



CELL TECHNOLOGY

APO ACTIVE 3™

Antibody Specific Active Caspase 3 Detection Kit

Highly Specific:

Cell Technology's APO-ACTIVE 3 Kit is highly specific for active human and murine caspase 3. Other assays require the utilization of peptide based (DEVD) reagents that tend to cross-react with caspase 7 and other caspases.

Compatible with Multiple Fluorometric Modalities:

- Fluorescence microscope
- 96 well plate reader
- Flow cytometry

Reliable:

Yields both quantitative and qualitative results. Gives a strong positive signal. The kit can be used in conjunction with other antibodies or stains.

Free Technical Support:

Cell Technology offers free technical support to help the researcher optimize the application of the APO-ACTIVE detection kit.

Easy to Use:

No need to make cell lysates or run western blots. Cells can be fixed and analyzed later.

Assay Principle

Cell Technology's APO-ACTIVE CASPASE 3 Kit utilizes a rabbit affinity purified polyclonal antibody raised against amino acid 163-175 of murine caspase 3 (9). This neo epitope is present on the p18 subunit of cleaved caspase 3 (9). Cells undergoing apoptosis are fixed and permeabilized prior to the addition of the antibody. A secondary FITC labeled goat anti rabbit antibody is used to visualize the bound rabbit anti caspase 3 polyclonal antibody.

Background

Apoptosis is an evolutionarily conserved form of cell suicide, which follows a specialized cellular process. The central component of this process is a cascade of proteolytic enzymes called caspases. These enzymes participate in a series of reactions that are triggered in response to pro-apoptotic signals and result in cleavage of protein substrates, causing the disassembly of the cell (1).

Caspases have been identified in organisms ranging from *C. elegans* to humans. The mammalian caspases play distinct roles in apoptosis and inflammation. In apoptosis, caspases are responsible for proteolytic cleavages that lead to cell disassembly (effector caspases), and are involved in upstream regulatory events (initiator caspases). An active caspase consists of two large (~20 kD) and two small (~10 kD) subunits to form two heterodimers that associate in a tetramer (2-4). As is common with other proteases, caspases are synthesized as precursors that undergo proteolytic maturation, either autocatalytically or in a cascade by enzymes with similar specificity (5).

Caspase 3, also known as CPP-32, Apopain or Yama, is a key effector caspase in the apoptotic pathway (6). It is present in many different cell lineages and is responsible for the cleavage of a variety of molecules such as poly ADP-ribose polymerase (PARP), protein kinase Cd, actin and DNA-dependent protein kinase (7,8).

