

The Fungal Battlefield: A Source for New Chemical Diversity?

Nicholas H. Oberlies, Ph.D.

Patricia A. Sullivan Distinguished Professor of Chemistry

Department of Chemistry & Biochemistry
University of North Carolina at Greensboro

A common question in the field of natural products research is: *why did that organism choose to biosynthesize those compounds?* Of course, the simple answer is that we, as humans, don't really know. However, the common postulate is that the secondary metabolites give the organism some sort of advantage, particularly with respect to chemical defense. If true, can we then set up experiments where organisms must 'fight' for their turf, essentially using co-culturing as a way to force the production of secondary metabolites, perhaps causing the amplification of production and/or the stimulation of otherwise silent biosynthetic gene clusters. Using a series of tools that profile the chemistry of fungal cultures *in situ*, our team has been pursuing these questions, both to probe some of the basics of fungal ecology and biology, as well as, to potentially generate new chemical diversity. This talk will explain some of the underlying tools used to assess the chemistry of fungal (and other microbial) cultures via mass spectrometry, and then apply those skills and databases to understanding fungal chemistry *in situ*.

