



## Superfusion System

Cat. No. 14900

### General

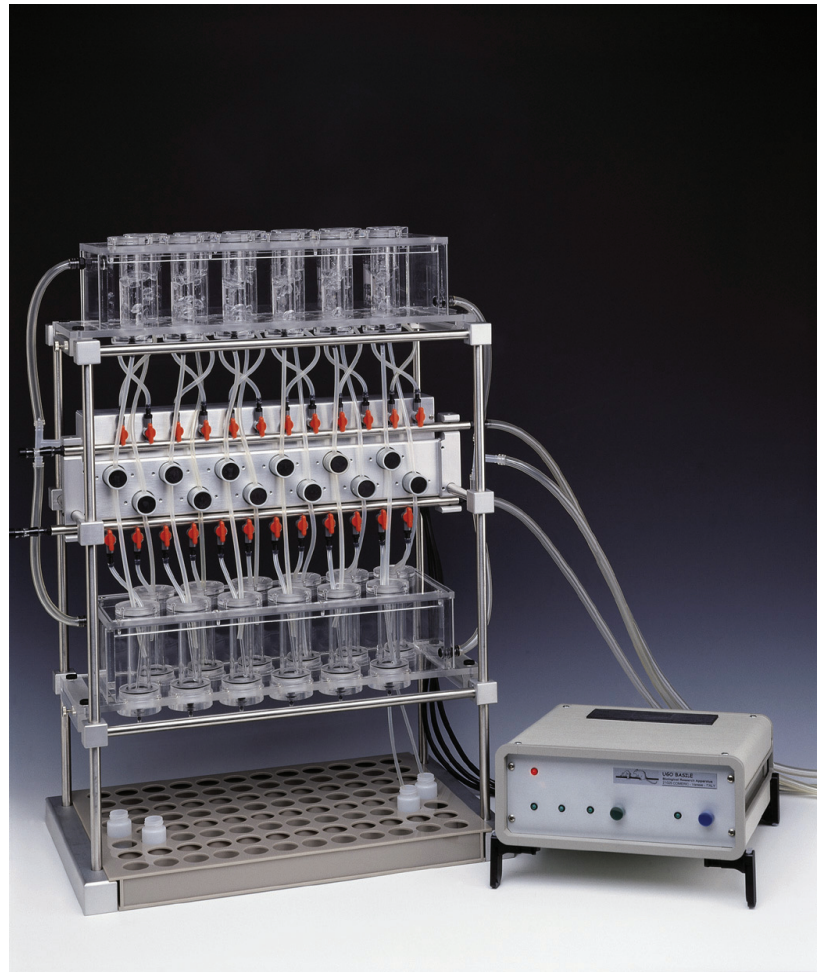
Neurotransmitter release is the major step of neurotransmission. Abnormalities in neurotransmitter release have been proposed to be involved in many pathological conditions.

Therefore, understanding the physiological mechanisms of transmitter release and how the process can be modified by pathological states is essential to develop therapeutically useful pharmacological agents.

**UGO BASILE 14900 Superfusion System** has been especially **designed to perform release studies from synaptosomes**, although brain slices can be employed as well.

On the other hand, presynaptic nerve terminals are the sites where release specifically occurs; therefore superfusion of synaptosomes is best suited to explore presynaptic events.

Superfused synaptosomes are the preparation of choice to study release-regulating presynaptic receptors and to explore the intimate mechanisms of neurotransmitter release.



**RAITERI'S METHOD**

**Synaptosomes  
Release  
Studies**

### Main Features

- Specifically designed to perform release studies from synaptosomes
- Brain slices can be employed as well
- More than 300 full papers using superfused synaptosomes have been published

## Introduction

UGO BASILE **14900 Superfusion System** is a semi-automated version of that originally developed in Raiteri's laboratory, where about 200 papers have been published exploiting the technique.

We have developed this Superfusion System in order to make commercially available an instrument in which the original design of the superfusion chambers has remained intact.

The 14900 Superfusion System consists of 12 parallel open superfusion chambers with 12 upper reservoirs, all thermo-stated by a water-jacket. Pre-warmed oxygenated media of the desired composition can be concomitantly delivered from the reservoirs to the superfusion chambers.

Synaptosomes are accommodated as very thin layers on microporous filters placed on glass filter supports. Synaptosome or slice superfusion is provided by a multi-channel peristaltic pump and superfusate samples are directly collected into scintillation vials.

### Ordering Information

**14900 SUPERFUSION SYSTEM**, standard package, including:-

<b>14900-001</b>	Electronic Unit
<b>14900-002</b>	Superfusion Bath Complete Assembly
<b>14900-004</b>	Suction Pump
<b>14900-302</b>	Instruction Manual
<b>E-WP008</b>	Mains Cable

Set of fuses for either 230 V or 115V operation

#### Optional:

<b>14900-003</b>	Water Circulator/Heater
<b>14900-005</b>	Masterflex Multi-Channel Peristaltic Pump

### Bibliography

#### Method Paper:

- M. Raiteri, F. Angelini, G. Levi: "A simple apparatus for studying the release of neurotransmitters from synaptosomes" *Eur. J. Pharmacol.* 25: 411-414, 1974

#### Additional Papers:

- A. Pittaluga et al.: "Human brain N-methyl-D-aspartate receptors regulating noradrenaline release are positively modulated by HIV-1 coat protein gp120" *AIDS* 10: 463-468, 1996.
- M. Di Luca et al. "Increased presynaptic protein kinase C activity and glutamate release in rats with a prenatally induced hippocampal lesion" *Eur. J. Neurosci.* 9: 472-479, 1997.
- M.V. Clos et al. "D2 dopamine receptors and modulation of spontaneous acetylcholine (ACh) release from rat striatal synaptosomes" *Br. J. Pharmacol.* 122: 286-290, 1997.
- D. Crespi et al. "Carrier-dependent and Ca<sup>2+</sup>-dependent 5-HT and dopamine release induced by (+)amphetamine, 3,4-methylenedioxymethamphetamine, p-chloroamphetamine and (+)fenfluramine" *Br. J. Pharmacol.* 121: 1735-1743, 1997.
- E. Schlicker et al. "Effects of selective h5-HT1B (SB-216641) and h5-HT1D (BRL-15572) receptor ligands on guinea-pig and human 5-HT auto- and heteroreceptors" *Naunyn-Schmiedeb. Arch. Pharmacol.* 356: 321-327, 1997.
- G. Maura et al. "Glutamate release in human cerebral cortex and its modulation by 5-hydroxytryptamine acting at h 5-HT1D receptors" *Br. J. Pharmacol.* 123: 45-50, 1998.
- R. Sala et al. "Nerve growth factor and brain-derived neurotrophic factor increase neurotransmitter release in the rat visual cortex" *Eur. J. Neurosci.* 10: 2185-2191, 1998.
- M. L'Hirondel et al. "Lack of autoreceptor-mediated inhibitory control of dopamine release in striatal synaptosomes of D2 receptor-deficient mice" *Brain Research* 792: 253-262, 1998.

In addition, more than 300 full papers using superfused synaptosomes have been published