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Antioxidant and Anticancer Activities of *Sorbus rufopilosa* extract in Human Colon adenocarcinoma HT29 Cells**You Na Oh, Soojung Jin, Hyun Ju Kwon, and Byung Woo Kim**
Dong-Eui University, South Korea

Sorbus rufopilosa, a tsema rowan, is a species of the small ornamental trees in the genus *Sorbus* and the family Rosaceae found in East Asia. The antioxidant and anticancer effects of *S. rufopilosa* remain unclear. The objective of this study is to evaluate the antioxidant and anticancer effects of ethanol extract of *S. rufopilosa* (EESR) and the molecular mechanism of its anticancer activity in human colon carcinoma HT29 cells. EESR showed significant antioxidant activity and inhibitory effect on HT29 cell growth in a dose-dependent manner. EESR induced cell cycle arrest at G2/M phase in a dose-dependent manner by modulating the expression of cyclin B, cyclin-dependent kinase 1 (CDK1), and CDK inhibitor p21. EESR-induced apoptosis was associated with the upregulation of p53, a death receptor Fas, a pro-apoptotic protein Bax and the activation of caspase 3, 8, and 9, resulting in the degradation of poly ADP ribose polymerase (PARP). These results suggest that EESR efficiently inhibits proliferation of HT29 by inducing both cell cycle arrest and apoptosis, and may be a possible candidate for the anticancer drug development.

Recent Publications:

1. Andreas G (2003) Introduction to apoptosis. ApoReview 2-26.
2. Evan GI, Vousden KH (2001) Proliferation, cell cycle and apoptosis in cancer. Nature 411:342-348.
3. Fulda S (2015) Targeting apoptosis for anticancer therapy. Semin. Cancer Biol. 31:84-88.
4. Fulda S, Debatin KM (2006) Extrinsic versus intrinsic apoptosis pathways in anticancer chemotherapy. Oncogene 25:4798-4811.
5. Udensi UK, Tchounwou PB (2016) Oxidative stress in prostate hyperplasia and carcinogenesis. J. Exp. Clin. Cancer Res. 35:139.

Biography

You Na Oh has completed her Master in Microbiology from Dong-Eui University, Busan, Republic of Korea. She is currently working as a researcher at Blue-Bio Industry Regional Innovation Center, Dong-Eui University. Her research is focused on Bioactive Natural

ohyouna@deu.ac.kr

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