



Bronchospasm Transducer

Cat. No. 7020

General

This transducer is designed to perform the bronchospasm test on the guinea pig and is particularly suitable for connecting to UGO BASILE DataCapsule Recorder 17400 .

It enables the research worker to evaluate the spasm-inducing effect of drugs having a very wide range of action, not necessarily intended to act on respiratory dynamics.

The Bronchospasm Transducer 7020 is also a useful research tool for screening substances inducing the opposite effect, both those causing active bronchodilation in basal conditions and those which antagonize test drugs such as histamine, bra-dykinin, etc.

It is basically an air flow meter provided with a water input valve with an adjustable pressure threshold. The whole device is a compact unit made entirely of Perspex, mounted on a base along with its own power supply and con-trols.



The picture shows a complete set-up for bronchodynamics studies which includes the Rodent ventilator 7025 and a pen recorder

- Evaluates the bronchospasm inducing effect of drugs

Main Features

- Simple and reliable method to assess airflow resistance
- The effect of bronchodilators agents is quickly assessed (by simply connecting to an animal ventilator and to a data acquisition system or chart recorder)

Experimental Layout

The experimental layout follows the well-known Konzett-Roessler arrangement (see BIBLIOGRAPHY) with the anaesthetized guinea pig breathing via a reciprocating pump, according to Starling's mode of operation. See sketch below.

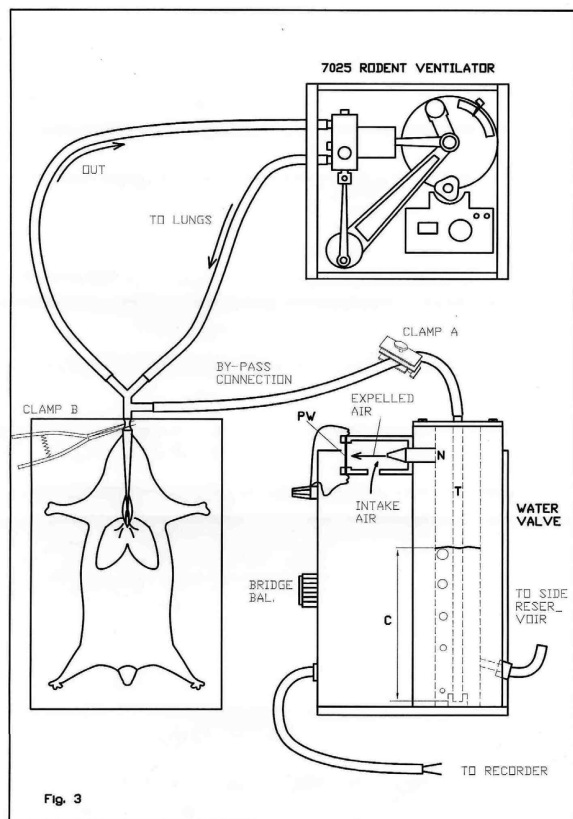


Fig. 3

Sensitivity

The sensitivity of the instrument in comparison with conventional Konzett-Roessler apparatus as illustrated in the table below

Minimum dosage in $\mu\text{g}/\text{Kg}$ giving significant readings

| Drug | Konzett | |
|---------------|-----------------|-----------|
| apparatus | UGO BASILE 7020 | |
| Histamine | 3 - 6 | 0.3 - 0.6 |
| Acetylcholine | 20 - 40 | 3 - 10 |
| Serotonin | 6 - 15 | 1 - 3 |

Air Flow Meter

The recording system monitors respiratory dynamics by providing a tracing appearing as a succession of spikes.

When bronchospasm occurs, overpressure displaces the water column inside tube T and air bubbles through the water, escaping through an air flow transducer

which generates an electrical signal.

When Bronchodilators are administered, overpressure is reduced to below normal breathing values, as the bronchi exert less aerodynamic resistance to forced inspiration. The tracing will decrease in amplitude to a marked degree, enabling the action of bronchodilators to be assessed.

Ordering Information

- 7020 Bronchospasm Transducer, complete
- 7021 Air Flow Head
- 7022 Set of two Steel Rods
- 7024 Side Reservoir
- 7014 Dust Cover
- 7015 Instruction Manual

Ask for details about:

- 7023 Aerosol Set-up
- 7025 Rodent Ventilator

Bibliography

Method Paper

- H.Konzett & R. Roessler: Arch. Exp. Path. Pharmacol.: 195, 171, 1940

Papers which include mention to 7020

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- L. Puglisi et alia: "Pharmacology of Natural Compounds. I. Smooth Muscle Relaxant Activity Induced by a Ginkgo Biloba L. Extract on Guinea-Pig Trachea" Pharmacol. Res. Commun.: Vol. 20: No. 7, 1988
- J.S. Franzone, R. Cirillo & P. Biffignandi: "Doxofylline Exerts a Prophylactic Effect Against bronchoconstriction and Pleurisy Induced by PAF" Eur. J. Pharmacol.: 165: 269-277, 1989
- P. Kimar et alia: "Non-Specific Cardiovascular Depressant Effect of Methyl Isocyanate (MIC) in Rats" J. Toxicol. Sc.: 14: 105-114, 1989
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