

Annexin V-iFluor 647 Apoptosis Detection Kit ab219919

1 Image

Overview

Product name	Annexin V-iFluor 647 Apoptosis Detection Kit
Detection method	Fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Quantitative
Species reactivity	Reacts with: Mammals, Other species
Product overview	Annexin V-iFluor 647 Apoptosis Detection Kit (ab219919) contains Annexin V labeled with our proprietary orange fluorescent dye iFluor 647, which allows the identification and quantification of apoptotic cells on a single-cell basis by flow cytometry or fluorescence microscopy.

The iFluor 647 dye (Ex/Em = 650/680 nm) has spectral properties almost identical to those of Cy5[®] or Alexa Fluor[®] 647, making it convenient to be used for common fluorescence instruments equipped with the light sources and filters for Cy5[®] or Alexa Fluor[®] 647.

Notes

Annexins are a family of calcium-dependent phospholipid-binding proteins. They are abundant in eukaryotic organisms belonging to a family of ubiquitous

Apoptosis is a regulated process of cell death that occurs during embryonic development as well as maintenance of tissue homeostasis. Inappropriately regulated apoptosis is implicated in different disease states, such as neurodegeneration disease and cancer. The apoptosis program is characterized by morphologic features, including loss of plasma membrane asymmetry and attachment, condensation of the cytoplasm and nucleus, and compaction and fragmentation of the nuclear chromatin. Exposure of phosphatidylserine (PS) on the external surface of the cell membrane has been reported to occur in the early phases of apoptotic cell death, during which the cell membrane remains intact. In leukocyte apoptosis, PS on the outer surface of the cell marks the cell for recognition and phagocytosis by macrophages. The human vascular anticoagulant, annexin V, is a 35-36 kDa Ca²⁺ dependent phospholipid binding protein that has a high affinity for PS, and shows minimal binding to phosphatidylcholine and sphingomyelin. Changes in PS asymmetry, which can be analyzed by measuring annexin V binding to the cell membrane, are generally observed before morphological changes associated with apoptosis occurred and before membrane integrity is lost.

Cy5[®] and Alexa Fluor[®] 647 are the trademarks of GE Healthcare and Invitrogen respectively.

Platform Flow cytometer, Fluorescence microscope

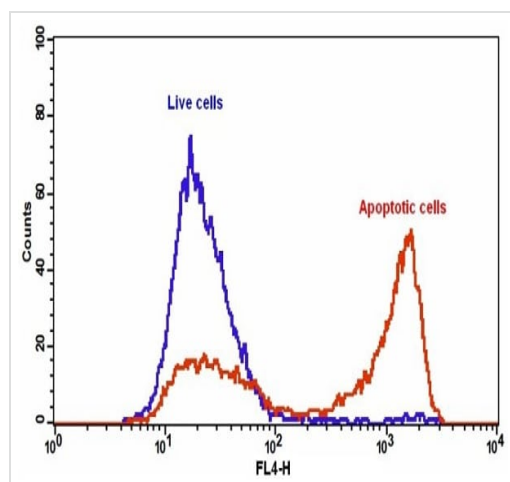
Properties

Storage instructions Store at +4°C. Please refer to protocols.

Components	100 tests
Annexin 647 (100X stock solution)	1 x 200µl
Assay Buffer	1 x 50ml

Function	This protein is an anticoagulant protein that acts as an indirect inhibitor of the thromboplastin-specific complex, which is involved in the blood coagulation cascade.
Involvement in disease	Pregnancy loss, recurrent, 3
Sequence similarities	Belongs to the annexin family. Contains 4 annexin repeats.
Domain	The [IL]-x-C-x-x-[DE] motif is a proposed target motif for cysteine S-nitrosylation mediated by the iNOS-S100A8/A9 transnitrosylase complex. A pair of annexin repeats may form one binding site for calcium and phospholipid.
Post-translational modifications	S-nitrosylation is induced by interferon-gamma and oxidatively-modified low-density lipoprotein (LDL(ox)) possibly implicating the iNOS-S100A8/9 transnitrosylase complex.

Images



The detection of binding activity of Annexin V-iFluor 647 and phosphatidylserine in Jurkat cells.

Annexin V-iFluor 647 Apoptosis Detection Kit (ab219919).
Detection of phosphatidylserine (PS) exposure in Jurkat cells.
Jurkat cells were left untreated (blue) or treated with 20 µM camptothecin (red) in a 37°C, 5% CO₂ incubator for 4-5 hours.
Cells were then incubated with Annexin V-iFluor reagent and PI for 30 minutes. The fluorescence intensity of Annexin V-iFluor 647 was measured with a FACSCalibur (BD Systems) flow cytometer using the FL41 channel.

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