## Datasheet: MCA2061 BATCH NUMBER 1603

Description:	MOUSE ANTI HUMAN CD284
Specificity:	CD284
Other names:	TLR4
Format:	Purified
Product Type:	Monoclonal Antibody
Product Type: Clone:	Monoclonal Antibody HTA125
Product Type: Clone: Isotype:	Monoclonal Antibody HTA125 IgG2a

## **Product Details**

Applications	This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit <u>www.bio-</u>					
		Yes	No	Not Determined	Suggested Dilution	
	Flow Cytometry	•			1/10 - 1/25	
	Immunohistology - Frozen					
	Immunohistology - Paraffin					
	ELISA			-		
	Immunoprecipitation					
	Western Blotting					
	Immunofluorescence			-		
	Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.					
Target Species	Human					

Species Cross Reactivity	Reacts with: Rhesus Monkey, Guinea Pig, Pig, Dog, Bovine <b>N.B.</b> Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.
Product Form	Purified IgG - liquid

Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Ba/F3 cell line expressing TLR4 (CD284).
External Database Links	UniProt: <u>O00206</u> <u>Related reagents</u>
	Entrez Gene: <u>7099</u> TLR4 <u>Related reagents</u>
RRID	AB_323647
Fusion Partners	Spleen cells from immunised Balb/c mice were fused with cells of the mouse SP2/0 myeloma cell line.
Specificity	Mouse anti Human CD284 antibody, clone HTA125 recognizes the human Toll like receptor 4 (TLR4) cell surface antigen.
	TLR4, also known as CD284, has been demonstrated to act as a receptor for LPS on human monocytes and macrophages. TLR4 signalling of LPS stimulation requires the presence of the MD-2 molecule.
	TLR4 is weakly expressed by resting cells, but is upregulated following stimulation with LPS.
	This antibody has been demonstrated to block activation of monocytes with LPS. The use of a preservative free format of Mouse anti Human CD284 antibody, clone HTA125 (MCA2061EL) is recommended for functional assays.
Flow Cytometry	Use 10ul of the suggested working dilution to label 10 <sup>6</sup> cells or 100ul whole blood.
References	<ol> <li>Shimazu, R. <i>et al.</i> (1999) MD-2, a molecule that confers lipopolysaccharide responsiveness on Toll-like receptor 4. <u>J Exp Med. 189 (11): 1777-82.</u></li> <li>Jiang, Q. <i>et al.</i> (2000) Lipopolysaccharide induces physical proximity between CD14 and toll-like receptor 4 (TLR4) prior to nuclear translocation of NF-kappa B. <u>J Immunol.</u> <u>165 (7): 3541-4.</u></li> <li>Yang, S. <i>et al.</i> (2001) Synergistic effect of muramyldipeptide with lipopolysaccharide or</li> </ol>

lipoteichoic acid to induce inflammatory cytokines in human monocytic cells in culture. Infect Immun. 69 (4): 2045-53.

4. Kawahara T *et al.* (2001) Type I *Helicobacter pylori* lipopolysaccharide stimulates toll-like receptor 4 and activates mitogen oxidase 1 in gastric pit cells. Infect Immun. 69 (7): 4382-9.

5. Devaney, J.M. (2003) Neutrophil elastase up-regulates interleukin-8 via toll-like receptor 4. FEBS Lett. 544:129-32.

6. de Kleer, I. (2010) CD30 Discriminates Heat Shock Protein 60-Induced FOXP3+CD4+ T Cells with a Regulatory Phenotype. <u>J Immunol. 185(4):2071-9.</u>

7. Bieback, K. *et al.* (2002) Hemagglutinin protein of wild-type measles virus activates toll-like receptor 2 signaling. <u>J Virol. 76: 8729-36.</u>

8. Brännström, K. *et al.* (2009) The *Schistosoma mansoni* protein Sm16/SmSLP /SmSPO-1 assembles into a nine-subunit oligomer with potential To inhibit Toll-like receptor signaling. <u>Infect Immun. 77: 1144-54.</u>

9. Baumgarten, G. *et al.* (2001) *In vivo* expression of proinflammatory mediators in the adult heart after endotoxin administration: the role of toll-like receptor-4. <u>J Infect Dis. 183:</u> 1617-24.

