

Polyclonal Antibody to TLR7 (Toll-like receptor 7)



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Polyclonal Antibody to TLR7 (Toll-like receptor 7)

Catalog No : IMG-581A
Formulation : 100 ug in 200 ul PBS containing 0.05% BSA, 0.05% sodium azide. Sodium azide is highly toxic.
Isotype : Rabbit IgG
Purification : Protein G Chromatography
Species React : Human, Mouse, Rat
Host : Rabbit

Application
Western blot analysis: 1-3 ug/ml
Flow (Intracellular): 2-5 ug/ 1x10⁶ cells or see Patole et al (2006) for details.
IHC (frozen): please see Pawar et al. 2005 for details.
IF/ICC: see Srivastava et al. (2005) for details
IP: see Brinkman et al (2008) for details
IHC (paraffin): 5-10 ug/ml
Flow (Cell Surface): 2-5 ug/ 1x10⁶ cells, see Patole et al (2006) and Pawar et al (2006) for details.

Storage
Store at 4°C, stable for 6 months. For long-term storage, store at -20°C.

Background

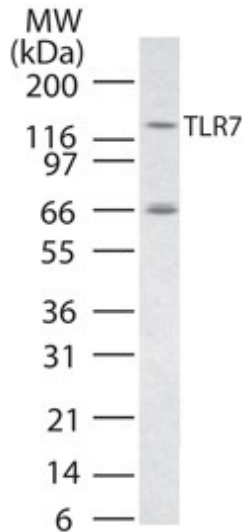
The Toll-like receptor (TLR) family in mammal comprises a family of transmembrane proteins characterized by multiple copies of leucine rich repeats in the extracellular domain and IL-1 receptor motif in the cytoplasmic domain. Like its counterparts in *Drosophila*, TLRs signal through adaptor molecules (1) 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 (2). TLRs characterized so far activate the MyD88/interleukin-1 receptor-associated kinase (IRAK) signaling pathway. Ten human homologs of TLRs (TLR1-10) have been described (3). Stimulation of the NFκB signaling pathway by TLR7 suggests that it plays a role in immune response.

Antigen

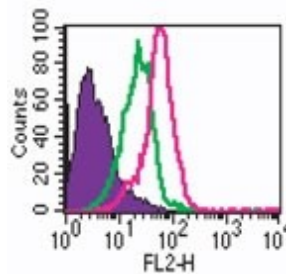
This antibody was developed against KLH-conjugated synthetic peptide corresponding to amino acids 706-728 of human TLR7; GenBank no. [gb|AAF78035.1|AF245702_1](http://www.ncbi.nlm.nih.gov/nuccore/gb|AAF78035.1|AF245702_1). It will cross-react with mouse TLR7. In human Ramos cells, additional bands are seen.

Genebank Info (Protein)

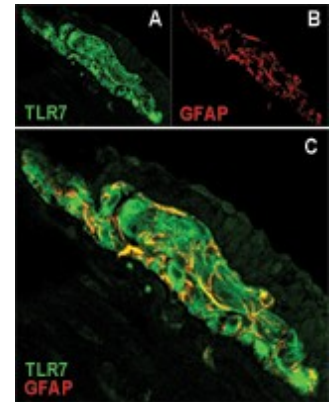
NP_057646



Western blot analysis of TLR7 in RAW cell lysate using IMG-581A at 3 ug/ml.



Intracellular staining by FACS analysis of TLR7 in human PBMC using IMG-581A at 0.5 ug/ml. Shaded histogram is cells alone, green is rabbit IgG isotype control (Imgenex, Cat. No. 20304), red represents anti-TLR7 antibody. Imgenex Goat anti-rabbit PE (Cat. 20303) was used for secondary.



Immunolocalization of TLR7 (A) and glial fibrillary acidic protein (GFAP) (B) in murine myenteric plexus. Most of the GFAP positive cells were also positive for TLR7 in the merged image (C, yellow staining). (Courtesy of Barajon I, et al., *Journal of Histochemistry & Cytochemistry*, 57(11): 1013-1023, 2009.)

Related Products

1. 20301 [Goat Anti-Rabbit HRP Conjugate]

Polyclonal Antibody to TLR7 (Toll-like receptor 7)

- 20302 [Goat Anti-Rabbit IgG (H+L)-FITC Conjugate]
- 20303 [Goat Anti-Rabbit IgG (H+L) PE conjugated secondary antibody]
- IMG-5142A [Polyclonal Antibody to beta Actin]
- IMG-5143A [Polyclonal Antibody to GAPDH]
- 40175 [Ramos cell line lysate (human Lymphoblast, Burkitt's lymphoma)]
- 40176 [NIH 3T3 cell line lysate (Swiss albino mouse embryo derived contact-inhibited fibroblast cells)]
- 10083K [IC-Flow (Intracellular Staining Flow Assay) Kit]
- IMG-2207 [Imiquimod, TLR7 ligand]

