

Sih et al. described pinoresinol di-*O*- β -D-glucopyranoside as the major antihyper-tensive principle of *E. ulmoides* and reported a synthesis of this glucoside [9]. Thus, coniferyl alcohol (65-21), prepared by oxidation of eugenol acetate (65-22) with mercuric acetate, was dimerized to pinoresinol by enzymatic catalysis using the chloroperoxidase-containing microorganism, *Caldariomyces fumago* (Fig. 65.1). Reaction of pinoresinol with α -bromoacetoglucose, in the presence of Ag_2O , followed by alkaline hydrolysis, produced pinoresinol di-*O*- β -D-glucopyranoside.

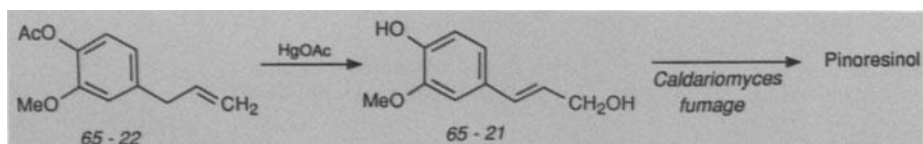
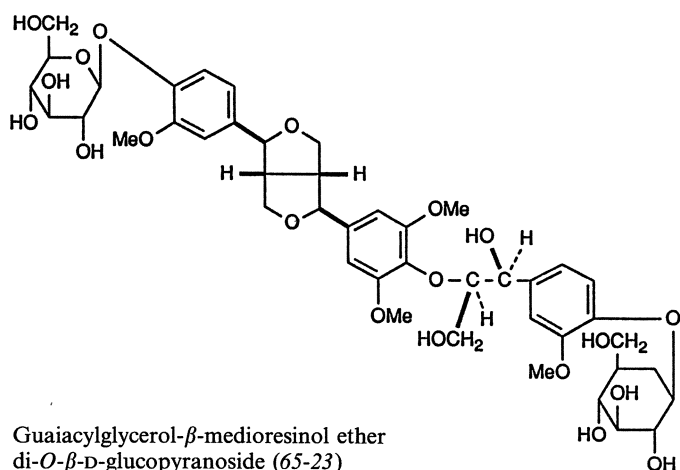


Fig. 65.1.

Pinoresinol diglucoside is mainly present in the phloem of the bark. The contents of pinoresinol diglucoside found in the phloem of various samples were up to 0.55%, whereas other parts of the bark did not contain the diglucoside [14].

Recently, a number of new lignans and lignan glycosides have been found and characterized such as guaiacylglycerol- β -medioresinol ether di-*O*- β -D-glucopyranoside (65-23) [4], *erythro*-dihydroxydehydrodiconiferyl alcohol (65-24) and its *threo* isomer [15], syringylglycerol- β -syringaresinol ether di-*O*- β -D-glucopyranoside (65-25) and dehydrodiconiferyl alcohol di-*O*- β -D-glucopyranoside (65-26) [16] together with the known compounds olivil 4'-*O*- β -D-glucopyranoside, olivil 4''-*O*- β -D-glucopyranoside [4], and citrusin B [16].



Guaiacylglycerol- β -medioresinol ether di-*O*- β -D-glucopyranoside (65-23)