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ProductInformation

Nuclear Fast Red

Product Number **N 8002**
Store at Room Temperature

Product Description
Molecular Formula: $C_{14}H_8NNaO_7S$
Molecular Weight: 357.3
CAS Number: 6409-77-4
CI: 60760
Synonyms: Kernechtrot, Calcium Red[1]

This dye has been used as a counterstain in saturated aqueous potassium alum[2] and in a counterstain solution of 0.1% (w/v) with 5% aluminum sulfate for a Prussian Blue Stain for ferric iron.[3] It has been used as a reagent for calcium in tissue where it forms a scarlet lake. Lakes are also formed with lead, ferric ion, copper, tin, and strontium, but not barium.[1,2] The suitability of nuclear fast red as a nuclear stain in autoradiographs of knee joints of mice and rats has been reported.[4]

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This dye is reported to be soluble in water (6 mg/ml) and in ethanol (0.4 mg/ml),[4] but it is likely that heat will be required for the aqueous solution.

Procedure
Preparation of a nuclear fast red (Kernechrot) solution for use as a counterstain:

1. Dissolve 25 g of aluminum sulfate in 500 ml of distilled water.
2. Add 0.5 g of nuclear fast red. Use heat to dissolve.
3. Cool, filter, and add a few grains of thymol as a preservative.

Note: A comparable solution is prepared and offered by Sigma (Product No. N 3020).

For use as a counterstain:

1. Rinse sections in distilled water.
2. Counterstain sections in nuclear-fast red solution for 5 minutes.
3. Wash in running tap water for 1 minute or more.
4. If using an aqueous mounting medium, the slides are ready to coverslip. If using a permanent mounting medium, dehydrate in 2 changes of 95% alcohol, 2 changes of absolute ethanol, and 2 changes of xylene. Slides can now be mounted using a synthetic, permanent mounting medium.

Note: Inadequate washing of the slides after nuclear fast red staining will result in cloudy slides. If the slides have not been coverslipped in a permanent mounting medium, return to running water and wash well. If slides have been coverslipped in a permanent mounting medium, soak in xylene to remove the coverslip, soak in 3 changes of xylene to remove the mounting medium, in 3 changes of absolute alcohol to remove the xylene, and then in 3 changes of 95% alcohol. Wash slides for 5 minutes in running tap water and repeat step 4 above. If the chromagen in immunochemistry is water soluble, skip the dehydration steps and mount in an aqueous mounting medium.

References

1. Conn's Biological Stains, 9th ed., Lillie, R. D., Williams and Wilkins (Baltimore, MD: 1977), p. 439.
2. J. Histochem. Cytochem., **6**, 22 (1958).
3. Histotechnology: A Self-Instruction Text, Carson, F. L., American Society of Clinical Pathology (1990), pp. 214-215.
4. Sams, A., and Davies, F. M., Commercial varieties of nuclear fast red; their behaviour in staining after autoradiography. Stain Technol. **42(6)**, 269-276 (1967).
5. The Sigma-Aldrich Handbook of Stains, Dyes and Indicators, Green, F.J., Ed., Aldrich Chemical Co. (Milwaukee, WI: 1990), p. 532.

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