BOSTER BIOLOGICAL TECHNOLOGY
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# Anti-Toll-like receptor 4 TLR4 Antibody Picoband®

**Catalog Number:** PA1484

## About TLR4

TLR4, Toll-like receptor 4, is a protein that in humans is encoded by the TLR4 gene. TLR 4 is a toll-like receptor. TLR4, the human homolog of Drosophila Toll, is a type I transmembrane protein with an extracellular domain consisting of a leucine-rich repeat region and an intracellular domain homologous to that of human interleukin-1 receptor. The TLR4 gene is mapped to chromosome 9q32-q33 by fluorescence in situ hybridization.It detects lipopolysaccharide from Gram-negative bacteria and is thus important in the activation of the innate immune system.The protein encoded by this gene is a member of the Toll-like receptor (TLR) family, which plays a fundamental role in pathogen recognition and activation of innate immunity. TLRs are highly conserved from Drosophila to humans and share structural and functional similarities. They recognize pathogen-associated molecular patterns (PAMPs) that are expressed on infectious agents, and mediate the production of cytokines necessary for the development of effective immunity.

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## Overview

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|---|---|
| Product Name | Anti-Toll-like receptor 4 TLR4 Antibody Picoband® |
| Reactive Species | Human |
| Description | Boster Bio Anti-Toll-like receptor 4 TLR4 Antibody catalog # PA1484. Tested in IHC, WB applications. This antibody reacts with Human. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance. |
| Application | IHC, WB |
| Clonality | Polyclonal |
| Formulation | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2mg Na2HPO4, 0.05 mg NaN3. |
| Storage Instructions | Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles. |
| Host | Rabbit |
| Uniprot ID | O00206 |

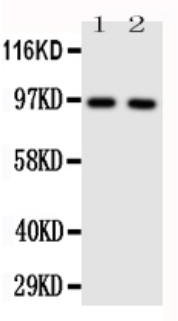
## Technical Details

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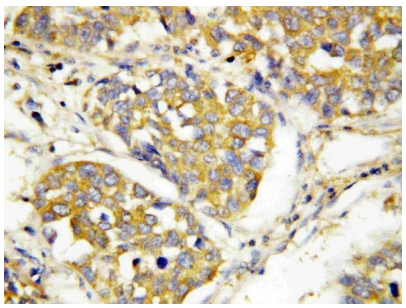
| | |
|---|---|
| Immunogen | A synthetic peptide corresponding to a sequence at the N-terminus of human TLR4. |
| Recommended Detection Systems | Boster recommends Enhanced Chemiluminescent Kit with anti-Mouse IgG (EK1001) for Western blot, and HRP Conjugated anti-Mouse IgG Super Vision Assay Kit (SV0001-1) for IHC(P). |
| Cross Reactivity | No cross-reactivity with other proteins |
| Isotype | Rabbit IgG |
| Form | Lyophilized |
| Concentration | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml. |
| Purification | Immunogen affinity purified. |
| Suggested Dilutions | Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human<br>Western blot, 0.1-0.5ug/ml, Human |

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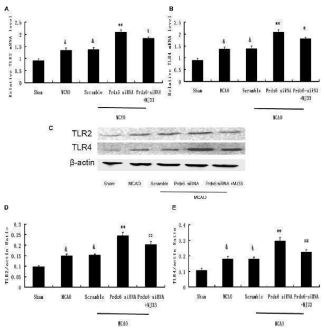
# Anti-Toll-like receptor 4 TLR4 Antibody Picoband® (PA1484) Images



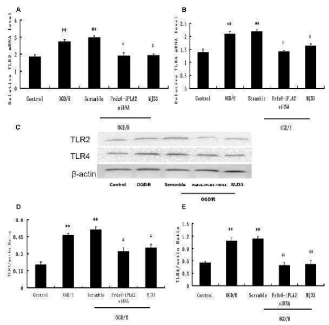

Anti-TLR4 antibody, PA1484, Western blottingLane 1: HELA Cell Lysate Lane 2: SMMC Cell Lysate



