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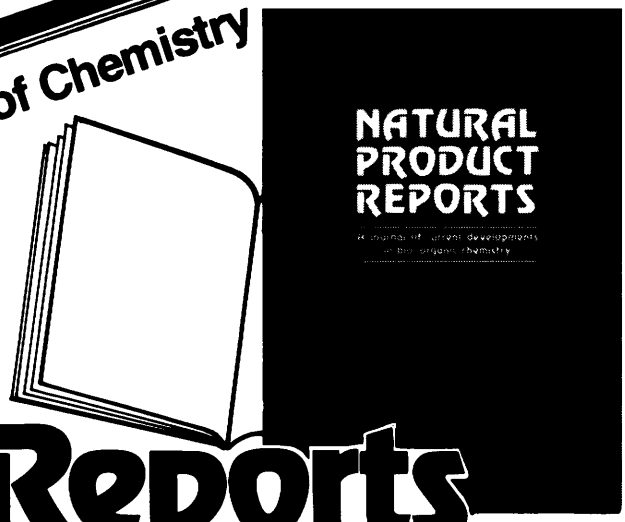

Natural Product Reports

Approximately 110 pages per issue
ISSN: 0265 0568

Natural Product Reports is a new bimonthly review journal which commenced publication in February 1984. It reviews recent developments in areas of natural product chemistry previously covered by the Specialist Periodical Reports (annual or biennial reviews) entitled "The Alkaloids", "Biosynthesis", "Terpenoids and Steroids" and "Aliphatic and Related Natural Product Chemistry". Publication in journal form helps to overcome the problem of overlap and enables reports to be published much faster than is possible in an annual volume. Furthermore, an annual subscription to Natural Product Reports costs substantially less than a subscription to Specialist Periodical Reports.

Natural Product Reports, however, is more than just a continuation of subjects covered by a number of SPR titles. Coverage includes such areas as chemotaxonomy, enzymology and biosynthetic aspects of biotechnology, and also advances in physical techniques used for structure determination e.g. n.m.r., h.p.l.c., mass spectrometry, and chiroptical data.

Natural Product Reports consists of critical reviews written by groups of leading authorities, many of whom have gained worldwide recognition for their contributions to the subject area. Each issue contains approximately 110 pages covering six or seven articles; there is an author index and a subject index (cumulated annually) to facilitate location of articles dealing with specific areas.

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Alkaloid Biosynthesis;
Aporphinoid Alkaloids;
Quinoline, Quinazoline, and Acridone Alkaloids;
Sesquiterpenoids;
Diterpenoids;

Issue 3 (June)
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Insect Pheromones;
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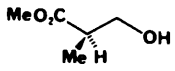
Creative Chirality

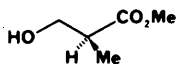
Methyl 3-Hydroxy-2-methylpropionates

Both Enantiomers Available

The **(*R*)-(−)-** and **(*S*)-(+)-** enantiomers of **methyl 3-hydroxy-2-methylpropionate** (**1**) are now available from Aldrich in high chemical and optical purity. These stable, colorless liquids serve as *bifunctional* building blocks for the synthesis of a wide variety of optically active molecules.



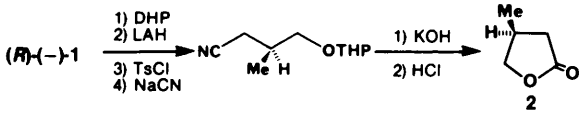
(*R*)-(−)-1



(*S*)-(+)-1

The availability of *both* enantiomers obviates the need to convert the heretofore-more-accessible (*S*)-(+)-isomer[1] to its mirror image for applications in which the (*R*)-(−)-isomer is required.

