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MARINE SECONDARY METABOLITES, ISOLATION, SYNTHESIS AND BIOACTIVITY

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The prerequisite for bioinspired synthesis is the knowledge of targeted specific families of natural substances within phylogenetically related organisms. Isolation and structural determination of secondary metabolites of a targeted metabolome from marine invertebrates can give some important clues toward biogenetic chemical pathways of complex molecules. Thus, the line of systematic tracking of structurally or chemically related metabolites is of great interest not only for the discovery of new bioactive molecules, but also for biomechanistic and biosynthetic investigation. Pyrrole-2-imidazole (P-2-AI) alkaloids isolated from marine sponges exhibit intriguing molecular diversity and various biological activities. Monomeric and dimeric P-2-AI members were isolated from Axinellidae and Agelasidae families of sponges in our group (Figure 1). These compounds have clearly emerged as promising synthetic targets and biologically active compounds. Synthetic aspects focusing either the challenging structures or chemical libraries preparation through easy routes will be presented.

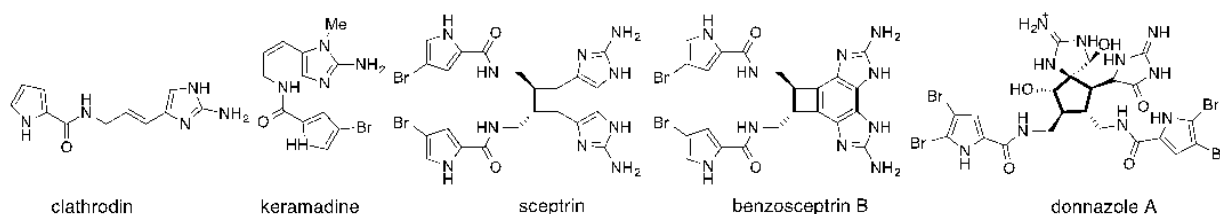


Figure 1: examples of isolated monomeric and dimeric P-2-AI metabolites

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