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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Pyronin Y

Cat. No.: HY-D0971

CAS No.: 92-32-0

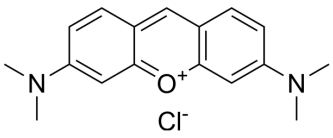
Molecular Formula: $C_{17}H_{19}ClN_2O$

Molecular Weight: 302.8

Target: DNA Stain

Pathway: Cell Cycle/DNA Damage

Storage: -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 : 25 mg/mL (82.56 mM; Need ultrasonic)
H_2O : 4 mg/mL (13.21 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.3025 mL	16.5126 mL	33.0251 mL
	5 mM	0.6605 mL	3.3025 mL	6.6050 mL
	10 mM	0.3303 mL	1.6513 mL	3.3025 mL

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

BIOLOGICAL ACTIVITY

Description

Pyronin Y (Pyronine G) is a cationic dye that intercalates RNA and has been used to target cell structures including RNA, DNA and organelles. Pyronin Y forms fluorescent complexes with double-stranded nucleic acids (especially RNA) enabling semi-quantitative analysis of cellular RNA. Pyronin Y can be used to identify specific RNA subspecies of ribonuclear proteins complexes in live cells[1][2][5].

In Vitro

Pyronin Y forms fluorescent complexes with double-stranded nucleic acids, especially RNA, enabling semi-quantitative analysis of cellular RNA in flow cytometry, to estimate the RNA content per cell in formalin fixed EL4 leukosis tumor cells, enzyme dispersed R3327-G rat prostatic adenocarcinoma cells, mouse spleen cells stimulated with concanavalin A, and human peripheral blood lymphocytes stimulated with phytohemagglutinin[1].
A fluorescent staining procedure based on pyronin Y is described. The technique has been used to stain RNA in human reticulocytes for subsequent flow analysis and sorting[2].
In viable cells this dye also accumulates in mitochondria. At a concentration of 1.7 to 3.3 μM, pyronin Y is localized almost exclusively in mitochondria of cultured cells, similar to another mitochondria! probe, rhodamine 123. At that concentration PY is not toxic but suppressed cell growth, arresting cells[3].
Pyronin Y has long been used, in combination with other dyes such as Methyl Green, as a differential stain for nucleic acids in

paraffin tissue sections. In sections stained with Methyl Green-pyronin Y, red blood cells, elastic fibre of blood vessels, zymogen granules of pancreatic acinar cells, surface membrane of heptocytes and kidney tubular cells showed strikingly strong green and/or red fluorescence, while the nuclei of cells appeared non-fluorescent[4].
Pyronin Y binds to double stranded RNA (dsRNA) including messenger RNA (mRNA), transfer RNA (tRNA) and ribosomal RNA (rRNA)[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]

The cells are resuspended and stained for 30 min in 1.0 mL of 0.01% pyronin Y in sodiumacetate buffer (1.0 M, pH 4.7). For this purpose 1.0 g of pyronin Y is dissolved in 100 mL distilled water and this solution is purified by chloroform extraction (three fractions of 100 mL). The purified pyronin Y solution is diluted with 1.0 M sodiumacetate buffer pH 4.7 to the appropriate concentration and filtered through paper filters before use. Stained cell samples are studied by fluorescence microscopy (excitation filters SP 560 and LP 515, chromatic beam splitter at 580 nm, barrier filter LP 580) or by flow cytometry[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Commun. 2021 Nov 30;12(1):6971.
- EMBO J. 2022 Dec 7;e111364.
- Transl Oncol. 2023 May 1;33:101681.

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REFERENCES

[1]. Pollack A, et al. Flow cytometric analysis of RNA content in different cell populations using pyronin Yand methyl green. Cytometry. 1982 Jul;3(1):28-35.

[2]. Tanke HJ, et al. Flow cytometry of human reticulocytes based on RNA fluorescence. Cytometry. 1981 Mar;1(5):313-20.

[3]. Darzynkiewicz Z, et al. Cytostatic and cytotoxic properties of pyronin Y: relation to mitochondrial localization of the dye and its interaction with RNA. Cancer Res. 1986 Nov;46(11):5760-6.

[4]. Li B, et al. Pyronin Y as a fluorescent stain for paraffin sections. Histochem J. 2002 Jun-Jul;34(6-7):299-303.

[5]. Laura M Andrews, et al. Spectral phasor analysis of Pyronin Y labeled RNA microenvironments in living cells. Biomed Opt Express. 2013 Jan 1;4(1):171-7.

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