

Toxicology and Clinical Pharmacology

&

Generic Drugs and Biosimilars

2nd International Conference on

December 14-16, 2017 Rome, Italy

Anti-cancer effect and apoptosis induction of cordycepin through DR3 pathway in the human colonic cancer cell HT-29

Beong Ou Lim, Seung Yuan Lee, Trishna Debnath and Si Kwan Kim
Konkuk University, Republic of Korea

Cordycepin is known to have many pharmacological effects such as anti-tumorigenic, anti-inflammatory and anti-angiogenic activity. However, cordycepin induced apoptosis through the DR3 pathway in human colon cancer cells has not been studied. The effect of cordycepin on anti-proliferation was investigated in this study. Cordycepin significantly inhibited cell viability in a dose and time-dependent manner. Cordycepin increased sub G1 and G2/M phase arrest on HT-29 cells at the concentration of 100 μ M, whereas cordycepin at 200 μ M and 400 μ M increased G1 phase arrest. Cordycepin induced apoptosis in HT-29 cells in a dose-dependent manner as detected by Hoechst and Annexin V-FITC staining. Intracellular ROS levels were higher in cordycepin treated cells as compared to control cells. The protein related to apoptosis was determined by antibody array. p53 and Bax expression increased treatment with cordycepin for 18 h. DR3, caspase-8, caspase-1, cleaved caspase-3 and cleaved PARP expression increased. These findings suggest that the cordycepin induces apoptosis through the DR3 pathway in human colon cancer HT-29. These findings suggest that cordycepin should be evaluated further as a therapeutic agent in human colon cancer.

Recent Publications

1. Pervin M, Hasnat M A, Lim J H, Lee Y M, Kim E O, Um B H, Lim BO (2014) Anti-inflammatory activity on mice of extract of *Ganoderma lucidum* grown on rice via modulation of MAPK and NF- κ B pathways. 114:125-36. Doi: 10.1016/j.phytochem.2014.10.019.
2. Pervin M, Hasnat M A, Lim J H, Lee Y M, Kim E O, Um B H, Lim B O. Preventive and therapeutic effects of blueberry (*Vaccinium corymbosum*) extract against DSS-induced ulcerative colitis by regulation of antioxidant and inflammatory mediators. J Nutr Biochem. 2016 28:103-113. Doi: 10.1016/j.jnutbio.2015.10.006.

Biography

Beong Ou Lim is an Assistant Professor at Department Of Life Science in Konkuk University, global campus, South Korea. He earned his Master's degree from Kyushu University in 1994 and achieved his PhD in Food Chemical Engineering from the same university in the year of 1997. Currently he has over 50 publications as a corresponding author. His recent publications include "Preventive and therapeutic effects of blueberry extract against DSS-induced ulcerative colitis regulation of antioxidant and inflammatory mediators," His current research interest includes the food medical bio-compound.

beongou@kku.ac.kr

Notes: