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Documentation of the first catalytic enantioselective gilman-speeter synthesis of β -Lactams

Plato A Magriotis, Karakoula A and Moraiti K
University of Patras, Greece

In recent years, organocatalysts have dominated the field of asymmetric organic synthesis due to their ability to catalyze a variety of fundamentally important transformations. One example is the Staudinger synthesis of β -lactams which continue to provide unique opportunities for the design and synthesis of new derivatives with unprecedented biological profiles other than antibacterial activity. In fact, during the last two decades medicinal chemists have convincingly demonstrated that structural modifications

of monocyclic β -lactams (monobactams) is an effective protocol for the discovery of new derivatives with novel pharmacological profiles. This lecture will cover recent progress that has been made in asymmetric organocatalytic Staudinger synthesis of β -lactams since the inaugural and pioneering investigations by Lectka and coworkers around the turn of the century,¹ as well as our own efforts toward the development of a novel Gilman-Speeter process for the catalytic enantioselective synthesis of β -lactams.

Biography

Plato A. Magriotis, Ph.D., is an Associate Professor of Medicinal Chemistry in the Department of Pharmacy at the University of Patras in Greece and a Research Affiliate with the Department of Chemistry at New York University. Magriotis received his Ph.D. in Chemical Biology with Professor Francis Johnson at Stony Brook University in 1983 and did Postdoctoral work at Harvard University with Nobel Laureate Professor E. J. Corey. His career started at West Virginia University and continued at Merck & Co. as well as New York University in the U.S., prior to his return to Greece. Magriotis' research program focuses on the development of new methodology for the synthesis of relevant pharmacophores applied in drug discovery.

pmagriotis@upatras.gr

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