B157 Preventive activity of pyrrolizidine alkaloids from *Senecio brasiliensis* on gastric and duodenal ulcer induced on mice and rats

W. Toma [a], J.R. Trigo [b] and A.R.M. Souza Brito [c]

[a] Departamento de Farmacologia, Faculdade de Ciências Médicas, Universidade Estadual de Campinas, 13083-970, Campinas, SP, Brazil. [b] Departamento de Fisiologia e Biofísica, Instituto de Biologia, Universidade Estadual de Campinas, 13083-970, Campinas, SP, Brazil. [c] Departamento de Zoologia, Instituto de Biologia, Laboratório de Ecologia Química, Universidade Estadual de Campinas, 13083-970, Campinas, SP, Brazil.

Senecio brasiliensis is widely used in traditional medicine of South America (1). We obtained the alkaloidal extract (PAs) from *Senecio brasiliensis* inflorescences, containing a mixture of senecionine, interregimine, retrorsine, usaramine and seneciphylline and evaluated the preventive antiulcerogenic effects. NSAID-cholinomimetic (2), hypothermic-restraint (3), pylorus ligature (4) and HCl-ethanol (5) induced gastric ulcer on mouse. Cysteamine induced duodenal ulcer on rats (6). Results are presented as mean ± SD. Statistical significance was determined by ANOVA followed by Dunnet's test ($p<0.05$). In the NSAID-cholinomimetic model PAs (100 mg/kg, p.o.) showed significant activity ($p<0.0001$) corresponding to 77.8% of inhibition of ulcers. In hypothermic-restraint model, the ulcerative lesion index was reduced by 80.8% ($p<0.0001$). PAs (100 mg/kg, p.o. and i.d.) significantly decreased the gastric juice content, increased the pH values and decreased the acid output in the pylorus ligature. PAs (12.5, 25, 50 and 100 mg/kg, p.o.) showed reduction of gastric lesion index ($p<0.0001$) in the HCl/ethanol induced gastric ulcer and this activity was dose-dependent ($r=0.96$; $p<0.0001$); ED_{50} was 56.3 mg/kg. PAs (100 mg/kg, p.o.) showed significant inhibition ($p<0.0001$) of duodenal lesions (69.3 %). The results suggest that the PAs extract presents a significant anti-ulcer effect when assessed in these induced ulcer models. The mechanisms involved with the action of the alkaloid extract are in progress to determine how PAs act as anti ulcer agent.

Acknowledgements: FAPESP (grant # 98/01065-7 to JRT) and WT was the recipient of a doctoral fellowship from CAPES.

References: 1. Serra, J.L.B.I. (1989) Gran enciclopedia de las plantas medicinales. Ed. Tikal. P. 880-881. **2.** Rainsford, K.D. (1978). Biochem Pharmacol. 27(6): 877-885, **3.** Levine, R.J. (1971). Peptic Ulcer. Ed. Pfeiffer, pp. 92-97, Munksgarrd, Copenhagen. **4.** Shay, H. et al (1945). Gastroenterology, 5(1): 43-61. **5.** Mizui, T., Doteuchi, M. (1983). Jpn. J. Pharmacol., 33(5): 939-945. **6.** Szabo, S. (1978). Am. J. Pathol., 93(1): 273-276.

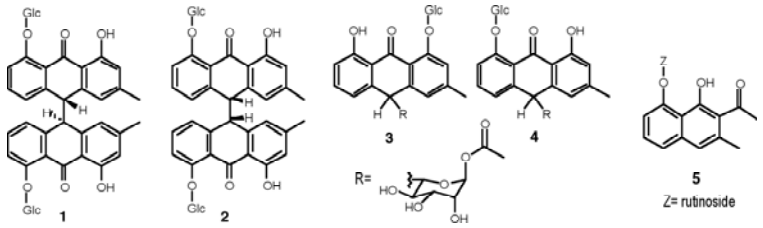
B158 New dianthrone glucosides, anthrone C,O-diglycosides and a naphthalene glycoside from *Alvaradoa amorphoides*

K. Winkelmann, O. Sticher and J. Heilmann

Institute of Pharmaceutical Sciences, Department of Applied BioSciences, Swiss Federal Institute of Technology (ETH) Zurich, Winterthurerstr. 190, CH-8057 Zürich, Switzerland.

The Yucatec Maya use the leaves of *Alvaradoa amorphoides* Liebm. (Picramniaceae; local name: Belsinikche') to treat itching pimples, dermatomycosis, and psoriasis (1,2). Until now chrysophanic acid, chrysophanein, the quassinoid chaparrin and some fatty acids have been isolated from *A. amorphoides* (3,4). The only further phytochemical study on this genus described the isolation of four new anthracenone C arabinosides - alvaradoins A–D - from *A. jamaicensis*, together with the known anthraquinones chrysophanol and physcion (5).

Our current investigation on the leaves of *A. amorphoides* led to the isolation and identification of new dianthrone glucosides (**1**, **2**), anthrone C,O-diglycosides (**3**, **4**), and a new naphthalene glycoside (**5**) from the ethyl acetate extract. Structure elucidation was based on 1D and 2D NMR spectroscopy (^1H, ^{13}C, DEPT135, HSQC, COSY, HMBC and ROESY), mass spectrometry and CD spectroscopy.



1 2 3 4 5

References: 1. Ankli, A. et al. (1999) Econ. Bot. 53: 144-160. **2.** Ankli, A. (2000) Yucatec Mayan Medicinal Plants: Ethnobotany, Biological Evaluation and Phytochemical Study of Crossopetalum gaumeri. Thesis, Swiss Federal Institute of Technology (ETH) Zurich. **3.** Soto de Villatoro, B. et al. (1974) Phytochemistry 13: 2018-2019. **4.** Pearl, M.B (1973) Lipids 8: 627-630. **5.** Harding, W.W. et al. (1999) J. Nat. Prod. 62: 98-101.