

Caspase-1 (active) Staining Kit - Green Fluorescence

ab219935

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Overview

Product name	Caspase-1 (active) Staining Kit - Green Fluorescence
Detection method	Fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Cell-based
Species reactivity	Reacts with: Mammals, Other species
Product overview	Caspase 1 (active) Staining Kit - Green Fluorescence (ab219935) is a sensitive fluorometric assay to measure caspase 1 activation in live cells. The assay uses FAM-YVAD-FMK, which binds irreversibly to active caspase 1 in stimulated cells. The fluorescent intensity of the FAM-YVAD-FMK signal is proportional to the amount of active caspase 1 and can be easily detected at Ex/Em = 490/525 nm by fluorescence microscopy, flow cytometer, or fluorescent microplate reader.
Notes	Caspase activity assay kits are based on fluorescent inhibitors of caspases. These inhibitors are cell permeable and non-cytotoxic. Once inside the cell, the caspase inhibitors bind covalently to the active caspases. Caspase-1 is primarily involved in the activation of pro-inflammatory cytokines and the process of pyroptosis. It has been proven that caspase 1 has substrate selectivity for the peptide sequence Tyr-Val-Ala-Asp (YVAD).
Platform	Microplate reader, Fluor. microscope, Flow cyt.

Properties

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

Components	25 tests
500X Hoechst Stain	1 x 100µl
500X Propidium Iodide	1 x 100µl
FAM-YVAD-FMK	1 vial
Washing Buffer	1 x 100ml

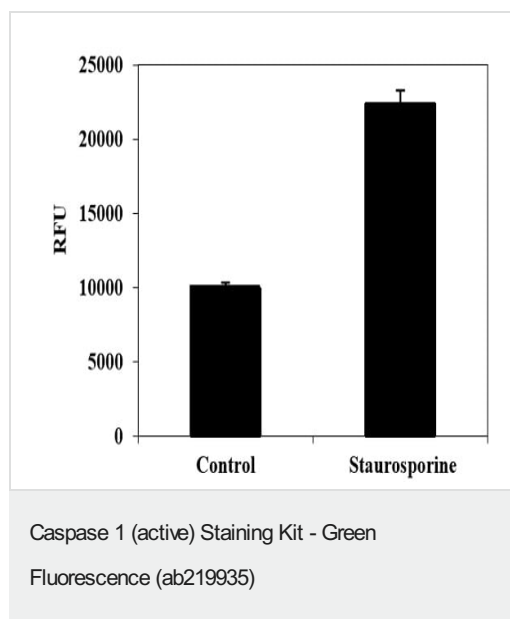
Relevance

Caspases are a family of cysteine proteases that are key mediators of programmed cell death or apoptosis. The precursor form of all caspases is composed of a prodomain, and large and small catalytic subunits. The active forms of caspases are generated by several stimuli including ligand-receptor interactions, growth factor deprivation and inhibitors of cellular functions. All known caspases require cleavage adjacent to aspartates to liberate one large and one small subunit, which associate into $\alpha_2\beta_2$ tetramer to form the active enzyme. Caspase 1 is similar to the cell death gene CED3 of *C. elegans* and regulates multiple proinflammatory cytokines, including Interleukin 1b and interferon-gamma-inducing factor. Caspase 1 plays a role in down stream of Caspase 8 which is involved in Fas-mediated apoptosis.

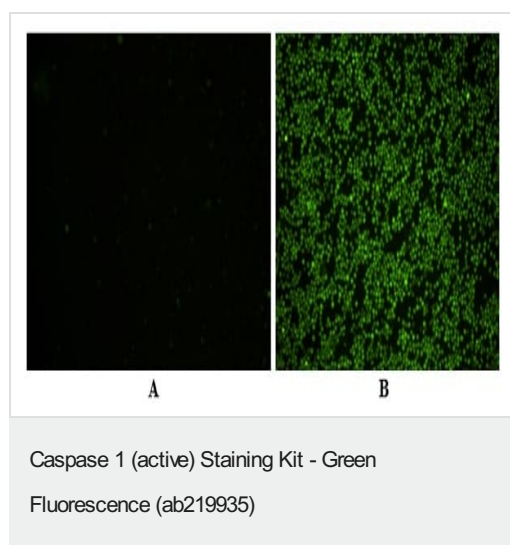
Cellular localization

Cytoplasmic

Images



Detection of active Caspase 1 in Jurkat cells. Jurkat cells (3×10^5 cells/100 μ L/well) were either untreated (control) or treated with 1 μ M staurosporine for 3 hours. Cells were incubated with FAM-YVAD-FMK for 1 hour at 37°C. The fluorescent signal was measured at Ex/Em = 490/525 nm (cut off at 515 nm) with a FlexStation microplate reader (Molecular Devices) using bottom read mode.



Active caspase 1 staining in Jurkat cells. cells (3×10^5 cells/100 μ L/well) were either untreated (A) or treated with 1 μ M staurosporine for 3 hours (B). Cells were incubated with FAM-YVAD-FMK for 1 hour at 37°C. Increase in fluorescent intensity was observed using a fluorescence microscope with a FITC channel.

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