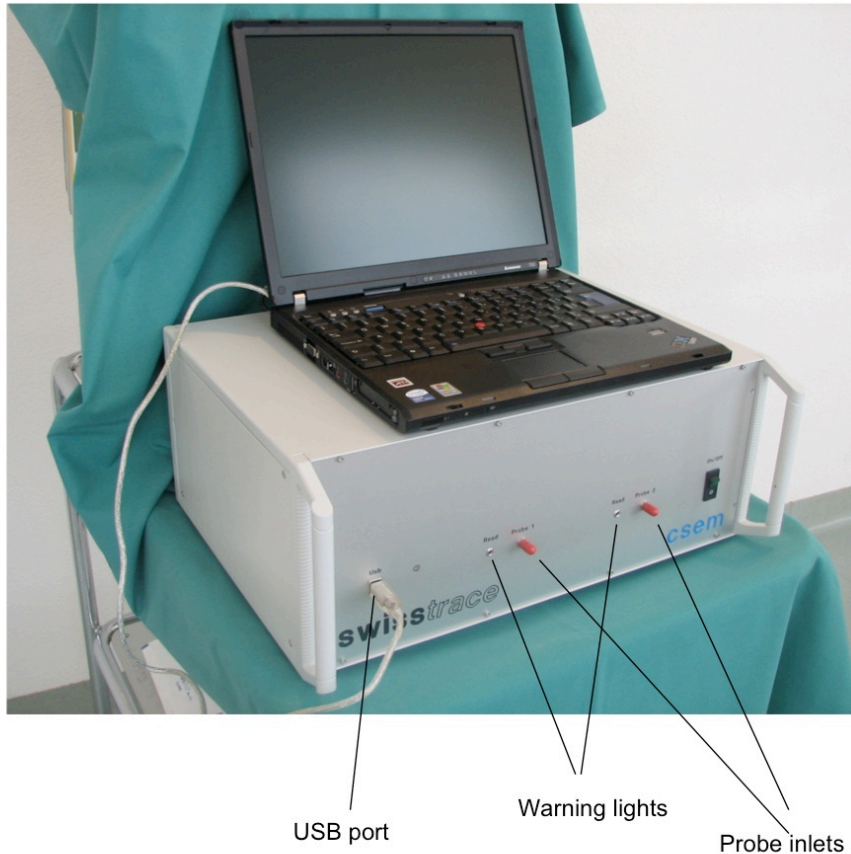


SWISSTRACE beta scintillator systems

swisstrace dual probe system



swisstrace GmbH

General description

The Swisstrace beta scintillator systems are built to be used in daylight. This is possible because the beta scintillators are specially coated. Another big advantage of the coating is, that interference with Cherenkov radiation is also eliminated. Furthermore the photomultiplier tubes inside the system are lead shielded. No additional lead is therefore required to shield the system during the experiments.

The standard configuration can be delivered with one or two probe inlets, and the scintillators come in all diameters in the range 0.25 mm-3 mm. The 3 mm probe is our latest development. It is ideal to perform measurements on the cortex. Since it is placed on the surface and not inserted into tissue, the cortex remains completely undisturbed. In rats and mice it is even possible to perform measurements through the bone. Another advantage of the surface probe is the superb sensitivity.

The system consists of the following parts:

- housing for PMT tubes, the PMT's are shielded with lead in order to prevent gammas from reaching the PMT's, inlets for 1 or 2 beta scintillators
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- light-tight beta scintillators, tip diameter in the range 0.25mm – 3 mm
- extension fibre for the beta scintillator, up to 10 m long for special applications
- 1 laptop computer for data acquisition (optional)
- PMOD software for data analysis, 6 month free trial version

Specifications:

Box size: 44 x 30 x 13 cm, rack-mountable

Weight: depending on model

Sensitivity of system with the 0.25 mm beta scintillators, F-18: 20 cps/(Mbq/ml)

Sensitivity of system with the 0.5 mm beta scintillator, F-18: 77 cps/(Mbq/ml)

Sensitivity of system with the
3 mm beta scintillator (surface probe) F-18: 500 cps (Mbq/ml)

For C-11 O-15 the sensitivities are markedly higher.

Dark counts in ambient day light for 0.25 mm beta scintillators: 0.5 cps

Dark counts in ambient day light for 0.5 mm beta scintillators: 2 cps

Dark counts in ambient day light for 3 mm beta scintillators: 8 cps

Publications using the Swisstrace beta scintillator

Weber B, Späth N, Wyss M, Wild D, Burger C, Stanley R, **Buck A**. Quantitative CBF measurements in the rat using a beta-probe and H215O. *J Cereb Blood Flow Metab.* 2003;23:1455-1460

Wyss MT, Ametamey SM, Treyer V, Bettio A, PhD; Blagoev M, Kessler L, Burger C, Weber B, Schmidt M, Gasparini F, **Buck A**. Quantitative Evaluation of 11C-ABP688 as PET Ligand for the Measurement of the Metabotropic Glutamate Receptor Subtype 5 using Autoradiographic Studies and a Beta-scintillator. *Neuroimage*, 2007, 35, 1086-1092.