B163 Quinoline alkaloids, coumarins and volatile constituents of *Helietta longifoliata*

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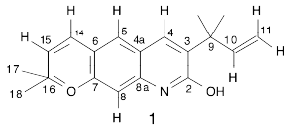
Helietta longifoliata Britt (Rutaceae), locally called "canela-de-veado", belongs to the botanical family of Rutaceae, and is a plant that grows in South America (Southern Brazil, Uruguay, Paraguay and Argentine). It has been used in Brazilian folk medicine as a natural remedy, for the treatment of various diseases (1). In continuation of our chemical studies on plants of the Rutaceae family (2-3) we now report on the isolation and structural elucidation of a new quinoline alkaloid (**1**) from the steam bark of Helietta longifoliata (chloroform extract), found together with seven other known compounds. Four of them were furoquinoline alkaloids **2-5**, and the other compounds were coumarins **6 - 8**. Compounds **2 - 6** and **8** are reported here for the first time as constituents of *H. longifoliata* and the absolute stereochemistry of compound **8** was assigned for the first time.



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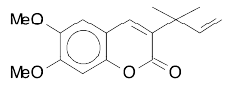

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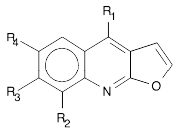
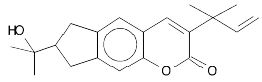


	R^1	R^2	R^3	R^4
2	OMe	OMe	H	H
3	OMe	OMe	$-CH_2OCH_2-$	
4	OMe	H	OMe	OMe
5	OMe	OMe	H	OMe



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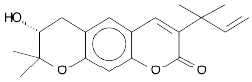

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Acknowledgements: FAPERGS, CNPq.

References: 1. Cruz G.L. (1985). Dicionário de Plantas Úteis do Brasil, 597. 3ª edição. Editora Civilização Brasileira S.A. Rio de Janeiro. **2.** Moura et. al. (1997) Phytochemistry: 46: 1443- 1446. **3.** Moura et al. (1998) Fitoterapia: LXIX (3); 271-272.

B164 Isolation, determination and antibacterial active of alkaloids from *Zanthoxylum rhoifolium*

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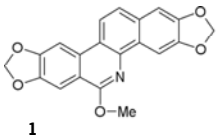
Zanthoxylum rhoifolium (Rutaceae), locally called "mamica-de-porca", is a plant that grows in South America (Brazil, Uruguay, Paraguay and Argentina). It has been used in Brazilian folk medicine against a variety of diseases. As a continuation of our chemical studies on Rutaceae plants (1), we now report on the isolation and structural elucidation of two new dihydrobenzophenanthridine alkaloids, rhoifoline-A (**1**) and B (**2**) (hexane extract) from the root bark of *Z. rhoifolium*, found together with three other known benzophenantridine alkaloids, 6-acetonyldihydronitidine (**3**) (2) {= 8-acetonyldihydronitidine (3)}, 8-acetonyldihydroavicine (**4**) (3), and zanthoxyline (**5**) (1) (chloroform extract). Spectral methods and mainly 1D and 2D NMR experiments were used to determine structures **1 - 5**.

The antibacterial studies of alkaloids **1-4** (Table 1) showed that alkaloids **3** and **4** were active against the tested Gram-positive (*S. aureus*, *S. efidermidis* and *M. luteus*) and Gram-negative (*K. pneumoniae*, *S. setubal* and *E. coli*) bacteria, as revealed by bioautography (4).



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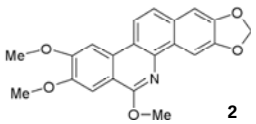

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Alkaloids	*S. aureus*	*S. efidermidis*	*K. pneumoniae*	*S. setubal*	*E. coli*	*M. luteus*
1	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA	NA
3	1.0	1.0	3.5	3.5	1.0	NA
4	1.0	3.5	1.0	3.5	3.5	NA

Table 1. Antibacterial activity: minimum amount required for inhibition on bacteria growth on TLC plates (µg).

Acknowledgements: FAPERGS, CNPq.

References: 1. Morel et al. (1997) Phytochemistry 46: 1443-6. **2.** Waterman, G.P. and Khalid, S.A. (1981) Biochem. Syst. Ecol. 9: 45-51. **3.** Ajith, P.K.N. (2001) Phytochemistry 56: 857-861. **4.** Homans, A.L. and Fuchs, A. (1970) J. Chromatogr. 51: 327.