



## Abstract

# Effect of Cucurbitacin I on Proliferation and Migration in Colorectal Cancer Cell Line, LS174T <sup>†</sup>

Emir Tosun \* and Ahmet Baysar

Department of Chemical Engineering, Inonu University, Malatya 44210, Turkey; ahmet.baysar@inonu.edu.tr

\* Correspondence: emir.tosun@inonu.edu.tr; Tel.: +90-4223774779

<sup>†</sup> Presented at the 2nd International Conference on Natural Products for Cancer Prevention and Therapy, Kayseri, Turkey, 8–11 November 2017.

Publish: 15 November 2017

**Abstract:** Cucurbitacin I is a natural component extracted from plants of the *Cucurbitaceae* family and has shown anti-cancer activity against various types of cancer. The aim of the present study was to investigate its antiproliferative and antimigratory effects on LS174T colon cancer cell line. The inhibitory effect on proliferation was assessed by a 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyl tetrazolium bromide (MTT) assay following exposure to cucurbitacin I at various concentrations (varying between 2.5 and 125 ng/mL) for 24–72 h. The antimigratory effect of cucurbitacin I was investigated by a wound healing assay for 12–48 h. Cucurbitacin I inhibited cell proliferation in a dose- and time-dependent manner. At 125 ng/mL concentration of cucurbitacin I, cancer cells decreased by 16%, 35% and 63% at the end of 24, 48 and 72 h, respectively. The IC<sub>50</sub> value following 72 h of incubation was 23 ng/mL. Cucurbitacin I at concentration of 23 ng/mL for 48 h inhibited migration into the scratched area by 48% as compared to the control group. A significant concentration-dependent effect was also observed for the rest of the cucurbitacin I concentration levels in the range for 24 h and 36 h. Preliminary studies indicate that cucurbitacin I is a promising treatment agent for colorectal cancer.

**Keywords:** cucurbitacin I; antiproliferative effect; wound healing; LS174T cell line



© 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/>).