Absolute Configuration of 2-*C*-Methylerythritol from *Convolvulus glomeratus*

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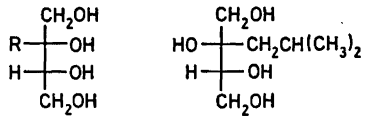
In a recent communication [1] we have reported the isolation of a new branched alditol (*1*) from *Convolvulus glomeratus* Choisy. The constitution and relative stereochemistry was deduced by spectroscopic methods and finally by synthesis of racemic *1* from citraconic acid.



1: R = CH_3

2: R = $CH_2CH(CH_3)_2$

3

In order to elucidate the absolute stereochemistry of *1*, a CD study of *1* and the two isobutyltetrols *2* and *3* of known configurations [2] has been performed. As expected, no extrema were reached in the CD measurements on aqueous solutions of *1*–*3*, and only low molecular ellipticities were obtained between 190 and 200 nm. Much more informative spectra were obtained, however, when the tetrols were investigated as their molybdate(VI) complexes (Fig. 1).[3] From these spectra and the known *erythro* configuration of *1*[1] it is obvious that *1* has the 2*S*, 3*R* configuration. Furthermore, since the CD band in the 330 nm region is positive for the erythritols and negative for the threitol this result suggests a method to distinguish between 2-*C*-alkylerythritols and 2-*C*-alkylthreitols.

Experimental. CD spectra were recorded on a Cary 60 instrument using a 1 cm cell for the 5.0 mM solutions of *1*–*3*, and a 0.05 cm cell for the solutions of the molybdate complexes. Following the conditions used by Voelter *et al.*,[3] the latter solutions were 5.0 mM with respect to tetrol and 10.0 mM with respect to sodium molybdate. The pH's were 5.0–5.1, adjusted with hydrochloric acid and measured with a

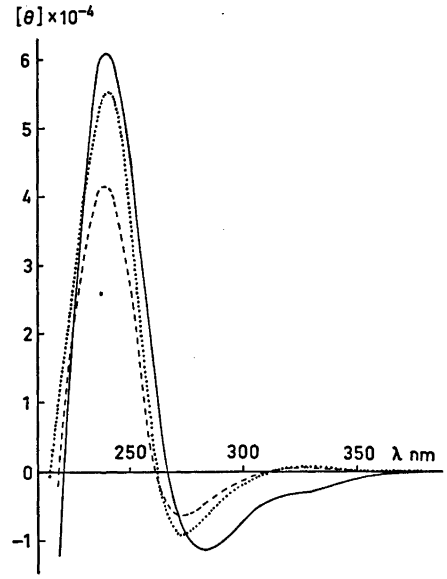


Fig. 1. CD spectra of molybdate(VI) complexes of *1*, ···; *2*, ---; and *3*, —·

Beckman pH meter (accuracy 0.1 unit). The molecular ellipticities are given in degree mol^{-1} cm^2. Obtained for *1*–*3*: $[\theta]_{192.5} = -0.18 \times 10^3$, -0.24×10^3, $+0.10 \times 10^3$, respectively. Obtained for *1*–*3* as molybdate complexes: see Fig. 1.

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2. Behr, D., Dahmén, J. and Leander, K. *Acta Chem. Scand. B 30* (1976) 309.
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