

Effect of Icariin on Osteoarthritis Fibroblast-Like Synoviocytes: An *In Vitro* Study

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Abstract: Osteoarthritis (OA) is a chronic joint bone disease which always leads to the dysfunction and disability of arthritis. Synovial inflammation plays an important role in the pathogenesis and progress of OA which can secrete large amounts of inflammatory cytokines. There is an urgent need to find safe and effective drugs that can reduce the inflammation and regulate the pathogenesis of cytokines of the OA disease. Icariin, a traditional Chinese herbal medicine, is the major pharmacological active component of herb *Epimedium*. This study we investigated the influence of icariin on the main cells in synovium-osteoarthritis fibroblast-like synoviocytes (OA-FLSs). The OA-FLSs were cultured *in vitro* and treated with different concentrations of icariin. Then, we investigated the viability, proliferation, and migration of the cells. Gene expression levels were detected via qRT-PCR, protein expression levels were detected via western blotting and immunofluorescence. Icariin showed low cytotoxicity to OA-FLSs at a concentration of under 10 μM and decreased the proliferation of the cells at lower concentrations. Also, the expression of inflammation cytokine *IL-1 β* , for the pathogenesis of OA was decreased by the various concentrations of icariin. These preliminary results imply that icariin might be an effective compound for the treatment of OA disease.

Keywords: Osteoarthritis; icariin; OA-FLSs; *IL-1 β* .

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