

Recombinant Human NACHT, LRR and PYD domains-containing protein 3 (NLRP3), partial

Product Name	Recombinant Human NACHT, LRR and PYD domains-containing protein 3 (NLRP3), partial
Catalog Number	MBS1391852
Expression host	<i>Yeast</i>
Buffer	Lyophilized from Tris/PBS-based buffer, 6% Trehalose, pH 8.0
Storage	Store at -20°C, for extended storage, conserve at -20°C or -80°C.
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Relevance	<p>As the sensor component of the NLRP3 inflammasome, plays a crucial role in innate immunity and inflammation. In response to pathogens and other damage-associated signals, initiates the formation of the inflammasome polymeric complex, made of NLRP3, PYCARD and CASP1 (and possibly CASP4 and CASP5). Recruitment of proCASP1 to the inflammasome promotes its activation and CASP1-catalyzed IL1B and IL18 maturation and secretion in the extracellular milieu (PubMed:28847925). Activation of NLRP3 inflammasome is also required for HMGB1 secretion (PubMed:22801494). The active cytokines and HMGB1 stimulate inflammatory responses. Inflammasomes can also induce pyroptosis, an inflammatory form of programmed cell death. Under resting conditions, NLRP3 is autoinhibited. NLRP3 activation stimuli include extracellular ATP, reactive oxygen species, K⁺ efflux, crystals of monosodium urate or cholesterol, amyloid-beta fibers, environmental or industrial particles and nanoparticles, cytosolic dsRNA, etc. However, it is unclear what constitutes the direct NLRP3 activator. Activation in presence of cytosolic dsRNA is mediated by DHX33 (PubMed:23871209). Independently of inflammasome activation, regulates the differentiation of T helper 2 (Th2) cells and has a role in Th2 cell-dependent asthma and tumor growth (By similarity). During Th2 differentiation, required for optimal IRF4 binding to IL4 promoter and for IRF4-dependent IL4 transcription. Binds to the consensus DNA sequence 5'-GRRGGNRGAG-3'. May also participate in the transcription of IL5, IL13, GATA3, CCR3, CCR4 and MAF.</p>
AA sequence	<p>MKMASTRCKLARYLEDLEDVDLKKFKMHLEDYPPQKGCIPLRGQTEKADHVD LATLMIDFNGEEKAWAMAVWIFAAINRRDLYEKAKRDEPKWGSDNARVSNPTVIC QEDSIEEEWMGLLEYLSRISICKMKKDYRKKYRKYVRSRFQCIEDRNARLGESVS LNKRYTRLRLIKEHRSQQEREQELLAIGKTKTCESPVS</p>
References	<p>"Osteoblasts express NLRP3, a nucleotide-binding domain and leucine-rich repeat region containing receptor implicated in bacterially induced cell death." McCall S.H., Sahraei M., Young A.B., Worley C.S., Duncan J.A., Ting J.P., Marriott I. J. Bone Miner. Res. 23:30-40(2008)</p>