

GLYCOL METHALACRYLATE ACRYLIC RESIN (GMA) EMBEDDING FOR IMMUNOHISTOCHEMISTRY

ADVANTAGES OF USING GMA

- Water miscible, doesn't require dehydration and rehydration steps
- No need to eliminate resin before staining
- Low viscosity, penetrates tissue easily
- No crosslinking, no antigen retrieval
- Good antigen presentation
- Good morphology preservation (cellular localisation)
- Low temperature processing
- Can cut very thin sections (1-2 μm) making the most of very small biopsies – very good resolution

PROCEDURE:

Fixation:

Several methods of tissue fixation can be used for GMA. Fixing in acetone usually gives good results

For example:

1. Place biopsy immediately in ice cold acetone containing protease inhibitors
2. Fix overnight -20°C
3. Replace fixative with acetone (room temperature) 15 minutes

Processing:

1. Place biopsy in Methyl benzoate for 15 minutes (This helps infiltration of GMA into the tissue)
2. Place biopsy in 5% methyl benzoate in GMA 4°C . Three times for 2 hours

Embedding:

Follow the kit manufacturer's instructions for embedding into GMA itself.

The GMA will need to be polymerised using a catalyst (provided in commercially available kits) and left to set for 48 hours at 4°C

Section preparation:

Sections can be cut at 1-2 μm .

Lay sections out on a water bath containing ammonia (2ml ammonia in 1L distilled water). No need to heat (as with paraffin sections). The ammonia helps antigenicity and provides better antibody staining (although the mechanisms for this are not clear).

Sections can be picked up on 10% poly-L-lysine coated slides and dried ready for staining. (wrap in foil and store at -20°C for no longer than 2 weeks)