

# PRODUCT INFORMATION



## Hoechst 33342 (hydrochloride)

Item No. 15547

CAS Registry No.: 875756-97-1

Formal Name: 2'-(4-ethoxyphenyl)-5-(4-methyl-1-piperazinyl)-2,5'-bi-1H-benzimidazole, trihydrochloride

Synonyms: Bisbenzimidazole, HOE 33342, NSC 334072

MF:  $C_{27}H_{28}N_6O \cdot 3HCl$

FW: 561.9

Purity:  $\geq 98\%$

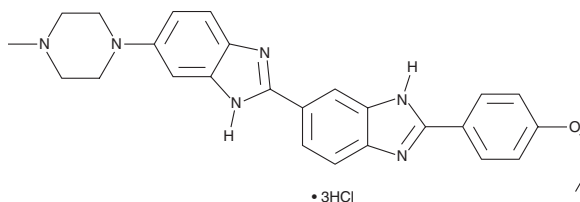
UV/Vis.:  $\lambda_{max}$ : 239, 272, 355 nm

Ex./Em. Max: 350/461 nm

Supplied as: A crystalline solid

Storage:  $-20^{\circ}C$

Stability:  $\geq 2$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Hoechst 33342 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the Hoechst 33342 (hydrochloride) in the solvent of choice. Hoechst 33342 (hydrochloride) is soluble in the organic solvent DMSO, which should be purged with an inert gas. The solubility of Hoechst 33342 (hydrochloride) in DMSO is approximately 20 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of Hoechst 33342 (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of hoechst 33342 (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Hoechst 33342 is a cell-permeable, benzimidazole dye that stains DNA by binding to the minor groove of adenine and thymine-rich sequences.<sup>1</sup> It emits blue fluorescence (excitation 350 nm/emission maximum 461 nm) when bound to double stranded DNA and is useful as a marker of nuclei for cell cycle studies and to distinguish nuclear morphology in apoptotic cells.<sup>2-4</sup>

### References

1. Sabnis, R.W. Handbook of biological dyes and stains: Synthesis and industrial applications. John Wiley & Sons, Inc., Hoboken, NJ, USA (2010).
2. Burren, N.S., Frigo, A., Rasmussen, R.R., *et al.* A colorimetric microassay for the detection of agents that interact with DNA. *J. Nat. Prod.* **55**(11), 1582-1587 (1992).
3. Lakowicz, J.R., Gryczynski, I., Malak, H., *et al.* Time-resolved fluorescence spectroscopy and imaging of DNA labeled with DAPI and Hoechst 33342 using three-photon excitation. *Biophys. J.* **72**(Pt 2), 567-578 (1997).
4. Lalande, M.E., Ling, V., and Miller, R.G. Hoechst 33342 dye uptake as a probe of membrane permeability changes in mammalian cells. *Proc. Natl. Acad. Sci. USA* **78**(1), 363-367 (1981).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/13/2017

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM