carefully considered for traditional phytotherapy during cancer treatment which can lead to controversial results.

Biography

Zafer Akan has graduated from Yuzuncu Yil University, Faculty of Science, Department of Physics and MSc in the Yuzuncu Yil University School of Medicine, Department of Biophysics and PhD in the Marmara University School of Medicine Department of Biophysics and University of North Carolina; Department of Biochemistry-Biophysics NC USA at 2009. His main research area is Boron Neutron Capture Therapy for Soft tissue, Head and Neck Cancers. Moreover he has worked on antioxidants and cancer relations. He is on the Editorial Boards of many international scientific journals. He is also a Chief Editor of *International Journal Medical Science and Discovery*.

zafer_akan@hotmail.com

Notes: