

Antihyperlipidaemic Activities of *Agriophyllum squarrosum* (L.) Moq. *in vivo*

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Abstract

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Agriophyllum squarrosum (L.) Moq. is medicine herb used as a traditional Mongolian drug. Its pharmacological efficacy studies are rarely reported. In the present study, we tested and confirmed the antihyperlipidaemic activity of *A. squarrosum* and its extracts in rats for the first time. The results of the antihyperlipidaemic experiment *in vivo* showed that *A. squarrosum* and its extracts had significant lipid-lowering activities. The significances of *A. squarrosum* and its extracts on decreasing blood levels of total cholesterol, triglyceride, and low density lipoprotein cholesterol were equal to that of simvastatin, which is a drug for the treatment of hyperlipidaemic.

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Introduction

Agriophyllum squarrosum is a species of the family Chenopodiaceae. It is commonly known as “Chuliger” in Mongolian. The full herb is light green therophyte and between 15 -50 centimeters of high with stiff stem. *A. squarrosum* grows in flowing sand dunes or lowland dunes, and distributed from north parts of China to Mongolia, Russia. It is widely grown in Khorchin, Liaohe plain, Huxi plateau, Wulanchabu, Ordos and Alashan of Inner Mongolia autonomous region, China. In Mongolian folk medicine, *A. squarrosum* was used for removing disease, detoxication, reducing fever and causing dieresis; Its decoction or pill was used to treat plague, headache, red eye, yellow gangrene, kidney fever, urethral burning pain, stomach “Hei”, mouth sores and tooth fester among other thing (Erdenebilig, 2014). In the

previous studies, the flavonoids, triterpenoids, sterides, coumarins, alkaloids and fatty acids as the main compounds of *A. squarrosum* were reported (Gong, 2012; Zhou, 2012; Liu, 2013). The antidiabetics activity of *A. squarrosum* were studied (Bao *et al.*, 2016), however, other pharmacological efficacy studies are rarely reported and haven't been included in to national pharmacopoeia and local medicinal standards. In the research of active parts of *A. squarrosum*, we studied that *A. squarrosum* and its extracts had an anti-hyperlipidemia activity on high fat rats model for the first time.

Experimental Procedures

A total of 60 males of Wistar rats (Research Centre for Laboratory Animal Science, Beijing,