Bioactive compounds and chemical ecology of the invasive algae Rugulopteryx okamurae.

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Résumé

Algae are a source of primary and secondary metabolites such as phenolic compounds, sterols, vitamins, and other bioactive components used in numerous blue biotechnology applications.
The brown algae *Rugulopteryx okamurae* (Dawson) (Dychophyta, Ochrophyta) is native to East Asia and was first discovered in the Mediterranean in 2002 in the Thau lagoon (France), where it was likely introduced via oyster farming. It was recently added to the list of invasive species, having invaded the western Mediterranean coast of the Alboran Sea since 2016. Subsequently, it invaded the Provençal coast of France and the coastal areas of Portugal. Recently, its proliferation has been reported on the coasts of Tarifa and Ceuta, marking the first observation of this species in Spain and the second in the Mediterranean. A population of brown algae *Rugulopteryx okamurae* was recently discovered on Belyounech Beach (Morocco), and a massive strandings of these brown algae have been observed on M'diq Beach (Alboran Sea), with some specimens found attached to rocks near the port of Tangier.

So far, only a few compounds have been identified from *Rugulopteryx okamurae* a part from several major terpenes and their ecological roles in competitive strategies remain largely unexplored.
Our research will be dedicated to identifying unique bioactive compounds of *Rugulopteryx okamurae*, as well as understanding the molecular mechanisms through which *R. okamurae* compounds exert their effects. Additionally, the study will focus on allelopathic compounds that affect biotic interactions, including competition with native species and the colonization of new habitats in northern Morocco.

Mots-Clés: Rugulopteryx Okamurae, Specialized metabolites, Allelopathic compounds, Biological activities.

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