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Innovative Engineering for Science

BRAIN SLICE KEEPER

BSK2

BRAIN SLICE KEEPER

CAUTION !

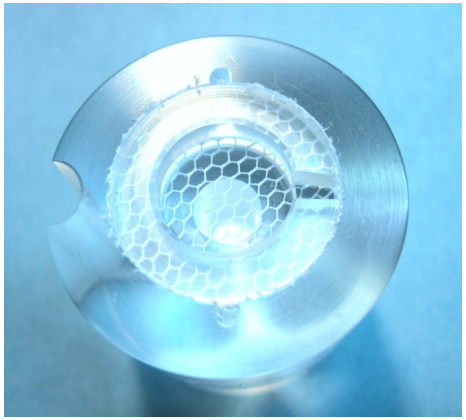
YOUR BRAIN SLICE KEEPER IS A PRECISION ENGINEERED TOOL FOR SCIENTIFIC RESEARCH. PLEASE TAKE A FEW MINUTES TO FAMILIARISE YOURSELF WITH THE KEEPER AND READ THROUGH THIS SHORT MANUAL BEFORE ATTEMPTING TO USE IT.

DO NOT USE ALCOHOL OR SIMILAR SOLVENTS IN ANY CONCENTRATION ON ANY PART OF THE KEEPER SINCE AS WITH MOST ACRYLICS, IT MAY FRAGMENT OR DEVELOP HAIR-LINE CRACKS.

OPERATION

The BSK2 Brain Slice Keeper has been designed to pre-incubate one or two brain slices in solution volumes of 5ml prior to transfer into recording chambers. This enables slices to be pre-loaded with experimental dyes or test solutions that are too expensive for large volume dilutions. It consists of a cylindrical chamber into which is placed a separate slice holding insert. This insert has a closely fitting acrylic ring at the top, between which is wedged a removable sheet of nylon netting.

The design of the insert (***right***) is such that when placed inside its chamber, a stream of oxygen bubbles introduced from the side are made to circulate the solution from the top downwards on to the net whilst also saturating the solution with oxygen. A hole below the net re-circulates the solution and exerts a downward force on the slices holding them down on the net.



View of insert with acrylic ring wedging removable nylon net.

PROCEDURE

In operation, the BSK2 is filled with ACSF until the insert is totally immersed at least 3mm above the rim of the acrylic ring holding the net. The side port connector is used feed a 95% O2, 5% CO2 gas mixture from a fine regulating valve. The bubbles rising from the side port along the edge of the channelled insert saturate the ACSF and provide constant circulation of solution to the nylon net. After a few minutes the oxygen flow rate is reduced and the BSK2 is ready to accept one or two slices which are placed on the central net. A plastic Petri dish cover is used as a lid on top of the BSK2 chamber, preventing the ASCF droplets from escaping from the chamber as well as unwanted contamination from falling into it. After several uses the nylon net can be replaced by pulling the acrylic ring and wedging a new sheet between the close fitting rings.

BSK2 Components - chamber with insert in place, needle valve gas flow regulator and lid.

NOTE: The needle valve should be located at a point higher than the fluid level in the BSK2 vessel to prevent backflow into the valve when no gas is being supplied to the keeper.

Specifications:
Typical volume of solution inside chamber: 5mls
Chamber diameter: 44.5 mm
Chamber height: 63mm
Usable net diameter on insert: 12.5 mm
Supplied with needle valve regulator, plastic lid and extraction tool for 'C' ring to replace nylon netting

MAINTENANCE

Alcohol should never be used on the slice keeper for cleaning purposes even at low concentrations because it de-hydrates and produces hair-line cracks in acrylic plastics

A laboratory detergent which completely rinses out should be used, however REMOVE THE CERAMIC BUBBLER FIRST as it will take a very long time to remove even these special detergents. The acrylic component can be cleaned with special laboratory detergents such as *Micro-90™ which completely rinses out. Heavy deposits of salts should be washed out with distilled water overnight and carbonate salts treated with mild acids such as citric acid. The most common contaminant is fungal growth, this can be avoided by washing out with distilled water and drying out completely at the end of each day. Hydrogen peroxide solution is also an effective cleaning agent.