10. Cuschieri, J. *et al.* (2006) Endotoxin tolerance attenuates LPS-induced TLR4 mobilization to lipid rafts: a condition reversed by PKC activation. <u>J Leukoc Biol. 80:</u> 1289-97.

11. Karlsson, H. *et al.* (2002) Innate immune responses of human neonatal cells to bacteria from the normal gastrointestinal flora. <u>Infect Immun. 70: 6688-96.</u>

12. Medvedev, A.E. *et al.* (2001) Induction of tolerance to lipopolysaccharide and mycobacterial components in Chinese hamster ovary/CD14 cells is not affected by overexpression of Toll-like receptors 2 or 4. J Immunol. 167: 2257-67.

13. Pioli, P.A. *et al.* (2007) Estradiol attenuates lipopolysaccharide-induced CXC chemokine ligand 8 production by human peripheral blood monocytes. <u>J Immunol. 179:</u> 6284-90.

14. Sugawara, S. *et al.* (2000) Proteolysis of human monocyte CD14 by cysteine proteinases (gingipains) from *Porphyromonas gingivalis* leading to lipopolysaccharide hyporesponsiveness. <u>J Immunol. 165: 411-8.</u>

15. Lindsay, J.O. *et al.* (2006) Clinical, microbiological, and immunological effects of fructo-oligosaccharide in patients with Crohn's disease. <u>Gut. 55: 348-55.</u>

16. Komori, H. *et al.* (2012)  $\alpha$ (1)-Acid glycoprotein up-regulates CD163 via TLR4/CD14 protein pathway: possible protection against hemolysis-induced oxidative stress. <u>J Biol</u> <u>Chem. 287 (36): 30688-700.</u>

Maiolini, A. *et al.* (2012) Toll-like receptors 4 and 9 are responsible for the maintenance of the inflammatory reaction in canine steroid-responsive meningitis-arteritis, a large animal model for neutrophilic meningitis. <u>J Neuroinflammation. 9: 226.</u>
 Sels, J.W. *et al.* (2012) Fractional flow reserve is not associated with inflammatory markers in patients with stable coronary artery disease. <u>PLoS One. 7: e46356.</u>
 Prokhorenko, I. *et al.* (2012) Toll-like receptor 4 in phagocytosis of Escherichia coli by endotoxin-activated human neutrophils in whole blood <u>Critical Care 16: P80</u>
 Mazzucchelli, I. *et al.* (2015) Expression and function of toll-like receptors in human circulating endothelial colony forming cells. <u>Immunol Lett. 168 (1): 98-104.</u>
 Garbe, K. *et al.* (2012) Plasmacytoid dendritic cells and their Toll-like receptor 9 expression selectively decrease with age. <u>Hum Immunol. 73 (5): 493-7.</u>

