

Metabolites and bioactivity of the marine xestospongia sponges (porifera, demospongiae, haplosclerida) of southeast Asian waters

ABSTRACT

Sponges are aquatic, spineless organisms that belong to the phylum Porifera. They come in three primary classes: Hexactinellidae, Demospongiae, and Calcarea. The Demospongiae class is the most dominant, making up over 90% of sponge species. One of the most widely studied genera within the Demospongiae class is Xestospongia, which is found across Southeast Asian waters. This genus is of particular interest due to the production of numerous primary and secondary metabolites with a wide range of biological potentials. In the current review, the antioxidant, anticancer, antiinflammatory, antibacterial, antiviral, antiparasitic, and cytotoxic properties of metabolites from several varieties of Southeast Asian Xestospongia spp. were discussed. A total of 40 metabolites of various natures, including alkaloids, fatty acids, steroids, and quinones, were highlighted in *X. bergquistia*, *X. testudinaria*, *X. muta*, *X. exigua*, *X. ashmorica* and *X. vansoesti*. The review aimed to display the bioactivity of Xestospongia metabolites and their potential for use in the pharmaceutical sector. Further research is needed to fully understand their bioactivities.