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AM20374PU-S Monoclonal Antibody to CD282 / TLR2 - Purified

Alternate names:	Toll-like receptor 2
Quantity:	0.1 mg
Concentration:	0.1 mg/ml
Background:	Toll-like receptors (TLR) are highly conserved throughout evolution and have been implicated in the innate defense to many pathogens. At present, ligands for several of the TLR's, such as TLR2-6,9, have been identified, confirming their role in first line defense against invading microorganism. In mammals, TLRs are identified as type I transmembrane signaling receptors with an extracellular portion containing leucine-rich repeats with pattern recognition capabilities. Pathogen recognition by TLRs provokes rapid activation of innate immunity by inducing proliferation of proinflammatory cytokines and upregulation of costimulatory molecules and eventually toinitiation of adaptive immunity. TLR2 has been identified as a receptor that is central to the innate immune response to lipoproteins of Gram-negative bacteria, several whole Gram-positive bacteria, as well as a receptor for peptidoglycan and lipoteichoic acid and other bacterial cell membrane products. It is suggested that TLR2 is able to recognize such a wide variety of PAMPs (pathogen-specific molecular patterns) by forming heterodimers with other TLRs like e.g. TLR6.. TLR2 is essential for recognizing lipopeptides and lipoproteins from several microorganisms and also peptidoglycans derived from gram-positive bacteria. Bacterial species as diverse as mycobacteria, spirochetes, mycoplasma, Staphylococcus aureus, and Streptococcus pneumoniae have all been shown to mediate cellular activation via TLR2.
Uniprot ID:	Q9QUN7
NCBI:	10090
GeneID:	24088
Host / Isotype:	Mouse / IgG1
Recommended Isotype Controls:	SM10P (for use in human samples), AM03095PU-N
Clone:	T2.5
Immunogen:	Mouse TLR2 peptide
Format:	**State:** Liquid 0.2 µm filtered Ig fraction **Purification:** Protein G **Buffer System:** PBS **Stabilizers:** 0.1% bovine serum albumin
Applications:	**Immunohistochemistry on frozen sections** (3,7): 6µm sections were fixed with aceton. Sections were blocked with goat serum and exposed o/n with T2.5. **Flow cytometry** (1,3,4,5): $4*10^4$ leukocytes/ml were stained for 30 minutes at 4°C. **Functional assays** (1,2,6): Mice were injected i.p. with 1 mg T2.5, after 1h incubation mice were challenged;T2.5 5µg/ml was added to cell culture.

Immunoassays (7): T2.5 as a detector.
Immunoflourescence (3,7).
Immunoprecipitation (3): 40µg cleared protein was incubated with 2µg T2.5 for 1h at 4°C.
Positive control: RAW264.7 cells.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: The monoclonal antibody T2.5 recognizes Toll-like receptor 2 (TLR2).

Species Reactivity: **Tested:** Human

Storage: Store at 2 - 8 °C.
Shelf life: one year from despatch.

General Readings:

1. Meng G, Rutz M, Schiemann M, Metzger J, Grabiec A, Schwandner R, et al. Antagonistic antibody prevents toll-like receptor 2-driven lethal shock-like syndromes. J Clin Invest. 2004 May;113(10):1473-81. PubMed PMID: 15146245.
2. Roura-Mir C, Wang L, Cheng TY, Matsunaga I, Dascher CC, Peng SL, et al. Mycobacterium tuberculosis regulates CD1 antigen presentation pathways through TLR-2. J Immunol. 2005 Aug 1;175(3):1758-66. PubMed PMID: 16034117.
3. Leemans JC, Stokman G, Claessen N, Rouschop KM, Teske GJ, Kirschning CJ, et al. Renal-associated TLR2 mediates ischemia/reperfusion injury in the kidney. J Clin Invest. 2005 Oct;115(10):2894-903. PubMed PMID: 16167081.
4. Spiller S, Elson G, Ferstl R, Dreher S, Mueller T, Freudenberg M, et al. TLR4-induced IFN-gamma production increases TLR2 sensitivity and drives Gram-negative sepsis in mice. J Exp Med. 2008 Aug 4;205(8):1747-54. doi: 10.1084/jem.20071990. Epub 2008 Jul 21. PubMed PMID: 18644971.
5. Sutmuller RP, den Brok MH, Kramer M, Bennink EJ, Toonen LW, Kullberg BJ, et al. Toll-like receptor 2 controls expansion and function of regulatory T cells. J Clin Invest. 2006 Feb;116(2):485-94. Epub 2006 Jan 19. PubMed PMID: 16424940.
6. Brüll F, Mensink RP, van den Hurk K, Duijvestijn A, Plat J. TLR2 activation is essential to induce a Th1 shift in human peripheral blood mononuclear cells by plant stanols and plant sterols. J Biol Chem. 2010 Jan 29;285(5):2951-8. doi: 10.1074/jbc.M109.036343. Epub 2009 Nov 30. PubMed PMID: 19948716.
7. Guan, Y et al; Human TLRs 10 and 1 share common mechanism of innate immune sensing but not signaling. J Immunol 2010, 184:5094.