Histocryl Data Sheet

There are many advantages in embedding in resin rather than paraffin wax. Resin causes less shrinkage and separation of tissue layers and thinner sections can be cut.

Semi-thin sections are particularly useful in the diagnosis of renal disease. In the renal glomerulus pathological changes previously requiring electron microscopy for diagnosis can now be revealed under the light microscope. The histology of densely cellular tissues benefits considerably from thin sections and this is particularly true of lymph nodes in the diagnosis and classification of lymphomas.

Hard dense tissues such as bone and some botanical specimens are given improved support during sectioning, preserving the juxtaposition of hard soft tissues. For this reason many laboratories now embed bone marrow trephines in resin routinely.

Histocryl is a hydrophilic acrylic resin, simple to use and formulated specifically for light microscopists. For those laboratories currently using an acrylic resin such as HEMA glycol methacrylate or commercially branded methacrylates no alteration need be made to the current processing schedule, but we have laid out here a typical processing schedule.

Fixation:

Most routine fixatives can be utilised with Histocryl (neutral buffered formalin is recommended), the time being dependent on the type and size of tissue in the normal way.

Dehydration:

A graded ethanol series is the method of choice, times again being dependent on the size of the tissue. Graded acetones should not be used.

A typical dehydration schedule for a block (12 x 10 x 3mm) on a mixer would be:

1 70% alcohol - 30 minutes

2 90% alcohol - 30 minutes

Two changes abs. alcohol 30 minutes each.

Infiltration:

Infiltrating solution:

100ml Histocryl plus 1.5g benzoyl peroxide paste.
Mix thoroughly until solution becomes clear.

Infiltrate tissue in 2 -3 changes of catalyzed resin 60 minutes each or overnight, depending on tissue and size. When fully infiltrated the tissue will become translucent.

Polymerisation:

Using a cotton wool bud or swab smear accelerator onto the base of each mould, then add polymerised resin and finally the tissue, allowing it to sink to the base rather than applying pressure.

The rate of polymerisation can be adjusted by varying the ratio of resin and accelerator e.g:

one drop to 10ml freshly catalysed resin (with 1.5% benzoyl peroxide paste)

10 minutes.

one drop to 20ml freshly catalysed resin (with 1.5% benzoyl peroxide paste)

15 minutes.

one drop to 25ml freshly catalysed resin (with 1.5% benzoyl peroxide paste)

20 minutes.

Polymerisation is an exothermic reaction and it is important to cool the moulds in a bath of cold water to disperse the heat produced.

Cutting and Mounting:

Histocryl can be sectioned using a steel knife and a standard microtome, but the method of choice would be to use a motorised microtome and glass (Ralph type) knives. Sections can be obtained from 1 - 5µ, floated onto a warm water bath, picked up onto clean slides and dried on a hot plate at 60°C for at least 30 minutes.

Staining:

It is not necessary to etch or remove the resin before staining. Most routine stains give good results on tissue embedded in Histocryl using standard times and temperatures, although it may occasionally be necessary to extend some staining times.

Mounting:

For best results air-dry sections prior to mounting. DPX or Canada Balsam are recommended as mounting media.

London Resin - acrylic resins for microscopists

This product is just one of the London Resin's range of resins specifically formulated for the needs of the microscopist. All the resins are manufactured to the same rigorous standards from one of the world's largest suppliers of histological resins.

LR White

A convenient and economical premixed resin with very wide application. Being both hydrophilic and electron beam stable it is equally suitable for light and electron microscopy, and with appropriate fixation the same specimen may be used for both techniques. Published work shows that immunocytochemical methods may be used through LR White sections without etching or any pre-treatment.

Histocryl

A conventional multi-component acrylic system offering a direct alternative for other commercial HEMA systems, but at a fraction of the cost of most. Economical enough to allow the histologist who recognises the high quality resin histology can bring to his work to use resin more widely and cost effectively than ever before.

