ONWUMA CHIBUOGWU OBI

18/MHS06/042

1)Purpose of fixation:

Fixation of tissue is done for several reasons. One reason is to kill the tissue so that postmortem decay (autolysis and putrefaction) is prevented. Fixation preserves biological material tissue or cells ) as close to its natural state as possible in the process of preparing tissue for examination. To achieve this, several conditions usually must be met.

First, a fixative usually acts to disable intrinsic biomolecules particularly proteolytic enzymes—which otherwise digest or damage the sample.

Second, a fixative 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.

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 and their composition

a)BOUIN-picric acid

saturated aqueous solution – 75 ml; formalin,

40% aqueous solution – 25 ml; acetic acid, glacial – 5 ml.

b)CARNOY

composed of 60% ethanol,

30% chloroform and 10% glacial acetic acid,

1 gram of ferric chloride

c)GENDRE SOLUTION:

95% ethanol (80ml) with formalin (37-40% formaldehyde) (15 ml) and glacial acetic acid (5ml).

d)ZENKER SOLUTION:

50g of mercuric chloride,

25g of potassium dichromate,

10g of sodium sulfate (decahydrate) and distilled water to complete 1000 ml

e)HOLLANDE SOLUTION:

 6.25g cupric acetate, 10g picric acid (wet powder), 25ml formalin (37-40% formaldehyde) and 2.5 ml glacial (100%) acetic acid and 250ml water.