

Contribution to the study of *Strychnos guianensis* : purification and structural elucidation of potentially curarizing quaternary alkaloids.

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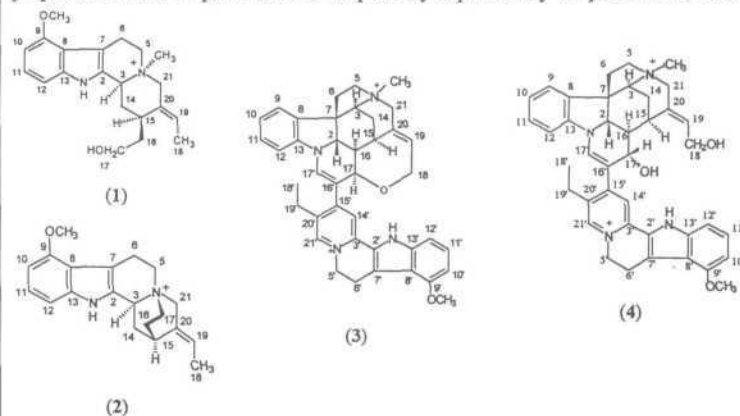
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Strychnos guianensis (Aubl.) Mart. (Loganiaceae) is a moderately sized liana well distributed in the basin of middle and upper Rio Orinoco and throughout the entire Amazon basin. It was the first plant source of curare to be collected and identified botanically. The use of this species in the preparation of curare is very widespread from Colombia to Surinam and in Ecuador and Brazil.¹ Several quaternary alkaloids were characterized by their chromatographic properties on paper and sometimes by their UV spectra.^{2,3}

In this work, we report the purification and structure determination of five monomeric quaternary indole alkaloids: 9-methoxy-N₆-methylgeissoschizol (1), C-alkaloid O (2), mavacurine, fluorocurine, macusine B and C-profluorocurine, and two asymmetrical dimeric indole quaternary alkaloids : guiaflavine (3) and guiachrysrine (4). Structures of these alkaloids were deduced from the interpretation of detailed spectroscopic methods.

In mice, guiaflavine and guiachrysrine administered intraperitoneally possess LD₁₀₀ of about 7.5 mg/kg (n = 8) and 7 mg/kg (n = 5), respectively. On the other hand, compound 1 reduced in a concentration-dependent manner (2.1 to 40.7 μM) the amplitude of spontaneous miniature end-plate potentials and endplate potentials evoked by nerve stimulation of isolated frog nerve-muscle preparations. Further studies to investigate the basis for this toxicity would be necessary. Nevertheless, the ethnobotanical use of *S. guianensis* in the preparation of arrow poisons could be partially explained by the presence of these alkaloids.



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References:

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