

Datasheet for 210-401-319**IL-1 Beta Antibody****Overview**

Description:	Anti-Mouse IL-1 β (RABBIT) Antibody - 210-401-319
Item No.:	210-401-319
Size:	100 μ g
Applications:	IF, IHC, WB
Reactivity:	Mouse
Host Species:	Rabbit

Product Details

Background:	IL-1 beta (also known as Interleukin-1 beta, IL-1 β and catabolin) is produced by activated macrophages. IL-1 stimulates thymocyte proliferation by inducing IL-2 release, B-cell maturation and proliferation, and fibroblast growth factor activity. IL-1 proteins are involved in the inflammatory response, being identified as endogenous pyrogens, and are reported to stimulate the release of prostaglandin and collagenase from synovial cells. IL-1 β is a monomeric secreted protein that may be released by damaged cells or is secreted by a mechanism differing from that used for other secretory proteins. Anti-IL-1 beta antibody is ideal for investigators involved in Cardiovascular and Immunology research.
Synonyms:	rabbit anti-IL-1 beta antibody, rabbit anti-IL-1b antibody, rabbit anti-Interleukin-1 beta antibody, IL-1 β , catabolin
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	Il1b
Reactivity:	Mouse
Immunogen Type:	Recombinant Protein
Immunogen:	This antibody was prepared by repeated immunizations with recombinant mouse IL-1 β produced in E.coli. The MW of recombinant mouse IL-1 β was 17 kDa.

Purity/Specificity:	This is an IgG preparation of whole rabbit serum purified by DEAE fractionation. This antibody is primarily directed against mature, 17,000 MW mouse IL-1β and is useful in determining its presence in various assays. The antibody does not recognize human IL-1β or mouse IL-1α based on a neutralization assay. In ELISA formats and other immunoreactive assays, reactivity occurs with rat IL-1β. This antibody will recognize 10% of the non-denatured (native) precursor 31,000 MW mouse IL-1β containing samples but will primarily detect all of the 17,000 MW mature molecule. However, in immunoblot analysis, the usual procedure of heating the sample in SDS with or without reducing agents will facilitate denaturing of the 31,000 MW IL-1β precursor molecule. Denatured 31,000 precursor IL-1β will be recognized by this antibody.
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Relevant Links:	• 210-401-319 SDS • UniProtKB - P10749 • NCBI - CAA28637.1 • GenelD - 16176
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Application Details

Tested Applications:	IF, IHC, WB
Application Note:	Anti-Mouse IL-1β has been tested for use in immunohistochemistry, immunoblotting and immunofluorescence. This antibody is useful in ELISA, neutralizations, radioimmunoassays, flow cytometry, and immunoprecipitation. It recognizes the 17,000 MW mature IL-1β. For immunoblots, typically, IL-1β is detected from supernatants or lysates of 2 x 10E6 endotoxin-stimulated peripheral blood mononuclear cells (PBMC). PBMC are stimulated for 24 hours with 1% (v/v) serum plus 10 ng/mL E.coli LPS. For immunoprecipitation pre-clearing the preparation with a non-specific Rabbit IgG (p/n 011-001-297) to reduce background is suggested. For immunohistochemistry either paraffin fixation or cryofixation can be used for sample preparation to stain intracellular IL-1β. For ELISA use HRP Conjugated Anti-Rabbit IgG [H&L] (Goat) (611-1302) for detection. In ELISA formats this antibody is best used as the second antibody in combination with a monoclonal antibody as a capture antibody. This antibody is also useful for neutralization of mouse and rat IL-1β activity in bioassays. It does not neutralize the biological activity IL-1α. It does not neutralize the biological activity of human or primate IL-1β. For neutralization, it is recommended to incubate the sample with a dilution of the antibody for at least 4 hours before being tested. A control of similarly diluted normal rabbit IgG is recommended. This antibody can be used for FACS analysis. Caution should be exhibited as the F(c) domain of the rabbit IgG molecule may interact with cells non-specifically.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:1,000 - 1:5,000
FC:	User Optimized
IF:	1:50-1:250

IHC:	1:50-1:250
IP:	1:200-1:800
Neutralization:	User Optimized
WB:	1:500 - 1:2,000