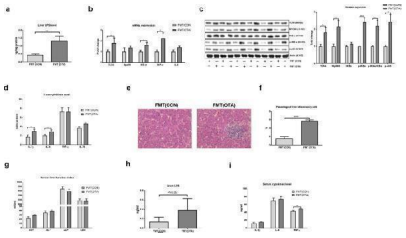
Anti-TLR4 antibody, PA1484, IHC(P)IHC(P): Human Lung Cancer Tissue




Expression of TLR2 and TLR4 in response to Prdx6 siRNA and MJ33. Real-time PCR showed that TLR2 (A) and TLR4 (B) expression increased after MCAO or giving Prdx6-siRNA. Combined treatment with Prdx6-siRNA and MJ33 downregulated TLR2 and TLR4 levels. Representative Western blot (C) and semi-quantitative analyses of the levels of TLR2 (D) and TLR4 (E) in the cortex after MCAO. Results are expressed as the mean ± SEM of three independent experiments. & $p < 0.01$ vs. Sham; ** $p < 0.01$ vs. Scramble; # $p < 0.05$, vs. Prdx6 siRNA; ## $p < 0.01$ vs. Prdx6 siRNA.Index in PubMed under a CC BY license. PMID: 28424593



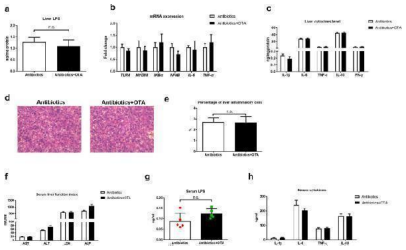

Effect of Prdx6-iPLA2 on Toll-like receptor 2 (TLR2) and TLR4 expression in microglia in response to OGD/R. TLR2 and TLR4 were activated during OGD/R exposure. Prdx6-iPLA2 siRNA or MJ33 treatment could inhibit TLR2 and TLR4 mRNA (A,B) and protein expression (C–E) . Results are expressed as the mean ± SEM of three independent experiments. ** $p < 0.01$ vs. Control; # $p < 0.05$ vs. Scramble; ## $p < 0.01$ vs. Scramble.Index in PubMed under a CC BY license. PMID: 28424593



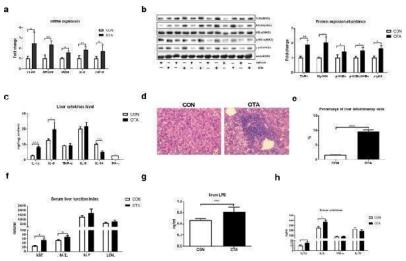
OTA-originated microbiota induces liver inflammation. a Liver LPS level in FMT (CON) and FMT (OTA) ducks. b Relative mRNA expressions of TLR4, MYD88, IKBalpha, IL-6, and TNF-alpha in the liver after FMT ( n = 6, mean with SEM). c Relative protein abundance of TLR4, MYD88, p-IKBalpha, p-IKBalpha/IKBalpha, and p-p65 in the liver after FMT ( n = 6,

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mean with SEM). d Effect of FMT on the liver levels of IL-1beta, IL-6, TNF-alpha, and IL-10 ( n = 6, mean with SEM). e Representative H&E-stained liver sections. f Statistical analysis of the percentage of inflammatory cells in different groups shown in e ( n = 6, mean with SEM). g Serum levels of AST, ALT, ALP, and LDH in different groups ( n = 6, mean with SEM). h Serum LPS level in different FMT groups ( n = 6, mean with SEM). i Serum levels of IL-1beta, IL-6, and TNF-alpha after FMT ( n = 6, mean with SEM). FMT (CON): ducks received the CON group fecal microbiota. FMT (OTA): ducks received the OTA group fecal microbiota. Data were analyzed with unpaired t test, n = 6. * P < 0.05; ** P < 0.01, *** P < 0.001, **** P <0.0001 Index in PubMed under a CC BY license. PMID: 31779704



