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Agar Low Viscosity Resin - Premix Kits

AGR1164, AGR1165, AGR1166

AGR1164 - Agar Low Viscosity Resin - Hard
AGR1165 - Agar Low Viscosity Resin - Medium
AGR1166 - Agar Low Viscosity Resin – Soft

A low viscosity epoxy embedding medium intended as a direct replacement for Spurr's. None of the components has the known carcinogenicity of ERL 4206, the main component of Spurr

Method of use

Each kit contains 1 set of 2 components plus an ampoule of accelerator. One component is in a 100ml capacity bottle, the other in a 50ml capacity bottle. Simply add the contents of the smaller bottle to those of the larger bottle, add the contents of the accelerator ampoule, mix thoroughly and approximately 100gm of resin is ready for use. No additional containers are required and any unused resin can be stored in a refrigerator for a few days or allowed to gel in the bottle and can then be discarded.

Fixation

Any fixation method currently used with epoxy resins for TEM can be successfully continued with Agar low viscosity resin

Dehydration, Infiltration and Embedding

Schedules will depend largely on the type and size of specimen that is being processed but a typical one is as follows:

70%	Ethanol for 10 minutes
100%	Ethanol for 10 minutes
100%	Ethanol for 15 minutes
100%	Propylene Oxide (or acetone) for 15 minutes 100% Propylene Oxide (or acetone) for 15 minutes
1:1	Embedding medium/propylene oxide for 30 minutes to 2 hrs at room temp.
2:1	Embedding medium/propylene oxide 30 mins to 2 hrs at room temp.
100%	Embedding medium for 30 minutes to 2 hours at room temperature.
100%	Embedding medium overnight.

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For many specimens, the propylene oxide stage may be omitted although infiltration using ethanol/resin mixtures instead of propylene oxide/resin mixtures takes longer. Traces of propylene oxide are able to cross-link into the final resin block (at least in moderation). Traces of ethanol are more likely to remain and can more readily affect the consistency of the final block.

It is recommended that for all of the infiltration steps a specimen rotator be used. After ethanol, drain the tissue of most of the propylene oxide, leaving a little so it does not dry out. Replace the solvent with a 1:1 solution of propylene oxide/embedding medium and allow it to stand for at least 1 hour at room temperature. A second change of 2:1 embedding medium to propylene oxide at room temperature is recommended for difficult tissues. Remove the mixture, replace it with final embedding medium and leave overnight if possible. All schedules are totally specimen dependent. Dehydration and infiltration times will be very different for cell cultures compared with skin for example.

Curing

The resin blocks containing the tissue should be polymerised in an oven at 60°C for at least 16 hours or shorter times may be appropriate in some cases at 70°C. Allow blocks to cool to room temperature before sectioning.

Storage

Components may be stored at room temperature. Both resin and hardener have long shelf lives if unopened. The accelerator should be used within 12 months so it is wise to date mark this component on receipt. The complete mixture may be stored at -20°C for many months although it will thicken slowly even at this low temperature. If you choose to store the mixture at low temperature, you should warm it thoroughly before use to avoid water vapour condensing into the resin. This could affect curing and the final hardness of the block.

Hazards

Sensible precautions associated with the safe use of epoxy resins should be observed using gloves and eye protection and working in a fume hood or in a very well ventilated area. However, none of the components of Agar low viscosity resin has the known carcinogenicity of ERL4206 the main component of Spurr that is now out of production.