

Marine Natural Products Synthesis: A Platform for Chemical and Biological Discovery

Marine natural products often have complex structures and potent biological activities; however, little is understood regarding how their molecular structure correlates with function or what biological targets or pathways are involved. Through rapid and efficient chemical syntheses of bioactive marine natural products we are able to prepare ample quantities of material to explore both structure-activity relationships as well as target identification studies. In all our efforts, a key focus is the development of short and scalable approaches, accomplished by new reaction development and strategic synthetic planning. Specifically, the monanchocidin, synoxazolidinone and lipoxazolidinone families of natural products will be discussed leading to novel synthetic derivatives that serve as lead structures for infectious disease and cancer chemical probe and therapeutic development.