Abstract

Goji Berry Fruit Extract Suppresses Cell Proliferation of Breast Cancer Cells by Inhibiting EGFR/ERK Signalling †

Hatice Bekci 1, Guzide Satir Basaran 2, Ayse Baldemir 3 and Ahmet Cumaoglu 2,*

1 Department of Food Engineering, Engineering Faculty, Erciyes University, Kayseri 38030, Turkey; hatice_bekci@hotmail.com
2 Department of Biochemistry, Faculty of Pharmacy, Erciyes University, Kayseri 38030, Turkey; basarangzd@gmail.com
3 Department of Pharmaceutical botany, Faculty of Pharmacy, Erciyes University, Kayseri 38030, Turkey; aysebaldemir@gmail.com
* Correspondence: ahmetcumaoglu@yahoo.com; Tel.: +90-5333-4051-04
† Presented at the 2nd International Conference on Natural Products for Cancer Prevention and Therapy, Kayseri, Turkey, 8–11 November 2017.

Abstract: Herbal medicines have been used in cancer treatment, with many exhibiting favorable side effect and toxicity profiles compared with conventional chemotherapeutic agents. The aim of this study was to verify whether Lycium barbarum fruit (red and black fruit) extracts inhibit proliferation of MDA-MB-231 cells through EGFR/ERK pathway. Cytotoxicity with MTT reduction assay and phosphorylation of EGFR and ERK were analyzed by western blot. IC50 values were 87.0 and 79.4 µg/mL for goji berry black fruit extract (GBBFE) and goji berry red fruit extract (GBRFE) expectively. Pretreatment with both extract inhibited phosphorylation of EGFR/ERK in EGF-treated cells. Goji berry fruit extracts cause cellular death of MDA-MB-231 breast cancer cells by inhibiting EGFR/ERK signaling and this study suggests that Goji berry fruit extracts could be beneficial for treating breast cancer.

Keywords: Goji berry; cancer; EGFR/ERK

© 2017 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).