

These results, while lending further weight to the hypothesis of a participation of kinins in the early hypotensive response of the dog to endotoxin suggest that in addition, the toxin can induce a delayed hypotensive response appearing after a latency period of at least 15 min, and apparently not involving plasma kininogen breakdown. This response may be due to the direct impairing effect of *E. coli* endotoxin on ventricular performance (Solis & Downing, 1966), which has a similar latency period.

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A new tracheal strip preparation for the evaluation of β -adrenergic activity

SIR,—The preparation we have used in our laboratory for the evaluation of β -adrenergic activity has been the tracheal muscle of the calf, described by Ariëns & Simonis (1960). However, dependence on an abattoir supply is a disadvantage as is the lack of the animal's history, while the tracheal muscles of the usual laboratory animals are too small to be used in the same way.

The preparations described in the literature are either too tedious to prepare, such as the guinea-pig tracheal chain* according to Castillo & De Beer (1947) and its modifications by Akcasu (1952) and Foster (1960), or otherwise inconvenient, like the spirally cut guinea-pig trachea of Constantine (1965) which has a torsion strength of its own.

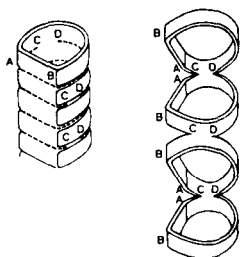


FIG. 1. Diagram of a new way of cutting the guinea-pig trachea. A-B: tracheal muscle; C-D: part which is cut open (along the dotted line).

We now wish to report that a satisfactory preparation can be obtained by cutting—with scissors—the trachea of a guinea-pig (400-600 g), after having removed all extraneous tissue, as indicated in Fig. 1. Between the cuts we left one cartilage ring and the total number of cuts was 10-15, depending on the size of the trachea.

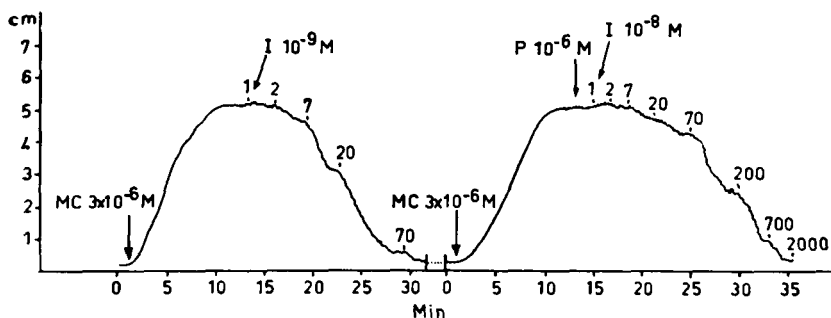


FIG. 2. Record of the spasmolytic action of isoprenaline (I) on the guinea-pig isolated trachea, with and without 10^{-6} M propranolol (P), respectively. The indicated concentrations of I are added cumulatively making the bath concentration 10^{-9} , 3×10^{-9} , 10^{-8} etc. The contractions, induced by 3×10^{-6} M methacholine (MC) are fully developed after about 30 min.

The preparation obtained is mounted and used as described by Ariëns & Simonis (1960) for the tracheal muscle of the calf. Drug-induced contractions of the preparation were recorded isotonicly on a smoke drum, using a load of about 1 g and a magnification of 20 times. The contractions obtained were smaller than those from the calf tracheal muscle; the base line is stable and the contractile response to 3×10^{-6} M methacholine is constant. We assessed the β -adrenergic blocking activity of propranolol on both preparations with isoprenaline as agonist (Fig. 2). The pA_2 value found, with 95% confidence limits, for calf tracheal muscle was (9 exp.) 7.79 (7.59–7.99), and for the proposed guinea-pig tracheal preparation (32 exp.) it was 8.19 (8.03–8.35).

The preparation also proved very sensitive to histamine: the pA_2 value of diphenhydramine hydrochloride as a histamine antagonist, assessed on our preparation was about 7.3; on the guinea-pig ileum it was 7.5.

The preparation we have described would seem very suitable for the investigation of β -adrenergic activities of drugs.

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* Foster (1966) has characterized the adrenergic receptors of the guinea-pig isolated trachea as β -receptors by established criteria.

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