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MATRIC NO: 19/MHS06/034

DEPT: MEDICAL LABORATORY SCIENCE

LEVEL: 200L

COURSE: MLS 202

1.The purpose of fixation

The purpose of fixation is to preserve cells or tissues in as near a life like condition as possible, prevent autolysis and putrefaction, and protect the tissue from subsequent processing. A fixative usually acts to disable intrinsic biomolecules which otherwise digest or damage the sample,thus preventing autolysis.Fixation typically protects a sample from extrinsic damage. Fixatives are toxic to most common microorganisms (bacteria  in particular) that might exist in a tissue sample or which might otherwise colonize the fixed tissue. In addition, many fixatives chemically alter the fixed material to make it less palatable (either indigestible or toxic) to opportunistic microorganisms and protecting it from putrefaction.

Finally, fixatives often alter the cells or tissues on a molecular level to increase their mechanical strength or stability. This increased strength and rigidity can help preserve the  morphology  (shape and structure) of the sample as it is processed for further analysis.

2.Compound Fixatives – These are fixatives in which more than one chemical  is used in their preparation. Some examples of compound fixatives and their components are listed below.

1. Zenker’s Fluid

a) Mercuric chloride -   5 gm

b) Pot. Dichromate   -   2.5 gm

c) Sodium sulfate     -   1.0 gm

d) Distilled water    -    100 ml

e) Glecial acetic acid -  5ml

2. Neutral Buffer

a) Sodium di-hydrozen phosphate  -  3.5 gm

b)  Di sodium hydrozen phosphate  -   6.5 gm

c) Formalin  -    100 ml

d) Distilled water  -    900 ml

3.Heidenhein’s susa
a)  Mercuric chloride - 4.5  gm

b) Sodium chloride  -  0.5  gm

c) Trichloro acetic acid - 2.0 gm

d) Glecial acetic acid  - 4 ml

e) Formalin  - 20 ml

f) Distilled water(Up-To) -  100ml

4. Bouin’s Fluid

a) Saturated (Aquas) picric acid - 75 ml

b) Formalin - 25 ml

c) Glecial acetic acid  - 5   ml

5. Gender’s Fluid

a) Saturated( Alcohol) picric acid  -  80 ml

b) Formalin   -   15 ml

c) Glacial acetic acid  -   5   ml