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DATASHEET

DAPI

Product overview

Name DA
Cat No HE
Biological description On

DAPI HB0747 **Overview**

DAPI is a blue fluorescent DNA stain which is cell permeant at high concentrations.

DAPI binds strongly to A-T rich regions in DNA to form a fluorescent complex. It preferentially stains ds-DNA and has a high quantum yield ($\phi f=0.92$) when bound to DNA.

Uses and applications

DAPI is commonly used as a nuclear and chromosome counterstain.

It is preferentially used to stain dead cells. DAPI is less effective as a live cell stain as it is unable to efficiently pass through the membrane in live cells. Therefore, higher concentrations may need to be used.

Cells must be permeabilized and/or fixed for DAPI to enter the cell and bind to DNA.

Due to DAPI's blue emission, there is very little fluorescent overlap between yellow-fluorescent, green-florescent molecules (e,g, fluorescein and GFP) or red-fluorescent stains (e.g. Texas red). It is therefore convenient for multiplexing assays.

DAPI has a great variety of applications but is often used for cell imaging, cell counting, cell sorting (based on DNA content), apoptosis analysis and in HCA (high-content analysis).

DAPI Staining Solution (1mg/mL) also available.

Biological action Dyes & stains Purity >98%

DescriptionBlue fluorescent DNA stain. Nuclear counterstain. Also available in solution.

Images









Figure 1: Neurofilament L and DAPI co-staining in hippocampal cell culture.

DAPI is a DNA binding dye commonly used to label cell nuclei in immunofluorescence experiments. DAPI from Hello Bio labels cell nuclei (blue) at 1µg/ml when co-stained with an anti-neurofilament L antibody (green). For protocol see #Protocol 1 in application notes below.

Figure 2: GFAP and DAPI co-staining in hippocampal cell culture.

DAPI is a DNA binding dye commonly used to label cell nuclei in immunofluorescence experiments. DAPI from Hello Bio labels cell nuclei (blue) at 1µg/ml when co-stained with an anti-GFAP antibody (green). For protocol see #Protocol 1 in application notes below.

Figure 3: MAP2 and DAPI co-staining in hippocampal cell culture.

DAPI is a DNA binding dye commonly used to label cell nuclei in immunofluorescence experiments. DAPI from Hello Bio labels cell nuclei (blue) at 1µg/ml when co-stained with an anti-MAP2 antibody (green). For protocol see #Protocol 1 in application notes below.

#Protocol 1: DAPI counterstaining of primary cultured neurones.

- Primary neurones were isolated and cultured from P2 rats and grown for three weeks before being fixed with 4% paraformaldehyde.
- Coverslips containing neuronal cell cultures were labelled for either MAP2, GFAP or Neurofilament L following standard immunohistochemical approaches.
- Coverslips were then submerged in 1µg/ml DAPI diluted in PBS for 1 minute.
- Following 2 x 5-minute washes in PBS coverslips were mounted and imaged with a fluorescent microscope.

Solubility & Handling

Storage instructions Solubility overview

Storage of solutions

Shipping Conditions Important

Soluble in water (10mg/ml, gentle warming), and in methanol

Prepare and use solutions on the same day if possible. Store solutions at -20°C for up to one month if

storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Stable for ambient temperature shipping. Follow storage instructions on receipt.

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 4',6-Diamidino-2-phenylindole dihydrochloride

Molecular Weight 350.24

Chemical structure

NH₂ NH C₁₆H₁₅N₅.2HCl

Molecular Formula 28718-90-3 **CAS Number PubChem identifier**

SMILES C1=CC(=CC=C1C2=CC3=C(N2)C=C(C=C3)C(=N)N)C(=N)N.CI.CI

FPNZBYLXNYPRLR-UHFFFAOYSA-N

MDL number MFCD00012681

340 / 360nM (for ds-DNA) Excitation **Fmission** 488 / 460nM (for ds-DNA)

References

InChiKey

DAPI: a DNA-specific fluorescent probe.

PubMedID 8580206

Labeling nuclear DNA using DAPI.

Chazotte B (2011) Cold Spring Harb Protoc 2011(1)

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