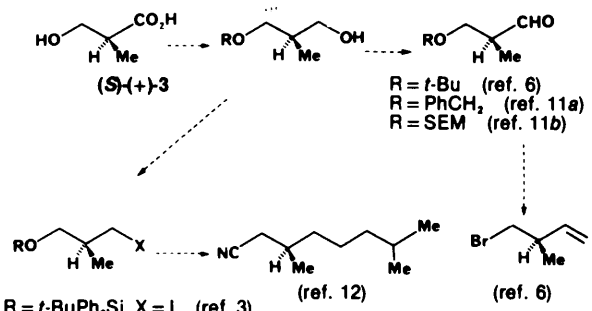
Ester (*R*)-(−)-**1** was recently used[2] for the synthesis of the (*S*)-(−)-lactone **2**, a key product for determining the absolute configuration of (+)-paraconic acid and the "A-factor" of streptomycin:



2

In addition, esters **1** are convenient precursors to the relatively unstable 3-hydroxy-2-methylpropionic *acids* (β-hydroxyisobutyric acids), **3**. These acids have figured recently in elegant syntheses of optically active calcimycin,[3] captopril,[4] 26-hydroxycholesterol,[5] lasalocid A,[6] maysine,[7] monensin,[8] muscone,[9] phyllanthocin,[10] rifamycin S,[11] and α-tocopherol.[12]

Typical transformations of (*S*)-(+)-**3**, for example, are shown below.



References:

(1) Goodhue, C.T.; Schaeffer, J.R. *Biotechnol. Bioeng.* **1971**, *13*, 203. (2) Mori, K. *Tetrahedron* **1983**, *39*, 3107. (3) Evans, D.A. *et al. J. Am. Chem. Soc.* **1979**, *101*, 6789. (4) Shimazaki, M. *et al. Chem. Pharm. Bull.* **1982**, *30*, 3139. (5) Byon, C.-Y.; Gut, M.; Toome, V. *J. Org. Chem.* **1981**, *46*, 3901. (6) Nakata, T.; Kishi, Y. *Tetrahedron Lett.* **1978**, 2745. (7) Meyers, A.I. *et al. J. Am. Chem. Soc.* **1983**, *105*, 5015. (8) Collum, D.B.; McDonald, III, J.H.; Still, W.C. *ibid.* **1980**, *102*, 2118. (9) Branca, Q.; Fischli, A. *Helv. Chim. Acta* **1977**, *60*, 925. (10) McGuirk, P.R.; Collum, D.B. *J. Am. Chem. Soc.* **1982**, *104*, 4496. (11) *a*) Nagaoka, H.; Kishi, Y. *Tetrahedron* **1981**, *37*, 3873. *b*) Masamune, S.; Imperiali, B.; Garvey, D.S. *J. Am. Chem. Soc.* **1982**, *104*, 5528. (12) Cohen, N. *et al. J. Org. Chem.* **1976**, *41*, 3505, 3512.

27,014-8 (R)-(−)-Methyl 3-hydroxy-2-methylpropionate
5g $12.00; 25g $40.00

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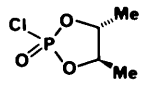
Anderson-Shapiro Reagent

A New, Chiral Derivatizing Agent



Aldrich introduces the **Anderson-Shapiro Reagent**,[1] a new derivatizing agent for assaying the enantiomeric purity of primary and secondary alcohols by ^{31}P NMR spectroscopy.

This method has advantages over the use of conventional derivatizing agents in that 1) spectral interpretation is relatively easy, regardless of the complexity of the alcohol under study; 2) the reactive center of the reagent is far enough removed from the site of chirality that asymmetric induction during the derivatization is minimized; and 3) auxiliary agents (such as lanthanide shift reagents) are not required.

The *in situ* derivatization procedure is simple. The alcohol to be assayed (1.0 eq) is dissolved in dry benzene (1.0 mmol/ml) in a vial, and dry triethylamine (1.5 eq) and 4-dimethylaminopyridine (0.1 eq) are added. The **Anderson-Shapiro Reagent** (1.05 eq) is added next, and the vial is shaken for 30 seconds. After allowing to stand 15 minutes, a small quantity of C_6D_6 may be added as an internal NMR lock. The resulting mixture is then filtered through cotton and the ^{31}P NMR spectrum is recorded.

We know you will find this to be a useful method for analyzing a wide range of optically active primary and secondary alcohols, including Sharpless epoxidation products.[2]

References:

1) Developed by R.C. Anderson and M.J. Shapiro, and licensed under an agreement with Sandoz, Inc. See this issue of *J. Org. Chem.*, p 1304.
2) Anderson, R.C.; Shapiro, M.J. personal communication with Aldrich Chemical Company, Inc.

27,567-0 (4*R*,5*R*)-2-Chloro-4,5-dimethyl-1,3,2-dioxaphospholane-2-oxide (Anderson-Shapiro Reagent) **250mg $12.70; 1g $35.30**