

O-31: NEW AZIRINES FROM *DYSIDEA FRAGILIS* - STRUCTURE, CHIROPTICAL ANALYSIS AND SYNTHESIS

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Alkaloids containing the simplest ring - the highly strained 2*H*-azirine (azacyclopropene) - are rare in nature. The first reported examples were azirinomycin (**1**),¹ discovered in 1971 from a soil bacterium (*Streptomyces aureus*) and (4*E*)-*R*-dysidazirine (**2**),² a long-chain α,β -unsaturated azirine, described in 1988 from the marine sponge *Dysidea fragilis*. In this talk, we present a suite of new long-chain azirines from a sample of *D. fragilis* collected in Micronesia. Mass spectrometric and chiroptical analyses revealed unexpected halogenation and enantiomeric compositions for each compound. The new natural products are only moderately antifungal towards *Candida albicans* and other fungi, in stark contrast to **2** and the methyl ester of **1**, which exhibit high activity. The first total synthesis of the known natural product (4*Z*)-*R*-**2**³ and other analogs will be presented along with an interesting structure-activity relationship that reveals antifungal activity is modulated by the chain length and stereochemical configuration.

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