

AN APPLICATION OF THE ANGULAR HYDROXYLATION USING BENZENE-SELENINIC ANHYDRIDE TO THE SYNTHESIS OF 10 $\beta$ -HYDROXYFURANO-EREMOPHILANES AND RELATED COMPOUNDS

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The total syntheses of eremophilane type sesquiterpenes having furan ring, furanoeremophilanes, have been achieved by the Diels-Alder reaction of 1 and 2. In the case of the syntheses of highly oxygenated furanoeremophilanes the hydroxylation of the angular (C-10) position of furanoeremophilanes with benzene-seleninic anhydride [(PhSeO)<sub>2</sub>O; BSA] was a critical step.

The Diels-Alder adduct (3) was converted to 4 in three steps [a) AcOH-H<sub>2</sub>O; b) isomerization of the C-4 methyl group to  $\beta$  orientation with p-TsOH; c) ketalization]. The angular hydroxylation of 4 with BSA gave 5a and 5b in excellent yield. The synthesis of decompositin (6) and other  $\Delta^{1,10}$ -furanoeremophilanes were achieved from 5b, stereoselectively. The furanoeremophilanes having 10 $\beta$ -hydroxyl group (8 and 9) were synthesized from 10 $\beta$ -hydroxy compound (5a) in good yield via epoxide (7) as a key intermediate. Synthesis of other highly oxygenated furanoeremophilanes will be discussed.

