

## Datasheet: MCA2061

<b>Description:</b>	MOUSE ANTI HUMAN CD284
<b>Specificity:</b>	CD284
<b>Other names:</b>	TLR4
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	HTA125
<b>Isotype:</b>	IgG2a
<b>Quantity:</b>	0.2 mg

## 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 [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

	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.

<b>Target Species</b>	Human
<b>Species Cross Reactivity</b>	Reacts with: Rhesus Monkey, Guinea Pig, Pig, Dog, Bovine <b>N.B.</b> Antibody reactivity and working conditions may vary between species.
<b>Product Form</b>	Purified IgG - liquid
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
<b>Buffer Solution</b>	Phosphate buffered saline
<b>Preservative Stabilisers</b>	0.09% Sodium Azide
<b>Carrier Free</b>	Yes
<b>Approx. Protein</b>	IgG concentration 1.0 mg/ml

## Concentrations

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**Immunogen** Ba/F3 cell line expressing TLR4 (CD284).

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## External Database Links

**UniProt:**

[O00206](#) [Related reagents](#)

**Entrez Gene:**

[7099](#) TLR4 [Related reagents](#)

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## Fusion Partners

Spleen cells from immunised Balb/c mice were fused with cells of the mouse SP2/0 myeloma cell line.

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## 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.

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## Flow Cytometry

Use 10ul of the suggested working dilution to label 10<sup>6</sup> cells or 100ul whole blood.

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## References

1. Shimazu, R. *et al.* (1999) MD-2, a molecule that confers lipopolysaccharide responsiveness on Toll-like receptor 4. [J Exp Med. 189 \(11\): 1777-82.](#)
2. Jiang, Q. *et al.* (2000) Lipopolysaccharide induces physical proximity between CD14 and toll-like receptor 4 (TLR4) prior to nuclear translocation of NF-kappa B. [J Immunol. 165 \(7\): 3541-4.](#)
3. Yang, S. *et al.* (2001) Synergistic effect of muramyl dipeptide with lipopolysaccharide or 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. [J Immunol. 185\(4\):2071-9.](#)
7. Bieback, K. *et al.* (2002) Hemagglutinin protein of wild-type measles virus activates toll-like receptor 2 signaling. [J Virol. 76: 8729-36.](#)
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. [Infect Immun. 77: 1144-54.](#)
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. [J Infect Dis. 183: 1617-24.](#)
10. Cuschieri, J. *et al.* (2006) Endotoxin tolerance attenuates LPS-induced TLR4 mobilization to lipid rafts: a condition reversed by PKC activation. [J Leukoc Biol. 80: 1289-97.](#)
11. Karlsson, H. *et al.* (2002) Innate immune responses of human neonatal cells to bacteria from the normal gastrointestinal flora. [Infect Immun. 70: 6688-96.](#)

