

## NLRP3 Protein, Mouse (His-SUMO)

<b>Cat. No.:</b>	HY-P71598
<b>Synonyms:</b>	Nlrp3; Cias1; Mmig1; Nalp3; Pypaf1; NACHT; LRR and PYD domains-containing protein 3; Cold autoinflammatory syndrome 1 protein homolog; Cryopyrin; Mast cell maturation-associated-inducible protein 1; PYRIN-containing APAF1-like protein 1
<b>Species:</b>	Mouse
<b>Source:</b>	E. coli
<b>Accession:</b>	Q8R4B8 (M1-R153)
<b>Gene ID:</b>	216799
<b>Molecular Weight:</b>	Approximately 35 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>           M T S V R C K L A Q    Y L E D L E D V D L    K K F K M H L E D Y    P P E K G C I P V P            R G Q M E K A D H L    D L A T L M I D F N    G E E K A W A M A V    W I F A A I N R R D            L W E K A K K D Q P    E W N D T C T S H S    S M V C Q E D S L E    E E W M G L L G Y L            S R I S I C K K K K    D Y C K M Y R R H V    R S R F Y S I K D R    N A R         </p>
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized after extensive dialysis against solution in 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0 or 50 mM Tris-HCl, 300 mM NaCl, 200 mM arginine, pH 8.0.
<b>Endotoxin Level</b>	<1 EU/μg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	<p>NLRP3 protein functions as the sensor component of the NLRP3 inflammasome, orchestrating inflammasome activation in response to defects in membrane integrity. Upon encountering pathogens or damage-associated signals affecting membrane integrity, NLRP3 initiates the assembly of the inflammasome polymeric complex composed of NLRP3, CASP1, and PYCARD/ASC. Recruitment of pro-caspase-1 to the NLRP3 inflammasome results in caspase-1 activation, subsequently cleaving and activating inflammatory cytokines IL1B and IL18, along with gasdermin-D (GSDMD), leading to cytokine secretion and pyroptosis. NLRP3 activation stimuli encompass a range of factors, including extracellular ATP, nigericin, reactive oxygen species, crystals, and various environmental particles. Notably, almost all stimuli induce intracellular K(+) efflux, contributing to membrane perturbation and NLRP3 activation. The activated NLRP3 is transported to the</p>
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microtubule organizing center (MTOC) and, upon interaction with NEK7, undergoes relocalization to dispersed trans-Golgi network (dTGN) vesicle membranes, forming an active inflammasome complex. Additionally, NLRP3 plays a role in T helper 2 (Th2) cell differentiation, influencing Th2 cell-dependent processes such as asthma and tumor growth by regulating the transcription of key genes involved in these pathways.

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

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