Product Data Sheet

Product Name: Cy5-Paclitaxel bromide
Cat. No.: GC79994

Chemical Properties

Cas. No.

Formula	$C_{79}H_{88}BrN_3O_{15}$	M.Wt	1399.46
Solubility		Storage	Store at 4°C, away from moisture and light

General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

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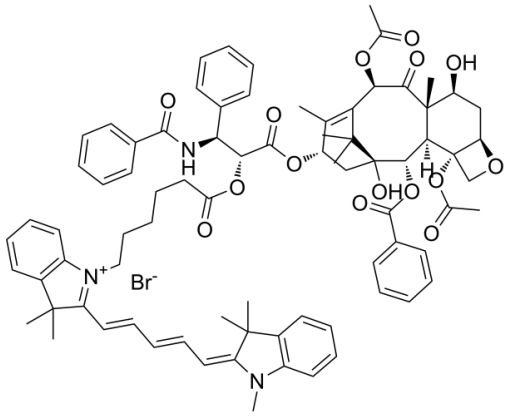
Structure



Background

Cy5-Paclitaxel bromide is a fluorescently labeled drug probe formed by conjugating the fluorescent dye Cy5 (Cyanine 5) with the chemotherapeutic agent Paclitaxel, which is used to track the cellular uptake, subcellular distribution and drug delivery process of Paclitaxel. The Cy5 (Cyanine 5) fluorophore is covalently linked to Paclitaxel, possessing both fluorescent tracing function and the biological activities of Paclitaxel (promoting tubulin polymerization and arresting the cell cycle at the G2/M phase); after entering cells, Cy5 emits far-red fluorescence, enabling real-time monitoring of drug localization and release [1].

In Vitro, Operating Instructions (The following is a recommended experimental protocol for guidance only; adjust according to actual requirements) 1. Stock Solution Preparation 1.1 Solvent: For most

dyes, organic solvents are commonly used for dissolution, such as anhydrous DMSO. 1.2 Concentration Recommendation: It is generally recommended to prepare a high-concentration stock solution of 1-10 mM. 2. Working Solution Preparation 2.1 Diluent: Cell culture medium. 2.2 Working Concentrations: 50 nM, 100 nM, 200 nM, 400 nM. 2.3 Notes: Adjust the working solution concentration as needed; prepare and use immediately. 3. Staining Procedure 3.1 Sample Type: Adherent breast cancer cells (MDA-MB-231) 3.2 Incubation Conditions: Incubate at 37°C for 48 h or 72 h in a humidified environment containing 5% CO2. 3.3 Washing Step: No washing step is specified in this experiment. 4. Control Group Setup 4.1 Blank Control: Unconjugated RNA pyramid nanoparticles (at the same test concentration as Cy5-Paclitaxel bromide-conjugated nanoparticles). 5. Detection and Analysis 5.1 Instruments: Fluorescence imaging system for Cy5 detection; microplate reader for absorbance detection. 5.2 Result Analysis: 5.2.1 Fluorescence Intensity Change: After irradiation with 365 nm ultraviolet light, the fluorescence intensity of Cy5 decreases. 5.2.2 Cell Viability: Compared with unirradiated samples and samples without photocleavable spacers, the Cy5-Paclitaxel bromide-conjugated RNA nanocages with photocleavable spacers show enhanced inhibitory effect on cell viability after ultraviolet irradiation. 5.2.3 Color Change: Cell viability is evaluated by detecting absorbance at 570 nm via MTT assay, where a decrease in absorbance corresponds to reduced cell viability.

References:

[1]. Xu C, et al. Photo-controlled release of paclitaxel and model drugs from RNA pyramids. Nano research. 2019 Jan;12(1):41-48.