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ProductInformation

Pyronin Y

Product Number **P 9172**
Store at Room Temperature

Product Description

Molecular Formula:
$C_{17}H_{19}ClN_2O$
Molecular Weight: 302.8
CAS Number: 92-32-0
Melting Point: 250-260 °C
λ_{max}: 548 nm (50% ETOH)
Synonyms: Pyronine Y, Pyronin J, and Pyronin G, and cationic xanthene dye

Pyronin Y solutions are red in transmitted light, displaying a yellow flouresence in reflected light. Pyronin Y is used widely in combination with methyl green to selectively and differentially stain nucleic acids. In the dichromatic dye solution, Pyronin Y stains RNA red, while methyl green stains the DNA green. [1] Transfer RNA (tRNA) will complex with Pyronin Y at a 1:10 molar ratio when analyzed by polyacrylamide gel electrophoresis.[2] tRNA (4 to 8 µg) complexed with Pyronin Y is visible as a red band during electrophoresis. The stained tRNA is also detectable by UV fluoresence at 302 nm. Pyronin Y can also be used in correlating RNA content by flow cytometry.[3,4] In addition, Pyronin Y solutions may be utilized in staining liver cells that have been fixed in Carnoy's fluid.[5]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water 1 mg/ml), yielding a clear dark red solution.

Procedure

Suitability Test for RNA Staining:

1. Prepare a tRNA (Product No. R 4251) solution at 1 µg/µl.
2. Prepare Pyronin Y solution: Dissolve 25 mg in 2.5 ml of 15% acetic acid in water. Once fully dissolved dilute the solution 5-fold with water.
3. Mix 220 µl of tRNA solution (step 1) with 2.5 µl of Pyronin Y solution (step 2). Equilibrate at 22 °C for 1.5 hours. To a 50 µl aliquot, add 12.5 µl of gel loading solution (G 2526). Load 10 µl of the tRNA/gel loading solution into the wells of a 20% TBE polyacrylaminde gel. Run until the blue dye front is about 1 cm from the bottom of the gel. Carefully remove the gel from the gel holder and photograph.

References

1. The Sigma-Aldrich Handbook of Stains, Dyes & Indicators, Green, F. J., ed., Aldrich Chemical Co. (Milwaukee, WI: 1990), pp. 601-602.
2. Hassur, S. M., and Whitlock, H. W. Jr., A gel electrophoresis method for determining the relative binding constants of biologically active, intercalating fluorescent stains. Anal. Biochem., **95(2)**, 329-339 (1979).
3. Crissman, H. A., et al., Normal and perturbed Chinese hamster ovary cells: correlation of DNA, RNA, and protein content by flow cytometry. J. Cell. Biol., **101(1)**, 141-147 (1985).
4. Clinical Flow Cytometry: Principles and Applications, Bauer, K. D., et al., Williams and Wilkins, (Philadelphia, PA: 1993), p. 377.
5. Conn's Biological Stains, 9th ed., Lillie, R. D., Williams and Wilkins (Baltimore, MD: 1977), p. 590.

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