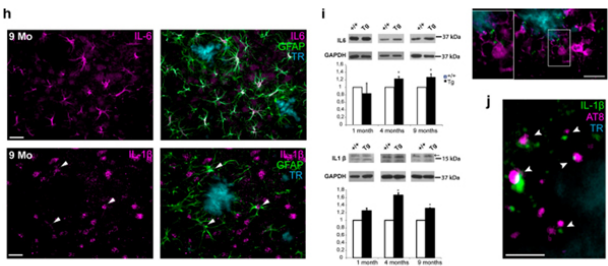
Formulation

Physical State:	Lyophilized
Concentration:	1.0 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	None
Stabilizer:	None
Reconstitution Volume:	100 µL
Reconstitution Buffer:	Restore with deionized water (or equivalent)

Shipping & Handling

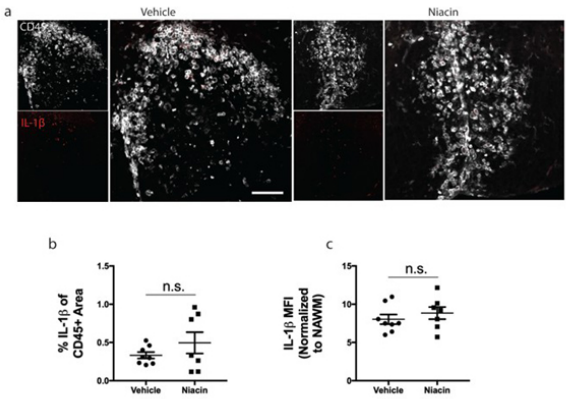
Shipping Condition:	Ambient
Storage Condition:	Store Anti-IL-1 beta antibody at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is six (6) months from date of receipt.

Images



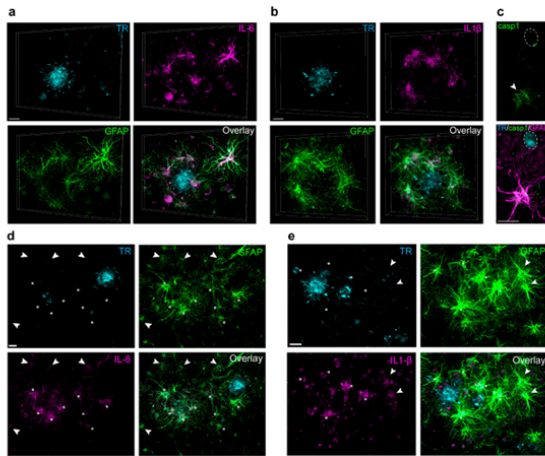
Immunofluorescence Microscopy

(h) Expression of IL-6 (upper panel, magenta) and IL-1β (lower panel, magenta) by GFAP+ astrocytes (green, arrows) in CRND8 mice at 9 months. (i) Western blot analysis of overall increases in IL-6 and IL-1β expression (mature form at 17 kDa, arrowhead) in the cortex of transgenic mice at 1, 4 and 9 months (with n = 3 for control and Tg+ at 1 month, n = 4 for control and n = 3 for Tg+ at 4 months, and n=4 for control and n = 4 for Tg+ at 9 months). (j) IL-1β clusters (green) are closely juxtaposed to hyperphosphorylated Tau granules (AT8; magenta) in CRND8 mice. Scale bars: 20 μm (a,e-h), 5 μm (j). Fig 5. PMID: 27090093



Immunofluorescence Microscopy

Treatment with niacin does not alter expression of IL-1β within lesions from middle-aged mice. a. Representative images depicting lesions immunostained for CD45 (white) and IL-1β (red) at 3 days post-demyelination from middle-aged demyelinated mice receiving either saline vehicle or niacin once a day for 3 days at a dose of 100 mg/kg IP. b. There is no difference in the percentage of IL-1β associated with CD45+ cells in lesions from both groups. c. Normalized mean fluorescence intensity (MFI) of IL-1β between lesions from vehicle- and niacin-treated mice 3 days post-demyelination did not differ. Values are represented as mean with the standard error of the mean. Results were analyzed with a 1-tail student's t-test and each data point represents 1 mouse (n.s. = not significant). Scale bar equals 100 μm. SF9. PMID: 32030468



