

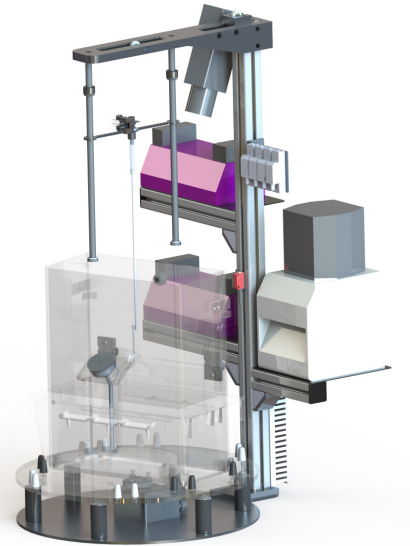


Scientific Instruments

Peira NeuroPlatform

PROBLEM

Most rodent studies in neuroscience, and many in physiology, pharmacology and basic biology, require collection of samples for analysis (e.g. blood, cerebrospinal or interstitial fluid (CSF/ISF), interstitial (ISF), concentrations of neurotransmitters and peptides), or recording of neurophysiological, electrical activity, with or without drug administration at precise times. It is generally preferred to have such experiments conducted in alert, freely-moving animals, whereby some sort of tether encasing the fluid or electrical connections to the animal is normally required. To allow improved freedom of movement and reliability of measurement, a swivel is generally provided between the animal and the sampling/ infusion or recording device. Multichannel electrical swivels may be reasonably satisfactory if a limited number of channels is required (although mercury-based devices are hazardous), however fluid swivels are problematical, being subject to leaks, blockages, and contamination. This requires frequent experimenter intervention to clean the fluid swivel and remove twists from the tether. The result is that the ideal of reliably monitoring animals in a low-stress, environment is difficult or impossible to achieve with currently available equipment.



SOLUTION

The Peira NeuroPlatform is a multichannel, multipurpose sample collection and drug delivery platform for freely moving small laboratory animals on which several sampling and/or infusion devices can be used simultaneously. Those devices are fixed to a rigid support frame. The animal's home cage sits on a powered turntable, also to prevent having to bring the animal into a novel testing environment thus further reducing stress. Rotation of the tether when the animal turns, is detected by optoelectronic switches, which cause the turntable to turn in the opposite direction taken by the animal. Fluid or electrical swivels are entirely eliminated; the animal experiences almost zero torque or weight on the tether. As the swivel normally limits the number of fluid or electrical connections in traditional systems, eliminating the swivel removes this constraint. Multiple probes, electrodes and blood lines can now be placed in alert, freely moving animals to sample several physiological systems simultaneously.

TECHNICAL DATA

Dimensions (LxWxH):	535 x 675 x 920 mm
Weight:	Approx. 15 kg
Power:	90 W
Volts:	230VAC
CE:	The NeuroPlatform fully complies with all CE and EMC equipment guidelines relative to mechanical and electrical.