

The alkaloid composition of *Nicotiana gossei* and *Duboisia hopwoodii* used in the production of pituri
by Australian aboriginal people

Nahid Moghbel, BoMi Ryu and Kathryn J. Steadman

University of Queensland, School of Pharmacy, Brisbane, Queensland 4072, Australia

Australian aboriginal people use plant materials to make a smokeless tobacco product called "pituri". Historical records indicate that *Duboisia hopwoodii* was the plant used, however the narcotic used for chewing as pituri in the greater part of Central Australia is not that species, but a native tobacco such as *Nicotiana gossei*. Pituri is prepared by mixing dried leaves with ash, usually from burned Acacia twigs, and macerated into a 'quid' or chewing gum. As part of a larger study into the health outcomes associated with pituri use, we investigated the concentration of nicotine alkaloids of *N. gossei* and *D. hopwoodii* leaves prepared ready for mastication. A HPLC technique was developed and validated to quantitate the four major alkaloids including nicotine, nornicotine, anatabine and anabasine from leaves that were dried and ready for mastication sent from Northern Territory. Ground tissue (100 mg) was extracted in 2 mL of 40% aqueous MeOH, containing 1 N HCl followed by separation of the alkaloids on a C18 column with a mobile phase of acetonitrile and triethylammonium formate buffered to pH 10 with triethylamine. The detection and quantification of alkaloids showed that dried leaves of both species contained mainly nicotine (15.6 and 19.8 mg/g DW in *N. gossei* and *D. hopwoodii*, respectively). Nornicotine was the second abundant alkaloid in both (1.4 and 2.2 mg/g DW, respectively). Anatabine occurred in lower concentration in both species, while anabasine was only detected in *N. gossei*. Our samples of *D. hopwoodii* contained higher concentrations of the two major alkaloids nicotine and nornicotine than *N. gossei*.

[1-5]

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