Revision 1

Store at -20C

#70934

Mouse Reactive PANoptosis Antibody Sampler Kit

1 Kit

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
MLKL (D6W1K) Rabbit mAb	37705	20 µl	54 kDa	Rabbit IgG
Phospho-MLKL (Ser345) (D6E3G) Rabbit mAb	37333	20 µl	54 kDa	Rabbit IgG
Caspase-3 (D3R6Y) Rabbit mAb	14220	20 µl	35, 19, 17 kDa	Rabbit IgG
Phospho-RIP3 (Thr231/Ser232) (E7S1R) Rabbit mAb	91702	20 µl	46-62 kDa	Rabbit IgG
Gasdermin D (E9S1X) Rabbit mAb	39754	20 µl	53, 30 kDa	Rabbit IgG
Cleaved Gasdermin D (Asp276) (E3E3P) Rabbit mAb	10137	20 µl	31 kDa	Rabbit IgG
IL-1β (D3H1Z) Rabbit mAb	12507	20 µl	17,31 kDa	Rabbit IgG
Cleaved-IL-1β (Asp117) (E7V2A) Rabbit mAb	63124	20 µl	17 kDa	Rabbit IgG
RIP3 (D4G2A) Rabbit mAb	95702	20 µl	46-62 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Mouse Reactive PANoptosis Antibody Sampler Kit provides an economical means of detecting the activation of PANoptosis in mouse samples. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA, 50% glycerol, and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibodies.*

Background

Programmed cell death (PCD) plays important roles in organismal development and immune responses. There are three major PCD pathways: apoptosis, pyroptosis, and necroptosis. Apoptosis is a non-inflammatory cell death and is characterized by a series of proteolytic cleavage, beginning with the initiator caspases (caspases-8/9), then the executioner caspases (caspases-3/6/7), followed by cleavage of substrate proteins to drive apoptotic cell death (1,2). During pyroptosis, caspase-1 is proteolytically activated through a protein complex called inflammasome, then the activated caspase-1 can cleave Gasdermin D (GSDMD), IL-1β, and IL-18. The freed GSDMD N-terminal domains from the cleavage form pores in the plasma membrane to drive pyroptotic cell lysis and release of the cleaved and matured IL-1β and IL-18, as well as damage-associated molecular patterns (DAMPs) (3,4). The key steps in necroptosis include the receptor-interacting protein kinase 3 (RIPK3)-dependent phosphorylation of mixed lineage kinase domain-like protein (MLKL), translocation of phosphorylated MLKL to plasma membrane, and disruption of plasma membrane integrity (5,6). In contrast to the non-inflammatory nature of apoptosis, both pyroptosis and necroptosis are proinflammatory (7). While early studies of these PCD pathways focused on their distinct individual features and underlying mechanisms, recent findings point to crosstalk and redundancies among these processes under certain conditions, where the three pathways are activated, not independently of each other, and compensatory responses occur when one pathway is blocked. This new form of PCD with key features of pyroptosis, apoptosis, and/or necroptosis has been termed PANoptosis (8,9). PANoptosis is a coordinated cell death pathway driven by a cytoplasmic protein complex named the PANoptosome, whose components provide scaffold and catalytic functions to engage pyroptosis, apoptosis, and/or necroptosis (10,11).

Background References

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Limited Uses