Acanthopanax senticosus
(Rupr. et Maxim.) Harms

1.1 Introduction

Ciwujia, Radix Acanthopanacis senticosi, is the dry root and rootstock of Acanthopanax (Eleutherococcus) senticosus (Rupr. et Maxim.) Harms (Araliaceae), which is collected in spring and fall. It is listed officially in the Chinese Pharmacopoeia and commonly known as “Siberian ginseng”. It belongs to the same plant family as Panax ginseng. In addition, two galenic preparations of A. senticosus are also included in the Chinese Pharmacopoeia:

- Ciwujia Jingao, Extractum Acanthopanacis senticosi, prepared by extraction of the powdered root of A. senticosus with 75% ethanol and concentration of the extract
- Ciwujia Pian, Tabellae Acanthopanacis senticosi, prepared from the extract

The roots and rootstock of A. senticosus and its preparations have been used as a tonic in Chinese traditional medicine for a long time.

1.2 Chemical Constituents

From the roots and stems of A. senticosus collected in China, isofraxidin (1-1), sesamin (1-2), β-sitosterol (1-3), friedelin (1-4), and several polysaccharides have been isolated in addition to eleutherosides A, B (1-8), B1 (1-9), C, D, E, I, K, L, and M [1]. The eleutherosides I, K, L, and M have also been isolated from the leaves of A. senticosus [2].

Isofraxidin is a derivative of coumarin, the lactone of coumarinic acid; sesamin is a lignan derivative; and β-sitosterol, a widely distributed plant sterol, has a stigmastane (1-5) carbon skeleton, whereas friedelin belongs to triterpenes derived from D: A-friedooleanane (1-6).
The eleutherosides are glycosides with different aglycones. Thus, eleutheroside A (1-7) is a steroid glycoside with β-sitosterol as the aglycone; eutherosides I (1-13), K (1-14), L (1-15), and M (1-16) are triterpene glycosides with oleanolic acid as the aglycone; and eleutherosides D (1-11) and E (1-12) are epimeric syringaresinol diglycosides. The other eleutherosides are glycosides with simple aglycones. The most simple eleutheroside is eleutheroside C (1-10), which is ethyl α-D-galactopyranoside. Eleutheroside B is identical to syringin.