

## Nuclear Fast Red Stain, Kernechtrot - Technical Memo

<b>SOLUTION:</b>	<b>250 ml</b>	<b>500 ml</b>	<b>1 Liter</b>
Nuclear Fast Red Stain, Kernechtrot	Part 1255A	Part 1255C	Part 1255B

**Additionally Needed:**

Xylene, ACS	Part 1445
Alcohol, Ethyl Denatured, 100%	Part 10841
Alcohol, Ethyl Denatured, 95%	Part 10842

**For storage requirements and expiration date refer to individual bottle labels.**

**APPLICATION:**

Newcomer Supply Nuclear Fast Red Stain, Kernechtrot is a versatile stain and/or counterstain that combines nuclear fast red dye with an aluminum sulfate mordant to selectively stain nuclear chromatin red and provide nonspecific background tissue staining in shades of pink.

Nuclear Fast Red (NFR) is also commonly known by its Germanic origin name of Kernechtrot. Kernechtrot and Nuclear Fast Red are interchangeable terms for the dye and solution. It is normal for precipitate to settle out of the Nuclear Fast Red Stain, Kernechtrot, which can be redistributed by shaking the solution well before each use. Do not filter the precipitate out.

This stain solution is used in a wide variety of staining procedures that include: Alcian Blue 1%, pH 2.5 Stain, Alcian Blue 1%, pH 1.0 Stain, Fontana Masson Stain, Colloidal Iron Stain Müller-Mowry, Iron Stain Gomori Prussian Blue, Reticulum Stain Gordon & Sweets, and Von Kossa Calcium Stain.

**METHOD:**

**Fixation:** Formalin 10%, Phosphate Buffered (Part 1090)

**Technique:** Paraffin sections cut at 5 microns

**Solutions:** All solutions are manufactured by Newcomer Supply, Inc.

All Newcomer Supply stain procedures are designed to be used with Coplin jars filled to 40 ml following the staining procedure provided below.

**STAINING PROCEDURE:**

1. Deparaffinize sections thoroughly in three changes of xylene, 3 minutes each. Hydrate through two changes each of 100% and 95% ethyl alcohols, 10 dips each. Wash well with distilled water.
  - a. See Procedure Notes #1 and #2.
2. Proceed with selected stain procedure:
  - a. Alcian Blue 1%, pH 2.5 Stain
  - b. Alcian Blue 1%, pH 1.0 Stain
  - c. Fontana Masson Stain
  - d. Colloidal Iron, Müller-Mowry Stain
  - e. Iron, Gomori Prussian Blue Stain
  - f. Reticulum, Gordon & Sweets Stain
  - g. Von Kossa Calcium Stain
  - h. Or other appropriate stain procedure
3. Counterstain in Nuclear Fast Red Stain, Kernechtrot for 5 minutes.
  - a. Shake solution well before use; do not filter.
4. Rinse well in distilled water.
  - a. See Procedure Note #3.
5. Dehydrate in two changes each of 95% and 100% ethyl alcohol. Clear in three changes of xylene, 10 dips each; coverslip with compatible mounting medium.

**RESULTS:**

Nuclei	Pink-red
Cytoplasm	Pale pink
Other tissue components	Dependent on stain procedure used

**PROCEDURE NOTES:**

1. Drain staining rack/slides after each step to prevent solution carry over.
2. Do not allow sections to dry out at any point during staining procedure.
3. Wash well after Nuclear Fast Red Stain, Kernechtrot to avoid cloudiness in dehydration steps.
4. If using a xylene substitute, closely follow the manufacturer's recommendations for deparaffinization and clearing steps.

**REFERENCES:**

1. Carson, Freida L., and Christa Hladik. *Histotechnology: A Self-Instructional Text*. 3rd ed. Chicago, Ill.: American Society of Clinical Pathologists, 2009. 145-146.
2. Kiernan, John. *Histological & Histochemical Methods*. 3rd ed. New York: Oxford University Press, 2003.96,114.
3. Sheehan, Dezna C., and Barbara B. Hrapchak. *Theory and Practice of Histotechnology*. 2nd ed. St. Louis: Mosby, 1980.183.
4. Modifications developed by Newcomer Supply Laboratory.