Revision 1

Store at -20C

#98303

Mouse Reactive Pyroptosis Antibody Sampler Kit

1 Kit (9 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
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
Caspase-1 (E2Z1C) Rabbit mAb	24232	20 µl	48, 10 kDa	Rabbit IgG
Cleaved Caspase-1 (Asp296) (E2G2I) Rabbit mAb	89332	20 µl	22 kDa	Rabbit IgG
Caspase-11 (17D9) Rat mAb	14340	20 µl	38, 43 kDa	Rat IgG2a
ASC/TMS1 (D2W8U) Rabbit mAb	67824	20 µl	22 kDa	Rabbit IgG
HMGB1 (D3E5) Rabbit mAb	6893	20 µl	29 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 Pyroptosis Antibody Sampler Kit provides an economical means of detecting proteins that are used as readouts for pyroptosis. 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

Pyroptosis is a regulated pathway of cell death with morphological features of necrosis, including cell swelling, plasma membrane pore formation, and engagement of an inflammatory response with the release of a number of damage-associated molecular patterns (DAMPs), such as HMGB1 and inflammatory cytokines like IL-1β and IL-18 (1,2). Pyroptosis is generally induced in cells of the innate immune system, such as monocytes, macrophages, and dendritic cells in the presence of pathogen-associated molecular patterns (PAMPs) expressed on microbial pathogens or by cell-derived DAMPs. It is induced through assembly of inflammasomes triggering proteolytic activation of caspase-1 which then cleaves inflammatory cytokines like IL-1β and IL-18 to their mature forms (3). A critical feature of pyroptosis is the cleavage of Gasdermin D by caspase-1 and mouse caspase-11 (or human caspase-4/5) (4-6). Upon cleavage, the N-terminal fragment of Gasdermin D oligomerizes to form a pore, allowing secretion of inflammatory DAMPs and cytokines. Canonical inflammasome assembly typically consists of a cytosolic-pattern recognition receptor (PPR; a nucleotide binding domain and leucine-rich repeat [NLR] or AIM2-like family members), an adaptor protein (ASC/TMS1), and pro-caspase-1. Distinct inflammasome complexes can recognize distinct PAMPs and DAMPs to trigger pyroptosis. The best characterized pathway triggered by the NLR, NLRP3, occurs through a two-step process. The first step is a priming signal, NF-κB is activated to induce the expression of a number of inflammasome components including NLRP3, pro-IL-1β, and pro-IL-18. In the second activation step, caspase-1 is activated and Gasdermin D and cytokines are proteolytically activated. In a non-canonical pathway, caspase-4 and caspase-5 can directly trigger Gasdermin D cleavage in monocytes following LPS stimulation (5,7).

Background References

1. Frank, D. and Vince, J.E. (2019) *Cell Death Differ* 26, 99-114.
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3. Malik, A. and Kanneganti, T.D. (2017) *J Cell Sci* 130, 3955-63.
4. He, W.T. et al. (2015) *Cell Res* 25, 1285-98.
5. Shi, J. et al. (2015) *Nature* 526, 660-5.
6. Kayagaki, N. et al. (2015) *Nature* 526, 666-71.
7. Viganò, E. et al. (2015) *Nat Commun* 6, 8761.

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