

TLR3 (L-13): sc-16238

BACKGROUND

Six human homologs of the *Drosophila* toll receptor were initially identified based on their sequence similarities and designated Toll-like receptors (TLR). Toll receptors are involved in mediating dorsoventral polarization in the developing *Drosophila* embryo and also participate in the host immunity. The TLR family of proteins are characterized by a highly conserved toll homology (TH) domain, which is essential for Toll-induced signal transduction. Expression of TLR receptors is highest in peripheral blood leukocytes, macrophages and monocytes. TLR1, as well as the other TLR family members, are type I transmembrane receptors that characteristically contain an extracellular domain consisting of several leucine-rich regions along with a single cytoplasmic Toll/IL-1R-like domain. TLR2 and TLR4 are activated in response to lipopolysaccharide (LPS) stimulation, which results in the activation and translocation of NF κ B and suggests that these receptors are involved in mediating inflammatory responses. TLR3 is highly expressed in placenta and pancreas, and is limited to the dendritic subpopulation of leukocytes. TLR3 recognizes dsRNA associated with viral infection and induces activation of NF κ B and production of type I interferons, which suggests that it may play a role in host defense against viruses. TLR6 is highly homologous to TLR1, sharing greater than 65% sequence identity. Like other members of TLR family, TLR6 induces NF κ B signaling upon activation.

REFERENCES

- Muzio, M., et al. 2000. Differential expression and regulation of toll-like receptors (TLR) in human leukocytes: selective expression of TLR3 in dendritic cells. *Mol. Biol.* 11: 5998-6004.
- Tissari, J., et al. 2005. IFN- α enhances TLR3-mediated antiviral cytokine expression in human endothelial and epithelial cells by upregulating TLR3 expression. *J. Immunol.* 174: 4289-4294.
- Schröder, M. and Bowie, A.G. 2005. TLR3 in antiviral immunity: key player or bystander? *Trends Immunol.* 26: 462-468.
- Wang, J., et al. 2005. TLR3 ligand-induced accumulation of activated splenic natural killer cells into liver. *Cell. Mol. Immunol.* 2: 449-453.
- Kulka, M., et al. 2006. TLR3 activation inhibits human mast cell attachment to fibronectin and vitronectin. *Mol. Immunol.* 43: 1579-1586.
- Town, T., et al. 2006. Microglia recognize double-stranded RNA via TLR3. *J. Immunol.* 176: 3804-3812.
- Salaun, B., et al. 2006. TLR3 can directly trigger apoptosis in human cancer cells. *J. Immunol.* 176: 4894-4901.

CHROMOSOMAL LOCATION

Genetic locus: TLR3 (human) mapping to 4q35.1.

SOURCE

TLR3 (L-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of TLR3 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-16238 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TLR3 (L-13) is recommended for detection of TLR3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

TLR3 (L-13) is also recommended for detection of TLR3 in additional species, including equine and canine.

Suitable for use as control antibody for TLR3 siRNA (h): sc-36685, TLR3 shRNA Plasmid (h): sc-36685-SH and TLR3 shRNA (h) Lentiviral Particles: sc-36685-V.

Molecular Weight of TLR3: 117 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226, CCRF-HSB-2 cell lysate: sc-2265 or NAMALWA cell lysate: sc-2234.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Kulka, M., et al. 2004. Activation of mast cells by double-stranded RNA: evidence for activation through toll-like receptor 3. *J. Allergy. Clin. Immunol.* 114: 174-182.
- Lee, H.K., et al. 2006. Double-stranded RNA-mediated TLR3 activation is enhanced by CD14. *Immunity* 24: 153-163.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.