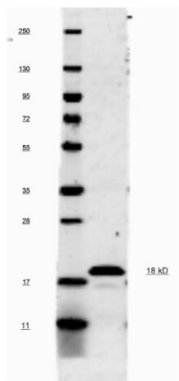
Immunofluorescence Microscopy

(a–c) RGN astrocytes in AD tissue express the pro-inflammatory cytokines IL-6 and IL-1β and the IL-1β processing enzyme Caspase 1. (a) 3D projection showing IL-6-expressing GFAP+ astrocytes near an Aβ plaque in AD cortex (male, 87 years old). Overlay shows IL-6 (magenta), GFAP (green), and Thiazine red (cyan). (b) 3D projection showing IL-1β expression (magenta) in GFAP+ astrocytes (green) around an Thiazine red-labeled Aβ plaque (cyan). (c) Reactive astrocytes (magenta) close to Aβ plaques (blue; dotted ellipse) also express the IL-1β processing enzyme Caspase 1 (green; arrowhead) in the same AD patient. (d,e) Astrocytes are sources of pro-inflammatory cytokines inside and outside RGNs: Examples of astrocytic IL-6 (d, magenta) and IL-1β (e, magenta) expression inside and outside RGNs with the local astrocyte network (GFAP+, green) in AD cortex. Scale bars: 20 μm (a,b,d,e), 10 μm (c). Fig 6. PMID: 27090093



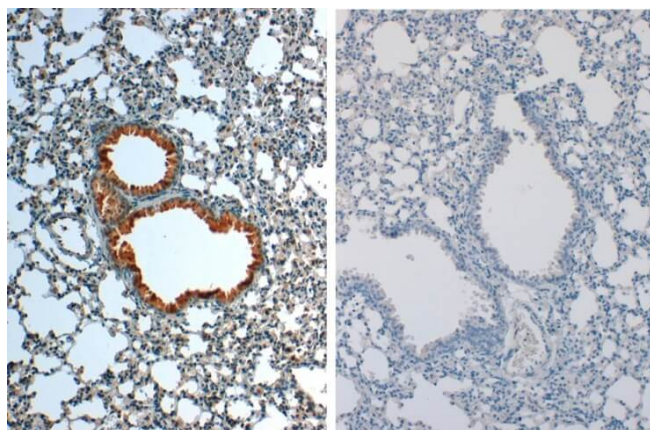
Immunofluorescence Microscopy

Immunofluorescence microscopy after staining of mouse carotid artery tissue with anti-Mouse IL-1β antiserum (p/n 110-401-319, less purified form of 210-401-319) diluted 1:50. Tissue sections were prepared after cryofixation. Reaction occurred at room temperature for 60' followed by washes and reaction with Rhodamine conjugated Gt-a-Rabbit IgG (p/n 611-100-122). Tissue was counterstained with bis-benzimide solution at 0.5 mg/ml in PBS for 15 min at room temperature. Panel A) shows no antibody staining of WT uninjured mouse carotid tissue. Panel B) shows anti-IL-1β staining of cells after surgical injury of tissue. Panel C) shows no antibody staining of injured carotid tissue from an IL-1β KO mouse.



Western Blot

This antibody will recognize 10% of the non-denatured (native) precursor 31,000 MW mouse IL-1 β containing samples but will primarily detect all of the 17,000 MW mature molecule. However, in western blot analysis, the usual procedure of heating the sample in SDS with or without reducing agents will facilitate denaturing of the 31,000 MW IL-1 β precursor molecule. Denatured IL-1 β will have a 18 kDa band.



Immunohistochemistry

Immunohistochemistry of Rabbit anti-IL1 β Antibody in Mouse Embryonic Kidney Tissue: Mouse Embryonic Kidney
 Fixation: FFPE buffered formalin 10% conc Ag Retrieval: Heat, Citrate pH 6.2. Pressure Cooker Primary antibody: 2 μ g/ml 1.5 hour @ room T Secondary Ab: MACH 1 HRP POLYMER 1:50 45" RT

References

- Rawji KS et al. Niacin-mediated rejuvenation of macrophage/microglia enhances remyelination of the aging central nervous system. *Acta Neuropathol.* (2020)
- Rawji KS et al. Niacin-mediated rejuvenation of macrophage/microglia enhances remyelination of the aging central nervous system. *Acta Neuropathol.* (2020)
- Bouvier et al. High Resolution Dissection of Reactive Glial Nets in Alzheimer's Disease. *Scientific Reports* (2016)

Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.