

Lituarines, a new class of marine macrocyclic lactones isolated from the new caledonian sea pen *Lituarina australasiae*

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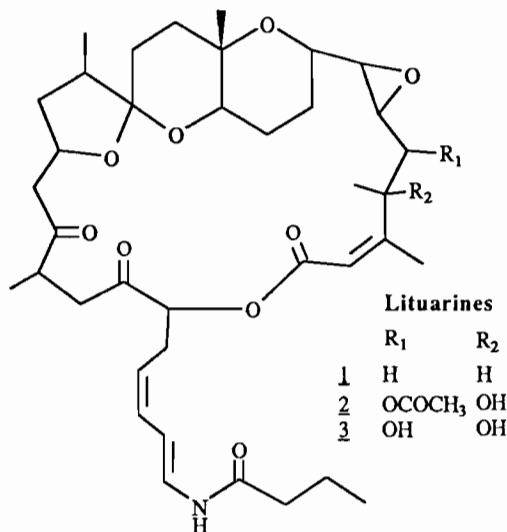
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The coelenterates have been extensively investigated for biological activity, especially the order Alcyonacea (Soft corals) and Gorgonacea. Although many chemical studies on the Pennatulacea order (Sea pens) have been carried out, the Veretillidae family has been comparatively little investigated (1). The metabolites that have been isolated from Sea pens are all diterpenes (2).

In the course of our survey on physiologically active substances (3-4) in marine organisms, we found that certain Sea pen members (§) contain potentially important antineoplastic constituents.

We now have isolated three new 21-membered-ring lactones **1**, **2** and **3**, named Lituarines A, B, and C, from extracts of the New Caledonian Sea pen : *Lituarina australasiae*. As Lituarines could not be obtained in crystalline state suitable for X-ray crystal structure determination, unequivocal assignment of structures **1**, **2** and **3** was performed by 1D and 2D ¹H and ¹³C NMR studies. NMR multipulse sequences used were COSY, TOCSY, NOESY, ROESY and DEPT.

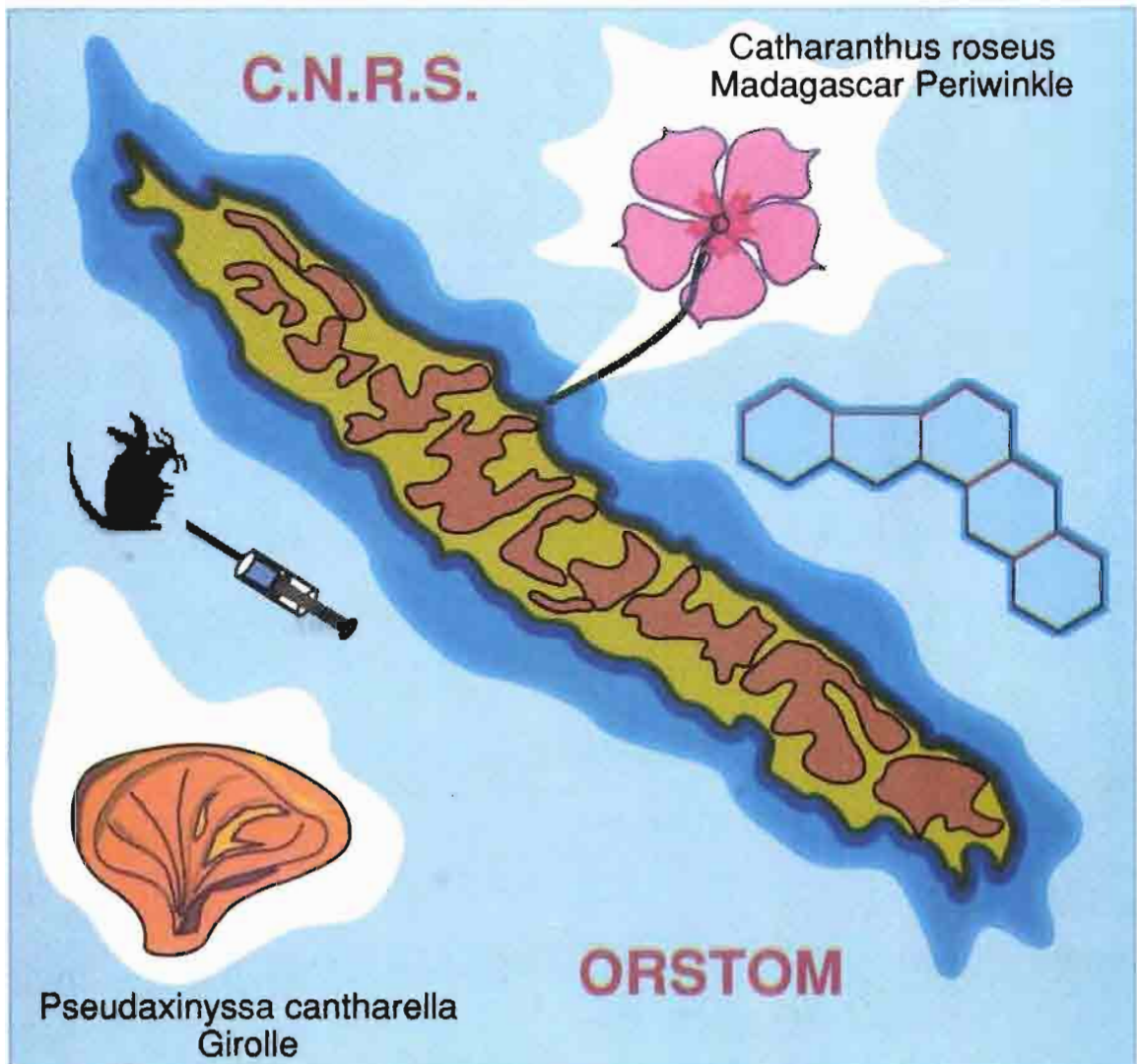
Lituarines are the first macrocyclic lactones with two fused tetrahydropyran rings reported from marine sources.



References:

- (1) A. CLASTRES, P. LABOUTE, A. AHOND, C. POUPAT AND P. POTIER, *J. Nat. Prod.*, **47**, 155 (1984)
- (2) D.J. FAULKNER, *Nat. Prod. Reports*, 578 (1984)
- (3) J.-P. VIDAL, D. LAURENT, J.-P. GIRARD and J.-C. ROSSI, *Botanica marina*, **27**, 533 (1984)
- (4) J.-P. GIRARD, E. RECHENCQ, M. BOUCARD, J.-P. VIDAL, and J.-C. ROSSI, *J. of Med. Plant. Research*, **54**, 193 (1988)

(§) Acknowledgment : we wish to thank Marie-José D'HONDT (Museum National d'Histoire Naturelle) for the taxonomic study of *L. australasiae*, Georges BARGIBANT and Jean-Louis MENUU for collection assistance and Professor Jean-François VERBIST (faculté de Pharmacie de Nantes) for Bioassay.



Troisième Symposium sur les substances naturelles
d'interêt biologique de la région Pacifique-Asie

*Third Pacific-Asia Symposium on biologically
active natural products*

Nouméa, Nouvelle-Calédonie, 26-30 Août 1991