



Product Information

Bisbenzimidazole H 33342

Product Number **B 2261**

Storage Temperature -0 °C

Product Description

Molecular Formula: $C_{27}H_{28}N_6O \cdot 3HCl \cdot 3H_2O$

Molecular Weight: 616.0

CAS Number: 23491-52-3

Fluorescent properties:

Free dye: Excitation maximum = 340 nm, Emission maximum = 510 nm (5 mM HEPES, 10 mM NaCl, pH 7.0)^{8,9}

DNA complex: Excitation maximum = 355 nm, Emission maximum = 465 nm (5 mM HEPES, 10 mM NaCl, pH 7.0)^{8,9}

Synonym: Hoechst 33342

Bisbenzimidazole Hoechst 33342 is a specific stain for AT-rich regions of double-stranded DNA and has been shown to displace several known DNA intercalators.¹ This fluorescent dye has been used in sorting living cells based on DNA content,² used in flow cytometry for the determination of DNA content,³ and for the visualization of chromatin distribution in living cells.⁴ It has been used to detect BrdU incorporation into cells⁵ and in studying the initial stages apoptosis and cell-cycle distribution.^{6,7} Chromosomes that are dividing or replicating will not stain with this dye.

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (50 mg/ml), yielding a clear solution. The pH of a 2% solution is 1.9. It has been observed that this material will precipitate from phosphate buffer solutions.

Storage/Stability

Aqueous solutions are stable for 1 month if kept in the dark at 2-8 °C.⁴

References

1. Biochemistry, **29**, 9029 (1990).
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3. Shapiro, H. M., Ed., Practical Flow Cytometry, 2nd ed., A. R. Liss, (New York: 1988) p. 135.
4. Gregoire, M. et al., Visualization of chromatin distribution in living PTO cells by Hoechst 33342 fluorescent staining. Exp. Cell Res., **152(1)**, 38-46 (1984).
5. Mozdziak, P. E., et al., Hoechst fluorescence intensity can be used to separate viable bromodeoxyuridine-labeled cells from viable non-bromodeoxyuridine-labeled cells, Cytometry, **41**, 89 (2000).
6. Ormerod, M. G., et al., Increased membrane permeability of apoptotic thymocytes: a flow cytometric study, Cytometry, **14**, 595 (1993).
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8. Latt, S.A., and Stetten, G., Spectral studies on 33258 Hoechst and related bisbenzimidazole dyes useful for fluorescent detection of deoxyribonucleic acid synthesis. J. Histochem. and Cytochem., **24(1)**, 31-33 (1976).
9. Latt, S.A., and Stetten, G., Spectral studies on 33258 Hoechst and related bisbenzimidazole dyes useful for fluorescent detection of deoxyribonucleic acid synthesis. J. Histochem. and Cytochem., **24(1)**, 24-33 (1976).

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