Cephalotaxus spp. 38

38.1 Introduction

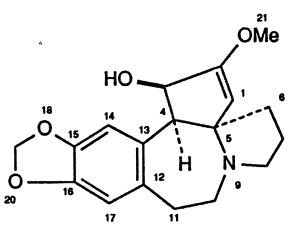
Cephalotaxus, the only genus of the family Cephalotaxaceae with eight species and few varieties known so far, is mostly native to China. Seven of the eight known *Cephalotaxus* species growing in China are: *C. fortunei* Hook. f., *C. hainanensis* Li, *C. wilsoniana* Hay., *C. mannii* Hook. f., *C. oliveri* Mast., *C. lanceolata* K.M. Feng, and *C. sinensis* Li. *C. harringtonia* occurs in Japan and *C. mannii* is also found in India [1, 2].

After the antitumor activity of the ester alkaloids contained in *Cephalotaxus* against P388 and L1210 leukemias in mice was reported [3], great interest in the chemistry and pharmacology of *Cephalotaxus* was aroused and a number of studies were carried out worldwide, especially in China. In view of the interesting chemistry and pharmacologic properties of the alkaloid constituents from *Cephalotaxus*, they are described here, although the *Cephalotaxus* species are not listed officially in the Chinese Pharmacopoeia.

38.2 Chemical Constituents

38.2.1 Alkaloids

The presence of alkaloid components in *Cephalotaxus* species was already reported in the 1950s by different groups [4–6]. The first isolated alkaloid, cephalotaxine (*38-1*), together with some other alkaloids from *C. harringtonia* var. *drupacea* (*C. drupacea*), and *C. fortunei* were reported by Paudler et al. [7]. The powdered leaves and stems of *C. fortunei* and *C. harringtonia* var. *drupacea* yielded 0.39% and 0.35%, respectively, crude alkaloid material by conventional acid-base extraction of the concentrated alcohol extracts. Cephalotaxine was present in yields of 50% and 54%, respectively, in the crude alkaloid mixture of *C. fortunei* and *C. harringtonia* var. *drupacea*.



Cephalotaxine (*38-1*)