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.

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 thermoregulated by a water-jacket. Prewarmed 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.

Superfusion is provided by a multi-channel peristaltic pump and superfusate samples are directly collected into scintillation vials.

Physical

- Weight: 34Kg (complete assembly)
- Shipping Weight: 48Kg
- Dimensions: 14900-001: 38(w)x30(d)x13(h)cm 14900-002: 46(w)x28(d)x60(h)cm
- Packing: 1 box 80x60x44cm 1 box 62x65x84
- Power Requirement: 115 or 230V, 50/60Hz, 100W max.

Bibliography

Method Paper:


Papers quoting 14900:

- S. Zucchini et alia: “Increased excitability in tat-transgenic mice: Role of tat in HIV-related neurological disorders” Neurobiology of Disease; available onlyne 2013
- C. Romei et alia: “The GABAB receptor antagonists CGP35348 and CGP52432 inhibit glycine exocytosis: Study with GABAB1- and GABAB2-deficient mice” Pharmacological Res. 61: 547-552, 2010

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

Ordering Information

- 14900 SUPERFUSION SYSTEM (Raiteri’s method), standard package, including:
  - 14900-001 Electronic Unit
  - 14900-002 Superfusion Bath Complete Assembly, including upper & lower chambers, valves, set of tubes, etc.
  - 14900-004 Suction Pump
  - 14900-032 Set of Phials
  - 14900-338 Set of Filters
  - 14900-325 Phial Rack
  - 14900-302 Drain Pan
  - E-WP008 Mains Cord

Optional:

- 14900-003-MA12 Water Circulator/Heater (12 litres)
- 14900-003-MA12 Water Circulator/Heater (26 litres)
- 14900-015 Masterflex Peristaltic Pump, 12 channels, expandable
- 14900-024 Masterflex Peristaltic Pump, 24 channels