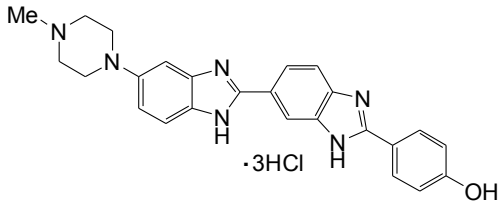
Hoechst 33258

中文名：二苯甲亚胺，三氯化氢 2'-(4-羟基苯基)-5-(4-甲基-1-哌嗪基)-2,5'-二-1H-苯并咪唑

英文名：2'-(4-Hydroxyphenyl)-5-(4-methyl-1-piperazinyl)-2,5'-bi-1H-benzimidazole, trihydrochloride

别名：Hoechst 33258，bisBenzimide H 33258，HOE 33258bisBenzimide H 33258 或 HOE 33258

结构式：



性质： 1. 外观：黄色粉末 2. 纯度：≥99%（HPLC）超纯级；CAS#：23491-45-4； 分子式：C25H24N6O · 3HCl； 分子量：533.88

产品描述：

Hoechst 33258 是可透过细胞膜并对 DNA 染色的细胞核染色试剂，在嵌入双链 DNA 后释放强烈的蓝色荧光。Hoechst 33258 常用于细胞凋亡检测，染色后用荧光显微镜观察或流式细胞仪检测。Hoechst 33258-DNA 的激发和发射波长分别为 350 nm 和 460 nm。

使用方法：

1、对于固定的细胞或组织：

1) 对于细胞或组织样品，固定后，适当洗涤去除固定剂。随后如果需要进行免疫荧光染色，则先进行免疫荧光染色，染色完毕后再按后续步骤进行 Hoechst 33258 染色。如果不需要进行其它染色，则直接进行后续的 Hoechst 33258 染色。

2) 对于贴壁细胞或组织切片，加入少量 Hoechst 33258 染色液，覆盖住样品即可。对于悬浮细胞，至少加入待染色样品体积 3 倍的染色液，并混匀。室温放置 3-5 分钟。

3) 吸除 Hoechst 33258 染色液，用 TBST 、PBS 或生理盐水洗涤 2-3 次，每次 3-5 分钟。

4) 直接在荧光显微镜下或封片后荧光显微镜下观察。观察细胞凋亡时，会看到凋亡细胞的细胞核呈致密浓染，或呈碎块状致密浓染。

2、对于活细胞或组织：

5) 加入适当量 Hoechst 33258 染色液，必须充分覆盖住待染色的样品，通常对于六孔板一个孔需加入 1ml 染色液，对于 96 孔板一个孔需加入 100 微升染色液。

6) 在适宜于细胞培养的温度培养 20-30 分钟。弃染色液，用 PBS 或培养液洗涤 2-3 次即可进行荧光检测。

储存条件：

-20℃避光保存，有效期一年。

注意事项：

1)Hoechst 33258 对人体有一定刺激性，请注意适当防护。

2)荧光染料都存在淬灭的问题，建议染色后尽量当天完成检测。

3)为减缓荧光淬灭可以使用抗荧光淬灭封片液。

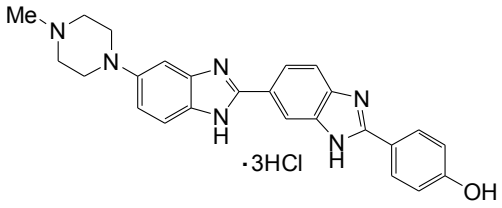
4)为了您的安全和健康，请穿实验服并戴一次性手套操作。

Hoechst 33258

Description:

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

Appearance: Yellow green powder; **MW=** $C_{25}H_{24}N_6O \cdot 3HCl$ =533.88



Storage&Shipping:

Store at -20°C protected from light. Product is shipped at ambient temperature.

Product Description

Hoechst dyes are cell membrane permeable and stain DNA to emit intense blue fluorescence. They bind to DNA in the minor groove of poly-AT sequence rich areas. Both Hoechst 33342 and Hoechst 33258 are water-soluble and stable in aqueous solutions. The excitation and emission wavelengths of Hoechst-DNA complex are 350 nm and 460 nm, respectively.

