Scientific Systems Design Inc.
Innovative Engineering for Science

50 #5 Steels Ave E
Milton
ONTARIO L9T 4W9
C A N A D A

Tel: 1 905 608 9307
ssd@scisys.info
www.scisys.info

Brain Slice Keeper

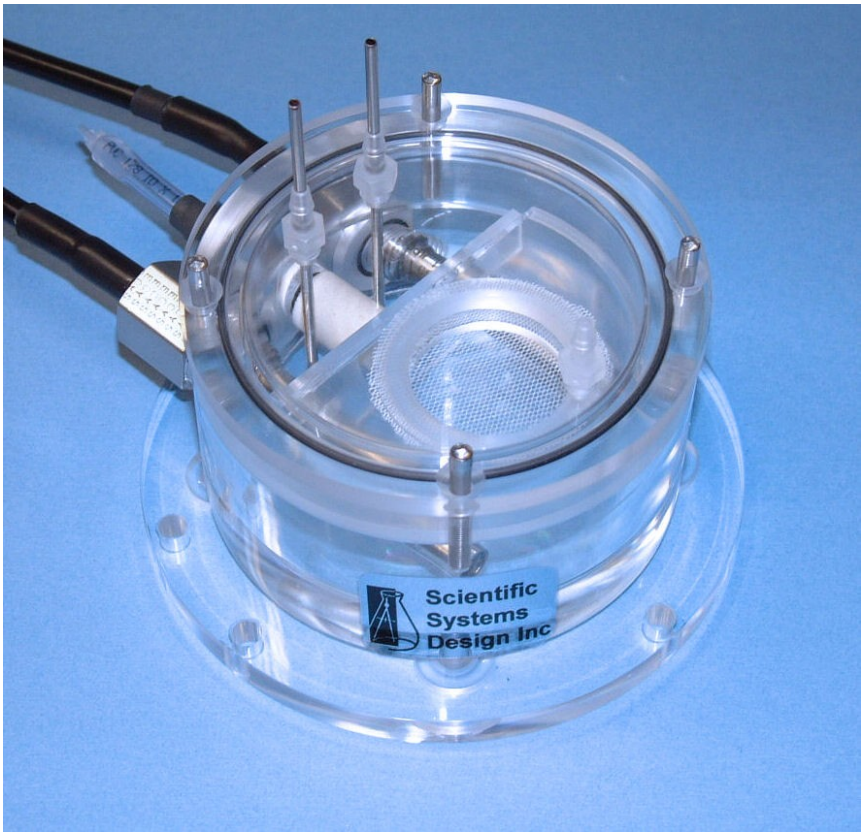
BSK-AM

Pre-Incubation of Slice Preparations

The Brain Slice Keeper AM has been designed with an integral heater and sensor element for pre-incubation of brain slices prior to transfer into recording chambers. In addition there is provision of inlet and outlet tubes to an external chamber incorporating multi-electrode arrays.

FEATURES

* *Pre-incubate slices at controlled temperatures prior to transfer to recording chamber*
* *Inlet and outlet ports used to supply ACSF to Alpha MED Sciences multi-electrode array probes*
* *Simple to set up and maintain, modular design allows quick cleaning and assembly*
* *Quick-change nylon net*



The main body of the BSK-AM comprises a chamber fitted with stainless steel heater and sensor probes to maintain the desired incubating temperature, regulated by our temperature controller PTC03. Within the body of the chamber is a holder for resting the slices, it consists of a closely fitting acrylic ring in a manifold. A removable piece of nylon netting is wedged between the ring and manifold. In operation, the BSK-AM is filled with ACSF so as to totally immerse the net and ring. A ceramic bubbler to one side is supplied with 95% O2 / 5% CO2 gas mixture to both saturate the ACSF and to produce circulation of the ACSF from the top downwards on to the net surface on which brain slices are placed. The circulation also provides for even heat distribution and feedback control from the heating element and sensor elements below. A deflector shield between the bubbler and the base of the nylon net prevents bubbles from being trapped under the slices and ensure continuous circulation of medium. Slices remain viable for many hours in these conditions. The BSK-AM fluid volume is typically 150ml. A close fitting lid with a sealing ring carries two stainless tubes into the base of the chamber. These tubes can be used to provide ASCF to the Alpha MED Sciences Perfusion Cap for their multi-electrode array probes. A third venting tube carries humidified oxygen which can also be used to supply the Alpha MED Sciences cap for interface slice applications.

