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Effect of Bupleuri Radix (BR) Extracts on the Toxicity of 5-Fluorouracil in HepG2 Cells and Normal Lymphocytes.

Su Jin Kang, Young Joon Lee, Hye Kyoung Jeon, Hae Dong Woo and Hai Won Chung
School of Public Health, Seoul National University, Seoul, Korea

5-Fluorouracil(5-FU) is widely used as an anti-tumor drug. However, its cytotoxicity and genotoxicity in normal lymphocytes remains in chemotherapy. The Korean traditional drug, Bupleuri Radix (BR), has been used for the treatment of liver diseases and contains series of triterpene saponins, named saikosaponins. Saikosaponin is known to have anti-oxidative activity by scavenging reactive oxidative stress(ROS) generated by physical and chemical agents. This study was carried out to find whether extract of Bupleuri Radix(BR) might enhance 5-FU induced cytotoxicity in HepG2 cells while protecting normal blood lymphocytes. Pre-treatment of Bupleuri Radix(BR) increased the frequency of micronuclei(MN) in HepG2 cells by 5-FU treatment. However, pre-treatment of Bupleuri Radix(BR) during G0 phase in human lymphocyte decreased the frequency of 5-FU induced MN. From above results it is suggested that Bupleuri Radix(BR) could protect cytotoxicity by 5-FU in human lymphocyte while enhance it in HepG2 cells. The results of this study may therefore demonstrate the potential activity of extract of Bupleuri Radix(BR) as a chemotherapeutic agent.

Keyword: Bupleuri Radix (BR), saikosaponin, cytotoxicity, 5-Fluorouracil(5-FU)