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Synthesis and Biological Evaluation of Majusculamide D Analogous Compounds:

Natural products continue to be an important source of novel chemical structures that have directly yielded or inspired a majority of our currently approved drugs. Marine cyanobacteria, especially Moorea sp., are prolific producers of bioactive secondary metabolites. Our continued exploration of these life forms for their bioactive components has been productive in both finding new molecules as well as new biological activities for known ones. Majusculamide D (MJS-D), a lipopentapeptide originally isolated from Lyngbya majuscula and reisolated from a Moorea sp. possesses selective and potent cancer cell toxicity. Derivatives of MJS-D will be synthesized with the purpose of improving its cytotoxicity. The synthesis of a small library of compounds analogous to MJS-D will allow the determination of its biochemical target and mechanism of action.