



Europa Bioproducts Ltd

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Cellstain-Double Staining Kit

Item# Unit Size
CS01-10 1 set

Kit Components:

Solution A (Calcein-AM) :4 vials
Solution B (PI) :1 vial

Storage Condition: -20°C, protect from light

Shipping Condition: blue ice

Required Equipment and Materials

Microscope with 490 nm excitation filter and 530 nm emission filter, glass slide or glass bottom plate, CO₂ incubator, 10 µl and 200 µl adjustable pipettes, PBS

Product Description

-Cellstain-Double Staining Kit is utilized for simultaneous fluorescence staining of viable and dead cells. This kit contains Calcein-AM and Propidium Iodide (PI) solutions, which stain viable and dead cells, respectively (Fig. 1). Calcein-AM, an acetoxymethyl ester of calcein, is highly lipophilic and cell membrane permeable. Although Calcein-AM itself is not a fluorescent molecule, the calcein generated from Calcein- AM by esterase in a viable cell emits a strong green fluorescence (excitation: 490 nm, emission: 515 nm). Therefore, Calcein-AM only stains viable cells. On the other hand, PI, a nuclei staining dye, cannot pass through a viable cell membrane. It reaches the nucleus by passing through disordered areas of dead cell membrane and intercalates with the DNA double helix of the cell to emit red fluorescence (excitation: 535 nm, emission: 617 nm). Since both calcein and PI-DNA can be excited with 490 nm, simultaneous monitoring of viable and dead cells is possible with a fluorescence microscope. With 545 nm excitation, only dead cells can be observed (Fig. 2). Since optimal staining conditions differ from cell line to cell line, we recommend that a suitable concentration of PI and Calcein- AM be individually determined. Please note that PI is suspected to be highly carcinogenic; careful handling is required.



CERTIFICATE NO. 3222

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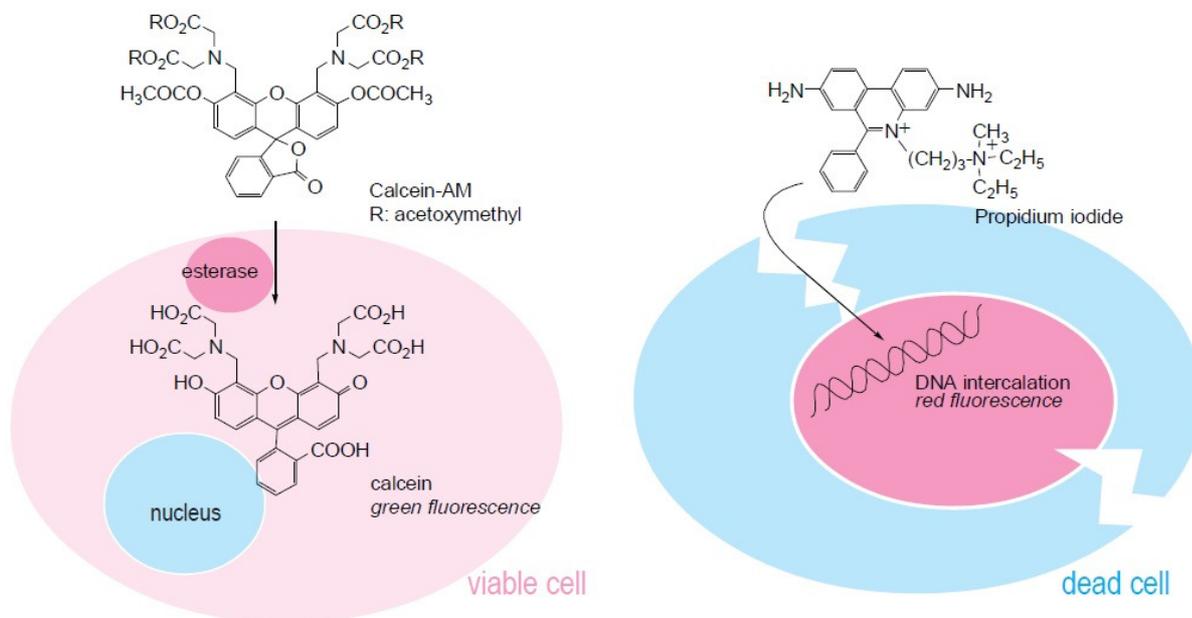


Fig. 1 Assay system to determine viable cells and dead cells



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