



GRACILIFLORIN, AN ANTIBIOTIC INDOLE ALKALOID FROM A MALAYSIAN RUBIACEAE *PAVETTA GRACILIFLORA* Wall.

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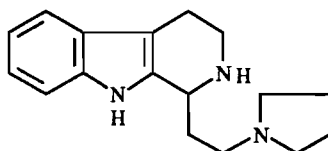
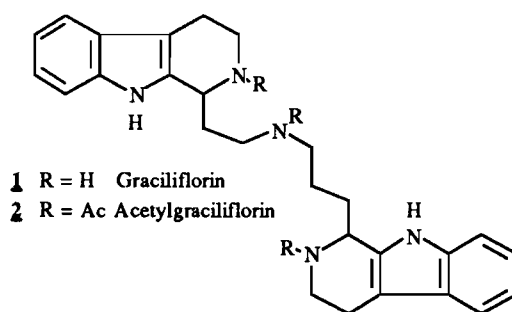
Résumé : d'une Rubiaceae de Malaisie, *Pavetta graciliflora*, qui montre une certaine activité antibiotique *in vitro*, un alcaloïde bisindolique, la graciliflorine **1**, est isolé.

Abstract : *Pavetta graciliflora*, a Rubiaceae from Malaysia, exhibiting a certain antibacterial activity *in vitro*, leads to the isolation of a bisindole alkaloid, graciliflorin **1**.

In the framework of the phytochemical survey of Malaysia (collaboration programme between CNRS and the University of Malaya) (1), we have selected, from a general antibacterial screening on G+/G- bacteria, a leaf extract of a Rubiaceae, *Pavetta graciliflora* Wall., a plant growing at Genting Simpah, near Kuala Lumpur.

Classical procedure affords a crude alkaloid extract which after chromatography on silica gel, leads to the isolation of very polar alkaloids.

In order to find the active substance in the crude extract, a direct sowing by *Staphylococcus aureus*, of the TLC plates (silicagel) is carried out. After incubation, a significant inhibition area of one spot is observed, corresponding to graciliflorin **1**.

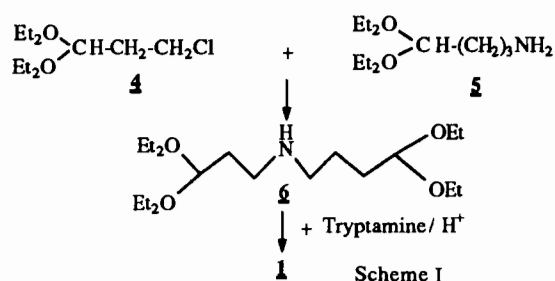




Graciliflorin is isolated under its acetylated form **2**. Spectral data (EIMS, ^1H ^2D NMR) are in agreement with the dimeric structure **1**.

Such a structure is reminiscent of dihydroelaeocarpidine **3** (previously tarennine), an alkaloid with diuretic properties (2) isolated from an African Rubiaceae, *Tarenna bipindensis*.

Synthesis of graciliflorin of unknown stereochemistry, has been performed by Pictet-Spengler condensation of tryptamine with the appropriate bisdiethylketal according to the Scheme I.



Antibiotic assay (Gif/Yvette, Rhône-Poulenc-Rorer) shows a medium activity *in vitro* (*S. aureus*: : MIC= 1 μg , *E. coli* : MIC= 4 μg , *K. pneumoniae* : MIC = 8 μg), but nothing *in vivo* on infected mice. An alkaloid of a closely related serie, tchibangensine, exhibits also a strong antibacterial activity (3).

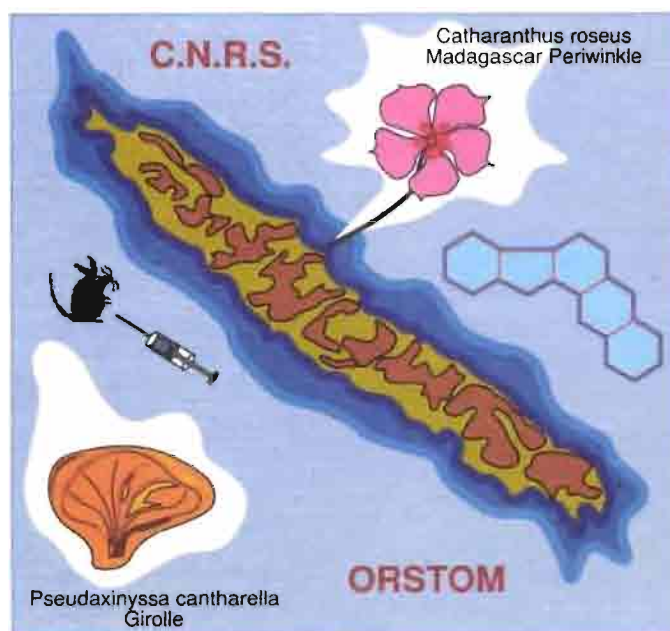
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