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## Efficient Entry to the Steroidal $14\alpha$ -Methyl-8-ene System

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The  $14\alpha$ -methyl-8-ene steroids are important intermediates of sterol biosynthesis, but their efficient chemical preparation has not been reported before. In a continuing study of the acid-catalyzed reaction of steroidal epoxide, the pivalyl ester of  $14\alpha,15\alpha$ -epoxy-5-cholesten- $3\beta$ -ol has now been treated with boron trifluoride etherate in benzene to give the 8-en- $15\alpha$ -ol in 75% yield. Oxidation of this alcohol with pyridinium chlorochromate gave, in 73% yield, the corresponding 15-ketone which exhibited a strongly negative Cotton effect indicating the  $14\beta$ -H configuration. The 15-ketone was methylated with methyl iodide/potassium *tert*-butoxide in *tert*-butanol to afford the  $14\alpha$ -methyl-15-ketone in 73% yield. Subsequent deoxygenation by Huang-Minlon reduction afforded the final product  $14\alpha$ -methylcholest-8-en- $3\beta$ -ol.

The above mentioned procedures were applied to 4,4-dimethyl analog to yield 24,25-dihydrolanosterol identical with natural product.

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