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Monoclonal Antibody to CD289 / TLR9 (268-284) - Purified

Alternate names: Toll-like receptor 9, UNQ5798/PRO19605

Catalog No.: SM7105P

Quantity: 0.1 mg

Concentration: 0.5 mg/ml

Background: TLR9 is a member of the Toll like receptor (TLR) family which plays a fundamental role in pathogen recognition and activation of innate immunity. TLRs are highly conserved from Drosophila to humans and share structural and functional similarities. They recognize pathogen associated molecular patterns (PAMPs) that are expressed on infectious agents, and mediate the production of cytokines necessary for the development of effective immunity. The various TLRs exhibit different patterns of expression. The gene encoding this protein is predominantly expressed in lung, placenta, and spleen, and lies in close proximity to another family member, TLR8, on chromosome X.

Uniprot ID: Q9NR96

NCBI: NP_059138.1

GeneID: 54106

Host / Isotype: Mouse / IgG1

Recommended Isotype Controls: SM10P (for use in human samples), SM20P (for use in rat samples), AM03095PU-N

Clone: 26C593.2

Immunogen: KLH-conjugated synthetic peptide corresponding to amino acids 268-284 of Human TRL9 isoform A
Remarks: Genbank accession no. AAF78037.

Format:
State: Liquid purified Ig fraction.
Purification: Protein G Chromatography.
Buffer System: PBS
Preservatives: 0.05% Sodium Azide
Stabilizers: 0.05% BSA

Applications:
EMSA: See Kindrachuk et al. (2008).
Confocal Microscopy: See Greene et al. (2005)
Western blotting: 1-5 µg/ml. Human Peripheral Blood Mononuclear Cells (PBMC) at 3 µg/ml or Human intestine cell lysate (use at 6 µg/ml) can be used as a positive control. A protein of approximately 120 kDa is detected. A smaller isoform, TLR9 isoform B (Genbank accession no. AAF72190) containing 975 amino acids may also be observed in some cases.
Flow Cytometry (Intracellular): 0.1-2 µg/10e6 cells. Use Ramos cells as positive control.

Flow Cytometry (Cell Surface): See Lee et al. (2006)
Immunohistochemistry on Frozen Tissues: 10-20 µg/ml (See Miller et al, 2005).
Immunohistochemistry on Paraffin Sections: 5 µg/ml. See also Martin-Armas et al. (2005).
Immunocytochemistry/Immunofluorescence: See Greene et al. (2005) and Tabeta et al. (2006).
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

This antibody detects Toll-Like Receptor 9 (TLR9).
Species: Human, Canine (Dog), Horse, Mouse, Rat and Rhesus Monkey.
Other species not tested.

Storage:

Store the antibody undiluted at 2-8°C for one month
or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

Product Citations:

Originator or purchased from resellers:

1. Miller LS, Sørensen OE, Liu PT, Jalian HR, Eshtiaghpour D, Behmanesh BE, et al. TGF-alpha regulates TLR expression and function on epidermal keratinocytes. J Immunol. 2005 May 15;174(10):6137-43. PubMed PMID: 15879109.
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9. Chentoufi AA, Dasgupta G, Nesburn AB, Bettahi I, Binder NR, Choudhury ZS, et al. Nasolacrimal duct closure modulates ocular mucosal and systemic CD4(+) T-cell responses induced following topical ocular or intranasal immunization. Clin Vaccine Immunol. 2010 Mar;17(3):342-53. doi: 10.1128/CVI.00347-09. Epub 2010 Jan 20. PubMed PMID: 20089796.
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11. Machida H, Ito S, Hirose T, Takeshita F, Oshiro H, Nakamura T, et al. Expression of Toll-like receptor 9 in renal podocytes in childhood-onset active and inactive lupus nephritis. Nephrol Dial Transplant. 2010 Aug;25(8):2530-537. doi: 10.1093/ndt/gfq058. Epub 2010 Feb 24. PubMed PMID: 20181802.
12. Expression and characterization of ligand binding by the ectodomain of Toll-like receptor 9. E. A. Potter, (2007) Dept. of Biochemistry University of Saskatchewan.
13. Kindrachuk J, Potter JE, Brownlie R, Ficzycz AD, Griebel PJ, Mookherjee N, et al. Nucleic acids exert a sequence-independent cooperative effect on sequence-dependent activation of Toll-like receptor 9. J Biol Chem. 2007 May 11;282(19):13944-53. Epub 2007 Mar 13. PubMed PMID: 17355967.
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General Readings:

Clone citations:
Maintenance of colonic homeostasis by distinctive apical TLR9 signaling in intestinal epithelial cells.
Lee J., J-H Mo, K. Katakura, I. Alkalay, A. N. Rucker, Y-T. Liu, H-K. Lee, C. Shen, G. Cojocaru, S. Shenouda, M. Kagnoff, L. Eckmann, Y. Ben-Neriah, and E. Raz.,
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Miller LS, OE Sorensen, PT Liu, HR Jalian, D Eshtiaghpour, BE Behmanesh, W Chung, TD Starner, J Kim,, PA. Sieling, T Ganz and RL Modlin.
J. Immunol, 174: 6137-6143 (2005).
Toll like receptor 9 (TLR9) is present in murine liver sinusoidal endothelial cells (LSECs)

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Martin-Armas M., J. Simon-Santamaria, I. Pettersen, U. Moens, B. Smedsrod and B.R. Sveinbjornsson.
Journal of Hepatology, Available online 7 November 2005.
TLR-Induced Inflammation in Cystic Fibrosis and Non-Cystic Fibrosis Airway Epithelial Cells.
Greene C.M., T. P. Carroll, S. G. J. Smith, C. C. Taggart, J. Devaney, S. Griffin, S. J. O'Neill, and N. G. McElvaney.
J. Immunol., 174: 1638-1646 (2005).
The Unc93b1 mutation 3d disrupts exogenous antigen presentation and signaling via Toll-like receptors 3, 7 and 9.
Koichi Tabeta, Kasper Hoebe, Edith M Janssen, Xin Du, Philippe Georgel, Karine Crozat, Suzanne Mudd, Navjiwan Mann, Sosathya Sovath, Jason Goode, Louis Shamel, Anat A.
Nature Immunology 7, 156-164 (2006).
General reading:
1. Muzio M, Natoli G, Saccani S, Levrero M, and Mantovani A.
J. exp. Med. 187: 2097-2101 (1998).
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Biochim. Biophys. Acta 1518 (1-2):157-161 (2001)
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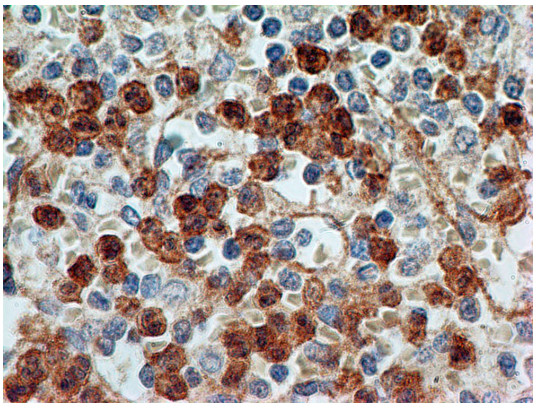
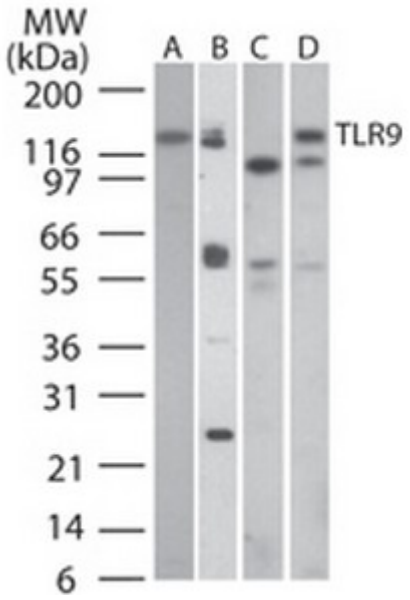
Pictures:

Formalin-fixed, paraffin-embedded human spleen probed with TLR9 antibody (Cat.-No.: SM7105P) at 5 ug/ml. Human tissue TMA was used for this test. Staining of formalin-fixed tissues is enhanced by boiling tissue sections in 10 mM sodium citrate buffer, pH 6.0 for 10-20 min followed by cooling at RT for 20 min.



Western blot analysis of TLR9 antibody in
A) human PBMCs
B) human intestine
C) mouse intestine
D) rat intestine tissue lysates using SM7105P at 3 µg/ml and goat anti-mouse HRP conjugate antibody as secondary.



Intracellular flow analysis of TLR9 in human PBMC using 0.5 µg of TLR9 antibody (red) and isotype control antibody (green). (Cat.-No.: SM7105P)