

DATASHEET

Hoechst 33258

Product overview

Name	Hoechst 33258
Cat No	HB0786
Description	Blue fluorescent nuclear DNA stain. Cell permeable.
Alternative names	bisBenzimide; HO 33258; Hoechst-33258
Biological description	<u>Overview</u>

Blue fluorescent DNA stain that is commonly used in immunofluorescent work. It is frequently used as a nuclear stain to stain nuclei. Excited by UV light.

It is less cell permeable but slightly more water soluble than the similar DNA stain [Hoechst 33342](#). Unlike Hoechst 33342, Hoechst 33258 is not an apoptotic inducer.

The stain is used as a substitute to [DAPI](#) and can be used on both live and fixed cells.

As with other Hoechst stains, Hoechst 33258 binds to the AT-rich regions of the minor groove in DNA.

Uses and applications

Hoechst 33258 has similar applications of use to Hoechst 33342 and is suitable for a variety of applications as there is little fluorescent overlap with other used fluorophores/fluorescent proteins that emit in the green/red range.

The stain is frequently used as a nuclear counterstain, for cell cycle analysis and to distinguish apoptotic cells.

As this stain does not induce apoptosis, it may be preferential to Hoechst 33342 for identification and isolation of the stem cell side population.

Biological action Dyes & stains

Images

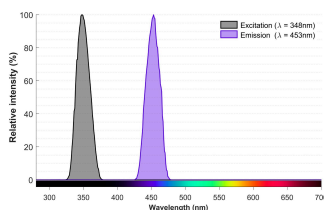


Fig. 1. Peak emission spectrum of Hoechst 33258 when excited at 345nm and excitation spectrum when recording at 453nm. Hoechst 33258 is a DNA binding dye with strong affinity for nucleic acids used to label cell nuclei in immunofluorescence experiments. Hoechst 33342 from Hello Bio has an excitation peak at 345nm and an emission peak at 453nm. For protocol see #Hoechst 3 in application notes below.

Biological Data

Application notes

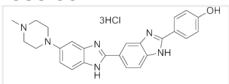
#Protocol 1: Measurement of excitation and emission spectra of Hoechst 33258

- Hoechst 33258 was prepared at 100pg/ml in PBS.
- Excitation and emission spectra were measured between 280nm and 850nm using a Tecan Infinite M200 PRO ELISA plate reader.

Solubility & Handling

Storage instructions	+4 °C (desiccate)
Solubility overview	Soluble in water (100 mM), and in DMSO (20 mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	Bisbenzimidazole trihydrochloride
Molecular Weight	533.88
Chemical structure	
Molecular Formula	C ₂₅ H ₂₄ N ₆ O 3HCl
CAS Number	23491-45-4
PubChem identifier	31953
SMILES	CN1CCN(CC1)C2=CC3=C(C=C2)N=C(N3)C4=CC5=C(C=C4)NC(=C6C=CC(=O)C=C6)N5.Cl.Cl.Cl
InChiKey	SMNPLAKEGAEPJD-UHFFFAOYSA-N
MDL number	MFCD00012679

References

Recognition of RNA duplex by a neomycin-Hoechst 33258 conjugate.

Willis B *et al* (2014) Bioorg Med Chem 22(7)

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Minor-groove binding drugs: where is the second Hoechst 33258 molecule?

Fornander LH *et al* (2013) J Phys Chem B 117(19)

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Interaction of DNA minor groove binder Hoechst 33258 with bovine serum albumin.

Ojha H *et al* (2009) Chem Pharm Bull (Tokyo) 57(5)

PubMedID [19420779](#)