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. [J Immunol. 179: 6284-90.](#)
14. Sugawara, S. *et al.* (2000) Proteolysis of human monocyte CD14 by cysteine proteinases (gingipains) from *Porphyromonas gingivalis* leading to lipopolysaccharide hyporesponsiveness. [J Immunol. 165: 411-8.](#)
15. Lindsay, J.O. *et al.* (2006) Clinical, microbiological, and immunological effects of fructo-oligosaccharide in patients with Crohn's disease. [Gut. 55: 348-55.](#)
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. [J Biol Chem. 287 \(36\): 30688-700.](#)
17. 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. [J Neuroinflammation. 9: 226.](#)
18. Sels, J.W. *et al.* (2012) Fractional flow reserve is not associated with inflammatory markers in patients with stable coronary artery disease. [PLoS One. 7: e46356.](#)
19. Prokhorenko, I. *et al.* (2012) Toll-like receptor 4 in phagocytosis of Escherichia coli by endotoxin-activated human neutrophils in whole blood [Critical Care 16: P80](#)
20. Mazzucchelli, I. *et al.* (2015) Expression and function of toll-like receptors in human circulating endothelial colony forming cells. [Immunol Lett. 168 \(1\): 98-104.](#)
21. Garbe, K. *et al.* (2012) Plasmacytoid dendritic cells and their Toll-like receptor 9 expression selectively decrease with age. [Hum Immunol. 73 \(5\): 493-7.](#)
22. Zwolak, A. *et al.* (2016) Metformin Changes the Relationship between Blood Monocyte Toll-Like Receptor 4 Levels and Nonalcoholic Fatty Liver Disease-Ex Vivo Studies. [PLoS One. 11 \(3\): e0150233.](#)
23. Zwolak, A. *et al.* (2015) Hyperreactivity of Blood Leukocytes in Patients with NAFLD to ex vivo Lipopolysaccharide Treatment Is Modulated by Metformin and Phosphatidylcholine but Not by Alpha Ketoglutarate. [PLoS One. 10 \(12\): e0143851.](#)
24. Xu, H. *et al.* (2015) Type 3 innate lymphoid cell depletion is mediated by TLRs in lymphoid tissues of simian immunodeficiency virus-infected macaques. [FASEB J. 29 \(12\): 5072-80.](#)
25. Blagitz, M.G. *et al.* (2015) Expression of CD14 and toll-like receptors 2 and 4 by milk neutrophils in bovine mammary glands infected with *Corynebacterium bovis* [Pesquisa Veterinária Brasileira. 35 \(1\): 1-5.](#)
26. Huang, D. *et al.* (2016) Hyperoxia induces inflammation and regulates cytokine production in alveolar epithelium through TLR2/4-NF- $\kappa$ B-dependent mechanism [Eur Rev Med Pharmacol Sci. 20: 1399-410.](#)
27. Kyrova, K. *et al.* (2014) The response of porcine monocyte derived macrophages and dendritic cells to *Salmonella typhimurium* and lipopolysaccharide. [BMC Vet Res. 10: 244.](#)
28. Ibeagha-Awemu, E.M. *et al.* (2008) Bacterial lipopolysaccharide induces increased expression of toll-like receptor (TLR) 4 and downstream TLR signaling molecules in bovine mammary epithelial cells. [Vet Res. 39 \(2\): 11.](#)
29. Chochi, K. *et al.* (2008) *Helicobacter pylori* augments growth of gastric cancers via the lipopolysaccharide-toll-like receptor 4 pathway whereas its lipopolysaccharide attenuates antitumor activities of human mononuclear cells. [Clin Cancer Res. 14 \(10\): 2909-17.](#)
30. Elner, S.G. *et al.* (2005) TLR4 mediates human retinal pigment epithelial endotoxin binding and cytokine expression. [Invest Ophthalmol Vis Sci. 46 \(12\): 4627-33.](#)

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**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.

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<b>Shelf Life</b>	18 months from date of despatch.
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<b>Health And Safety Information</b>	Material Safety Datasheet documentation #10040 available at: 10040: <a href="https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf">https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf</a>
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<b>Regulatory</b>	For research purposes only
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## Related Products

### Recommended Secondary Antibodies

Goat Anti Mouse IgG (STAR76...)	<a href="#">RPE</a>
Goat Anti Mouse IgG IgA IgM (STAR87...)	<a href="#">Alk. Phos.</a> , <a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR9...)	<a href="#">FITC</a>
Goat Anti Mouse IgG (STAR77...)	<a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR12...)	<a href="#">RPE</a>
Goat Anti Mouse IgG (Fc) (STAR120...)	<a href="#">FITC</a> , <a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR8...)	<a href="#">DyLight®800</a>
Goat Anti Mouse IgG (STAR70...)	<a href="#">FITC</a>
Human Anti Mouse IgG2a (HCA037...)	<a href="#">FITC</a> , <a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR13...)	<a href="#">HRP</a>
Goat Anti Mouse IgG (H/L) (STAR117...)	<a href="#">Alk. Phos.</a> , <a href="#">DyLight®488</a> , <a href="#">DyLight®549</a> , <a href="#">DyLight®649</a> , <a href="#">DyLight®680</a> , <a href="#">DyLight®800</a> , <a href="#">FITC</a> , <a href="#">HRP</a>

### Recommended Negative Controls

[MOUSE IgG2a NEGATIVE CONTROL \(MCA929\)](#)

<b>North &amp; South America</b>	Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: <a href="mailto:antibody_sales_us@bio-rad.com">antibody_sales_us@bio-rad.com</a>	<b>Worldwide</b>	Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: <a href="mailto:antibody_sales_uk@bio-rad.com">antibody_sales_uk@bio-rad.com</a>	<b>Europe</b>	Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: <a href="mailto:antibody_sales_de@bio-rad.com">antibody_sales_de@bio-rad.com</a>
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