

[Tetrahedron Lett., 27, 231 (1986)]

Synthesis of Chiral 1,2-Diols and Related Compounds of Biological Activities via Stepwise Ring Fission of 5-Alkyl-6,8-dioxabicyclo-[3.2.1]octane Skeleton.

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5-Alkyl-7-mesyloxymethyl-6,8-dioxabicyclo [3.2.1]octanes, prepared from (+)-tartaric acid, were converted by means of an organoaluminium reagent $\text{Et}_2 \text{AlSPh}$ into the pyranoid monothioacetals, which were utilized via the successive thioacetalization to the synthesis of the insect pheromones (+)-disparlure and (-)-(2S,3S)-octanediol.

[Synthesis, 1986, 226]

Synthesis of Hexasubstituted Carbamimidic Acid Anhydrides and of N^1, N^1, N_2 -Trisubstituted Formamidines from 1,1,3-Trisubstituted Ureas.

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1,1,3-Trisubstituted ureas were converted with phosphoryl chloride to hexasubstituted carbamimidic acid anhydrides which were hitherto unknown or difficult to prepare by other methods. The ureas bearing bulky substituents were converted to amidinoyl chlorides which were reduced to the corresponding formamidines with amine-boranes in acid.

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Vibrational Spectra of β -Lactams—II. 1-Methyl-2-azetidinone and Its Deuterated Compounds.

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The infrared and Raman spectra of 1-methyl-2-azetidinone and its 3,3- d_2 and methyl- d_3 compounds have been recorded, and the observed bands have been assigned on the basis of the isotope effects and the normal coordinate analysis. Comparison of the C=O and C-N force constants between 2-azetidinone and 1-methyl-2-azetidinone indicates that, depending on amide resonance, these constants are related to each other. The solvent effects on the C=O frequencies of four to seven-membered lactams have also been examined.