AIM2 (N-terminal region)

Rabbit Polyclonal

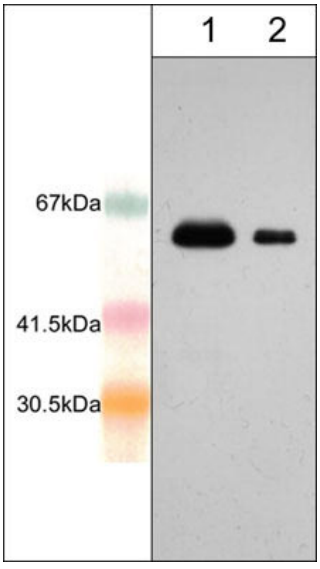
Cat. # AP3851
Size 100 µl

Background

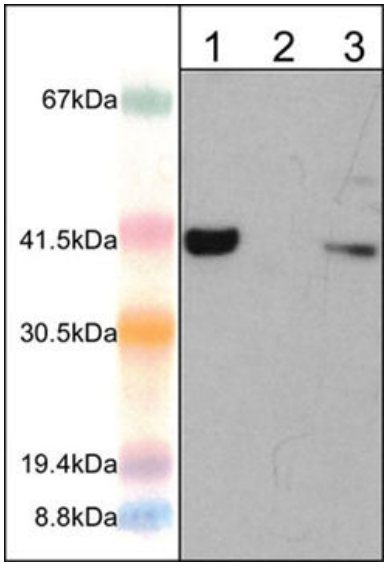
Host- and pathogen-associated cytoplasmic double-stranded DNA triggers the activation of a NALP3-independent inflammasome, which activates caspase-1, leading to maturation of pro-interleukin-1beta and inflammation. Several studies have isolated AIM2 (absent in melanoma 2) as a candidate cytoplasmic-DNA-sensing protein that contains an N-terminal pyrin domain and C-terminal oligonucleotide binding domain. A screen for transcripts induced by interferon-beta identified AIM2 gene expression. AIM2 protein bound double-stranded DNA, recruited the inflammasome adaptor ASC, and localized to ASC containing speckles. AIM2 and ASC form a pyroptosome, which induces pyroptotic cell death mediated by caspase-1. RNA-mediated suppression of AIM2 expression impairs DNA-induced maturation of interleukin -1beta in THP-1 human monocytic cells, as well as abrogates caspase-1 activation in response to cytoplasmic double-stranded DNA and the double-stranded DNA vaccinia virus. Thus, AIM2 is a DNA-sensing protein for the activation of the caspase-1 inflammasome.

Background References

Bürckstümmer, T. et al. (2009). Nat Immunol. 10(3):266.
Fernandes-Alnemri, T. (2009) Nature. 458(7237):509.
Hornung, V. et al. (2009). Nature. 458(7237):514.
Roberts, T.L. et al. (2009). Science. 323(5917):1057.



Western blot analysis of human recombinant AIM2 full length sequence with N-terminal GST tag (62 kDa). The blot was probed with rabbit polyclonal anti-AIM2 (N-terminal region) antibody at 1:250 (lane 1) and 1:1000 (lane 2).



Western blot analysis of human Jurkat cells (lane 1), mouse macrophages untreated (lane 2) and treated (lane 3) with IFNγ (10 ng/ml) and LPS (1µg/ml) for 12 hr (20 µg/lane). The blot was probed with rabbit polyclonal anti-AIM2 (N-terminal region) antibody at 1:1000.

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Immunogen

Uniprot ID: O14862

AIM2 synthetic peptide (coupled to KLH) corresponds to amino acid residues in the N-terminal region of human AIM2. This peptide sequence is highly conserved in rat and mouse AIM2.

Buffer and Storage

Rabbit polyclonal, affinity-purified antibody is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at –20°C. Stable for 1 year.

Applications

WB	1:1000
ELISA	1:2000

Species Reactivity

Hu, Rt, Ms

End user should determine optimal dilution for their particular applications and experiments.
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.
Abbreviations: E = ELISA, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, MS = mass spectrometry, WB = western blot
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

Specificity

This antibody was affinity purified using AIM2 (N-terminal region) peptide (without carrier). The antibody detects a 40 kDa* doublet corresponding to AIM2 in immunoblots of Jurkat cells, as well as mouse macrophages treated with IFNγ and LPS.

*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.
"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

Related Products

AX3855 AIM2 (N-terminal region) Blocking Peptide
CK6360 Caspase Family Antibody Sampler Kit
CM3771 Caspase-3 (N-terminal region) Mouse Monoclonal
RM2741 ROCK-I (C-terminal), cleavage-specific Mouse Monoclonal
TM3391 TRADD (C-terminal region) Mouse Monoclonal
RS3251 Anti-Rabbit Ig Light-Chain Specific:HRP Mouse Monoclonal

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