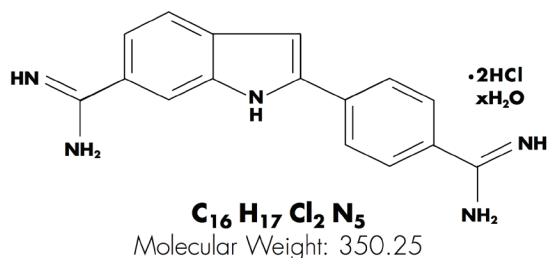


TECHNICAL DATA SHEET 315

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4¹,6-Diamidino-2-Phenylindole Dihydrochloride (DAPI)

DAPI is a highly fluorescent cationic dye which specifically binds to adenine-thymine-rich deoxyribonucleic acids (A-T-rich DNA). This fluorescent character permits the use of DAPI for fluorescent microscopy and analytical biochemistry.



Examples of the preparative use of DAPI are a simple separation of mitochondrial DNA from yeast using cesium chloride gradients,¹ and the separation of different cell structures in bacteria, leucocytes, spermatozoa, etc. in urine, sputum, cerebrospinal fluid samples and ejaculates.²

In diagnostics, DAPI has been used in a simple cytochemical technique for demonstration of DNA in cells infected with mycoplasmas and viruses.³ DAPI shows a very high stability in UV light. For staining on a slide, a 15-20 minute exposure to a solution of 0.1 µg DAPI per ml at 37°C is sufficient. Large DNA viruses, phages, bacteria, and yeasts may be stained. Other samples are trypanosomes and mammalian mesenchymal tissues. If bromodeoxyuridine is incorporated in DNA instead of thymidine, the fluorescence is reduced after staining with DAPI.⁴

DAPI can also be used for the detection of nanogram quantities of DNA in cell homogenates⁵ and the detection of DNA cleavage sites after treatment with Eco R I restriction endonuclease.⁶ It has also been used for fluorescent staining of R bands and specific heterochromatic regions in human chromosomes,⁷ and for cytofluorometric determination of DNA base content in human chromosomes.⁸

DAPI is water soluble (2.5%) and solutions are stable for weeks if kept cold. The onset of hydrolysis can be monitored by the occurrence of turbidity. Polyvalent anions in concentrated DAPI solutions cause insoluble amidinium salts to precipitate. The dye has an absorbance maximum at 340 nm and a fluorescence maximum at 488 nm.

HANDLING AND STORAGE:

The full chemical, physical, and toxicological properties of the chemical mentioned herein are not known. Avoid contact with skin, eyes, or respiratory system. Keep in a tightly closed container. Store refrigerated.

ORDERING INFORMATION

Cat. #	Description	Size
09224	DAPI	10mg 50mg

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