

Recombinant Human NLRP1 Protein (L1379-K1462), Tag Free

Cat. No. NLRP1-0067H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human NLRP1(L1379-K1462) Protein was expressed in E. coli.

Species Human

Source E.coli

ProteinLength L1379-K1462

Description

Acts as the sensor component of the NLRP1 inflammasome, which mediates inflammasome activation in response to various pathogen-associated signals, leading to subsequent pyroptosis. Inflammasomes are supramolecular complexes that assemble in the cytosol in response to pathogens and other damage-associated signals and play critical roles in innate immunity and inflammation. Acts as a recognition receptor (PRR): recognizes specific pathogens and other damage-associated signals, such as cleavage by human rhinoviruses 14 and 16 (HRV-14 and HRV-16), double-stranded RNA or Val-boroPro inhibitor, and mediates the formation of the inflammasome polymeric complex composed of NLRP1, CASP1 and PYCARD/ASC. In response to pathogen-associated signals, the N-terminal part of NLRP1 is degraded by the proteasome, releasing the cleaved C-terminal part of the protein (NACHT, LRR and PYD domains-containing protein 1, C-terminus), which polymerizes and associates with PYCARD/ASC to initiate the formation of the inflammasome complex: the NLRP1 inflammasome recruits pro-caspase-1 (proCASP1) and promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D

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(GSDMD), leading to pyroptosis. Activation of NLRP1 inflammasome is also required for HMGB1 secretion; the active cytokines and HMGB1 stimulate inflammatory responses. Binds ATP and shows ATPase activity. Plays an important role in antiviral immunity and inflammation in the human airway epithelium. Specifically recognizes a number of pathogen-associated signals: upon infection by human rhinoviruses 14 and 16 (HRV-14 and HRV-16), NLRP1 is cleaved and activated which triggers NLRP1-dependent inflammasome activation and IL18 secretion. Positive-strand RNA viruses such as Semliki forest virus and long dsRNA activate the NLRP1 inflammasome, triggering IL1B release in a NLRP1-dependent fashion. Acts as a direct sensor for long dsRNA and thus RNA virus infection. May also be activated by muramyl dipeptide (MDP), a fragment of bacterial peptidoglycan, in a NOD2-dependent manner.

Form	Liquid
Endotoxin	< 0.01 EU per µg of the protein
Purity	90%
Stability	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade.
Storage	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Storage Buffer	Supplied as sterile 50mM Tris-HCl (pH 7.5), 200mM NaCl, 20% glycerol
Shipping	It is shipped out with blue ice.

GENE INFORMATION

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Gene Name	NLRP1 NLR family, pyrin domain containing 1 [Homo sapiens (human)]
Official Symbol	NLRP1
Synonyms	NLRP1; NLR family, pyrin domain containing 1; NACHT, leucine rich repeat and PYD (pyrin domain) containing 1, NALP1; NACHT, LRR and PYD domains-containing protein 1; CARD7; CLR17.1; DEFCAP; DKFZp586O1822; KIAA0926; NAC; nucleotide binding oligomerization domain; leucine rich repeat and pyrin domain containing 1; caspase recruitment domain protein 7; NACHT, LRR and PYD containing protein 1; NACHT, leucine rich repeat and PYD containing 1; caspase recruitment domain-containing protein 7; nucleotide-binding domain and caspase recruitment domain; death effector filament-forming Ced-4-like apoptosis protein; NACHT, leucine rich repeat and PYD (pyrin domain) containing 1; nucleotide-binding oligomerization domain, leucine rich repeat and pyrin domain containing 1; NALP1; SLEV1; PP1044; VAMAS1; DEFCAP-L/S;
Gene ID	22861
mRNA Refseq	NM_001033053
Protein Refseq	NP_001028225
MIM	606636
UniProt ID	Q9C000

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