Revision 1

Store at -20C

#8055

AIM2 Antibody

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	40	Rabbit	#O14862	9447

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

AIM2 Antibody recognizes endogenous levels of total AIM2 protein.

Species predicted to react based on 100% sequence homology

Monkey

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro250 of human AIM2 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Absent in melanoma 2 (AIM2) is an interferon-inducible protein containing an amino-terminal pyrin domain and carboxy-terminal HIN-200 domain that functions in innate immunity and tumor progression (1). Expression of AIM2 can inhibit cell growth and tumor formation (2,3). Furthermore, the *AIM2* gene has a high frequency of mutations associated with microsatellite-unstable colorectal cancers (4). AIM2 has a critical role in the activation of caspase-1, the protease responsible for the processing of pro-inflammatory cytokines IL-1β and IL-18. Caspase-1 activation is regulated by multi-protein complexes referred to as "inflammasomes" (5,6). Distinct inflammasome complexes have been described containing NLRP1/NALP1, NLRP3/NALP3, IPAF, and AIM2. The HIN-200 domain of AIM2 is responsible for binding to cytoplasmic double-stranded DNA, resulting in caspase-1 activation. (7-9). This inflammasome complex also involves binding of the pyrin domain of AIM2 to the CARD-domain protein ASC/TMS1, which then interacts directly with caspase-1. As a result, AIM2 has been demonstrated to be an important sensor for a number of different pathogens (10-12).

Background References

1. DeYoung, K.L. et al. (1997) *Oncogene* 15, 453-7.
2. Chen, I.F. et al. (2006) *Mol Cancer Ther* 5, 1-7.
3. Patsos, G. et al. (2010) *Int J Cancer* 126, 1838-49.
4. Woerner, S.M. et al. (2007) *Genes Chromosomes Cancer* 46, 1080-9.
5. Schroder, K. and Tschopp, J. (2010) *Cell* 140, 821-32.
6. Khare, S. et al. (2010) *Crit Rev Immunol* 30, 463-87.
7. Roberts, T.L. et al. (2009) *Science* 323, 1057-60.
8. Hornung, V. et al. (2009) *Nature* 458, 514-8.
9. Fernandes-Alnemri, T. et al. (2009) *Nature* 458, 509-13.
10. Jones, J.W. et al. (2010) *Proc Natl Acad Sci USA* 107, 9771-6.
11. Fernandes-Alnemri, T. et al. (2010) *Nat Immunol* 11, 385-93.
12. Kim, S. et al. (2010) *Eur J Immunol* 40, 1545-51.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

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