reduced by CH 29-717. Effects obtained in response to 0.3 $mg \cdot kg^{-1}$ s.c. were significant at 1 and 3 h, and to 0.03 $mg \cdot kg^{-1}$ s.c. at 3 h after drug administration. These results suggest that prolactin secretion inhibition induced by CH 29-717 is not dependent on intact biogenic amine stores and amine synthesis in the hypothalamic neuronal system controlling prolactin secretion. This suggests that the compound acts directly at the pituitary level.

Discussion. The results presented indicate that CH 29-717 is a potent inhibitor of prolactin secretion in female and in male rats under different conditions. Basal secretion as well as physiologically and chemically stimulated secretion are inhibited when CH 29-717 is given by the s.c. or by the oral route. In the different test systems used, the potency of the new compound compared with bromocriptine varies. In the test for implantation inhibition (experiment 1) the new compound is about 60 times more active than the standard, while in male rats (experiment 3) it is between 17 times (4 h after drug administration) and 4 times (24 h after drug administration) more potent. This large difference between relative activities in experiments with female and male rats is difficult to explain. The diminution in relative activities observed in the male with CH 29-717 between 8 and 24 h after drug administration (Table 2) seems to indicate a shorter duration of action of the new compound compared with bromocriptine. In the experiments assessing lactation inhibitory activity after oral administration, a comparison of the ID_{50} values indicates that CH 29-717 is 220 times more potent than bromocriptine. This figure reflects more a rather low oral activity of bromocriptine in the rat than an unexpected high activity of the new compound. This becomes clear when the ID_{50} values (oral) from experiment 2 and the ED_{50} values (s.c.) from experiment 1 are compared. As to the site and mechanism of action of CH 29-717, the results of experiment 4 indicate that prolactin secretion inhibition is probably due to a direct action on the prolactin secreting cells. In analogy to what is known of the mechanism of action of bromocriptine[3,8,9], it may be assumed that CH 29-717 acts by stimulating inhibitory dopamine receptors on the prolactin secreting cells. The assumption that CH 29-717 is a dopaminomimetic drug is supported by results from studies on non-endocrine systems, the results of which will be reported elsewhere.

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Foetal growth retardation in the rat following chronic exposure to the inhalation anaesthetic enflurane

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Summary. Chronic exposure of pregnant rats to high subanaesthetic concentration of the inhalation anaesthetic agent enflurane led to foetal growth retardation. No significant foetal loss or abnormalities occurred.

Recent epidemiological studies suggest that chronic exposure to an operating room environment may have an adverse influence on pregnant women and their unborn children. It would appear that these women have a greater chance of spontaneous abortion or of having a child with congenital abnormalities than women in the same profession but in a different working environment[1-4]. Moreover, the results of animal studies are conflicting. Some have implicated inhalation anaesthetics as the possible cause for the teratogenic effects[5-8], whereas other investigations indicated that the danger of foetal toxicity from chronic exposure to the inhalation anaesthetic agents nitrous oxide, halothane and methoxyflurane may not be as great as had previously been feared[9-11]. We report here the results of a preliminary study of the effects of chronic exposure of pregnant rats to the volatile inhalation anaesthetic agent enflurane.

Materials and methods. Female virgin Sprague-Dawley rats (250–300 g) were placed overnight with males of proven fertility, and the morning on which spermatozoa were found in the vaginal smear was designated the first day of gestation. The pregnant animals were weighed, marked and randomly assigned to either a control or a treatment group. Both groups of animals were exposed for 8 h daily throughout gestation (days 1–21) in separate perspex exposure chambers at constant ambient temperature with careful

Fetotoxicity of the inhalation anaesthetic enflurane

	No. of animals	Implantations	Resorptions	Fetal weight (g)* (mean ± SE)	Placental weight (mg)* (mean ± SE)
Experimental	8	88	1	4.5 ± 0.07	631.3 ± 65.7
Control	5	68	1	5.3 ± 0.06	586.7 ± 11.1
				$p < 0.001$	NS

* Significance of difference between values of the control and the experimental groups was analyzed by means of the Student t-test.

