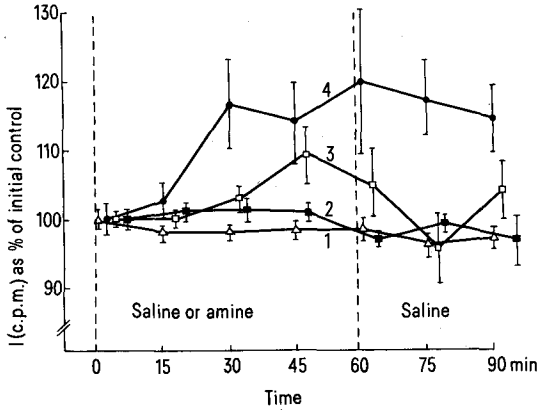
For quantification of results and statistical analysis by 2-tailed t-tests, counts corresponding to the 3 initial control samples (saline a.h. or i.v.) of a single experiment were averaged. This value represents 100% at zero time. Counts obtained from the following 6 samples, corresponding to periods of amine infusion plus recovery, were expressed as percent change of the value at zero time.
The drugs employed were: DA (3,4-dihydroxy-2-phenylethylamine, HCl), Nutritional Biochem.; NA (L-arterenol bitartrate hydrate), Calbiochem.; and A (L-epinephrine bitartrate), Sigma Chem.



Effects of anterior pituitary microinfusion of saline (curve 1), dopamine (curve 2), adrenaline (curve 3) or noradrenaline (curve 4) on ^{131}I release. Each figure represents the mean ± SE of 8–9 experiments in 5–6 dogs.

Results and discussion. A.h. infusion of saline throughout the experiment only caused minor changes in the time-course of radioiodine release (figure). The curve obtained with either DA or A did not differ significantly from the control curve. In contrast to this, NA infused a.h. caused c.p.m. increase after a latency period of 30 min. Such increase remained unchanged throughout the experiment, and was significant ($p < 0.01$) in all the points of the curve when compared to controls. NA, A or DA, in no less than 8 experiments each, did not cause any change in radioactivity compared to controls when administered i.v. under the same schedule, infusion rate and dosage as for a.h. administration.
The present findings suggest that NA is an stimulatory agent for dog thyrotrophic secretion in vivo, acting in situ on the gland since peripheral effects can be ruled out from the control experiments. Perhaps NA is acting on thyrotrophic cells causing TSH release; however an indirect action in situ cannot be ruled out. It is less likely that NA is acting by diffusion on extraglandular sites since extremely low amounts of the amine are infused in relatively long periods of time (about 0.1 ng/60 min). However, it has been known that NA can release TRH from mouse hypothalamic fragments in vitro[7], and an overflow of NA from the anterior pituitary to the hypothalamus should not be overlooked. An A-induced TSH release in vitro from mouse anterior pituitary slices has already been shown[11], nevertheless we could not demonstrate this action in the dog in vivo. Differences would be attributed to species variation or different experimental conditions.

11 J. F. Wilber, G. T. Peake and R. D. Utiger, Endocrinology *84*, 758 (1969).

Effect of a sesquiterpene from *Aristolochia indica* Linn. on fertility in female mice

Anita Pakrashi[1] and Chandrima Shaha

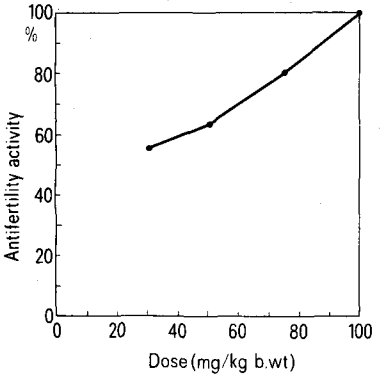
Reproductive Biology Section, Indian Institute of Experimental Medicine, 4 Raja Subodh Mullick Road, Jadavpur, Calcutta 700032 (India), 20 January 1977

Summary. A sesquiterpene isolated from the roots of *Aristolochia indica* (Linn.) was found to exert 100% interceptive activity and 91.7% anti-implantation activity in mice at a single oral dose of 100 mg/kg b.wt. No toxic effect was found at the dose levels used.

The root of the plant *Aristolochia indica* Linn. (N.O. Aristolochiaceae) is reputed to have emmenagogic[2,3] and abortifacient properties[4]. The effect of different exrtactives from the root on interception in female mice was reported earlier from this laboratory[5]. The crude petroleum ether extract was found to exert 100% abortifacient activity in mature female mice at a single oral dose of 100 mg/kg b.wt. The present communication deals with the follow-up studies with a pure crystalline product, m.p. 150 °C, isolated from the petroleum ether extract and identified as a sesquiterpene, the characterization of which is in progress in the Medicinal Chemistry Department of this institute.
Materials and methods. The colony-bred, Swiss albino normal cycling female mice weighing 20–25 g were caged with fertile males in the ratio of 2:1 at a controlled room temperature (24–25 °C). Presence of vaginal plug was marked as day 1 of pregnancy. The test sample was pasted with gum acacia powder and suspended in water for oral administration. Since the crude petroleum ether extract exerted 100% interceptive activity in mice at the dose level of 100 mg/kg b.wt, the pure compound was also given in the dosage of 100 mg/kg b.wt on day 6–7 of pregnancy. After establishing the antifertility activity, the sesquiterpene was administered at successively lower dose levels of 75, 50, 30 mg/kg b.wt for the elucidation of dose-response relationship. Proper controls were maintained. Laparotomy was performed on day 8–10 by observing vaginal changes and depression of mammary glands. The compound in the dosage of 100 mg/kg b.wt was also fed to a group of mice on day 1 of pregnancy. Laparotomy was performed on day 6 of pregnancy. Controls were treated with vehicle only.
The results indicate that the compound exerted 100% abortifacient activity in the dosage of 100 mg/kg b.wt. Subsequent lower doses showed lower percentages of activity (table). The dose response relationship is shown in the figure. Laparotomy indicated abortion to occur between day 8 and 10 of pregnancy. The uterine lumen was either empty or showed fetus in degenerated condi-

