SYNTHETIC STUDIES ON ANTIBIOTIC A23187 (CALCIMYCIN)

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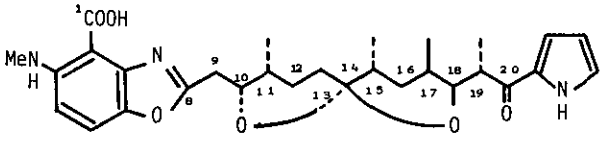
Synthetic approach to the title compound 1, a divalent cation ionophore, will be described.



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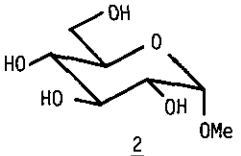

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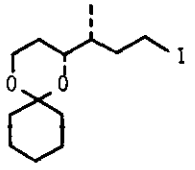

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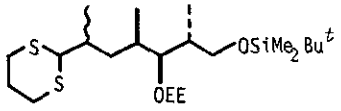

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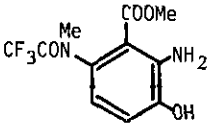

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The molecule 1, consiting of four heterocycles, involves seven asymmetric centers. Stereocontrol of the carbon framework was explored by use of the synthon 3 and 4, both of which were stereoselectively prepared from a readily available carbohydrate 2.

Condensation of the carboxylic acid mixed anhydride at C-8 with an aminophenol derivative 5 achieved the formation of the appropriately substituted benzoxazole moiety.

To introduce another heterocycle into the molecule, a regioselective acylation of pyrryl-magnesium bromide in the presence of CuI was examined.