

Monoclonal Antibody to TLR5 (Toll-like receptor 5)



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Monoclonal Antibody to TLR5 (Toll-like receptor 5)

Catalog No : IMG-664A
Formulation : 0.1 mg in 0.2 ml PBS containing 0.05% BSA, 0.05% sodium azide. Sodium azide is highly toxic.
Isotype : Mouse IgG2a, Kappa
Clone : 19D759.2
Purification : Protein G Chromatography
Species React : Dog, Human, Mouse
Host : Mouse

Application
Western blot analysis: 1-3 ug/ml
Flow (Intracellular): 0.5-1 ug/10⁶ cells
IHC (frozen): 10 ug/ml (see Product citation, Miller et al, 2005).
Flow (Cell Surface): see Fukata et al (2008) for details.
IHC (paraffin): 5 ug/ml

Storage
Store at 4°C for six months. For long term storage, store at -20°C. Avoid repeat freeze-thaws.

Background

The Toll-like receptor (TLR) family in mammal comprises a family of transmembrane proteins characterized by multiple copies of leucine rich repeats in the extracellular domain and IL-1 receptor motif in the cytoplasmic domain. Like its counterparts in *Drosophila*, TLRs signal through adaptor molecules and could constitute an important and unrecognized component of innate immunity in humans. The TLR family is a phylogenetically conserved mediator of innate immunity that is essential for microbial recognition. TLRs characterized so far activate the MyD88/interleukin-1 receptor-associated kinase (IRAK) signaling pathway. Thirteen homologs of TLRs (TLR1-13) have been described. Toll-like receptor 5 (TLR5) expression is upregulated following exposure to bacteria or to the TLR5 agonist, flagellin. Gram-negative bacteria, stimulate monocyte/macrophage cells in a TLR5-specific, CD14-independent manner. The TLR5 receptor thus appears to be the principal means by which the innate immune system recognizes flagellated bacterial pathogens.

Antigen

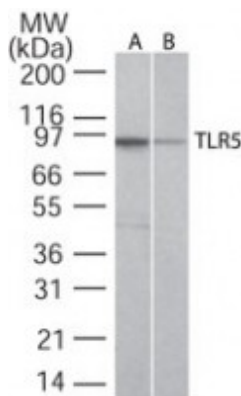
This antibody was developed against KLH-conjugated synthetic peptide corresponding to a portion of human TLR5 between amino acids 700-800. The antibody also reacts with mouse TLR5.

Application Notes

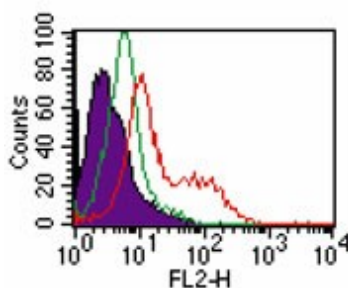
This antibody recognizes an intracellular epitope in the cytoplasmic domain of TLR5.

Genebank Info (Protein)

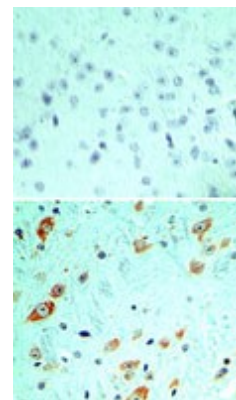
NP_003259



Western blot analysis of TLR5 in A) Ramos and B) Raw cell lysate using IMG-664A at 2 ug/ml.



Intracellular flow analysis of TLR5 in human monocytes using 0.5 ug of IMG-664A. Shaded histogram represents cells without antibody; green represents isotype control (BD Biosciences); red represents TLR5 antibody. IMGENEX's goat anti-mouse IgG PE (IMGENEX, 20103) secondary antibody was used in this test.



Immunohistochemical analysis of TLR5 in formalin-fixed, paraffin-embedded mouse brain tissue using an isotype control (top) and IMG-664A (bottom) at 5 ug/ml.

