Studying the anti-renal fibrosis effects of crude extracts of radix achyranthis bidentatae

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ABSTRACT

Department of Health press release under the Republic of China announced the major leading cause of death 98 years people, of which diabetes and nephritis, nephrotic syndrome and nephrosis lethal ranked fifth and third respectively 10. Diabetes type of kidney disease will lead to produce end-stage renal disease, and end-stage renal disease is characterized by renal fibrosis, so the inhibition of renal fibrosis has been proposed as a treatment for end-stage renal disease in a strategy. Radix Achyranthis Bidentatae (RAB) is a specific effect of traditional Chinese medicine to promote blood circulation, has been widely used to treat liver and kidney disease. In this study, extracts of RAB role for the inhibition of renal fibrosis, RAB extract obtained by alcohol extraction of heat, and the use of transforming growth factor beta (TGF-β) induced stimulation of the renal fibroblast NRK-49F fibrosis, and in the TGF-β stimulated for 24 hours, then add into the different doses of RAB extract and continue for 24 hours, this study RAB on the role of inhibition of renal fibrosis and effect. Fibrosis, TGF-β as a hormone, via its messaging is type I transforming growth factor beta receptor (TGF-β RI) and signal transduction message (such as Smad2, Smad3 and Smad4 protein), further stimulate cell fibrosis At the same time, this path can be produced by inhibition of Smad7 effect, block fibrosis messaging. Experiment was added after RAB extract does not affect cell survival, depending on the amount of additive reduces the increase in fibronectin, and inhibit the production of receptor TGF-β RI and TGF-β binding activity. In the message transmission path, with inhibitory effects of signaling molecules pass fibrosis Smad7 also increased with increasing additive content, and thus effectively inhibit fibrosis. The study found that RAB extract can inhibit the TGF-β Smad signaling pathways controlling renal cell fiber fibrosis, therefore, RAB with clinical application potential of anti-renal fibrosis.

Keywords : Radix Achyranthis Bidentatae、fibronectin、renal fibrosis、Transforming growth factor beta (TGF-β)、Smad signal transdution

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