

# Toll-like Receptor 4 Antibody (Rodent Specific)

**Orders** ■ 877-616-CELL (2355)  
orders@cellsignal.com

**Support** ■ 877-678-TECH (8324)  
info@cellsignal.com

**Web** ■ www.cellsignal.com

rev. 12/18/15

**For Research Use Only. Not For Use In Diagnostic Procedures.**

**Entrez-Gene ID #** 7099  
**Swiss-Prot Acc. #** O00206

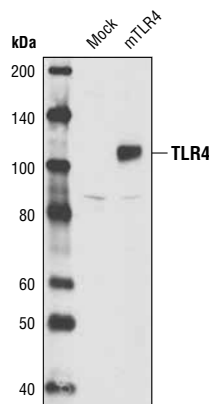
Applications W Transfected	Species Cross-Reactivity* M, (R)	Molecular Wt. 110 kDa	Source Rabbit**
----------------------------------	-------------------------------------	--------------------------	--------------------

**Background:** Members of the Toll-like receptor (TLR) family, named for the closely related Toll receptor in *Drosophila*, play a pivotal role in innate immune responses (1-3). TLRs recognize conserved motifs found in various pathogens and mediate defense responses. Triggering of the TLR pathway leads to the activation of NF- $\kappa$ B and subsequent regulation of immune and inflammatory genes. The TLRs and members of the IL-1 receptor family share a conserved stretch of approximately 200 amino acids known as the TIR domain. Upon activation, TLRs associate with a number of cytoplasmic adaptor proteins containing TIR domains including MyD88 (myeloid differentiation factor), MAL/TIRAP (MyD88-adaptor-like/TIR-associated protein), TRIF (Toll-receptor-associated activator of interferon) and TRAM (Toll-receptor associated molecule). This association leads to the recruitment and activation of IRAK1 and IRAK4, which form a complex with TRAF6 to activate TAK1 and IKK. Activation of IKK leads to the degradation of I $\kappa$ B that normally maintains NF- $\kappa$ B inactivity by sequestering it in the cytoplasm.

TLR4 functions in association with MD-2 in the recognition and initiation of immune responses elicited by lipopolysaccharide (LPS) of Gram-negative bacteria (4-8). TLR4 triggers the activation of NF- $\kappa$ B, IRF-3, and MAPK pathways leading to the production of inflammatory cytokines (9).

**Specificity/Sensitivity:** Toll-like Receptor 4 Antibody (Rodent Specific) detects transfected levels of total TLR4 protein. Cross reactivity was not detected with other TLR family members.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Cys549 within the extracellular region of mouse and rat TLR4 protein. Antibodies were purified by peptide affinity chromatography.



Western blot analysis of extracts from HeLa cells, mock transfected or transfected with mouse TLR4, using Toll-like Receptor 4 Antibody (Rodent Specific).

#### Background References:

- (1) Akira, S. (2003) *J Biol Chem* 278, 38105-8.
- (2) Beutler, B. (2004) *Nature* 430, 257-63.
- (3) Dunne, A. and O'Neill, L.A. (2003) *Sci STKE* 2003, re3.
- (4) Rock, F.L. et al. (1998) *Proc. Natl. Acad. Sci. USA* 95, 588-593.
- (5) Poltorak, A. et al. (1998) *Science* 282, 2085-2088.
- (6) Chow, J.C. et al. (1999) *J. Biol. Chem.* 274, 10689-10692.
- (7) Hoshino, K. et al. (1999) *J. Immunol.* 162, 3749-3752.
- (8) Shimazu, R. et al. (1999) *J. Exp. Med.* 189, 1777-1782.
- (9) Kawai, T. and Akira, S. (2006) *Cell Death Differ.* 13, 816-825.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

**\*Species cross-reactivity is determined by western blot.**

**\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.**

#### Recommended Antibody Dilutions:

Western blotting 1:1000

**For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).**

**Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.**

**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.