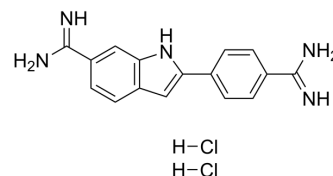


## DAPI dihydrochloride

<b>Cat. No.:</b>	HY-D0814
<b>CAS No.:</b>	28718-90-3
<b>Molecular Formula:</b>	C <sub>16</sub> H <sub>17</sub> Cl <sub>2</sub> N <sub>5</sub>
<b>Molecular Weight:</b>	350.25
<b>Emission (Em):</b>	451
<b>Excitation(Ex):</b>	356
<b>Target:</b>	DNA Stain
<b>Pathway:</b>	Cell Cycle/DNA Damage
<b>Storage:</b>	-20°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 75 mg/mL (214.13 mM; Need ultrasonic)  
H<sub>2</sub>O : 5.56 mg/mL (15.87 mM; ultrasonic and warming and heat to 60°C)

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.8551 mL	14.2755 mL	28.5510 mL
	5 mM	0.5710 mL	2.8551 mL	5.7102 mL
	10 mM	0.2855 mL	1.4276 mL	2.8551 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.08 mg/mL (5.94 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.08 mg/mL (5.94 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.08 mg/mL (5.94 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

DAPI dihydrochloride is a DAPI dye. DAPI is a fluorescent dye that binds strongly to DNA. It binds to the AT base pair of the double-stranded DNA minor groove, and one DAPI molecule can occupy three base pair positions. The fluorescence intensity of DAPI molecules bound to double-stranded DNA is increased by about 20 times, and it is commonly observed with fluorescence microscopy, and the amount of DNA can be determined based on the intensity of fluorescence. In addition, because DAPI can pass through intact cell membranes, it can be used to stain both live and fixed cells<sup>[1]</sup>.

## In Vitro

### General Protocol

#### 1. Preparation of DAPI working solution

##### 1.1 Preparation of the stock solution

Dissolve 1 mg DAPI in 1 mL ddH<sub>2</sub>O to obtain 1 mg/mL of stock solution.

Note: It is recommended to store the stock solution at -20 °C or -80 °C away from light and avoid repetitive freeze-thaw cycles.

##### 1.2 Preparation of DAPI working solution

Dilute the stock solution in serum-free cell culture medium or PBS to obtain 1-10 µg/mL of working solution.

Note: Please adjust the concentration of DAPI working solution according to the actual situation.

#### 2. Cell staining

##### 2.1 Suspension cells 6-well plate

a. Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time. The cell density is  $1 \times 10^6$ /mL.

b. Add 1 mL of working solution, and then incubate at room temperature for 3-10 minutes.

c. Centrifuge at 400 g at 4°C for 3-4 minutes and then discard the supernatant.

d. Wash twice with PBS, 5 minutes each time.

e. Resuspend cells with serum-free cell culture medium or PBS. Observation by fluorescence microscopy or flow cytometry.

##### 2.2 Adherent cells

a. Culture adherent cells on sterile coverslips.

b. Remove the coverslip from the medium and aspirate excess medium.

c. Add 100 µL of working solution, gently shake it to completely cover the cells, and then incubate at room temperature for 3-10 minutes.

d. Wash twice with medium, 5 minutes each time. Observation by fluorescence microscopy or flow cytometry.

### Storage

-20°C, 1 year. Protect from light

Precautions 1. Please adjust the concentration of DAPI working solution according to the actual situation.

2. This product is for R&D use only, not for drug, household, or other uses.

3. For your safety and health, please wear a lab coat and disposable gloves to operate.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Nat Methods. 2023 Nov 30.
- Cell Res. 2022 Dec;32(12):1047-1067.
- Light Sci Appl. 2022 Nov 11;11(1):324.
- Adv Funct Mater. 2022: 2204636.
- ACS Nano. 2023 Jul 3.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Kapuscinski J, et al. DAPI: a DNA-specific fluorescent probe. Biotech Histochem. 1995 Sep;70(5):220-33.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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