Staining Procedure

1. First prepare the stock HOECHST Dye solution: 1.9 mM Hoechst 33258 aqueous solution (1mg HOECHST 33258 Dye Powder in 1 ml dH2O)
2. Prepare 10-50 μM Hoechst dye solution with PBS or an appropriate buffer to dilute the stock solution.
3. Add Hoechst dye solution with 1/10 of the volume of cell culture medium to the cell culture.
4. Incubate the cell at 37°C for 10-20 min.
5. Wash cells twice with PBS or an appropriate buffer.
6. Observe the cells under a fluorescence microscope with 350 nm excitation and 460 nm emission filters.

Note: Since Hoechst dyes may be carcinogenic, extreme care is necessary during handling.

Safety warnings and precautions

Warning: For research use only. These example protocols utilize chemicals that may be hazardous, and should only be performed by appropriately qualified and well-trained persons.

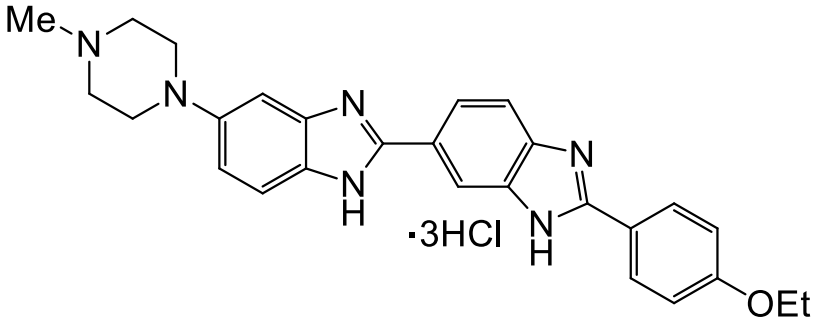
Hoechst 33342

中文名：二苯甲亚胺，三氯化氢2'-(4-乙基苯基)-5-(4-甲基-1-哌嗪基)-2,5'-二-1H-苯并咪唑

英文名：2'-(4-Ethoxyphenyl)-5-(4-methyl-1-piperazinyl)-2,5'-bi-1H-benzimidazole, trihydrochloride

别名：Hoechst 33342，bisBenzimide H 33342，HOE 33342

结构式：



性质： 1. 外观：黄绿色粉末　　2. 纯度：≥99%（HPLC）超纯级；　分子式：C27H28N6O ·3HCl；分子量：561.93；　CAS#：23491-52-3

产品描述：

Hoechst染料是一类在显微观察中标记DNA的荧光染料。因为这类荧光染料能标记DNA，所以它们也经常用于细胞核和线粒体的显像观察。这类染料中两个相关的染料Hoechst 33258和Hoechst 33342经常使用。这两种染料都在紫外光下350nm处被激发，都在461nm处最大发射光附近发射蓝/青色荧光。Hoechst染料可以用于活细胞或者固定化细胞，并且经常用来代替其它核酸染料如DAPI。这两种染料关键的不同点在于，Hoechst 33342加有乙基，这使它具有更强的亲脂性，因此能更好的透过完整的细胞膜。在一些实验中，Hoechst 33258的渗透性明显比Hoechst 33342要弱些。这些染料也可以用来检测样品中的DNA含量，通过绘制发射光强度与DNA含量的标准曲线。

Hoechst 33342是一种可透过细胞膜并对DNA染色的细胞核染色试剂，它在嵌入双链DNA后释放强烈的蓝色荧光。Hoechst 33342常用于细胞凋亡检测，染色后用荧光显微镜观察或流式细胞仪检测。Hoechst 33342-DNA的激发和发射波长分别为350 nm和460 nm。

