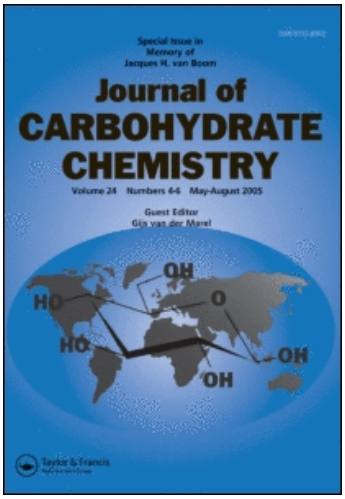

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Preface

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Preface

This special issue of the *Journal of Carbohydrate Chemistry* "Carbohydrates in the Development of Antibiotics" began a symposium held at the 228th National Meeting of the American Chemical Society in Philadelphia on August 23, 2004. The symposium, co-sponsored by the Division of Carbohydrate Chemistry and Centocor, Inc., Johnson and Johnson, brought together several perspectives in different areas of antibiotics research, including chemical synthesis, structural studies, and biosynthesis. This issue of the *Journal of Carbohydrate Chemistry* includes several of the symposium speakers as well as other individuals whose contributions represent exciting developments in carbohydrate chemistry as it relates to our understanding of how antibiotics work and how new ones can be produced. A new family of mycothiol analogs, which may serve as inhibitors of mycothiol-associated enzymes in *Mycobacterium tuberculosis*, has been synthesized. Novel analogs of aminoglycoside antibiotics have been synthesized that possess activity against resistant strains equipped with aminoglycoside-modifying enzymes. In another paper in the area of aminoglycoside antibiotics, a new methodology for the conjugation of aminoglycosides to peptide nucleic acids using solid phase techniques has been developed. Many antibiotics are glycosylated with 2-deoxy sugars. A method for the synthesis of α-2-deoxyglycosides by conjugate addition under acidic conditions is described. Unnatural 1,1-linked disaccharides analogous to trehalose have been synthesized by a palladium-catalyzed glycosylation reaction. A novel series of aryl- and heteroaryl-substituted glycosylamides were prepared by iodoamidation of glycals. Finally, two studies are described in which aryl *C*-aminoglycosides are synthesized using aminoglycals and quinones, chemistry developed for the synthesis of pluramycin- and ravidomycin-type antibiotics. These papers highlight new methodologies in organic synthesis that will contribute to research in the further development of antibiotics.

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