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1. Write on the purpose of fixation and give 5 compound fixatives and composition

Answer::

The purpose of fixation is to preserve tissues permanently in a life like condition as possible. Fixatives have different penetration rates usually measured in depth penetrated per mm per hour. It should be carried out immediately after removal of the tissues (in the surgical pathology) or soon after death (with autopsy) to prevent autolysis. There is no perfect fixative though formaldehyde comes the closest. Therefore a variety of fixatives are available for use depending on the type of tissues present and features to be demonstrated.

Compound fixatives:

B5-Ingredients: mercuric chloride, sodium acetate, DI, formaldehyde.

Uses: Good nuclear detail in the haematopoietic and lymphoreticular tissue.

Limitations: cannot store tissues indefinitely, bad for silver stains

PAF- Ingredients: paraformaldehyde, picric acid, NaOH, NaH₂PO₄

Uses: EM fixatives

Limitations: pH 7.3 important stable at temperature

Orth- Ingredients: potassium dichromate, sodium sulfate, DI, formaldehyde

Uses: demonstrate of chromaffin granule (in pheochromocytoma for example) good for glycogen, also rickettsia and bacteria

Limitations: wash after fixation, store in permanently 70% alcohol

Gendre solution- Ingredients: 95% alcohol saturate with picric acid, formaldehyde, acetic acid

Uses: Carbohydrates preservation, especially glycogen.

Limitations: wash with 80% alcohol to remove picric acid

Hollande solution- Ingredients: copper acetate, picric acid, formaldehyde, acetic, DI

Uses: same as pro as bouins, plus cupric acetate stabilizes RBC. Membranes and granules of eosinophils and endocrine cells

Limitations: tissues must be washed with water prior to processing