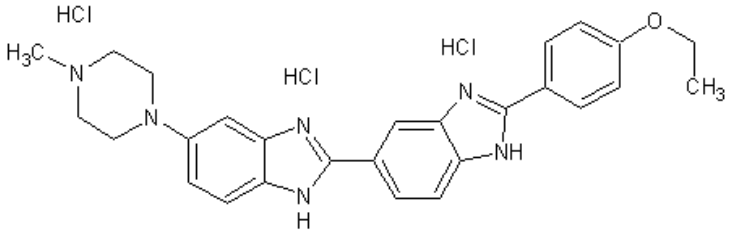
Hoechst 33342 *20 mM Solution in Water*

Ordering Information	*Storage Conditions*
Product Number: 17535 (20 mM, 5 mL)	Avoid exposure to light Keep at -20 °C and desiccated Expiration date is 6 months from the date of receipt

Chemical and Physical Properties



Molecular Weight: 561.93
Spectral Properties: Excitation = 350 nm; Fluorescence = 461 nm.

Biological Applications

The Hoechst stains are a family of fluorescent stains for labeling DNA in fluorescence microscopy. Because these fluorescent stains label DNA, they are also commonly used to visualize nuclei and mitochondria. Two of these closely related bis-benzimides are commonly used: Hoechst 33258 and Hoechst 33342. Both dyes are excited by ultraviolet light at around 350 nm, and both emit blue/cyan fluorescence light with an emission maximum at 461 nm. The Hoechst stains may be used on live or fixed cells, and are often used as a substitute for another nucleic acid stain, DAPI. The key difference between them is that the additional ethyl group of Hoechst 33342 makes it more lipophilic, and thus more readily to cross intact cell membranes. In some applications, Hoechst 33258 is significantly less permeant than Hoechst 33342. The products may be used in fluorescence microscopy, microplate, cuvette, and flow cytometry applications.

These dyes can also be used to detect the contents of a sample DNA by plotting a standard emission-to-content curve.

Sample Protocol for Staining Cells

The following procedure can be adapted for most cell types. Growth medium, cell density, the presence of other cell types and other factors may influence staining. Residual detergent on glassware may also affect real or apparent staining of many organisms, causing brightly stained material to appear in solutions with or without cells present.

Pellet cells by centrifugation and resuspend the cells in buffered salt solutions or media, with optimal dye binding at pH 7.4. Adherent cells in culture may be stained *in situ* on cover slips or in the cell culture wells. Add Hoechst stain using the concentrations between 0.5 and 5 µM and incubate it for 15 to 60 minutes as a guide. In initial experiments, it may be best to try several dye concentrations over the entire suggested range to determine the concentration that yields optimal staining.

References

1. Zhang X, Kiechle FL. (2006) Fatty acid synthase and its mRNA concentrations are decreased at different times following Hoechst 33342-induced apoptosis in BC3H-1 myocytes. Ann Clin Lab Sci, 36, 185.
2. van den Berg van Saparoea HB, Lubelski J, van Merkerk R, Mazurkiewicz PS, Driessen AJ. (2005) Proton motive force-dependent Hoechst 33342 transport by the ABC transporter LmrA of Lactococcus lactis. Biochemistry, 44, 16931