Calcein

V02

Cat: C7600
Size:10g
Storage: Room Temperature, avoid light, valid for 1 year.

Product Specification

CAS:1461-15-0
Molecular Formula: $C_{30}H_{26}N_2O_{13}$
Molecular Weight: 666.51
Appearance: Yellow granular powder
Solubility: Soluble in DMSO at 100 mg/ml

Introduction

Calcein also known as the fluorescein complex, is a calcium ion fluorescent indicator with an excitation wavelength of 495 nm and an emission wavelength of 515 nm. When its concentration exceeds 100 mM, the fluorescence of Calcein undergoes self-quenching. It is commonly used as a complexometric indicator for titrating calcium ions chelated by EDTA and for determining calcium ion concentrations using fluorescence detection methods.

Calcein-AM is a cell-staining reagent used for fluorescent labeling of live cells. Based on Calcein, Calcein-AM has enhanced hydrophobicity, allowing it to easily penetrate cell membranes. Once inside the cytoplasm, esterases hydrolyze Calcein-AM into Calcein, which remains within the cell and emits a strong green fluorescence. Compared to other similar reagents (such as BCECF-AM and Carboxy-fluorescein diacetate), Calcein-AM is the most suitable fluorescent probe for staining live cells due to its low cytotoxicity.

Additionally, in nucleic acid fluorescent dyes, manganese ions bind to Calcein, resulting in fluorescence quenching and an orange color of the dye. During nucleic acid amplification, a large amount of pyrophosphate ions is generated. When pyrophosphate ions are formed in the amplification reaction, manganese ions bind to pyrophosphate ions to form manganese pyrophosphate, which triggers the generation of a fluorescent signal and changes the dye color to yellow-green. Calcein has now been widely applied in fluorescence detection of isothermal amplification reactions.

Note

1. Biochemical reagents produced by our company are generally non-sterile packaged unless otherwise specified. If used for cell experiments, please conduct pre-treatment in advance.
2. Once the reagent is dissolved, it should be aliquoted and stored to avoid product degradation caused by repeated freeze-thaw cycles.
3. This product is for research use only. Do not use for medicinal, clinical diagnosis or therapeutic purposes, food, or cosmetics. Do not store in residential areas.
4. The product information is for reference only. If you have any questions, please call 400-968-6088 for consultation.
5. For your safety and health, please wear a lab coat and use disposable gloves and a mask during operation.