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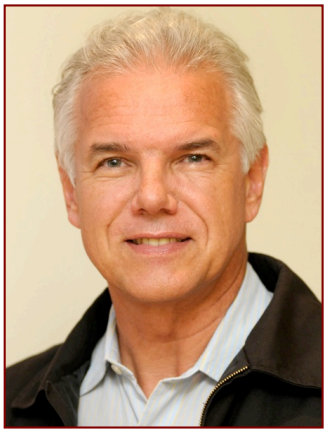
Abbott Workshop Series in Synthetic Organic and Medicinal Chemistry



PROFESSOR TADEUSZ F. MOLINSKI

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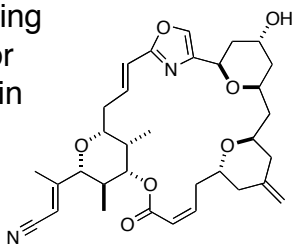
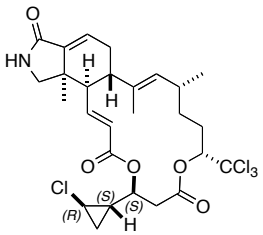
Research interests:
structure, synthesis, and biological properties
of novel marine natural products.
http://www-chem.ucsd.edu/research/profile.cfm?cid=C05288

Marine Natural Products in extremis: Synthesis, Stereochemistry and Nanomole-Scale Structure Elucidation

Abstract: Natural products from marine organisms are exciting sources for new drug discovery and engines of inspiration for organic synthesis and methodology. Remarkable advances in NMR instrumentation[1a] now make possible discovery and structure elucidation of natural products with sample sizes beneath the threshold for many conventional methods, including X-ray crystallography. Yet removal of the natural products chemist from the comfort zone of milligram-scale to the world of nanomole-scale structure elucidation presses new challenges: solving stereochemistry of chiral molecules and the completion of their biological evaluation when the world's supply is only a few μg. Natural products in extremis.



Hemi-phorboxazole A
16.5 μg



Muironolide A 90 μg

In this presentation, recent results from our laboratory will illustrate how these barriers are overcome with the aid of chemical synthesis, sensitive spectroscopic techniques—including electronic circular dichroism (ECD)[1b,c]—and new windows for discovery are opened.

1. (a) Molinski, T. F. *Nat. Prod. Rep.* **2010**, *27*, 321-329. (b) Molinski, T. F. *Curr. Opin. Drug Discov. Devel.* **2009**, *12*, 197-206. (c) Molinski, T. F. *Curr. Opin. Biotechnol.* **2010**, *21*, 819-826.

4:15 p.m. Friday, February 18
331 Smith Hall

Host: Thomas Hoye

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