AIM2 Protein, Human

Cat. No.:	HY-P702186
Synonyms:	AIM2; Interferon-inducible protein AIM2; Absent in melanoma 2
Species:	Human
Source:	E. coli
Accession:	O14862 (S144-T343)
Gene ID:	/
Molecular Weight:	

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 μm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	AIM2 protein serves as a crucial sensor component within the AIM2 inflammasome, orchestrating inflammasome activation in response to the presence of cytosolic double-stranded DNA (dsDNA), ultimately leading to pyroptosis. This supramolecular complex assembles in the cytosol as a response to pathogens and damage-associated signals, playing pivotal roles in innate immunity and inflammation. AIM2 acts as a pattern recognition receptor (PRR), specifically binding and recognizing dsDNA in the cytosol, thus facilitating the formation of the inflammasome polymeric complex composed of AIM2, CASP1, and PYCARD/ASC. Activation of pro-caspase-1 by the AIM2 inflammasome leads to the cleavage and activation of inflammatory cytokines IL1B and IL18, as well as gasdermin-D (GSDMD), promoting cytokine secretion. AIM2 detects cytosolic dsDNA in a non-sequence-specific manner, responding to viral and bacterial origin. Furthermore, AIM2 plays a role in the DNA damage response, mediating pyroptosis in response to double-strand DNA breaks caused by acute ionizing radiation. In the context of neurodevelopment, AIM2 acts as a regulator, promoting neural cell death in response to DNA damage in the developing brain. Independently, AIM2 serves as a tumor suppressor by restricting stem cell proliferation in the intestinal mucosa, inhibiting the AKT-mTOR signaling pathway, and regulating regulatory T-cell (Treg) homeostasis to restrain autoimmune diseases. AIM2's multifaceted functions encompass its role in inflammatory responses, DNA damage sensing, and regulation of cell proliferation, highlighting its significance in host defense and cellular homeostasis.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA