Elabscience®

Comprehensive Cell Pyroptosis Detection Solutions

Cell Pyroptosis: A form of pro-inflammatory cell death initiated through programmed cell death pathways, typically triggered by pathogenic infections or inflammatory stimuli. It depends on the activation of inflammasomes and is mediated by caspases such as Caspase-1 or Caspase-4/5/11. This process ultimately results in pore formation in the cell membrane, cell lysis, and the release of large amounts of inflammatory cytokines, such as IL-1β and IL-18.

Accurately Targets Critical Signaling Pathways

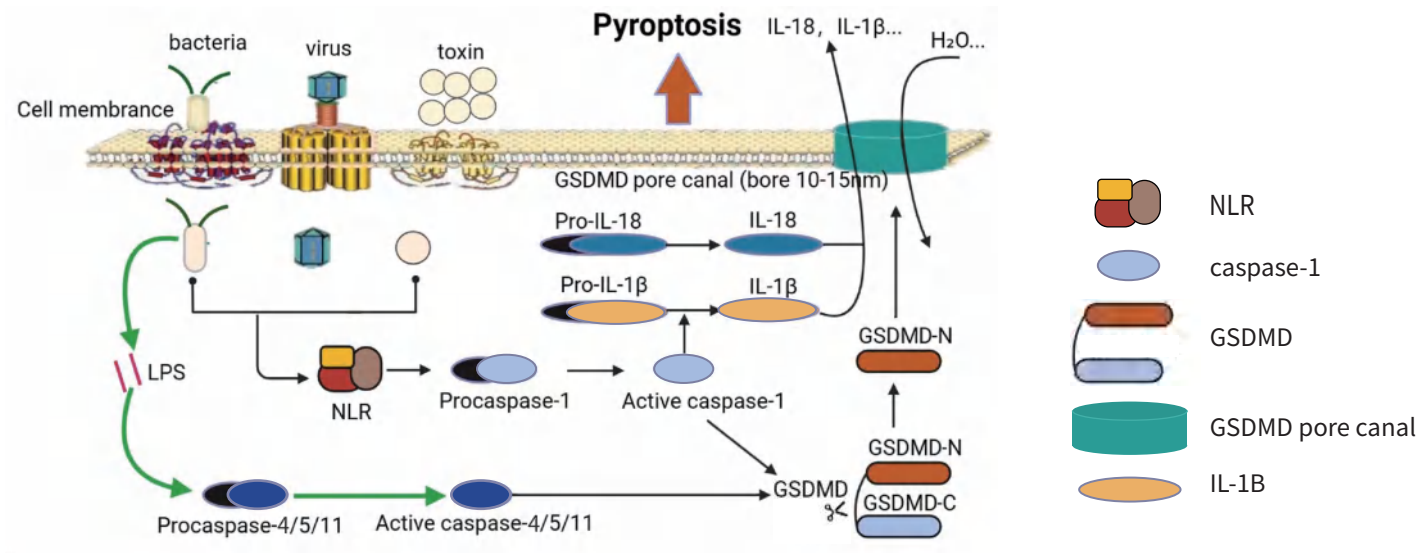
Focusing on key regulators: Caspase activation and GSDMD cleavage antibodies

Comprehensive Assay Solutions

Provide detection kits for inflammatory factor release and membrane integrity disruption

Stringent QC Ensures Reliable Data

ISO 9001–certified reagents ensure consistency and reproducibility across experiments



Pyroptosis signaling pathway

Recommended Cell Pyroptosis Detection Markers

Detection of Core Markers

Detection of caspase-1/4 activity

Caspase 1 is the initiating core of the classical pyroptosis pathway,Caspase 4 mediates non-classical pathways, directly recognizes the pathogen LPS and cleases GSDMD

GSDMD cutting verification

GSDMD is the executive of pyroptosis.The N-terminal fragment (GSDMD-N) formed after being cleaved by Caspase forms pores in the cell membrane, causing the cell to swell and rupture

Detection of IL-1β/IL-18 release

The release of mature IL-1β/IL-18 depends on the cleavage of precursor proteins by Caspase 1, which is direct evidence of the pyroptotic inflammatory effect

Detection of Auxiliary Markers

Detection of inflammasome

Pyroptosis depends on the activation of inflammasomes. NLRP3, AIM2, NLRC4, etc. are the key components of inflammasomes