Related Products

1. IMG-410A [Polyclonal Antibody to TLR2 (Toll-like receptor 2)/CD282]
2. IMG-321A [Monoclonal Antibody to human TLR8 (Toll-like receptor 8)/CD288]
3. IMG-319 [Monoclonal Antibody to TLR2 (Toll-like receptor 2)/CD282]
4. IMG-416A [Monoclonal Antibody against human TLR2 (Toll-like receptor 2)/CD282]
5. IMG-417A [Monoclonal Antibody to human TLR4 (Toll-like receptor 4)/CD284]
6. IMG-428A [Monoclonal Antibody to Mouse TLR4 (Toll-like receptor 4)/CD284]

Monoclonal Antibody to TLR5 (Toll-like receptor 5)

7. IMG-431 [Polyclonal Antibody to TLR9/CD289]
8. IMG-440 [Monoclonal Antibody to human TIRAP (TIR domain-containing adaptor protein)]
9. IMG-441 [Polyclonal Antibody to IRAK-4 (IL-1 receptor associate kinase-4)]
10. IMG-5031A [Monoclonal Antibody to TLR4/CD284 (Clone 76B357.1)]
11. IMG-5033 [Polyclonal Antibody to mouse TLR11 (Toll-like receptor 11)]
12. IMG-5034 [Polyclonal Antibody to TLR12 (Toll-like receptor 12)]
13. IMG-5086 [Polyclonal Antibody to TIR8 (Toll/IL-1R8; Ig IL-1-related receptor)]
14. IMG-516 [Polyclonal Antibody to mouse TLR3 (Toll-like receptor 3)/CD283]
15. IMG-526 [Polyclonal Antibody to TLR2 (Toll-like receptor 2)/CD282]
16. IMG-527 [Polyclonal Antibody to TLR6/CD286 (Toll-like receptor 6)]
17. IMG-540 [Polyclonal Antibody to TLR7 (Toll-like receptor 7)]
18. IMG-545 [Polyclonal Antibody to TLR2/CD282]
19. IMG-578A [Polyclonal Antibody to TLR4 (Toll-like receptor 4)/CD284]
20. IMG-579A [Polyclonal Antibody to TLR4 (Toll-like receptor 4)/CD284]
21. IMG-580 [Polyclonal Antibody to TLR5]
22. IMG-581A [Polyclonal Antibody to TLR7 (Toll-like receptor 7)]
23. IMG-661 [Polyclonal Antibody to mouse TRIF/TICAM1]
24. IMG-662 [Polyclonal Antibody to mouse TLR2 (Toll-like receptor 2)/CD282]
25. IMG-663A [Monoclonal Antibody to TLR5 (Toll-like receptor 5)]
26. IMX-5091 [Polyclonal Antibody to TLR10 (Toll-like receptor 10)]
27. IMX-5093 [Polyclonal Antibody to TLR10 (Toll-like receptor 10)/CD290]
28. IMX-5131 [Polyclonal Antibody to TLR5]
29. IMX-5168 [Polyclonal Antibody to TLR13]
30. IMX-5169 [Polyclonal Antibody to TLR13]
31. IMX-5170 [Polyclonal Antibody to TLR13]
32. 20101 [Goat Anti-Mouse Ig HRP Conjugate]
33. 20102 [Goat Anti-Mouse IgG (H+L)-FITC Conjugate]
34. 20103 [Goat Anti-Mouse IgG (H+L) PE conjugated secondary antibody]
35. IMG-5019A-1 [Monoclonal Antibody to GAPDH - Loading Control]
36. IMG-5019A-2 [Monoclonal Antibody to GAPDH - Loading Control]
37. 40175 [Ramos cell line lysate (human Lymphoblast, Burkitt's lymphoma)]
38. 10083K [IC-Flow (Intracellular Staining Flow Assay) Kit]
39. IMG-2205 [Flagellin, Recombinant, TLR5 ligand]

Reference

1. Muzio M, Natoli G, Saccani S, Levrero M, and Mantovani A.J. *Exp. Med.* 187: 2097-2101 (1998).
2. Medzhitov R and Janeway CA. *Cell* 91: 295-298 (1997).
3. Chuang TH and Ulevitch RJ. *Biochim. Biophys. Acta* 1518 (1-2): 157-161 (2001).

