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Frontiers in Natural Product Chemistry

Book Details

DOI: 10.2174/97816810893791210801
eISBN: 978-1-68108-937-9, 2021
ISBN: 978-1-68108-938-6
ISSN: 1574-0897 (Print)
ISSN: 2212-3997 (Online)

Quinolizidine Alkaloids from Marine Organisms: A Perspective on Chemical, Bioactivity and Synthesis

Author(s): Archana Singh, Supriya Tilvi and Keisham S. Singh *

Pp: 45-98 (54)

DOI: 10.2174/9781681089379121080004

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Frontiers in Natural Product Chemistry • Volume 8, Pages 45 - 98 • 2021

Document type

Book Chapter

Source type

Book Series

ISSN

15740897

DOI

10.2174/9781681089379121080004

Publisher

Bentham Science Publishers

Original language

English

[View less](#) ^

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Singh, Archana^{a, b, c}; Tilvi, Supriya^a;

Singh, Keisham S.^a [✉](#)

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^a Bioorganic Chemistry Laboratory, CSIR-National Institute of Oceanography, Dona Paula, Goa, 403004, India

^b National Centre for Polar and Ocean Research, Ministry of Earth Sciences, Goa, Vasco da Gama, 403802, India

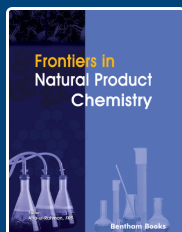
^c School of Chemical Sciences, Goa University, Taligao, 403001, India



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Abstract

Marine organisms produce numerous secondary metabolites that exhibit a wide range of biological activities, which have applications in pharmaceutical research. Numerous secondary metabolites have been discovered from various marine organisms and studied for their chemical and biological properties. Among the secondary metabolites of marine organisms, alkaloids constitute a versatile group of bioactive natural products with promising bio-activities. Several alkaloids, such as pyridoacridines, pyrroles, bisindole, isoquinolines, quinolizidines and bromotyrosines, etc., to name a few, have been isolated from marine organisms. The chemical diversity and bio-activities of marine alkaloids are reported in several research and review articles. Quinolizidine alkaloids (QAs) are a group of compounds that possess either a quinolizidine ring or its derivatives. They are isolated from terrestrial plants, animals and also from numerous marine organisms, such as sponges, tunicates, fungus, etc. Biological activities exhibited by QAs include ichthyotoxicity, chemical defense, antimicrobial, antiviral, and inhibition of nicotinic acetylcholine receptors. In the past years, a few scattered reviews appeared on the isolation of QAs from natural sources, mostly from terrestrial sources, but the reports skipped several QAs of marine origin. This chapter presents a comprehensive review of various quinolizidine and bis-1-oxaquinolizidine alkaloids isolated from marine organisms, detailing their chemical structures and reported biological properties. Further, the chapter highlighted synthesis of some marine-derived QAs, namely, petrosins, xestospongins, clavipictines, pictamine, citrinadins A and B.