## Overview

**Product name**  
Annexin V-CF Blue 7-AAD Apoptosis Staining / Detection Kit

**Detection method**  
Fluorescent

**Sample type**  
Adherent cells, Suspension cells

**Assay type**  
Cell-based (quantitative)

**Species reactivity**  
**Reacts with:** Mammals, Other species

**Product overview**  
Annexin V-CF Blue 7-AAD Apoptosis Staining / Detection Kit (ab214663) contains Annexin V labeled with CF Blue, which allows the identification and quantitation of apoptotic cells on a single-cell basis by flow cytometry. Simultaneous staining of cells with Annexin V–CF Blue (blue fluorescence) and the non-vital dye 7-aminoactinomycin D (7-AAD) (red fluorescence) allows the discrimination of intact cells (Annexin V-CF Blue negative, 7-AAD Staining Solution negative), early apoptotic (Annexin V-CF Blue positive, 7-AAD Staining Solution negative) and late apoptotic or necrotic cells (Annexin V-CF Blue positive, 7-AAD Staining Solution positive).

CF-Blue can be used as direct replacement for Pacific Blue™ or similar blue dyes.

For more apoptosis assays, review the full set of Annexin V assays, or the apoptosis assay and apoptosis marker guide.

**Notes**  
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 Annexin V protein 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.

**Platform**  
Flow cytometer

**Properties**

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

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<tr>
<td>10X Binding Buffer Concentrate</td>
<td>1 x 50ml</td>
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<tr>
<td>7-AAD Staining Solution in PBS (pH 7.4)</td>
<td>1 x 500μl</td>
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<tr>
<td>Annexin V-CF Blue Conjugate (PBS, pH 7.2)</td>
<td>1 x 500μl</td>
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### 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

Abcam's Apoptosis Detection (Annexin V-CF Blue 7-AAD) Kit Jurkat cells (T-cell leukemia, human) treated with 6 μM camptothecin for four hours.
Abcam’s Apoptosis Detection (Annexin V-CF Blue 7-AAD) Kit ab214663 Jurkat cells (T-cell leukemia, human) untreated.

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