Effect of the sesquiterpene from the petroleum ether extract of the plant *Aristolochia indica* Linn. on fertility in female mice

No. of mice used	Day of administration	Dose administered in mg/kg b.wt	Mice showing antifertility activity (%)
20 (control)	1, (6–7)	–	0.0
12	1	100	91.7
10	6–7	30	55.5
10	6–7	50	63.6
10	6–7	75	80
10	6–7	100	100



Graph showing percentage of antifertility activity at different dose levels in mice.

tion. The ovary showed prominent corpus albicans. The nonaborting females in each case were allowed to go to term.

The extract exerted 91.7% anti-implantation activity, where laparotomy on day 6 revealed the absence of implantation sites. The ovary showed corpus albicans. No toxic effect was observed at the dose levels used. The litters of the nonaborting females were observed for any morphological abnormalities. No deformities were observed upto the F_1 generation.

1 The authors wish to thank Dr S. C. Pakrashi and his associate Mr P. P. Ghosh Dastidar of Medicinal Chemistry Department for isolating the compound for this study. Thanks are also due to Director-General of Indian Council of Medical Research for granting a Junior Research Fellowship to C.S.

2 R. N. Chopra, S. L. Nayer and I. C. Chopra, in: Glossary of Indian Medicinal Plants, p. 24. Council of Scientific and Industrial Research, New Delhi 1956.

3 K. R. Kirtikar and B. D. Basu, in: Indian Medicinal Plants III, p. 2123. L. M. Basu. Allahabad 1935.

4 K. P. Biswas and A. Ghosh, Bharatiya Bonousadhi IV, p. 385. Calcutta University, India 1973.

5 A. Pakrashi, B. Chakrabarty and A. Dasgupta, Experientia *32*, 394 (1976).

A centrally induced vasodepressor response after intravenous administration of whole venom of *Naja mossambica pallida* in cats[1]

R. K. Raina[2], D. Njoroge, J. N. Ng'ang'a and B. V. Telang

Division of Pharmacology and Therapeutics, Department of Medicine, P. O. Box 30588, Nairobi (Kenya), 2 May 1977

Summary. Naja mossambica pallida venom administered i.v. (300 μg/kg) produces an initial brief fall in blood pressure, due to a direct myocardial depressant effect, and a sustained fall due to central depressant effect.

I.v. administered snake venoms generally cause a precipitous fall in the blood pressure followed by a partial recovery and then a gradual or a rapid descent of systemic arterial pressure. In *Dendroaspis Jamesoni* venom, a central locus of action for the hypotensive response was suggested[3,4]. In this paper evidence is presented for a central locus for the hypotensive response after i.v. administration of *Naja mossambica pallida* venom.

Materials and methods. Cats (2.5–3.5 kg) were anaesthetized with ether followed by i.v. chloralose (80 mg/kg). Carotid artery blood pressure was recorded by a Statham transducer (P23D) and the heart rate on a Grass Polygraph (Model 79-8P-40). Artificial respiration at a pressure of 15 cm of water/kg and rate of 20/min was maintained by an electronic ventilator (SRI, England). The rectal temperature was maintained between 36 and 37 °C throughout the experiment. The efferent pathways of the hypotensive response were determined in spinalized cats (C-2). The action of snake venom on central vasomotor areas was assessed according to method described by Telang et al.[4].

Drugs used. Atropine sulphate (Sigma, London), mepyramine maleate (May & Baker, England), pentolinium tartrate (May & Baker, England) 1,1-dimethyl-4-phenylpiperazinium iodide (DMPP, K & K Laboratories Inc. USA), sodium nitrite[5] (B.D.H. analar grade). Dessicated whole venom was obtained from Mr J. H. Leakey, Baringo Snake Farm, P.O. Box 1141, Nakuru, Kenya.

Results and discussions. In control experiments, the mean blood pressure was 135 ± 2.5 mm Hg (mean ± SE). I.v. administration of snake venom (300 μg/kg) produced a biphasic vasodepressor response (figure 1A). An initial brief fall (61.6 ± 7.5 mm Hg) and a prolonged fall (59.2 ± 5.8 mm Hg). The blood pressure did not return to normal levels even after 2 h. In spinalized cats (N = 7), mean basal blood pressure 71.4 mm Hg ± 5.5 mm of Hg, after i.v. administration of the venom (300 μg/kg), the prolonged fall in blood pressure was completely

1 This study was supported by University of Nairobi research grants (670–376). We also thank Mr E. Njogu for photographic assistance.

2 Permanent address: Department of Pharmacology, Government Medical College, Jammu 180001 (India).

3 R. K. Raina, J. N. Ng'ang'a, D. K. Njoroge and B. V. Telang, Toxicon, in press (1977).

4 B. V. Telang, R. J. M. Lutunya and D. Njoroge, Toxicon *14*, 133 (1976).

5 R. Scivoletto, A. J. O. Toledo, A. C. Gomes Da Silva and D. Nigro, Archs int. Pharmacodyn. *223*, 333 (1976).