【P-47】

Effect of Rhus Verniciflua Strokes Extracts and Its Components on the Cytotoxicity, Collagen Synthesis, Signaling Pathway and Hepatic Fibrosis Related Proteins Mrna Levels in Human Hepatic Stellate Cells

Seung Hyun Jung[1], Jeong Ran Kim[1], Chun Soo Na[2], Bum Rak Choi[2], Sun Young Yun[2], Young In Park[1] and Mi Sook Dong[1]

[1]*School of Life Sciences & Biotechnology, Korea University, Seoul 136-701,*

[2]*Lifetree Biotech Co., Ltd, Kyonggido, 441-350.*

Hepatic stellate cells (HSC) and the derived myofibroblasts are known to play a central role in liver fibrogenesis. Rhus verniciflua Strokes (RVS) has traditionally been used in Korea herbal medicine for a stomachic tonic and known to toxic in liver. We prepared urushiol free RVS extract which contains mainly flavonoids. In this study, we observed the effect of RVS extract (RW-2) and its components on the cytotoxicity, the collagen synthesis, hepatic fibrosis related proteins mRNA levels and signaling pathway, such as TGFβ1, NF-κB, AP-1 in LI-90 cells which is a fully activated human hepatic stellate cell line. RW-2 inhibited the proliferation and decreased the content of collagen without the cytotoxicity in the LI-90 cells. The mRNA levels of TβR2, CTGF and collagen 1a2 were reduced by RW-2 treatment. The anti-fibrotic activity of each component of RW-2 was not excellent in compared with that of total RW-2 judging by collagen excretion and mRNA levels of hepatic fibrosis related proteins. Similarly, RW-2 blocked TGFβ1-induced Col1A2 promoter activity. However, RW-2 stimulation alone was not sufficient to decrease collagen gene activity. Also, in HepG2 cell lines, RW-2 significantly reduced TGFβ1- induced transcriptional activity of SBE2 that drived by two repeats of the CAGACA sequence identified as Smad binding element in the JunB promoter. AP-1 and NF-κB sites existed on the 4.3kb Col1A2 promoter region. NF-κB and AP-1 driven luciferase activities were also reduced by RW-2 in HepG2 cells which is transiently transfected pNF-κb-6x- Luc and pAP-1-6x-Luc, respectively. Collectively, RW-2 inhibited hepatic stellate cell proliferation, collagen synthesis, and correlated with col1a2 gene expression mechanisms that might have a protective role against liver fibrosis.

Keyword : RHUS VERNICIFLUA, antihepatofibrotic effect