

A study on the hydrothermal reaction of ginseng extract to increase the specific ginsenosides

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Pharmacological properties of ginseng are generally attributed to the ginsenosides. The ginsenosides have many bioactivities such as anti-cancer activities, anti-obesity activities, and improvements of blood circulation. In general, deglycosylated or dehydrated ginsenosides are more bioavailable and bioactive than intact ginsenosides therefore there have been many tries to increase 'specific ginsenosides', which are in processed ginseng but not in unprocessed ginseng. Steaming treatments, fermenting processes, and additional acids treatments are usually carried out to increase specific ginsenosides. However, these processes tend to be time-consuming and complicated. To overcome these disadvantages, hot compressed water, which has a high ion product constant and a low dielectric constant, was used as a hydrothermal reaction medium. Among specific ginsenosides, Rk3, Rg3, Rk1, and Rh2 were analyzed by using a HPLC-ELSD. As changing various reaction conditions, an optimal condition was found. As a result, the specific ginsenosides were successfully increased by hydrothermal reactions in short time.