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Inhibition of breast cancer growth and angiogenesis by a medicinal herb: *Spatholobus suberectus*

Wang Zhiyu, Wang Neng and Chen Jianping

School of Chinese Medicine, University of Hong Kong, Hong Kong

Spatholobus suberectus (SS) is a traditionally used medicinal herb, which shows anti-inflammation, hematopoiesis and immunity enhancing properties. So far no detailed studies have been reported on its effects on human cancers. Thus we analyzed its effects on human breast cancer utilizing *in vitro* and *in vivo* methodologies. Aqueous extracts were prepared from dried roots of SS. Human breast cancer cell line MCF-7 and MDA-MB-231 were utilized for evaluating SS influences on tumor progression and angiogenesis process like proliferation, cell cycle, apoptosis, tube formation and migration abilities. Both cancer xenografts were also built to determine the herb efficacy *in vivo*. SS extracts inhibits proliferation and induces G2/M phase arrest in both cancer cells. Annexin V-PI staining and Western blotting analysis indicates that the mitochondrial pathway apoptosis is activated by SS. Angiogenesis experiments revealed that SS could inhibit VEGF expression in both cancer cells. Meanwhile, the proliferation, tube formation and migration abilities of endothelial cells were also inhibited. The VEGFR-2 kinase activity of endothelial cells was also suppressed after SS administration. *In vivo* experiments demonstrated that SS extracts reduced tumor size and neoangiogenesis in both cancer xenografts. The preclinical study implied that SS might be of value as a breast cancer preventive and therapeutic agent by inducing apoptosis and inhibiting angiogenesis.

Biography

Mr. Wang Zhiyu is a PhD student focusing on cancer prevention by natural plants in school of Chinese Medicine, the University of Hong Kong. The research interests of our team can be divided into following directions: (1) Identification of cancer prevention molecular targets; (2) Isolation and determination of active components from natural plants.