Anti-TREM2 Antibody

ER1902-96

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	WB, IHC-P, FC
Molecular Wt:	Predicted band size: 25 kDa

Description: Forms a receptor signaling complex with TYROBP which mediates signaling and cell activation following ligand binding . Acts as a receptor for amyloid-beta protein 42, a cleavage product of the amyloid-beta precursor protein APP, and mediates its uptake and degradation by microglia. Binding to amyloid-beta 42 mediates microglial activation, proliferation, migration, apoptosis and expression of pro-inflammatory cytokines, such as IL6R and CCL3, and the anti-inflammatory cytokine ARG1. Acts as a receptor for lipoprotein particles and for apolipoproteins and CLU and enhances their uptake in microglia. Binds phospholipids (preferably anionic lipids) such as phosphatidylserine, phosphatidylethanolamine, phosphatidylglycerol and sphingomyelin. Regulates microglial proliferation by acting as an upstream regulator of the Wnt/beta-catenin signaling cascade. Required for microglial phagocytosis of apoptotic neurons. Also required for microglial activation and phagocytosis of myelin debris after neuronal injury and of neuronal synapses during synapse elimination in the developing brain. Regulates microglial chemotaxis and process outgrowth, and also the microglial response to oxidative stress and lipopolysaccharide. It suppresses PI3K and NF-kappa-B signaling in response to lipopolysaccharide; thus promoting phagocytosis, suppressing pro-inflammatory cytokine and nitric oxide production, inhibiting apoptosis and increasing expression of IL10 and TGFB. During oxidative stress, it promotes anti-apoptotic NF-kappa-B signaling and ERK signaling. Plays a role in microglial MTOR activation and metabolism. Regulates age-related changes in microglial numbers. Triggers activation of the immune responses in macrophages and dendritic cells. Mediates cytokine-induced formation of multinucleated giant cells which are formed by the fusion of macrophages. In dendritic cells, it mediates up-regulation of chemokine receptor CCR7 and dendritic cell maturation and survival. Involved in the positive regulation of osteoclast differentiation.

Immunogen:	Synthetic peptide within human TREM2 aa 30-60.
Positive control:	THP-1 cell lysates, human liver tissue, human liver carcinoma tissue, human colon carcinoma tissue, THP-1.
Subcellular location:	Cell membrane, Secreted.
Database links:	SwissProt: Q9NZC2 Human
Recommended Dilutions:	
WB	1:500-1:2,000
IHC-P	1:50-1:200
FC	1:50-1:100
Storage Buffer:	1*TBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% Sodium Azide.
Storage Instruction:	Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.
Purity:	Immunogen affinity purified.

Images

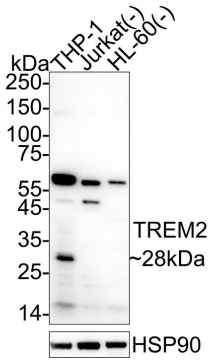

Fig1: Western blot analysis of TREM2 on different lysates with Rabbit anti-TREM2 antibody (ER1902-96) at 1/1,000 dilution.

Lane 1: THP-1 cell lysate
Lane 2: Jurkat cell lysate (negative)
Lane 3: HL-60 cell lysate (negative)

Lysates/proteins at 20 µg/Lane.

Predicted band size: 25 kDa
Observed band size: 28 kDa

Exposure time: 59 seconds; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ER1902-96) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

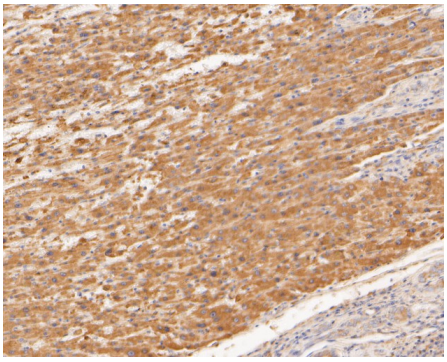

Fig2: Immunohistochemical analysis of paraffin-embedded human liver tissue using anti-TREM2 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ER1902-96, 1/50) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

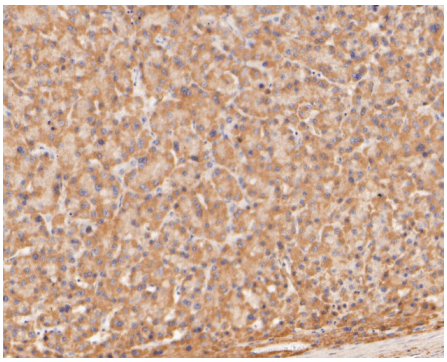

Fig3: Immunohistochemical analysis of paraffin-embedded human liver carcinoma tissue using anti-TREM2 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ER1902-96, 1/50) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

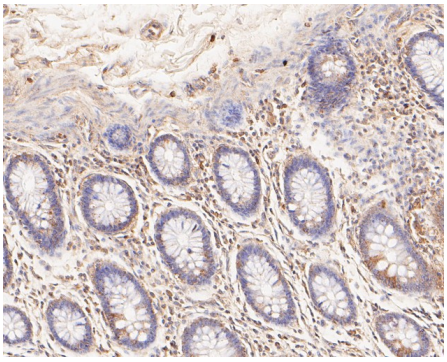

Fig4: Immunohistochemical analysis of paraffin-embedded human colon carcinoma tissue using anti-TREM2 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ER1902-96, 1/50) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

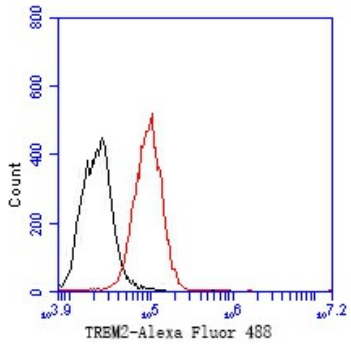

Fig5: Flow cytometric analysis of TREM2 was done on THP-1 cells. The cells were fixed, permeabilized and stained with the primary antibody (ER1902-96, 1/50) (red). After incubation of the primary antibody at room temperature for an hour, the cells were stained with a Alexa Fluor 488-conjugated Goat anti-Rabbit IgG Secondary antibody at 1/1000 dilution for 30 minutes.Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Qin Q et al. TREM2, microglia, and Alzheimer's disease. Mech Ageing Dev. 2021 Apr
2. Binnewies M et al. Targeting TREM2 on tumor-associated macrophages enhances immunotherapy. Cell Rep. 2021 Oct