LR Gold

A special acrylic resin for very specific purposes. Its infiltration and polymerisation at low temperatures down to -20°C means that unfixed tissue may be embedded in LR Gold. This enables enzyme histochemistry and immunocytochemistry of many fixation sensitive enzymes and epitomes to be performed on 1 – 2µm resin sections. Bringing the quality of resin histology to an area where only cryostat sections were previously available. LR Gold is a real step forward in histochemical technique. This resin has the ability to be cured by blue light thus making expensive ultra-violet sources unnecessary.

All these acrylic resins combine low viscosity, low toxicity and case of use, reflecting the safety-conscious standards of London Resin products.

London Resin - manufactured and supplied by:
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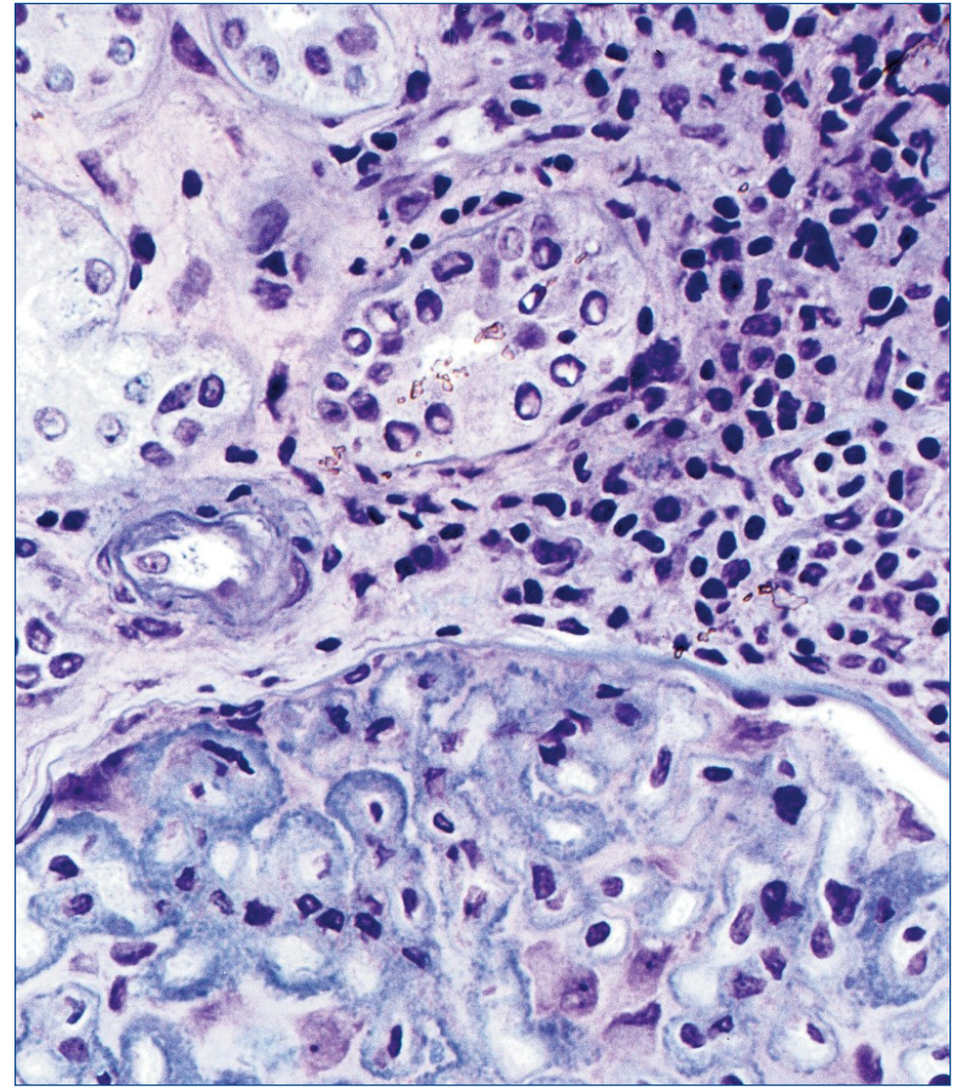

Human kidney from a renal biopsy of a patient with systemic lupus erythematous. Toluidine blue stained. 3µm section