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PLANTS AGAINST SNAKEBITES

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Small molecular weight compounds from Mandevilla velutina *and from* Eclipta prostata *were found to be active against snakebite.*

Key words: snake venon – *Mandevilla* – *Eclipta* – wedelolactone – anti-snake venom activity

Brazil has a long tradition in the defense against envenomation by snakebite. Ever since the foundation of the Butantan Institute in 1899, the country has maintained a front position in the production of anti-snake sera. Now something new is appearing in this field.

Plants have been used throughout history against the lethal action of snake venoms. Interest in the subject in Brazil was raised in 1982, when Koji Nakanishi presented the findings of his group on the activity of a Brazilian folk-medicine against snakebites at the 13th International Symposium on the Chemistry of Natural Products, at Tenerife. Two compounds, proved to be active against the toxic cardiovascular effects of *Bothrops* venom, were isolated and identified (Nakagawa et al., 1982).

Brazilian scientists from several institutions decided to start research os the subject in 1984. Venoms chosen for the initial studies were those of Brazilian species of *Bothrops* and *Crotalus*. Up to now, the plants which showed the most interesting results were *Mandevilla velutina* (Apocynaceae), studied at the Department of Pharmacology of the Federal University of Santa Catarina, and *Eclipta prostrata* (Asteraceae), investigated by three groups at the Federal University of Rio de Janeiro.

In the tubers of *Mandevilla* was found the first known natural antagonist against the action of bradykinin (Calixto et al., 1985), a substance which, incidentally, was also discovered by Brazilian scientists (Rocha e Silva et al., 1949).

In the work on *Eclipta*, two kinds of assays were chosen: the survival of mice injected with the venom mixed with the antidote; and the assessment of the reduction of myotoxic activity by measuring the inhibition of creatine kinase release from isolated rat muscle exposed to the venom. Samples of *E. prostrata* extract neutralize high lethal doses of venom in both tests. Three compounds isolated from the plant – wedelolactone, sitosterol and stigmasterol – can reproduce these effects (Mors et al., 1989).

Amazingly, *E. prostrata* is known for its anti-snake venom activity in the traditional medicine of both China and Brazil.

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