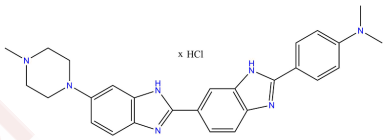
Data Sheet (Cat.No.T19011L)

TargetMol

Hoechst 34580 xHCl(23555-00-2(free base)

Chemical Properties



CAS No. :

Formula: C27H29N7.xHCl

Molecular Weight:

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Hoechst 34580 xHCl(23555-00-2(free base) is a cell-permeable fluorescent dye, is used for staining DNA and nuclei.
Targets(IC50)	Beta Amyloid
In vitro	Hoechst 34580 is a good candidate for treating Alzheimer's disease by inhibiting Aβ formation. 50 μM Aβ42 solutions co-incubated with 100, 25, 12.5, 3.125, 0.78, and 0.1, 0.01 μM Hoechst 34580 at 37 °C for 70 h. Hoechst 34580 can inhibit the aggregation of Aβ42 in a dose-dependent manner. The IC50 is obtained by measuring the concentration of Hoechst 34580 while maintaining the Aβ42 concentration which gave 0.86±0.05 μM for Hoechst 34580.
Cell Research	Instructions I. Solution preparation 1. Stock solution: Dissolve Hoechst 34580 in DMSO to prepare a 1mg/ml stock solution. Note: The stock solution should be kept away from light and stored at -20°C after aliquoting to avoid repeated freezing and thawing to maintain the activity of the dye. 2. Working solution: Dilute the stock solution to the final concentration (usually 1-10 μg/mL) before the experiment. Note: It is recommended to use a suitable pure DMEM medium or PBS (without phenol red) for dilution to ensure the best staining effect. II. Operation steps 1. Cell preparation: Adherent cells: After culturing cells to an appropriate density, wash 1-2 times with PBS buffer to remove the culture medium residue. Suspended cells: Collect cells directly, centrifuge and discard the supernatant, and resuspend with PBS. 2. Staining reaction: 1) Resuspend cells or incubate adherent cells with Hoechst 34580 working solution to ensure sufficient mixing. 2) The staining concentration is usually 1-10 μg/mL, and incubate at 37°C in the dark for 10-30 minutes. 3. Washing steps: After staining, wash the cells 2-3 times with PBS buffer to remove unbound dye. 3. Detection and analysis

Cell Research	Fluorescence detection: Use a fluorescence microscope or flow cytometer to detect the fluorescent signal in the cells. Hoechst 34580 has a high affinity for DNA and can specifically bind to the cell nucleus, showing bright blue fluorescence. Recommended detection parameters: Excitation wavelength: 355-360 nm Emission wavelength: 465-480 nm 4. Data analysis: Observe and take fluorescent images to analyze the nuclear staining intensity or cell cycle distribution. Positive and negative control groups can be combined for comparison to verify the experimental results. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 11 mg/mL,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Reference

Thai NQ, et al. Discovery of DNA dyes Hoechst 34580 and 33342 as good candidates for inhibiting amyloid beta formation: in silico and in vitro study. J Comput Aided Mol Des. 2016 Aug;30(8):639-50.
Nogueira E, et al. Assessment of liposome disruption to quantify drug delivery in vitro. Biochim Biophys Acta. 2016 Feb;1858(2):163-7.
Cherian S, et al. Evaluation of an 8-color flow cytometric reference method for white blood cell differential enumeration. Cytometry B Clin Cytom. 2010 Sep;78(5):319-28.