

Evaluation of pharmacological activity of *Sinularia* secondary metabolite: a systematic review

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Abstract

Introduction: The order *Sinularia* is a large, diverse and ecologically important group of marine invertebrates. In this work, we present an overview of the most promising marine bioactive compounds isolated from *Sinularia* species in the first decade of the 21st century, which may have applications in the therapy of human diseases. The present study also discusses future perspectives for the bio-prospecting of new marine natural product that produced by this species group of marine invertebrates.

Methods and Results: This study was systematic review and reviewed publications were identified through searches in Scopus, science direct, PubMed, Proquest, Ovid and also Wiley by using the search terms “sinularia”, “metabolite” and “pharmacology”. The search was completed through December 2017, and was limited to articles published in English. Relevant articles were identified based on the expertise and clinical experience of the authors. This review covered about several effects of *sinularia* secondary metabolites and we categorized our result in different pharmacological effects including: cytotoxic, antitumor and anticancer activity against antibiotic-resistant and antibacterial activity, anti-inflammatory, antiviral, antialgeal, and antifouling effects. Also inhibitory effect on HIV-1 reverse transcriptase and p56lck tyrosine kinase, HIF-2 α Induced Gene Expression, the release of elastase by human neutrophils, the generation of the superoxide anion.

Conclusions:

Finally, the review speculates *sinularia* secondary metabolite was a potent bioactive compound that had a potential to introduce as a lead compound in many diseases especially in cancer and anti-inflammatory diseases.

Key words: *sinularia*, metabolite, marine, pharmacology