Quantification of LDH activity

The leakage of LDH enzymes from the cytoplasm reflects an increase in membrane permeability, which is indirect evidence for the formation of pyroptosis membrane pores

Detection of ROS levels

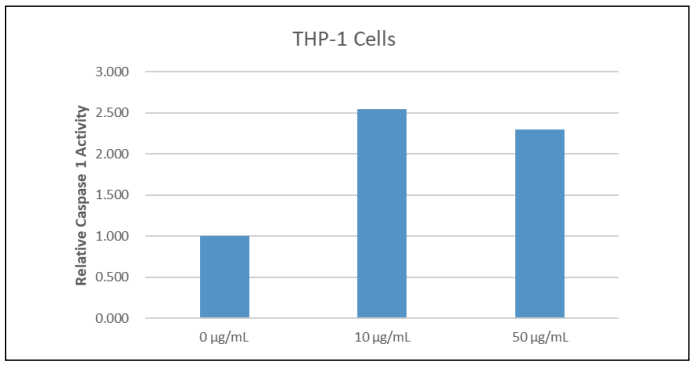
The burst of mitochondrial ROS is a key trigger for the activation of NLRP3 inflammasome and is involved in the initiation of pyroptosis

Elabscience® Cell Pyroptosis Detection Products

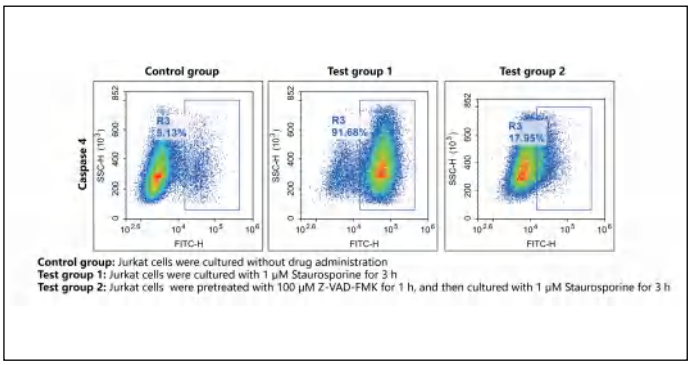
Classification	Product Name	Cat. No.	Size
Cell Health Detection Kits	Caspase 1 Activity Assay Kit	E-CK-A381	20/50/100 Assays
	Caspase 4 Activity Assay Kit	E-CK-A384	20/50/100 Assays
	Caspase 1 Activity Detection Substrate for Flow Cytometry	E-CK-A481	20/100 T
	Caspase 4 Activity Detection Substrate for Flow Cytometry	E-CK-A484	20/100 T
Metabolism Assays	Reactive Oxygen Species (ROS) Fluorometric Assay Kit (Green)	E-BC-K138-F	96 T
	Reactive Oxygen Species (ROS) Fluorometric Assay Kit (Red)	E-BC-F005	96 T
	Lactate Dehydrogenase (LDH) Cytotoxicity Colorimetric Assay Kit	E-BC-K771-M	96 T
ELISA Kits	Human IL-1β(Interleukin 1 Beta) ELISA Kit	E-EL-H0149	48 T/96 T/96 T × 5
	Human IL-18(Interleukin 18) ELISA Kit	E-EL-H0253	48 T/96 T/96 T × 5
	Mouse IL-1β(Interleukin 1 Beta) ELISA Kit	E-EL-M0037	48 T/96 T/96 T × 5
	Mouse IL-18(Interleukin 18) ELISA Kit	E-EL-M0730	48 T/96 T/96 T × 5
Antibodies	Recombinant GSDMD Monoclonal Antibody	E-AB-81473	50/100 µL
	NLRC4 Polyclonal Antibody	E-AB-52183	20/60/120/200 µL
	AIM2 Polyclonal Antibody	E-AB-10974	20/60/120/200 µL

For more cell pyroptosis detection products, please visit www.elabscience.com or contact local distributors.

Experimental Results



THP-1 cells, treated with different concentrations of LPS for 24 h, detected the changes in Caspase 1 enzyme activity with Caspase 1 Activity Assay Kit (E-CK-A381)



Jurkat cells, treated with different conditions, stained with Caspase 4 Activity Detection Substrate for Flow Cytometry (E-CK-A484), detected by flow cytometry

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