CHAMELEON SUBMARINE GEL INSTRUCTIONS

INTRODUCTION: The CHAMELEON line has been designed to incorporate every feature possible while maintaining a reasonable cost.

GEL SEALING BARS: These bars allow one to cast agarose gels without gaskets, tape, or casting trays. Agarose gels instantly when it contacts the cold bar and creates an instant seal. Store the bars in a bag in the freezer if you pour your gels hot. A chilled bar will allow you to pour gels of 85 degrees, however, agarose of such high temperature may warp the gel tray. Gel trays can be positioned end-to-end with a single gel sealing bar between the trays, allowing one to pour several gels simultaneously. ALWAYS SLIDE THE BAR OFF OF THE SOLIDIFIED GEL. Do not pull the bar off as it may break the gel.

LOADING SLOTS IN COVER: These slots are desuigned to stabilize the hand while loading and guide the loading pipet tip to the proper depth. The distance between the racking ridges present on most 200 ul pipet tips and the bottom of the CHAMELEON gel tray allows one to load by sliding the tip along the edge of the cover slot until the racking ridge on the pipet tip touches the cover. With most brands of pipet tips, the orifice of the tip is then 2 to 5 mm from the bottom of the tray, which is perfect for loading. The possibility of piercing the bottom of the sample well is eliminated. Furthermore, resting the pipet tip on the edge of the slot steadies the loading hand.

GEL TRAY HAS A CENTIMETER RULER: The gel tay has a ruler etched at the edge. The ruler can be seen in transilluminated photography of the gel on the UV-T gel tray.

8-PLACE PIPETTOR LOADS SOME COMBS This is really only useful if the reactions are from 96 well plates or some other format which lines up with the 8-place pipettor.

MULTIPLE COMB POSITIONS: The gel trays have wide and narrow slots in multiple positions. This allows the positioning of multiple combs on each gel, allowing one to use a resolution distance shorter then the length of the entire gel tray. Bars are provided which will slide into the wide slots. A custom comb or a comb already in the lab can be clipped to this bar.

RECIRCULATION PORT: The submarine gels usually used for the resolution of nucleic acids do not need recirculation. For these gels a size 000 rubber stopper should be used to close the port. The future is bringing high-field gels of low ionic strength which must be recirculated with a high flow of buffer to keep the pH constant. Preparative gels also require recirculation. The flow of buffer from the usual paristaltic pump is not adequate for this purpose. To use the recirculator, simply open the port and set the apparatus on a stirrer.

CASTING TRAY NOTCHES: These notches form "ears" on the gel which make it less likely the gel will slide out of the tray.

UV-T BASE: Allows one to view the gel on a UV trans illuminator as it is running.

A LABORATORY EXPERIMENT UTILIZING MANY OF THE CHAMELEON'S FEATURES: Low percentage agarose gels can be used to resolve small organelles and particles. A preparative agarose gel which has an elution well downstream from the sample well has been used to resolve coated vesicles.[1] These gels have now been used to resolve vaults[2], acidic beta-galactosidase[3], and membrane vesicles[4]. There are many other applications for this technique.

The technique incorporates a dual channel paristaltic pump which simultaneously flows equal volumes of buffer into and out of the elution well. The gel is made by casting sample and elution wells with 1.5 mm thick Teflon slabs as the well formers. The slabs of Teflon can be clipped to CHAMELEON comb-holding bars and positioned either 4 mm or 9mm apart. The usual 0.1 to 0.3% agarose gels must be cast in a cold room. Small tubing is routed through the apparaus cover to flush the elution well. The tubing can be anchored by attachment to a comb-holding bar. The buffer is recirculated during the overnight electrophoresis. For specifics of how to set up such a gel, paristaltic pump flow rates, etc., see Kedersha and Rome[1].

REFERENCES:

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4. Leidenix, M. J. et. al. (1989) J. Bact. **171**, p. 5680-5686.

COMMENTS? PHONE OR WRITE TO US.

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