A New Steroidal Saponin from *Agave brittoniana* and Its Biphasic Effect on the Na^+-ATPase Activity

Graziela M. Silva[a], Aloa M. De Souza[b], Luciene S. Lara[b], Tatiana P. Mendes[a], Bernadete P. da Silva[a], Anibal G. Lopes[b], Celso Caruso-Neves[b], and José P. Parente[a,*]

[a] Núcleo de Pesquisas de Produtos Naturais, Universidade Federal do Rio de Janeiro, Centro de Ciências da Saúde, 21944-970, P.O. Box 68045, Rio de Janeiro, Brasil. Fax: +55-21-2562-6791. E-mail: parente@nppn.ufrj.br

[b] Instituto de Biofísica Carlos Chagas Filho, Universidade Federal do Rio de Janeiro, Centro de Ciências da Saúde, Rio de Janeiro, Brasil

* Author for correspondence and reprint requests

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A new steroidal saponin, 3-{(*O*-6-deoxy-α-L-mannopyranosyl-(1→4)-*O*-β-D-glucopyranosyl-(1→3)-*O*-[*O*-β-D-glucopyranosyl-(1→3)-β-D-glucopyranosyl-(1→2)]-*O*-β-D-glucopyranosyl-(1→4)-β-D-galactopyranosyl)oxy}-6-hydroxy-(3β,5α,6α,25*R*)-spirostan-12-one, was isolated from *Agave brittoniana* Trel. The structure was determined by extensive NMR spectroscopy studies and chemical conversions. Its effects on the Na^+-ATPase and (Na^++K^+)-ATPase activities of the proximal tubule from pig kidney were evaluated. It was observed that this steroidal saponin exerts a biphasic effect on the Na^+-ATPase activity. It is concluded that the effect of the aqueous extract as a diuretic is due, at least in part, to the action of saponin on the ouabain-insensitive Na^+-ATPase.

Key words: *Agave brittoniana,* Steroidal Saponin, Na^+-ATPase