

Rat NLRP3 ELISA Kit ab277086

Recombinant SimpleStep ELISA

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Overview

Product name Rat NLRP3 ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Extract	8			4.9%

Inter-assay

Sample	n	Mean	SD	CV%
Extract	3			8.6%

Sample type

Tissue Extracts

Assay type

Sandwich (quantitative)

Sensitivity

6.6 pg/ml

Range

15.63 pg/ml - 1000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Tissue Extracts	105	104% - 106%

Assay time

1h 30m

Assay duration

One step assay

Species reactivity

Reacts with: Rat

Product overview

Rat NLRP3 ELISA kit (ab277086) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Rat protein in rat cell and tissue extract samples. It uses our proprietary SimpleStep ELISA® technology. Quantitate Rat NLRP3 with 6.6 pg/mL sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This

approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (**ab203359**) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes NACHT, LRR and PYD domains-containing protein 3 (NLRP3), encoded by the *NLRP3* gene, is known to have a vital role in the innate immunity and inflammation. NLRP3 is highly expressed in macrophages and as a component of the inflammasomes in which it functions to detect products of damaged cells and subsequently activates itself to trigger an immune response. Mutations in the NLRP3 has been shown in studies to be associated with a wide spectrum of dominantly inherited autoimmune diseases. This kit has been developed to recognize rat NLRP3.

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances. It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform Pre-coated microplate (12 x 8 well strips)

Properties

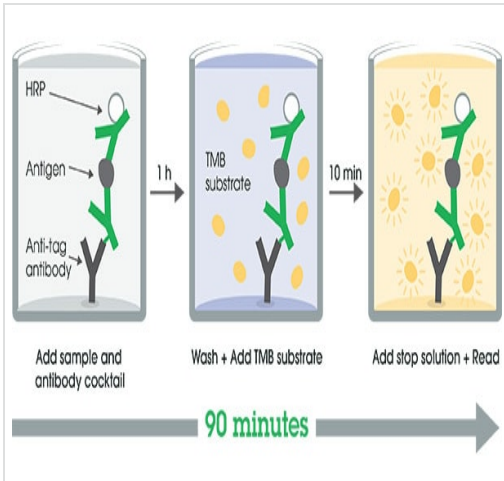
Storage instructions Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Rat NLRP3 Capture Antibody	1 x 600µl
10X Rat NLRP3 Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 4BR	1 x 6ml
Plate Seals	1 unit
Rat NLRP3 Lyophilized Recombinant Protein	2 vials
Sample Diluent NS (ab193972)	1 x 12ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml

Components	1 x 96 tests
TMB Development Solution	1 x 12ml

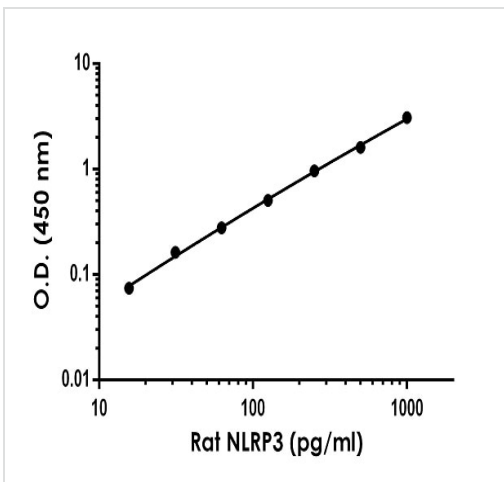
Function	May function as an inducer of apoptosis. Interacts selectively with ASC and this complex may function as an upstream activator of NF-kappa-B signaling. Inhibits TNF-alpha induced activation and nuclear translocation of RELA/NF-KB p65. Also inhibits transcriptional activity of RELA. Activates caspase-1 in response to a number of triggers including bacterial or viral infection which leads to processing and release of IL1B and IL18.
Tissue specificity	Expressed in blood leukocytes. Strongly expressed in polymorphonuclear cells and osteoblasts. Undetectable or expressed at a lower magnitude in B- and T-lymphoblasts, respectively. High level of expression detected in chondrocytes. Detected in non-keratinizing epithelia of oropharynx, esophagus and ectocervix and in the urothelial layer of the bladder.
Involvement in disease	<p>Defects in NLRP3 are the cause of familial cold autoinflammatory syndrome type 1 (FCAS1) [MIM:120100]; also known as familial cold urticaria. FCAS are rare autosomal dominant systemic inflammatory diseases characterized by episodes of rash, arthralgia, fever and conjunctivitis after generalized exposure to cold.</p> <p>Defects in NLRP3 are a cause of Muckle-Wells syndrome (MWS) [MIM:191900]; also known as urticaria-deafness-amyloidosis syndrome. MWS is a hereditary periodic fever syndrome characterized by fever, chronic recurrent urticaria, arthralgias, progressive sensorineural deafness, and reactive renal amyloidosis. The disease may be severe if generalized amyloidosis occurs.</p> <p>Defects in NLRP3 are the cause of chronic infantile neurologic cutaneous and articular syndrome (CINCA) [MIM:607115]; also known as neonatal onset multisystem inflammatory disease (NOMID). CINCA is a rare congenital inflammatory disorder characterized by a triad of neonatal onset of cutaneous symptoms, chronic meningitis and joint manifestations with recurrent fever and inflammation.</p>
Sequence similarities	<p>Belongs to the NLRP family.</p> <p>Contains 1 DAPIN domain.</p> <p>Contains 9 LRR (leucine-rich) repeats.</p> <p>Contains 1 NACHT domain.</p>
Cellular localization	Cytoplasm.

Images



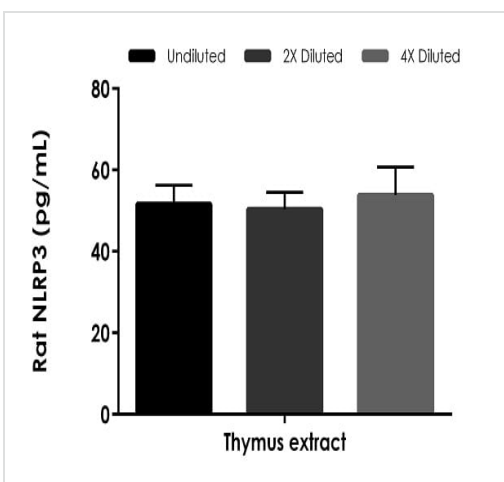
SimpleStep ELISA Protocol Diagram

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



Example of rat NLRP3 standard curve in 1X Cell Extraction Buffer PTR.


The NLRP3 standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of native NLRP3 in rat thymus extract based on a 1,000 µg/mL extract load.

The concentrations of NLRP3 were measured in duplicate and interpolated from the NLRP3 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean NLRP3 concentration was determined to be 51.9 pg/mL in thymus extract.

Powered by recombinant antibodies



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Consistent and reproducible results

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Recombinant technology

Success from the first experiment
Confirmed specificity

Ethical standards compliant
Animal-free production

Sandwich ELISA - Rat NLRP3 ELISA Kit

To learn more about the advantages of recombinant antibodies see [here](#).

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