

Surprises and Discoveries with Natural Products

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Natural products chemistry can offer immense opportunities for the study of biological processes, discovery of novel therapeutics, as well as for the development of novel strategies and methods for chemical synthesis. We have been involved in the study of several biologically active natural compounds with the aim of identifying novel chemical transformations and tactics as well as ultimately providing tools for studies in bioorganic chemistry. We will present a lecture that highlights these investigations. New derivatives of Amphotericin B (AmB) were synthesized through a double reductive alkylation of the mycosamine. These derivatives of AmB displayed superior antifungal activity against *Saccharomyces cerevisiae* wild type strain and especially in the case of an AmB-resistant *Candida albicans* strain. Moreover, these compounds display significantly reduced hemotoxicity compared to AmB. Furthermore, the same mycosamine modification can lead to improved properties with other well known polyene macrolide antibiotics; this would suggest that the specific modification can be employed to provide insight into biological processes in yeast.

