

NLRP3 Protein, Human (1-536a.a, His)

Cat. No.:	HY-P702770
Synonyms:	C1orf7; CIAS1; NALP3; PYPAF1; FCAS; FCU; MWS; NACHT; CLR1.1; Cryopyrin;
Species:	Human
Source:	E. coli
Accession:	Q96P20-1 (M1-L536)
Gene ID:	114548
Molecular Weight:	66.1 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 μ m filtered solution of Tris-based buffer, 50% glycerol.
Endotoxin Level	<1 EU/ μ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μ g/mL in ddH ₂ O.
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>NLRP3 protein serves as the sensor component of the NLRP3 inflammasome, orchestrating the activation of the inflammasome in response to various stimuli that compromise membrane integrity, leading to the secretion of inflammatory cytokines IL1B and IL18, as well as pyroptosis. In the presence of pathogens or damage-associated signals affecting membrane integrity, NLRP3 initiates the assembly of the inflammasome complex, comprising NLRP3, CASP1, and PYCARD/ASC. This results in the recruitment and activation of pro-caspase-1, which subsequently cleaves and activates IL1B, IL18, and gasdermin-D (GSDMD), promoting cytokine release and pyroptotic cell death. Activation stimuli include extracellular ATP, nigericin, reactive oxygen species, crystals, amyloid-beta fibers, and various particles or nanoparticles. Intriguingly, NLRP3 also plays a role in regulating the differentiation of T helper 2 (Th2) cells, contributing to Th2 cell-dependent processes such as asthma and tumor growth. During Th2 differentiation, NLRP3 is involved in optimal IRF4 binding to the IL4 promoter and IRF4-dependent IL4 transcription, highlighting its multifaceted functions beyond inflammasome activation.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

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