Lipid droplets Blue Probe (Aggregation-induced emission, AIE)

L1375493

Storage at -20°C (12 months). Avoid freeze/thaw cycle. Protect from light.

Introduction:

AIE Lipid droplets Blue Probe is a triphenylamine-based lipid droplet probe developed based on the AIE principle, with typical AIE properties. The product has cell transmembrane ability;it can complete transmembrane transport through passive transport just by simply incubating with cells.

Product Characteristics:

AIE Lipid droplets Blue Probe has excellent aggregation-induced emission properties. It can specifically label lipid droplet structures in various living cells and fixed cells by targeting the polar environment of lipid droplets. Due to the change in aggregation state before and after binding to lipid droplets, its fluorescence intensity will produce extremely obvious changes, while the fluorescent probes that do not bind to lipid droplets basically do not emit fluorescent signals.

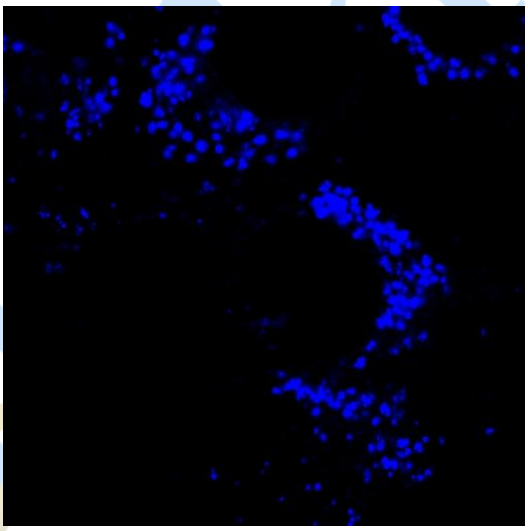

Figure 1. Laser confocal imaging effect diagram of HeLa cells

Unlike common dyes, the AIE Lipid Droplet Blue Probe has a large Stokes shift, which can be clearly distinguished from other dyes and reduce the possibility of crosstalk in imaging. Moreover, the AIE Lipid Droplet Blue Probe is easy to operate and can be imaged without washing. At the same time, the AIE Lipid Droplet Blue Probe has good biocompatibility and high imaging concentration, and can still ensure stable fluorescent signal output under multiple scanning conditions, making it very suitable for multiple imaging.

Product Properties:

Product Properties	Details
Formula	$C_{35}H_{30}N_2O$
Molecular Weight	470.62 g/mol
Purity	≥98% (HPLC)
Working Concentration	100 - 200 nM
Full Width at Half Maximum	450 nm - 550 nm
Max Absorption/Emission Wavelength (nm)	λabs = 412 nm / Em = 497 nm

Product Advantages:

1. Relatively low cytotoxicity, applicable for both live cell imaging and fixed cell imaging.
2. Strong anti-photobleaching ability, with the emitted fluorescence intensity remaining unchanged after 40 laser scans totaling 15 minutes.
3. Low background signal, enabling rapid imaging without the need for washing.

Experimental Methods:

1. Preparation of dye stock solution: Centrifuge briefly, pipette to mix evenly, then aliquot the probe solution appropriately and store in the dark at -20°C or lower.
2. Preparation of dye working solution: Take 1μL of AIE Lipid Droplet Blue Probe stock solution and add it to 110mL of cell culture medium or an appropriate buffer (such as PBS) toobtain a working solution of AIE Lipid Droplet Blue Probe with a final concentration of 100-1000nM.
3. For Cell staining: For live cells, incubate adherent cells with an appropriate amount of working staining solution for 30 minutes (preferably in a cell culture incubator); for fixed cells, after cell fixation, incubate the fixed cells with an appropriate amount of working staining solution for 30 minutes, then wash three times with PBS; after staining, observe with a confocal fluorescence microscope or a fluorescence microscope, set the excitation wavelength to 405 nm; collect signals at 418-500 nm.

Matters needing attention:

1. Please centrifuge briefly before use, and appropriately adjust the staining concentration and time according to different cell types.
2. Store at -20°C and avoid repeated freezing and thawing.
3. For your safety and health, please wear a lab coat and disposable gloves during operation.
4. This product is only for scientific research purposes.