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In vitro* Evaluation of the Hepatotoxic Potential of Aqueous and Methanolic Extracts of *Myricaria longifolia

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In a previous study aqueous extracts of several plant species frequently used in the traditional Mongolian therapy of liver disorders have been analysed for potential genotoxic or cytotoxic properties in the primary rat hepatocyte assay with or without proliferative stimulation by the epidermal growth factor EGF. The most prominent finding was a pronounced cytotoxicity of *Myricaria longifolia*. Significant levels of necroses were observed at concentrations $\geq 10 \mu\text{g/ml}$. At the highest concentration (100 $\mu\text{g/ml}$) more than 30% of the cells were killed.

Without stimulation by EGF an increasing percentage of apoptoses was observed parallel to the increase of necroses, further indicating a pro-apoptotic potential of the extract, which is masked in the presence of the growth factor. In order to further characterize the active ingredients the original water extracts were fractionated according to the protocol in Fig. 1. These fractions were tested again in the primary rat hepatocyte assay at a concentration of 100 $\mu\text{g/ml}$ (Fig.2).

The cytotoxic activity of the fractions increased with increasing methanol concentrations. The highest cytotoxic activity was contained in fraction S9 (80% methanol) and yielded approximately 90% necroses. Fractions S7 and S8 had a less pronounced cytotoxic effect. In contrast, the level of apoptoses did not show large variations. The highest level was obtained by treatment with fractions S10 and S11.

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