

## Phloeodictine and Thiophloeodictine, novel antimicrobial and cytotoxic guanidine alkaloids from the New Caledonian sponge *Phloeodictyon* sp.

Elly Kourany-Lefoll, T. Sévenet, D. Guénard, A. Montagnac, C. Debitus\*, E. Guittet et M. Païs.

*Institut de Chimie des Substances Naturelles, CNRS, 91198 Gif-sur-Yvette Cedex, France;*

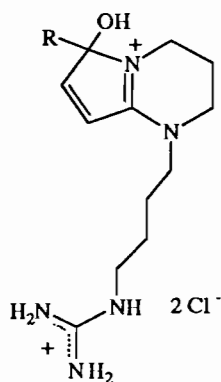
*\*Centre Orstom, BP A5, Nouméa, Nouvelle-Calédonie.*

In the course of our screening for novel bioactive agents from New Caledonian marine organisms, we have isolated from an undescribed species of the deep sponge *Phloeodictyon* (family Nepheliospongiidae, order Nepheliospongida) two guanidine alkaloids designated as Phloeodictine and Thiophloeodictine. These compounds possess an unprecedented bicyclic skeleton with both a lipophilic alkyl chain and one or two hydrophilic side chains with terminal guanidines.

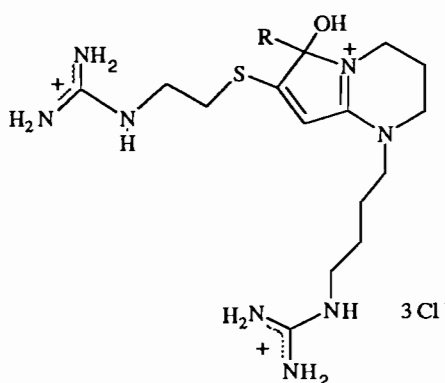
The bioassay-guided isolation of these polar alkaloids from the methanolic extract of the lyophilized sponge involved several separation techniques such as Amberlite XAD-7, reverse phase C<sub>18</sub> medium pressure column chromatography and ion-pair RP HPLC.

The structures were determined by extensive spectroscopic analysis especially one and two dimensional NMR including HETCOR, DFQ-COSY, LR <sup>1</sup>H-<sup>1</sup>H COSY, HOHAHA, reverse long range <sup>13</sup>C-<sup>1</sup>H and ROESY experiments.

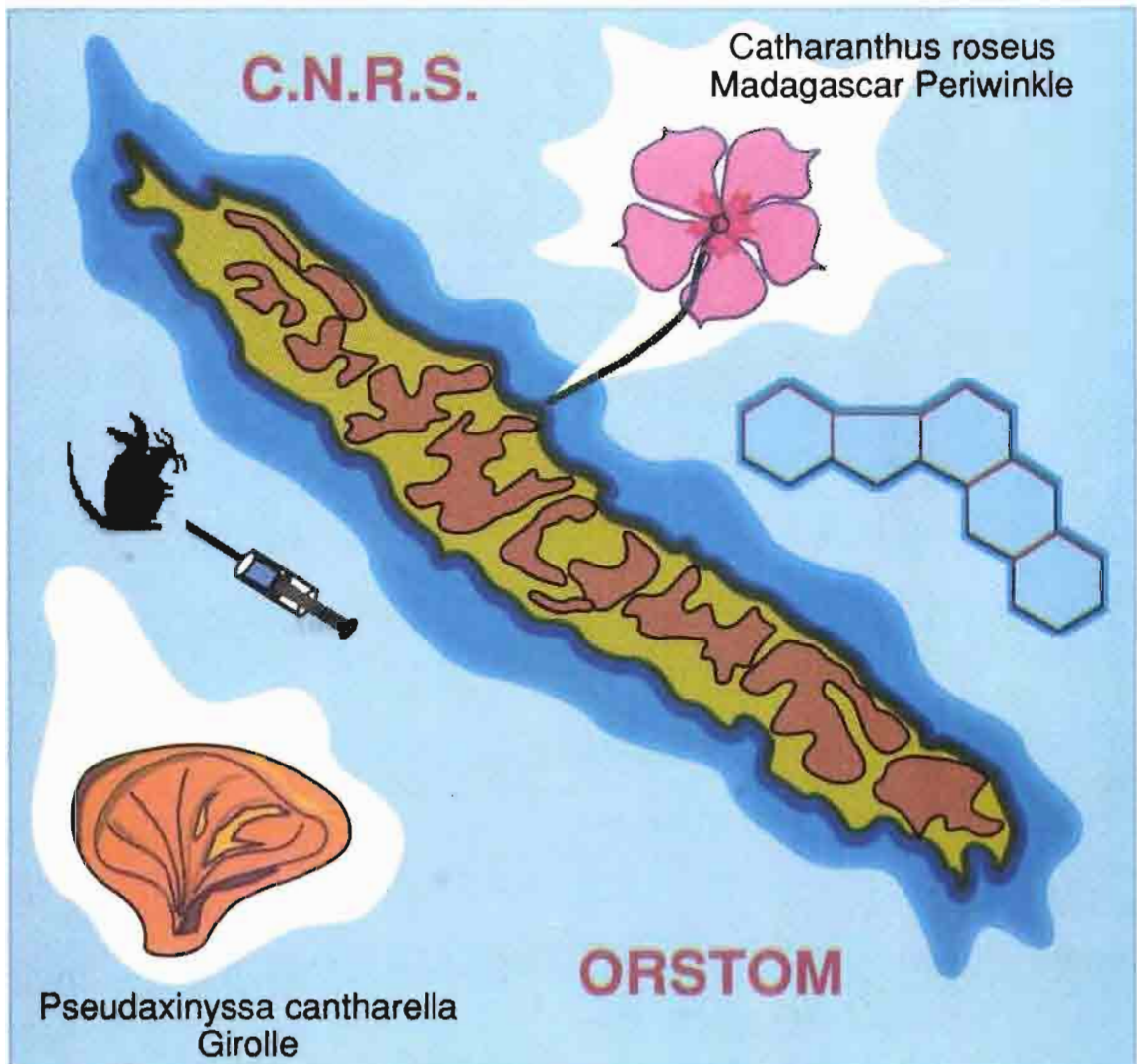
Both compounds showed antibacterial activity against *Escherichia coli*, *Pseudomonas aeruginosa*, *Proteus vulgaris*, *Klebsiella pneumoniae* and *Staphylococcus aureus* and are moderate cytotoxic agents against KB cells.



Phloeodictine



Thiophloeodictine



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