Reference

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

Product Citations

- Expression of mRNA and proteins for toll-like receptors, associated molecules, defensins and LL-37 by SRIK-NKL, a CD8+ NK/T cell line.** Maya D. Srivastava and B.I.S. Srivastava. *Leukemia Res.*, 29: 813-820 (2005). **The following Imgenex antibodies cited were used for IF/ICC in SRIK-NKL cells: TLR2 (IMG416), TLR4 (IMG-417), TLR7 (IMG-581), and TLR9 (IMG-305).**
- TLR7/8-Mediated Activation of Human NK Cells Results in Accessory Cell-Dependent IFN- γ Production.** Orla M. Hart, Veronica Athie-Morales, Geraldine M. O Connor, and Clair M. Gardiner. *J. Immunol.*, 175: 1636-1642 (2005). **IMGENEX TLR antibodies cited: 1. TLR7 [(IMG-581A) WB, Fig. 1: TLR7 transfected cells and NKL human leukemia cell line. The specificity of the TLR7 antibody has been validated by WB using overexpressed TLR7 in 293T cells in Fig. 1.]. 2. TLR8 [(IMG-321A) WB, Fig. 1: TLR8 transfected cells, NKL human leukemia cell line, and NK92 human lymphoma cell line. The specificity of the TLR8 antibody has been validated by WB using overexpressed TLR8 in 293T cells in Fig. 1].**
- Members of the Toll-like Receptor Family of Innate Immunity Pattern-Recognition Receptors Are Abundant in the Male Rat Reproductive Tract.** Palladino MA., TA Johnson, R Gupta, JL Chapman, and P Ojha. *Biol Reproduction.*, in press, DOI: 10.1095/biolreprod.106.059410 (2007). **IMGENEX antibodies cited: The following antibodies were used for WB in Fig. 2 using rat, testis, epididymis, and vas deferens: TLR 1 (IMG-5012), TLR2 (IMG-545), TLR5 (IMG-580), TLR6 (IMG-527), TLR7 (IMG-581) TLR9 (IMG-305A), TLR10 (IMG-5255A), TLR11 (IMG-5034) and MYD88 (IMG-178).**
- Antitumor Effects of Imidazoquinolines in Urothelial Cell Carcinoma of the Bladder.** Smith E.B., M. Schwartz, H. Kawamoto, X. You, D. Hwang, H. Liu, and D. S. Scherr., *J. of Urology*, 177, doi:10.1016/j.juro.2007.01.112 (2007). **Imgenex antibodies cited: 1. TLR7 (IMG-581) [WB, Fig.4 (MBT-2, TCCSUP, T24, and J82 cancer cell lines)].**
- Toll-Like Receptor-7 Modulates Immune Complex Glomerulonephritis.** Pawar R.D., P. S. Patole, D. Zecher, S. Segerer, M. Kretzler, D. Schlondorff, and H-J Anders., *J Am Soc Nephrol*, 17: 141-149 (2006). **Imgenex antibodies cited: 1. TLR3 (IMG-516) 2. TLR7 (IMG-581) [Flow (intracellular and cell surface), Fig.3: TLR3 (mesengial cells and J774 macrophages), TLR7 (J774 macrophages)]. [IHC-F, Fig.2 (Kidneys of MRL1pr/1pr mice)].**
- 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-Pocidalco, 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-315A)
 3. TLR5 (IMG-664)
 4. TLR7(IMG-581A)
- The interaction between the ER membrane protein UNC93B and TLR3, 7, and 9 is crucial for TLR signaling.** Brinkman M, E Spooner, K Hoebe, B Beutler, H Ploegh, Y Kim. *JCB* 177: 265-275 (2007). **Imgenex antibody cited: IMG-581A (TLR7): IP (mouse bone marrow-derived dendritic cells), Fig. 6A,B,C.**
- Human squamous cell carcinomas evade the immune response by down-regulation of vascular E-selectin and recruitment of regulatory T cells.** Clark R, Huang S, Murphy G, Mollet I, Hijnen, D, Muthukuru M, Schnabacher C, E Vonetta, Miller D, Kim J, Lambert J, Kupper T. *JEM* doi: 10.1084/jem.20071190 (2008). **Imgenex antibodies cited:**
 1. TLR8 (IMG-321A): IF/ICC (human squamous cell carcinoma tumor cells), Fig. 3A.
 2. TLR7 (IMG-581A): IF/ICC (human squamous cell carcinoma tumor cells), Fig. 3A.
- Ro60-associated single-stranded RNA links inflammation with fetal cardiac fibrosis via ligation of TLRs: A novel pathway to autoimmune-associated heart block.** Clancy R, D Alvarez, E Komissarova, F Barrat, J Swartz, J Buyon. *J Immunol*, 184: 2148-2155 (2010). **IMGENEX antibodies cited:**
 1. TLR-7 (IMG-665A): Primary human macrophages derived from PBMCs, Flow (Intracellular): Fig 1A
 2. TLR-8 FITC (IMG-321C): Primary human macrophages derived from PBMCs Flow (Intracellular): Fig 1A
 3. TLR-7 (IMG-581A): Fetal cardiac fibroblasts, IHC (paraffin) fixed: Fig 7A
- TLR7 triggered immune response in the lung mediates acute and long-lasting suppression of experimental asthma.** Xirakia C, O Koltzida, A Stavropoulos, A Thanassopoulou, V Aidinis, P Sideras, E Andreacos. doi: 10.1164/rccm.200908-125OC (2010). **IMGENEX product cited: TLR7 (IMG-581A) IF/ICC, Fig E2, mouse lung epithelial cells.**
- Expression and Regulation of Toll-like Receptors in Lupus-like Immune Complex Glomerulonephritis of MRL-Fas(lpr) Mice.** Patole PS, RD Pawar, M Lech, D Zecher, H Schmidt, S Segerer, A Ellwart, A Henger, M Kretzler, and H-J Anders. *Nephrol Dial Transplant*, 21:3062-3073 (2006). **Imgenex antibodies cited: For IHC (frozen) on mouse kidney sections (Fig. 5): TLR3 (IMG-516), TLR7 (IMG-581A), TLR9 (IMG-431) and Rabbit IgG isotype control antibody (20304). For Flow (Intracellular) and Flow (Cell surface) on J774 mouse macrophage-like cell line (Fig 6B): TLR7 (IMG-581A), TLR9 (IMG-431) and Rabbit IgG isotype control antibody (20304).**

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