OTA fails to promote liver inflammation in antibiotics-treated ducks. a Liver LPS level in different groups ( n = 6, mean with SEM). b Relative mRNA expressions of TLR4, MYD88, IKBalpha, IL-6, and TNF-alpha in the liver of antibiotics-treated ducks with or without OTA ( n = 6, mean with SEM). c Levels of IL-1beta, IL-6, TNF-alpha, IL-8, IL-10, and IFN-gamma in the liver of antibiotics-treated ducks with or without OTA ( n = 6, mean with SEM). d Representative images of H&E-stained liver sections (magnification × 400; scale bar 100 um; n = 6). e Statistical analysis of the percentage of inflammatory cells in different groups shown in d ( n = 6, mean with SEM). f Effect of OTA on serum levels of AST, ALT, ALP and LDH in antibiotics-treated ducks ( n = 6, mean with SEM). g Serum LPS level with or without OTA treatment in antibiotics-treated ducks ( n = 6, mean with SEM). h Effect of OTA on serum levels of IL-1beta, IL-6, TNF-alpha, and IL-10 ( n = 6, mean with SEM). Data were analyzed with unpaired t test. n.s., not significant Index in PubMed under a CC BY license. PMID: 31779704



OTA promotes liver inflammation. a Relative mRNA expressions of TLR4, MYD88, IKBalpha, IL-6, and TNF-alpha in the liver after OTA oral gavage ( n = 6, mean with SEM). b Relative protein abundances of TLR4, MYD88, p-IKBalpha, p-IKBalpha/IKBalpha, and p-p65 in the liver after OTA oral gavage ( n = 6, mean with SEM). c Effect of OTA on levels of liver cytokines, including IL-1beta, IL-6, TNF-alpha, IL-8, IL-10, and IFN-gamma ( n = 6, mean with SEM). d Representative images of H&E-stained liver sections in CON and OTA group (magnification × 400, scale bar 100 um, n = 6). e Statistical analysis of the percentage of inflammatory cells in different groups shown in d ( n = 6, mean with SEM). f Effect of OTA on serum levels of AST, ALT, ALP, and LDH ( n = 6, mean with SEM). g Serum LPS level with or without OTA treatment ( n = 6, mean with SEM). h Effect of OTA on serum levels of IL-1beta, IL-6, TNF-alpha, and IL-10 ( n = 6, mean with SEM). Data in a , b , c , e , f , g , and h were analyzed with unpaired t test, * P < 0.05; ** P < 0.01, *** P < 0.001, P <0.0001 Index in PubMed under a CC BY license. PMID: 31779704

## 31 Publications Citing This Product

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1. PubMed ID: 10.1016/j.jtherbio.2019.07.003, Effect of curcumin supplementation on TLR4 mediated non-specific immune responses in liver of laying hens under high-temperature conditions

2. PubMed ID: 34000276, Liu J,Zhang N,Zhang M,Yin H,Zhang X,Wang X,Wang X,Zhao Y.N-acetylserotonin alleviated the expression of interleukin-1beta in retinal ischemia-reperfusion rats via the TLR4/NF-kappaB/NLRP3 pathway.Exp Eye Res.2021 May 14:108595.doi:10.1016/j.exer.2021.108595.Epub ahead of print.PMID:34000276.

3. PubMed ID: -, Daiyang Xia,Lin Yang,Yu Li,Jianying Chen,Xiufen Zhang,Heng Wang,Shuangshuang Zhai,Xianzhi Jiang,Giuseppe Meca,Shunxiang Wang,Liang Huang,Shanshan Zhu,Yang Fu,Weiqing Ma,Yongwen Zhu,Hui Ye,Wence Wang,Melatonin alleviates Ochratoxin A-induced liver inflamma

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