Product Citations

1. **TGF- α Regulates TLR Expression and Function on Epidermal Keratinocytes.** Miller LS, OE Sørensen, 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). **(IHC-frozen) Imgenex antibodies cited: 1. TLR5 (IMG-664) [IHC-frozen, Fig 1 (normal human skin and psoriasis, primary human organotypic keratinocyte culture)]. 2. TLR9 (IMG-305A) [IHC-frozen, Fig 1 (normal human skin and psoriasis, primary human organotypic keratinocyte culture)].**
2. **Human CD4+ T Cells Express TLR5 and Its Ligand Flagellin Enhances the Suppressive Capacity and Expression of FOXP3 in CD4+CD25+ T Regulatory Cells.** Crellin NK, RV Garcia, O Hadisfar, SE Allan, TS Steiner, and MK Levings. *J. Immunol.*, 175: 8051-8059 (2005). **Imgenex antibodies cited: 1. TLR5-FITC (IMG-663C) [Flow-intracellular, Figs 3B and 3D (primary human CD4+ T cells, primary human CD14+ monocytes, primary human monocyte-derived dendritic cells)]; 2. TLR5 (IMG-664) [WB, Fig 5 (primary human CD4+ T cells)] The specificity of the IMG-664 antibody was confirmed by WB with 293T cells transfected with a TLR5 expression vector, documented in the Materials and Methods section)**
3. **Intracellular Signaling Mechanisms Regulating Toll-Like Receptor-Mediated Activation of Eosinophils.** Wong CK, PFY Cheung, WK IP and CWK Lam. *Am. J. Respir. Cell Mol. Biol.*doi:10.1165/rcmb.2006-0457OC (2007), in press. **Imgenex antibodies cited (human blood eosinophils and neutrophils from buffy coat): For WB, Fig. 1A: TLR1 (IMG-5012), TLR5 (IMG-664), TLR6 (IMG-304A), TLR7 (IMG-540), TLR8 (IMG-321A), TLR9 (IMG-305A). For Flow (Intracellular) and Flow (Surface), Fig. 1B: TLR1 (IMG-5021), TLR2 (IMG-416C), TLR3 (IMG-315C), TLR4 (IMG-417C), TLR5 (IMG-663C), TLR6 (IMG-304C), TLR7 (IMG-665A), TLR8 (IMG-321C), TLR9 (IMG-305C).**
4. **Stimulation by TLR5 modulates osteoclast differentiation through STAT1/IFN- γ .** Ha H, J Lee, N Kim, H Kwak, H Kim, S Lee, J Rhee, H Kim, Z Hee Lee. *J Immunol* 180: 1382-1389 (2008). **WB (mouse osteoclasts and bone marrow cells), Fig. 1A.**
5. **Inhibition of neutrophil apoptosis by TLR agonists in whole blood: involvement of the phosphoinositide 3-Kinase/Akt and NF- κ B signaling pathways, leading to increased levels of Mcl-1, A1, and phosphorylated bad.** François S, J El Benna, M Pham, C Dang, E Pedruzzi, M Gougerot-Pocidallo, C Elbim. *J. Immunol* 174: 3633-3642 (2005). **Imgenex antibodies cited [WB (human polymorphonuclear neutrophils (PMN)), Fig. 5]:**
 1. TLR2 (IMG-319)
 2. TLR3 (IMG-315)
 3. TLR5 (IMG-664)
 4. TLR7(IMG-581A)
6. **The myeloid differentiation factor 88 (MyD88) is required for CD4+ T cell effector function in a murine model of inflammatory bowel disease.** Fukata M, Breglio K, A Chen, A Vamadevan, T Goo, D Hsu, D Conduah, R Xu, M Abreu. *J Immunol* 180: 1382-1389 (2008). **Flow (Cell Surface) + Flow (Intracellular) [mouse splenic CD4+CD45Rbhigh T cells, RAW 264.7 cells], Fig. 1.**
7. **Antibodies specific for human or murine Toll-like receptors detect canine leukocytes by flow cytometry.** Burgener IA and TW Jungi. *Veterinary Immunology and Immunopathology*124:184-191 (2008). **Imgenex products cited for canine (dog) PBMC subpopulations:**
 1. 10083K [IC-Flow (Intracellular Staining Flow Assay) Kit]
 2. IMG-416A (TLR2), Flow (Cell Surface), Fig 1 and Tables 1 & 2
 3. IMG-315A (TLR3), Flow (Intracellular), Tables 1 & 2
 4. IMG-417A (TLR4), Flow (Intracellular), Fig 1 and Tables 1 & 2
 5. IMG-663A (TLR5), Flow (Cell Surface), Fig 1 and Tables 1 & 2
 6. IMG-664A (TLR5), Flow (Cell Surface), Tables 1 & 2
 7. IMG-305A (TLR9), Flow (Intracellular), Fig 2 and Tables 1 & 2
8. **Toll-like receptors 4 and 5 induce distinct types of vasculitis.** Deng J, W Ma-Krupa, A Gewirtz, B Younge, J Goronzy, C Weyand. *Circulation Research* DOI: 10.1161/CIRCRESAHA.108.185777 (2009). **IMG-664A: IHC (paraffin), human temporal arteries, Fig. 1E,G.**

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