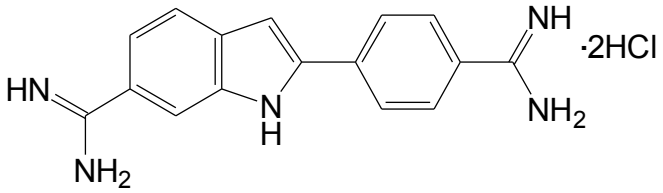
DAPI and DAPI solution

英文名：4',6-Diamidino-2-phenylindole, dihydrochloride； CAS#：28718-90-3 中文名：4',6-联脒-2-苯基吲哚二盐酸盐

结构式：



MW=C16H17Cl2N5=350.25

1. 外观：黄色液体

2. 纯度：≥99% (HPLC)

3. 产品描述：

DAPI 是一种可对 DNA 染色的细胞核染色试剂，它在嵌入双链 DNA 后释放蓝色荧光。DAPI 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。DAPI 也常用于普通的细胞核染色以及某些特定情况下得双链 DNA 染色。尽管 DAPI 不能通过活细胞膜，但却能穿透扰乱的细胞膜而对核染色。DAPI 具有很高的光漂白承受水平，能用来检测酵母线粒体 DNA，叶绿体 DNA，病毒 DNA，microplasm DNA 以及染色体 DNA。DAPI-DNA 复合物的激发和发射波长分别为 360nm 和 460nm。

本 DAPI 染色液可以直接用于固定细胞或组织的细胞核染色。

4. 使用方法

（1）取适量 1mM DAPI 水溶液加到 PBS* 中，制备成 10-50 μM 的 DAPI 溶液。

* 推荐以下 PBS 的配制方法：NaCl: 8.00g KCl: 0.20g Na2HPO4 .12H2O: 2.9g KH2PO4: 0.2g 以上试剂溶解于 1000 ml 纯水中。

（2）将 1/10 培养基体积的 DAPI 溶液加入到细胞培养基中。（也可以用 1/10 浓度的 DAPI 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 360 nm 激发波长、460 nm 发射波长的滤光片的荧光显微镜观察细胞。

储存条件：-20℃避光保存，有效期一年。

5.注意事项：

1）DAPI 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。

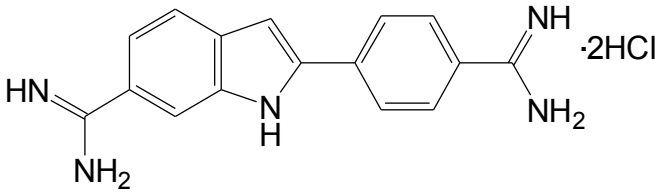
4）为了您的安全和健康，请穿实验服并戴一次性手套操作。

DAPI and DAPI solution

Chemical Name: 4',6-Diamidino-2-phenylindole, dihydrochloride CAS: 28718-90-3

Appearance: yellow powder MW: 350.25, $C_{16}H_{17}Cl_2N_5$

Storage Condition : -20°C, protect from light; Shipping Condition : ambient temperature



Product Description

DAPI is an AT-sequence specific DNA intercalator that attaches to DNA at the minor groove of the double helix like Hoechst dyes. Though DAPI is not permeable through viable cell membranes, it passes through disturbed cell membranes to stain the nucleus. DAPI has a high photo-bleaching tolerance level. DAPI is utilized for the detection of mitochondrial DNA in yeast, chloroplast DNA, virus DNA, micoplasm DNA and chromosomal DNA. The excitation and emission wavelengths of DAPI-DNA complex are 360 nm and 460 nm, respectively.

Staining Procedure

1. The 1mM DAPI stock solution was prepared by adding 35mg DAPI powder into 100mL ddH2O.
2. Prepare 10-50 μM DAPI solution with PBS or an appropriate buffer.
3. Add DAPI solution with 1/10 of the volume of cell culture medium to the cell culture. Or you may replace the culture medium with 1/10 concentration of DAPI buffer solution.
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 using a fluorescence microscope with 360 nm excitation and 460 nm emission filters.

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

Reference

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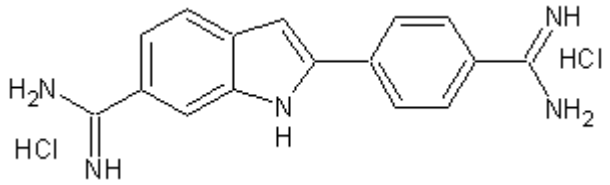
DAPI [4,6-Diamidino-2-phenylindole, dihydrochloride] *UltraPure grade*

Cat#	Size	Price	MW	Abs	Em	Soluble in	Storage
17510	10 mg	$49	350.25	358 nm	461 nm	DMSO	F/D/L



Features and Biological Applications

DAPI is a fluorescent stain that binds strongly to DNA. It is used extensively in fluorescence microscopy. Since DAPI passes through an intact cell membrane, it can be used to stain live cells besides fixed cells. For fluorescence microscopy, DAPI is excited with ultraviolet light. When bound to double-stranded DNA its absorption maximum is at 358 nm and its emission maximum is at 461 nm. One drawback of DAPI is that its emission is fairly broad. DAPI also binds to RNA although it is not as strongly fluorescent as it binds to DNA. Its emission shifts to around 400 nm when bound to RNA. DAPI's blue emission is convenient for multiplexing assays since there is very little fluorescence overlap between DAPI and green-fluorescent molecules like fluorescein and green fluorescent protein (GFP), or red-fluorescent stains like Texas Red. Besides labeling cell nuclei, DAPI is also used for the detection of mycoplasma or virus DNA in cell cultures.

References

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