	22. Zwolak, A. <i>et al.</i> (2016) Metformin Changes the Relationship between Blood Monocyte Toll-Like Receptor 4 Levels and Nonalcoholic Fatty Liver Disease- <i>Ex Vivo</i> Studies. <u>PLoS</u>
	<ul> <li>23. Zwolak, A. <i>et al.</i> (2015) Hyperreactivity of Blood Leukocytes in Patients with NAFLD to <i>ex vivo</i> Lipopolysaccharide Treatment Is Modulated by Metformin and Phosphatidylcholine but Not by Alpha Ketoglutarate. PLoS One. 10 (12): e0143851.</li> </ul>
	24. Xu, H. <i>et al.</i> (2015) Type 3 innate lymphoid cell depletion is mediated by TLRs in lymphoid tissues of simian immunodeficiency virus-infected macaques. <u>FASEB J. 29 (12)</u> : 5072-80.
	25. Blagitz, M,G. <i>et al.</i> (2015) Expression of CD14 and toll-like receptors 2 and 4 by milk neutrophils in bovine mammary glands infected with <i>Corynebacterium bovis</i> <u>Pesquisa</u> <u>Veterinária Brasileira. 35 (1): 1-5.</u>
	26. Huang, D. <i>et al.</i> (2016) Hyperoxia induces inflammation and regulates cytokine production in alveolar epithelium through TLR2/4-NF-κB-dependent mechanism <u>Eur Rev</u> <u>Med Pharmacol Sci. 20: 1399-410.</u>
	<ul> <li>27. Kyrova, K. <i>et al.</i> (2014) The response of porcine monocyte derived macrophages and dendritic cells to <i>Salmonella typhimurium</i> and lipopolysaccharide. <u>BMC Vet Res. 10: 244.</u></li> <li>28. Ibeagha-Awemu, E.M. <i>et al.</i> (2008) Bacterial lipopolysaccharide induces increased expression of toll-like receptor (TLR) 4 and downstream TLR signaling molecules in bovine mammary epithelial cells. <u>Vet Res. 39 (2): 11.</u></li> </ul>
	<ul> <li>29. Chochi, K. <i>et al.</i> (2008) <i>Helicobacter pylori</i> augments growth of gastric cancers via the lipopolysaccharide-toll-like receptor 4 pathway whereas its lipopolysaccharide attenuates antitumor activities of human mononuclear cells. <u>Clin Cancer Res. 14 (10): 2909-17.</u></li> <li>30. Elner, S.G. <i>et al.</i> (2005) TLR4 mediates human retinal pigment epithelial endotoxin binding and cytokine expression. <u>Invest Ophthalmol Vis Sci. 46 (12): 4627-33.</u></li> </ul>
Storage	Store at +4°C or at -20°C if preferred.
	This product should be stored undiluted.
	Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the protein. Should this product contain a precipitate we recommend microcentrifugation before use.
Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10040 available at: https://www.bio-rad-antibodies.com/SDS/MCA2061 10040
Regulatory	For research purposes only

## **Related Products**

## **Recommended Secondary Antibodies**

Rabbit Anti Mouse IgG (STAR12...)RPEGoat Anti Mouse IgG IgA IgM (STAR87...)HRP

Goat Ant	Goat Anti Mouse IgG (STAR76) RPE					
Goat Ant	i Mouse IgG (STAR70)	<u>FIT</u>	<u>FITC</u>			
Goat Ant	i Mouse IgG (H/L) (STAR <sup>2</sup>	117) <u>Alk</u>	<u>. Phos., DyLight®488,</u> [	DyLight®550,		
		Dyl	<u>ight®650</u> , <u>DyLight®68</u>	0, DyLight®8	<u>00</u> ,	
		FIT	<u>C, HRP</u>			
Rabbit A	nti Mouse IgG (STAR9)	FIT	<u>C</u>			
Goat Ant	i Mouse IgG (STAR77)	<u>HR</u>	<u>P</u>			
Goat Ant	i Mouse IgG (Fc) (STAR1	20) <u>FIT</u>	<u>C, HRP</u>			
Rabbit A	nti Mouse IgG (STAR13	) <u>HR</u>	<u>P</u>			
Recommended Negative Controls						
MOUSE IgG2a NEGATIVE CONTROL (MCA929)						
North & South	Tel: +1 800 265 7376	Worldwide	Tel: +44 (0)1865 852 700	Europe	Tel: +49 (0) 89 8090 95 21	
America	Fax: +1 919 878 3751		Fax: +44 (0)1865 852 739	rad com	Fax: +49 (0) 89 8090 95 50	
	Email. anubody_sales_us@blo-tau.			-rad.com	Linan. anubody_sales_de@blo-rad.com	

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets 'M366122:200529'

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