Staining mordant

The mordant is a metalic salt (such as: k,Cr,Fe,Al..) wich combined with the nuclear stain and has an affinity for both the chromatin and the dye and serves to bind the latter to the chromatin while permitting its removal from cytoplasm. It may be used before the dyes is applied to the tissue, or may be combined with dye in the staining solution.

Staining

It is process of stain the sections with known stains to differentiated and the study the structures of the tissue according its reaction with the used stain.

Staining purpose

Several different types of staining process are used to colour tissues for microscopical examination.

Classification of dyes depending on its chemical reactions:

1) **Basic dyes:**
- It is the basic dyes or its salt
- It is stained the cells and tissue structures which have acidic nature like nuclear chromatin DNA &RNA.

E.g : haematoxylin, methylene green.

2) **Acidic dyes:**
- It is acidic dyes or its salt.
- It is stained the basic tissue structure like the granules in white blood cell, cytoplasm and the front part of thymus gland.

E. g: eosin, fuschin acid and congo-red.....ect.

3) **Neutral dyes**:

Which produce from mixed watery solution with acidic or basic dyes.

E.g: sudan III and methylene – blue.

♥**Staining methods:**

1. **Progressive staining**: by which the material to be stained is exposed to the stain gradually until the desired degree of coloring is obtained. It is usually used with dyes that stains the nucleus first then the cytoplasm like carmine and haematoxylin.
2. **Regressive staining:** by this method, an excess of dye is allowed to accumulate in the tissue and the material is then destained until the proper degree of differentiation is produced.

the latter method generally produces a much better nuclear differentiation than do progressive methods.

3.Vital staining: used by injection the tissue with the dyes solution through intravenous or subcutaneous, this method used with animal laboratory.

4. **Routine staining:** by this method can be stained all tissue structure with different between the nucleus and the cytoplasm.
5. **Special staining:** this method less used because it is identified the special structures in the tissue like glycogen, fat, DNA, RNA, enzyme and bacteria.
6. **Counterstaining**: this method mostly used when a part of tissue or cell stained with suitable stain then the other parts are stained with counter Most of the counter staining processes include replacement of the one stain with other one in a place more suitable for it.
   colour stains.

They should be chosen, like

1) They must be of a different colour.
2) They should be pale to avoid masking the specific stain.
3) Commonly it is chosen that stains directly without a mordant.

Preparation of Myer s egg albumin

1.take egg albumin, discarding the yolk.

2. filter the egg albumin through the several layer of clean gauze.

3. add equal amount of glycerine to albumin which filtrated.

4. add crystal of thymol to preserve the albumin to prevent growth moulds.