Scientific Systems Design Inc.
Innovative Engineering for Science

5 #14 Mid-Way Blvd
Mississauga,
ONTARIO L5M4J7
C A N A D A

Tel: 1 905 608 9307
ssd@scisys.info
www.scisys.info

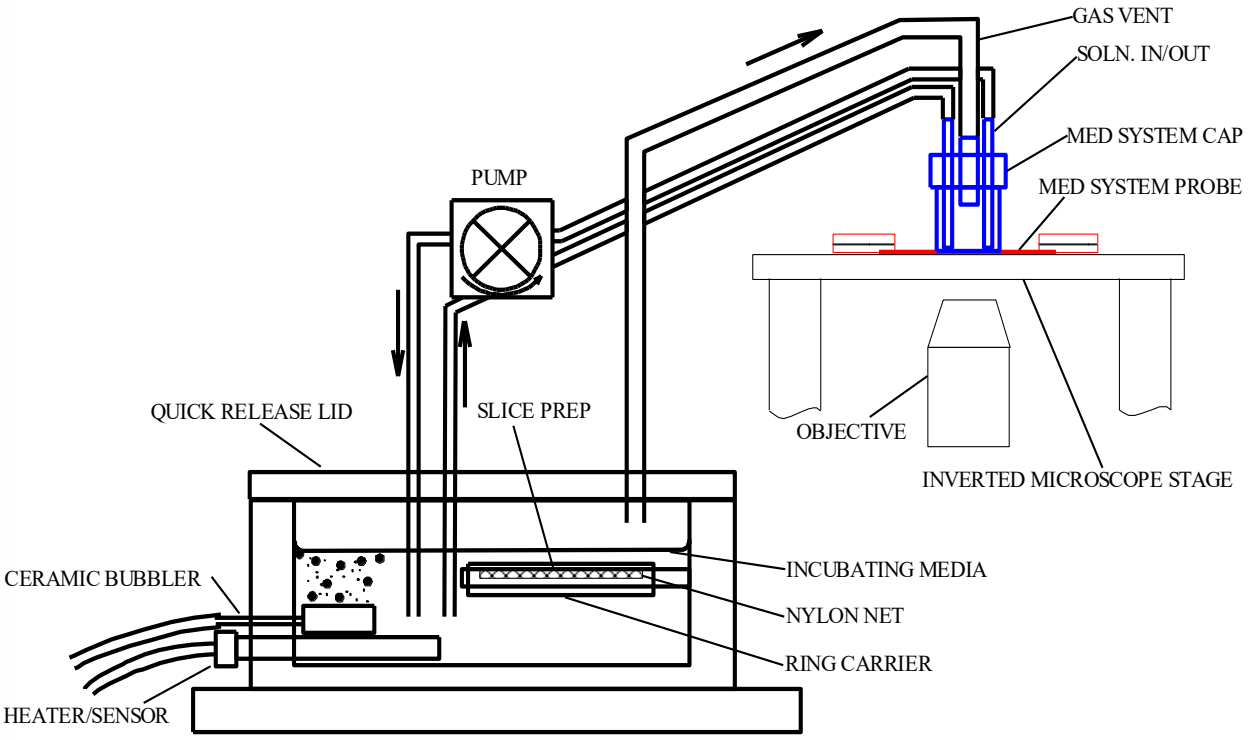
Brain Slice Keeper

BSK-AM

Pre-Incubation of Slice Preparations

Brain slice keeper schematic

SCHEMATIC ARRANGEMENT OF BSK-AM WITH MED SYSTEM PROBE AND CAP



BRAIN SLICE KEEPER AM

Pipes and tubes should be as short as possible and arranged to be well thermally insulated to minimise the temperature drop from the incubating area to the recoding area. The PTC03 temperature controller is electrically quiet and should not produce any interference in recordings. Peristaltic pumps may need to be grounded and shielded and kept at a distance from the recording area.

Recent publication

BK Channels Regulate Spontaneous Action Potential Rhythmicity in the Suprachiasmatic Nucleus
Kent J, Meredith AL, 2008 BK Channels Regulate Spontaneous Action Potential Rhythmicity in the Suprachiasmatic Nucleus. PLoS ONE 3(12): e3884. doi:10.1371/journal.pone.0003884