

91.1 Introduction

Renshen, Radix Ginseng, is the dry root of *Panax ginseng* C.A. Mey. (Araliaceae), a worldwide well-known traditional Chinese medicine with the popular name “ginseng”. The wild-growing or cultivated ginseng root, which is collected in the fall, is officially listed in the Chinese Pharmacopoeia and used as a tonic.

Ginseng was formerly a wild plant growing in the northeastern region of China. Wild Ginseng, the mountain ginseng, is called “Shanshen” in Chinese and should be dried in the sun. Nowadays, wild ginseng is rarely available, and almost all of the commercially available ginseng root is cultivated in the northeastern district and other regions of China, where the growing conditions for ginseng plant are favorable. Cultivated ginseng, the garden ginseng, is called “Yuanshen” in Chinese and should be dried either in the sun or after steaming. The steamed root has a caramel color and is also called “red ginseng.”

91.2 Chemical Constituents

Although ginseng has been used for a long time and may be the best-known traditional Chinese medicine, isolation and characterization of the chemical constituents only became successful during the 1960s. The major constituents of ginseng are the saponins. The first sapogenin of ginseng saponins isolated and structurally elucidated was oleanolic acid. It was obtained by hydrolysis of a 50% ethanolic extract of ginseng with sulfuric acid [1]. Then, another compound named panaxadiol (91-1) was isolated from the crude ginseng saponin mixture by hydrolysis with dilute mineral acid in boiling aqueous ethanol. It was supposed to be a sapogenin [2], but was later shown to be formed as an artifact during acid hydrolysis. Panaxadiol was recovered unchanged after treatment with mineral acid, whereas a chlorine-containing compound (91-2), described first by Katake [3], could be obtained directly by hydrolysis of the crude ginseng saponins with concentrated hydrochloric acid [4].