

Toll-like Receptor 9 (D2C9) Rabbit mAb

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

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W, IP	Reactivity: H	Sensitivity: Endogenous	MW (kDa): 130	Source/Isotype: Rabbit IgG	UniProt ID: #Q9NR96	Entrez-Gene Id: 54106
-------------------------------	-------------------------	-----------------------------------	-------------------------	--------------------------------------	-------------------------------	---------------------------------

Product Usage Information**Application**

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Toll-like Receptor 9 (D2C9) Rabbit mAb recognizes endogenous levels of total TLR9 protein. This antibody is predicted to react with known full-length isoforms of TLR9, but not with the cleaved TLR9 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the central ectodomain of human TLR9 protein.

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 (1-4). TLRs recognize conserved motifs found in various pathogens and mediate defense responses (5-7). Triggering of the TLR pathway leads to the activation of NF-κB and subsequent regulation of immune and inflammatory genes (4). The TLRs and members of the IL-1 receptor family share a conserved stretch of approximately 200 amino acids known as the Toll/Interleukin-1 receptor (TIR) domain (1). Upon activation, TLRs associate with a number of cytoplasmic adapter proteins containing TIR domains, including myeloid differentiation factor 88 (MyD88), MyD88-adaptor-like/TIR-associated protein (MAL/TIRAP), TIR domain-containing adapter-inducing IFN-β (TRIF), and Toll-receptor-associated molecule (TRAM) (8-10). This association leads to the recruitment and activation of IRAK1 and IRAK4, which form a complex with TRAF6 to activate TAK1 and IKK (8,11-14). Activation of IKK leads to the degradation of IκB, which normally maintains NF-κB in an inactive state by sequestering it in the cytoplasm.

TLR9 is highly expressed in macrophages, dendritic cells, and B lymphocytes, and in humans has five isoforms generated by alternative splicing (15,16). TLR9 binds to unmethylated CpG motifs present on bacterial DNA and stimulates NF-κB via the MyD88 adaptor protein (17-19). In contrast to most TLR family members that are localized to the plasma membrane, TLR9 is an intracellular receptor localized to the ER in resting cells (20). Upon binding to CpG DNA, TLR9 is proteolytically processed and translocates to endo-lysosomal compartments where it binds MyD88, initiating downstream signaling (21-23).

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. Medzhitov, R. et al. (1997) *Nature* 388, 394-7.
5. Schwandner, R. et al. (1999) *J Biol Chem* 274, 17406-9.
6. Takeuchi, O. et al. (1999) *Immunity* 11, 443-51.
7. Alexopoulou, L. et al. (2001) *Nature* 413, 732-8.
8. Zhang, F.X. et al. (1999) *J Biol Chem* 274, 7611-4.
9. Horng, T. et al. (2001) *Nat Immunol* 2, 835-41.
10. Oshiumi, H. et al. (2003) *Nat Immunol* 4, 161-7.
11. Muzio, M. et al. (1997) *Science* 278, 1612-5.
12. Wesche, H. et al. (1997) *Immunity* 7, 837-47.
13. Suzuki, N. et al. (2002) *Nature* 416, 750-6.
14. Irie, T. et al. (2000) *FEBS Lett* 467, 160-4.
15. Du, X. et al. (2000) *Eur Cytokine Netw* 11, 362-71.
16. Chuang, T.H. and Ulevitch, R.J. (2000) *Eur Cytokine Netw* 11, 372-8.
17. Hemmi, H. et al. (2000) *Nature* 408, 740-5.
18. Bauer, S. et al. (2001) *Proc Natl Acad Sci U S A* 98, 9237-42.
19. Takeshita, F. et al. (2001) *J Immunol* 167, 3555-8.

20. Latz, E. et al. (2004) *Nat Immunol* 5, 190-8.
21. Park, B. et al. (2008) *Nat Immunol* 9, 1407-14.
22. Ewald, S.E. et al. (2008) *Nature* 456, 658-62.
23. Sepulveda, F.E. et al. (2009) *Immunity* 31, 737-48.

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.
Applications Key	W: Western Blotting IP: Immunoprecipitation
Cross-Reactivity Key	H: Human
Trademarks and Patents	Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc. All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.
Limited Uses	Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect. Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.