

Product datasheet

# Annexin V-mFluor Violet 550 Apoptosis Detection Kit ab219922

1 Image

Overview

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<b>Product name</b>	Annexin V-mFluor Violet 550 Apoptosis Detection Kit
<b>Detection method</b>	Fluorescent
<b>Sample type</b>	Adherent cells, Suspension cells
<b>Assay type</b>	Quantitative
<b>Species reactivity</b>	<b>Reacts with:</b> Mammals, Other species
<b>Product overview</b>	Annexin V-mFluor Violet 550 Apoptosis Detection Kit (ab219922) contains Annexin V labeled with our proprietary orange fluorescent dye mFluor Violet 550, which allows the identification and quantitation of apoptotic cells on a single-cell basis by flow cytometry. Simultaneous staining of cells with Annexin V-mFluor Violet 550 (orange fluorescence) and the non-vital dye propidium iodide (PI) allows the discrimination of intact cells (Annexin V-mFluor Violet 550 negative, PI Staining Solution negative), early apoptotic (Annexin V-mFluor Violet 550 positive, PI Staining Solution negative) and late apoptotic or necrotic cells (Annexin V-mFluor Violet 550, PI Staining Solution positive).

The mFluor Violet 550 (Ex/Em = 405/550 nm, excited with the violet laser at 405 nm) has spectral properties almost identical to those of Pacific Orange<sup>®</sup>, making it convenient to be used with a fluorescence instruments equipped with a violet laser.

**Notes**

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 off 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 Ca<sup>2+</sup> 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.

Pacific Orange® is the trademark of Invitrogen.

**Platform** Flow cytometer

## Properties

**Storage instructions** Store at -20°C. Please refer to protocols.

Components	100 tests
100X Propidium Iodide	1 x 100µl
Anexin Violet 550 (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.

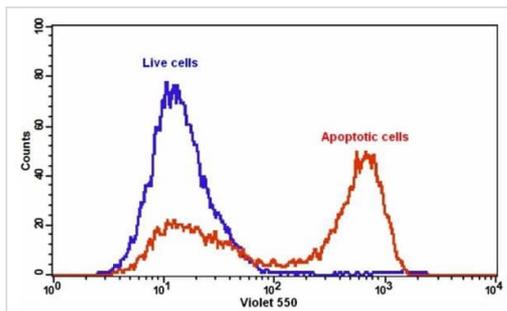
**Involvement in disease** Pregnancy loss, recurrent, 3

**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-mFluor Violet 550 and phosphatidylserine in Jurkat cells

Annexin V-mFluor Violet 550 Apoptosis Detection Kit (ab219922). 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% CO<sub>2</sub> incubator for 4-5 hours. Cells were then incubated with Annexin V-mFluor Violet 550 reagent and PI for 30 minutes. The fluorescence intensity of Annexin V-mFluor Violet 550 was measured with a FACSCalibur (BD Systems) flow cytometer using the Violet channel.

In live non-apoptotic cells, Annexin V-mFluor Violet 550 conjugate detects innate apoptosis in non-induced cells, which is typically 2-6% of all cells. In apoptotic cells Annexin V-mFluor Violet 550 conjugate binds to phosphatidylserine, which is located on the outer leaflet of the cell membrane, resulted in increased staining intensity.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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