

# TLR7 (4F4): sc-57463

## 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 NF $\kappa$ B signaling pathway, suggesting that they play a role in the immune response.

## REFERENCES

- Gay, N.J. and Keith, F.J. 1991. *Drosophila* Toll and IL-1 receptor. Nature 351: 355-356.
- Rock, F.L., et al. 1998. A family of human receptors structurally related to *Drosophila* Toll. Proc. Natl. Acad. Sci. USA 95: 588-593.
- Brightbill, H.D., et al. 1999. Host defense mechanisms triggered by microbial lipoproteins through Toll-like receptors. Science 285: 732-736.
- Du, X., et al. 2000. Three novel mammalian Toll-like receptors: gene structure, expression and evolution. Eur. Cytokine Netw. 11: 362-371.

## CHROMOSOMAL LOCATION

Genetic locus: TLR7 (human) mapping to Xp22.2.

## SOURCE

TLR7 (4F4) is a mouse monoclonal antibody raised against amino acids 451-500 of TLR7 of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 1% glycerol.

## APPLICATIONS

TLR7 (4F4) is recommended for detection of TLR7 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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

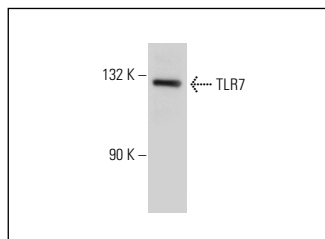
Molecular Weight of TLR7: 121 kDa.

Positive Controls: Ramos cell lysate: sc-2216 or K-562 whole cell lysate: sc-2203.

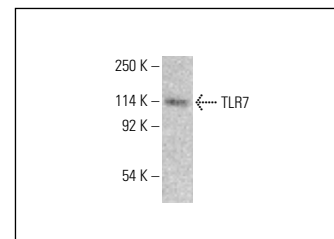
## STORAGE

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

## DATA



TLR7 (4F4): sc-57463. Western blot analysis of TLR7 expression in Ramos whole cell lysate.



TLR7 (4F4): sc-57463. Western blot analysis of TLR7 expression in K-562 whole cell lysate. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

## SELECT PRODUCT CITATIONS

- Aggarwal, R., et al. 2015. Characterization of Toll-like receptor transcriptome in squamous cell carcinoma of cervix: a case-control study. Gynecol. Oncol. 138: 358-362.
- He, M., et al. 2016. The ORF3 protein of genotype 1 hepatitis E virus suppresses TLR3-induced NF $\kappa$ B signaling via TRADD and RIP1. Sci. Rep. 6: 27597.
- El Hajj, R., et al. 2018. EAPB0503: an imiquimod analog with potent *in vitro* activity against cutaneous leishmaniasis caused by *Leishmania major* and *Leishmania tropica*. PLoS Negl. Trop. Dis. 12: e0006854.
- Dombkowski, A.A., et al. 2019. TLR7 activation in epilepsy of tuberous sclerosis complex. Inflamm. Res. 68: 993-998.
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- Pawar, K., et al. 2020. Infection-induced 5'-half molecules of tRNA<sup>His</sup>GUG activate Toll-like receptor 7. PLoS Biol. 18: e3000982.
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- Zhu, Y., et al. 2022. Allosteric inhibition of SHP2 uncovers aberrant TLR7 trafficking in aggravating psoriasis. EMBO Mol. Med. 14: e14455.

## RESEARCH USE

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