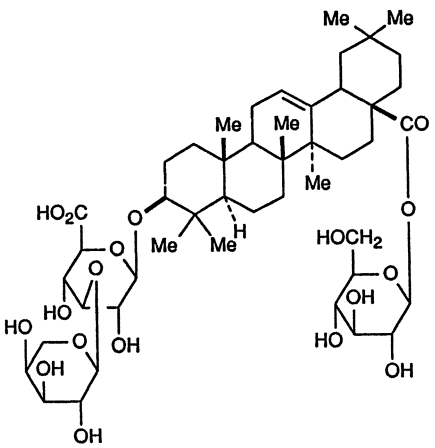
30.2.2 Chemical Constituents of *Bupleurum chinense* and Other *Bupleurum* Species

The saikosaponins were also found in *B. chinense* and *B. scorzonerifolium*. The amount of crude saponins in the root of *B. chinense* was 1.69%, whereas the stem and leaf contained 0.29% [18]. The yield of saponins was dependent on the size of the roots. Thus, the yields were 1.24%, 3.18%, and 4.86% for saikosaponins in *B. chinense* roots with diameters of 9.5, 5.4, and 2.7 mm, respectively [19]. Histochemical studies showed that saponins were present in the cortex but not in the wood of the root [19].

The isolation of a new triterpene glycoside with an oleanolic acid aglycone from the aerial part of *B. chinense* was also reported. The structure of this new saponin was determined as 3-*O*-(α-L-arabinopyranosyl(1→3)-*O*-β-D-glucuronopyranosyl)-oleanolic acid β-D-glucopyranosyl ester (*30-18*) [20].



(*30-18*)

Five new triterpene glycosides were isolated from the root of *B. kunmingense*. Four of them were found to be acetylated saikosaponins, 3″-*O*-acetylsaikosaponin A, 4″-*O*-acetylsaikosaponin A, 2″-*O*-acetylsaikosaponin D, and 2″-*O*-acetylsaikosaponin A. In addition, 16-*epi*-chikusaikoside I (*30-19*) was identified [21].

2″-*O*-acetylsaikosaponin A, 3″-*O*-acetylsaikosaponin A, and 3-*O*-β-D-rhodeopyranosylsaikogenin F (*30-20*) were isolated from the roots of *B. marginatum, B. marginatum* var. *stenophyllum*, and *B. rockii* [22].