

ZBP1 Protein, Human (His)

Cat. No.:	HY-P71436
Synonyms:	Z-DNA-Binding Protein 1; Tumor Stroma and Activated Macrophage Protein DLM; ZBP1; C20orf183; DLM1
Species:	Human
Source:	E. coli
Accession:	Q9H171 (M1-S149)
Gene ID:	81030
Molecular Weight:	16-23 kDa

PROPERTIES

AA Sequence	<p> MAQAPADPGR EGHLEQRILQ VLTEAGSPVK LAQLVKECQA PKRELNQVLY RMKKELKVS L TSPATWCLGG TDPEGEGPAE LALSSPAERP QQHAATIPET PGPQFSQQRE EDIYRFLKDN GPQRALVIAQ ALGMRATAKDV NRDLYRMKS </p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>ZBP1, a pivotal innate sensor, plays a crucial role in host defense against various viruses by recognizing and binding to Z-RNA structures produced by pathogens such as herpesvirus, orthomyxovirus, and flavivirus. This recognition triggers a spectrum of cell death responses, including pyroptosis, necroptosis, and apoptosis, collectively referred to as PANoptosis. ZBP1 serves as a key activator of necroptosis, particularly in response to death-inducing TNF-alpha family members, by binding Z-RNA and subsequently stimulating RIPK3 kinase, leading to the phosphorylation and activation of MLKL, ultimately executing programmed necrosis. Moreover, in the context of orthomyxovirus infection, ZBP1 detects Z-RNA structures in infected nuclei, activating RIPK3 and promoting MLKL phosphorylation, resulting in the disruption of the nuclear envelope and release of cellular DNA into the cytosol. ZBP1's role extends beyond direct pathogen sensing, as it is</p>
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involved in PANoptosis triggered by bacterial and fungal infections. Notably, in response to Zika virus infection, ZBP1, in conjunction with RIPK3, initiates a death-independent transcriptional program that restricts viral replication by modifying cellular metabolism. However, in the case of herpes simplex virus 1 (HHV-1) infection, ZBP1 may form hetero-amyloid structures with HHV-1 protein RIR1/ICP6, potentially inhibiting ZBP1-mediated necroptosis and allowing viral evasion of host cell death pathways.

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

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