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## Apoptotic, Necrotic and Healthy Cells Quantitation Kit Plus

A convenient assay for quantifying apoptotic (green), necrotic (red), and total (blue) cells within the same cell population by flow cytometry or fluorescence microscopy.



### Product Description

The Apoptotic, Necrotic & Healthy Cells Quantitation Kit Plus provides a convenient assay for quantifying apoptotic (green), necrotic (red), and total (blue) cells within the same cell population by fluorescence microscopy.

Apoptosis and necrosis are two major processes by which cells die. Apoptosis is an active, genetically regulated disassembly of the cell from within. During apoptosis, phosphatidylserine (PS) is translocated from the inner to the outer leaflet of the plasma membrane for phagocytic cell recognition. The human anticoagulant Annexin V is a 35 kDa,  $\text{Ca}^{2+}$ -dependent phospholipid-binding protein with high affinity for PS. Annexin V labeled with CF®488A stains apoptotic cells green by binding to PS exposed on the cell surface. CF®488A is spectrally similar to fluorescein (FITC), with much brighter and more photostable fluorescence.

Necrosis normally results from severe cellular insult. Both internal organelle and plasma membrane integrity are lost, resulting in the release of cellular contents into the surrounding environment. Ethidium Homodimer III (EthD-III) is a highly positively charged nucleic acid probe, which is impermeant to live cells, but stains cells with compromised membrane integrity with red fluorescence. EthD-III is a superior alternative to Propidium Iodide (PI) or Ethidium Homodimer I because of its significantly higher affinity for DNA and higher fluorescence quantum yield.

The kit also includes the cell membrane-permeant DNA dye Hoechst 33342 to stain all cell nuclei blue.

CF dye technology is covered by US and international patents.

### References

1. Cell Death Dis (2012) 3, e414. <https://doi.org/10.1038/cddis.2012.154>
2. JBC (2019) 294, 11259-11275. doi: [10.1074/jbc.RA119.007851](https://doi.org/10.1074/jbc.RA119.007851)

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### Product attributes

<b>Apoptosis/viability marker</b>	Phosphatidylserine/Annexin V, Dead cell stain, All cell stain, Apoptosis/necrosis assay
<b>For live or fixed cells</b>	For live/intact cells
<b>Detection method/readout</b>	Fluorescence microscopy
<b>Assay type/options</b>	Endpoint assay
<b>Colors</b>	Blue/Green/Red
<b>Product origin</b>	Annexin V (human); recombinant, produced in E. coli
<b>Storage Conditions</b>	Store at 2 to 8 °C, Do not freeze, Protect from light