maintenance of oxygen tension. Accumulation of carbon dioxide and water vapour was avoided. Enflurane, 3200 ppm (v/v) in air, i.e. 0.2 MAC, was added to the experimental group and the concentration in the cages monitored regularly by gas chromatography. The animals were given food and water ad libitum when not in the exposure chambers. The animals were killed just prior to delivery on the morning of day 22. The number of resorptions and dead foetuses and the sex of the offspring were noted. All foetuses were weighed and examined for external defects. Selected foetuses (control 10; experimental 12) were cleared and the skeletal system stained with Alizarin Red-S. The remaining foetuses (control 57; experimental 75) were fixed in Bouin's solution and examined later for visceral abnormalities by the Wilson's technique. Maternal liver, kidney and foetal liver were processed routinely for histological studies.

Results and discussion. A summary of our findings is presented in the table. There were no maternal deaths and all animals were found to be pregnant at the time of post-mortem. There were no significant differences in weight gain during the experimental period between treated and control animals. Exposure of the mothers to the anaesthetic agent did not significantly increase the incidence of foetal resorptions. All foetuses recovered at term were alive and showed no external defects. Major skeletal defects were not present in any of the alizarin-stained foetuses. There was, however, a significant decrease in the mean b.wt of foetuses of enflurane-exposed mothers when compared to the control. Microscopic examination of the maternal and foetal tissues revealed no pathological changes.

This preliminary investigation indicates that as with nitrous oxide[12], halothane[11,12] and methoxyflurane[12], high subanaesthetic concentrations of the inhalation agent enflurane may cause foetal growth retardation without any significant foetal loss or abnormalities. Pope et al.[12] have previously demonstrated that food deprivation alone, in the amounts caused by appetite suppression after chronic exposure to inhalation anaesthetics, does not cause intrauterine growth retardation. Thus, enflurane may be less harmful during pregnancy than might have been suspected from previous studies with other volatile anaesthetic agents.

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Natural occurrence of trichothecenes (nivalenol, deoxynivalenol, T_2) and zearalenone in corn

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Summary. Samples of corn suspected of causing infertility and refusal symptoms were analyzed and found to contain nivalenol, deoxynivalenol, T_2 toxin and zearalenone, metabolites from *Fusarium* species.

Several sporadic cases of mycotoxicosis were reported from animals consuming cereal grains, particularly corn. This cereal is often implicated in symptoms such as abortion, emesis, and feed refusal. *Fusarium* species have been shown to be causative agents in producing mycotoxins inducing these symptoms. Samples from 2 lots of corn in France suspected of causing infertility, hyperestrogenic signs and feed refusal in swine were analyzed for zearalenone and trichothecenes, using thin layer chromatography (TLC) and gas-liquid chromatography (GLC) and the biological rat skin test.

Experimental. Preparation of extract: The extracts (E_1, E_2, E_3) were prepared from samples according to the method described by Ueno et al.[1]. The methanolic solution was washed with hexane to remove corn lipids and the aqueous methanol was evaporated to dryness. The residue was extracted with methanol-chloroform (1:5). Only this latter soluble fraction was analyzed. The control extract (E_1) was prepared from freshly harvested corn.

Dermic test. The extracts were dissolved in acetone and applied topically to clipped skin rats according to the method described by Frayssinet[2]. Skin was inspected after 24, 48 and 72 h.

Chemical procedure. The extracts (E_1, E_2, E_3) were dissolved in methanol and the amount equivalent to 10 g of the original samples was applied on TLC plates of 0.5 mm thickness (20 × 20 cm). The standard solutions of nivalenol, neosolaniol, deoxynivalenol, fusarenon-X, and T_2 toxin were applied on both ends of the plates and developed with benzene-acetone (12:7, v/v). The edges of the plates were charred with H_2SO_4 to visualize the standard trichothe-

Concentration of toxins

	E_1	E_2	E_3
Zearalenone	ND	10 ppm	2.5 ppm
Nivalenol	ND	4.28 ppm	1.18 ppm
Deoxynivalenol	ND	0.6 ppm	0.14 ppm
T_2 toxin	ND	0.02 ppm	ND

ND = not detected.