

### INTENDED USE

After proper dilution, Prefer Concentrate may be used as a histological fixative.

### PRODUCT SUMMARY

Glyoxal is a two-carbon di-aldehyde and is the active ingredient in diluted Prefer Concentrate. Being an aldehyde, glyoxal provides morphology equivalent to formaldehyde fixation. Glyoxal fixes tissues by combining with macromolecules containing methyl, amide, amine, and hydroxyl groups. Glyoxal is able to form crosslinkages, but does not crosslink significantly in the time frame normally encountered in surgical pathology. If crosslinking does occur, it does not impair immunoreactivity, because the crosslink is longer with glyoxal than with formaldehyde.

Glyoxal reacts with the amino acid arginine to form various cyclic imidazole derivatives. In this reaction arginine's positive charge is lost. This results in the reduction of staining of Paneth cells, pancreatic acinar granules and eosinophils.

The alcohol content of the standard diluted Prefer Concentrate is too low to create alcohol-type patterns of fixation. Its role, along with the buffer, is to promote the activity of glyoxal. Prefer Concentrate can be prepared as an alcoholic fixative following the dilution instructions below. The higher alcohol content will increase the penetration rate.

### INGREDIENTS

Glyoxal, ethanol, buffer

### WARNING

Irritant. Avoid prolonged, repeated contact with skin. Avoid all contact with eyes.

For In Vitro Diagnostic Use.

### STORAGE

Store at room temperature. Avoid freezing; product is not harmed but container may break. Keep containers tightly closed when not in use.

The alcoholic dilution is flammable; store at room temperature in a flammable cabinet.

### DIRECTIONS FOR USE

1. Prefer Concentrate must be diluted before use.
  - a. Standard dilution: To make 5 gallons, mix well:
    - i. Prefer Concentrate.....1 gallon
    - ii. Ethanol or reagent alcohol ....3.5 L (0.92 gallon)
    - iii. Deionized/distilled water .....11.6 L (3.07 gallon)
  - b. Alcoholic dilution: To make 5 gallons, mix well:
    - i. Prefer Concentrate.....1 gallon
    - ii. Ethanol or reagent alcohol ....7.4 L (1.95 gallon)
    - iii. Deionized/distilled water .....7.7 L (2.03 gallon)
2. Best results are obtained when diluted Prefer Concentrate is used for collection and processing.

3. Diluted Prefer Concentrate may be used as the primary or secondary fixative in conjunction with NBF or zinc formalin.
  - a. No rinsing is required.
  - b. Phosphate and zinc salts are stable in Prefer and will not precipitate.
4. Depending on exposure time, optimal morphology that is normally observed with Prefer may not be achieved if formalin is used as the primary fixative.
5. Specimens may be stored in diluted Prefer Concentrate. Extensive storage (months) may reduce eosinophilia in an H&E.

### Processing

1. Place diluted Prefer Concentrate in the first two stations on the tissue processor.
2. Fix tissues for a total of 4-6 hours in standard diluted Prefer for highest quality nuclear detail. Prepare alcoholic Prefer and place in station 2 when fixation time is minimal or to assist in the processing of fatty specimens.

### Staining

1. Diluted Prefer Concentrate does not preserve red blood cells. Blood pigment (hematin) is sometimes observed in the tissue. To remove hematin:
  - a. Treat the sections with 0.5% sodium hydroxide (NaOH) in 100% alcohol.
  - b. Place the alcoholic NaOH solution after the deparaffinization steps.
2. Color intensity of H&E staining may increase with Prefer fixation. Reduction of staining times may be necessary.
3. Special stains work well with diluted Prefer Concentrate. Diluted Prefer Concentrate does not allow the demonstration of *Helicobacter pylori* with silver methods. Other silver procedures (e.g., reticulin, fungus) are not affected with Prefer fixation.
4. The lack of crosslinking with diluted Prefer Concentrate eliminates or reduces the need for antigen recovery in immunohistochemistry. However, nuclear antigens (histones) rich in arginine may require antigen recovery procedures. Retrieval with a tris-based pH 8.6 buffer at 120-125°C can provide optimal results.

### DISPOSAL

Discard into the sanitary sewer system with approval of local wastewater officials. Alternately, use a licensed waste hauler.

### MSDS

MSDS are available online at [www.anatechltdusa.com](http://www.anatechltdusa.com).

### ORDERING INFORMATION

<u>Cat#</u>	<u>Packaging</u>
411	1 gallon