Hoechst 33342溶于水，溶解度可达20mg/mL。

染色程序：

(1)　用PBS或合适的缓冲液制备10～50μM Hoechst33342染料。

(2)　将1/10细胞培养基体积的Hoechst染料溶液加入细胞培养物中（可以用1/10浓度的Hoechst染料缓冲液代替培养基）。

(3)　在37℃培养细胞10～20分钟。

(4)　用PBS或合适的缓冲液洗细胞两次。

(5)　用带有350nm激发波长，460nm发射波长的滤光片的荧光显微镜观察细胞。

储存条件：

-20℃干燥避光保存，有效期一年。

注意事项：

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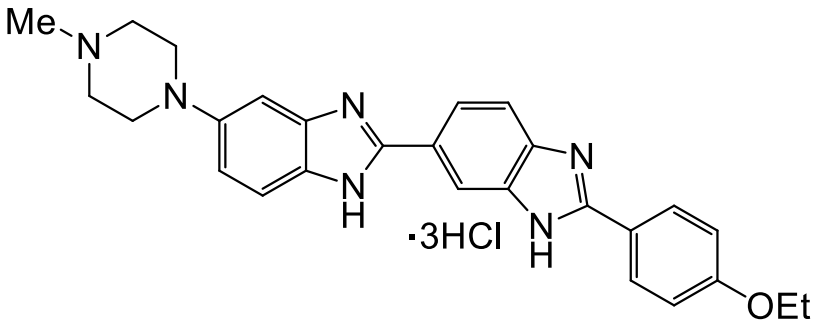
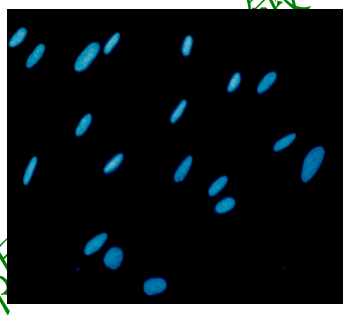
Hoechst 33342

Description:

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

Appearance: Yellow green powder; **MW:** C27H31Cl3N6O=561.93





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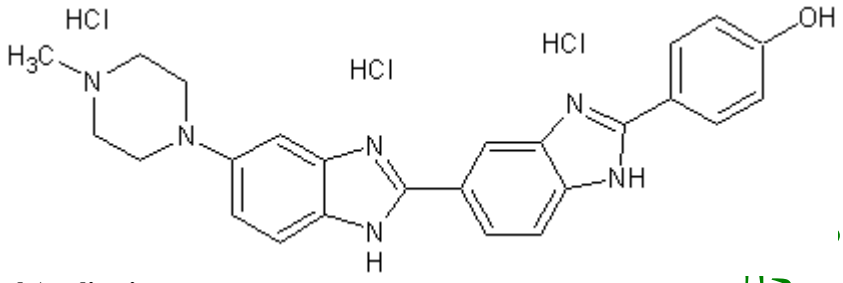
Hoechst 33258 *UltraPure grade*

Cat#	Size	Price	MW	Abs	Em	Soluble in	Storage
17520	10mg	$45	533.88	352 nm	461 nm	DMSO	F/D/L



Features and 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 around 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 renders it more lipophilic, and thus more able to cross intact cell membranes. In some applications, Hoechst 33258 is significantly less permeant. These dyes can also be used to detect the contents of a sample DNA by plotting a standard emission-to-content curve.

References

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11. Kakkar R, Suruchi, Grover R. (2005) Theoretical study of molecular recognition by Hoechst 33258 derivatives. J Biomol Struct Dyn, 23, 37.

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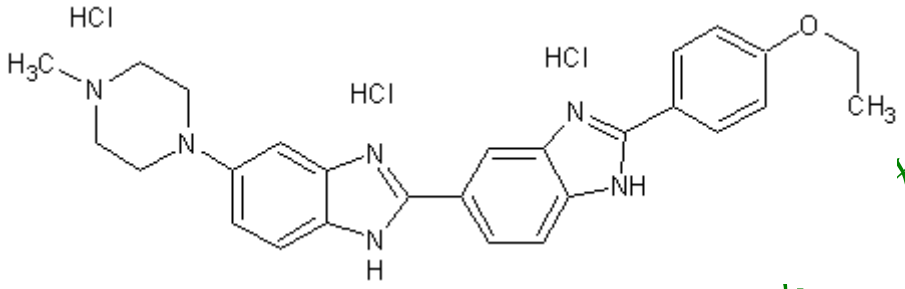

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References

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.
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