SANTA CRUZ BIOTECHNOLOGY, INC.

TLR7 (H-114): sc-30004

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The Power to Question

BACKGROUND

The Toll-like receptors (TLR) are a family of human receptors that share homology with the *Drosophila* Toll receptors, which are involved in mediating dorsoventral polarization in developing *Drosophila* embryos and participate in host immunity. The TLR family members are characterized by a highly conserved Toll homology (TH) domain, which is essential for Toll-induced signal transductions. TLRs are type I transmembrane receptors that contain an extracellular domain consisting of several leucine-rich regions and a single cytoplasmic Toll/IL-1R like domain. Three TLR family members, TLR7, TLR8 and TLR9, belong to a subfamily of TLRs which are differentially expressed. TLR7 is expressed in lung, placenta and spleen. TLR8 is expressed in lung and peripheral blood leukocytes, and TLR9 is predominantly expressed in spleen, lymph nodes, bone marrow and peripheral blood leukocytes. TLR7, TLR8 and TLR9 stimulate the NFκB signaling pathway, suggesting that they play a role in the immune response.

REFERENCES

1. Gay, N.J., et al. 1991. *Drosophila* Toll and IL-1 receptor. Nature 351: 355-356.
2. Rock, F.L., et al. 1998. A family of human receptors structurally related to *Drosophila* Toll. Proc. Natl. Acad. Sci. USA 95: 588-593.
3. Brightbill, H.D., et al. 1999. Host defense mechanisms triggered by microbial lipoproteins through toll-like receptors. Science 285: 732-736.
4. Medzhitov, R., et al. 2000. A human homologue of the *Drosophila* Toll protein signals activation of adaptive immunity. Nature 388: 394-397.
5. Du, X., et al. 2000. Three novel mammalian toll-like receptors: gene structure, expression, and evolution. Eur. Cytokine Netw. 11: 362-371.
6. Chuang, T.H., et al. 2000. Cloning and characterization of a sub-family of human toll-like receptors: hTLR7, hTLR8, hTLR9. Eur. Cytokine Netw. 11: 372-378.

CHROMOSOMAL LOCATION

Genetic locus: TLR7 (human) mapping to Xp22.2; Tlr7 (mouse) mapping to X F5.

SOURCE

TLR7 (H-114) is a rabbit polyclonal antibody raised against amino acids 27-140 mapping within an N-terminal domain of TLR7 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

TLR7 (H-114) is recommended for detection of TLR7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TLR7 (H-114) is also recommended for detection of TLR7 in additional species, including bovine.

Suitable for use as control antibody for TLR7 siRNA (h): sc-40266, TLR7 siRNA (m): sc-40267, TLR7 shRNA Plasmid (h): sc-40266-SH, TLR7 shRNA Plasmid (m): sc-40267-SH, TLR7 shRNA (h) Lentiviral Particles: sc-40266-V and TLR7 shRNA (m) Lentiviral Particles: sc-40267-V.

Molecular Weight of TLR7: 120.9 kDa.

Positive Controls: Ramos cell lysate: sc-2216.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Eiró, N., et al. 2012. Duodenal expression of toll-like receptors and interleukins are increased in both children and adult celiac patients. Dig. Dis. Sci. 57: 2278-2285.
2. Eiró, N., et al. 2012. Study of the expression of toll-like receptors in different histological types of colorectal polyps and their relationship with colorectal cancer. J. Clin. Immunol. 32: 848-854.
3. Ioannidis, I., et al. 2013. Toll-like receptor expression and induction of type I and type III interferons in primary airway epithelial cells. J. Virol. 87: 3261-3270.
4. Eiró, N., et al. 2013. Expression of TLR3, 4, 7 and 9 in cutaneous malignant melanoma: relationship with clinicopathological characteristics and prognosis. Arch. Dermatol. Res. 305: 59-67.