**DESCRIPTION**

### Species Reactivity
Human

### Specificity
Detects human TREM2 in direct ELISAs and Western blots. In direct ELISAs, less than 50% cross-reactivity with recombinant mouse TREM2b is observed.

### Source
Polyclonal Goat IgG

### Purification
Antigen Affinity-purified

### Immunogen
Mouse myeloma cell line NS0-derived recombinant human TREM2

\[\text{His}19-\text{Ser}174\]

Accession #: Q9NZC2

### Formulation
Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.*

**APPLICATIONS**

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

<table>
<thead>
<tr>
<th>Application</th>
<th>Recommended Concentration</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>0.2 µg/mL</td>
<td>See Below</td>
</tr>
<tr>
<td>Flow Cytometry</td>
<td>2.5 µg/10^6 cells</td>
<td>Human peripheral blood monocytes</td>
</tr>
<tr>
<td>Immunocytochemistry</td>
<td>5-15 µg/mL</td>
<td>See Below</td>
</tr>
<tr>
<td>CyTOF-ready</td>
<td></td>
<td>Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.</td>
</tr>
</tbody>
</table>

### ELISA

This antibody functions as an ELISA detection antibody when paired with Mouse Anti-Human TREM2 Monoclonal Antibody.

This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Human TREM2 DuoSet ELISA Kit (Catalog # DY1828-05) for convenient development of a sandwich ELISA.

**DATA**

**Western Blot**

Detection of Human TREM2 by Western Blot. Western blot shows lysates of THP-1 human acute monocytic leukemia cell line. PVDF membrane was probed with 0.2 µg/mL of Goat Anti-Human TREM2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1828) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for TREM2 at approximately 28 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

**Immunocytochemistry**

TREM2 in Human Dendritic Cells. TREM2 was detected in immersion fixed immature human dendritic cells using Goat Anti-Human TREM2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1828) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.
ELISA

Human TREM2 ELISA Standard Curve. Recombinant Human TREM2 protein was serially diluted 2-fold and captured by Mouse Anti-Human TREM2 Monoclonal Antibody (Catalog # MAB18281) coated on a Clear Polystyrene Microplate (Catalog # DY990). Goat Anti-Human TREM2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1828) was biotinylated and incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # DY998) followed by Substrate Solution (Catalog # DY999) and stopping the enzymatic reaction with Stop Solution (Catalog # DY994).

PREPARATION AND STORAGE
Reconstitution
Reconstitute at 0.2 mg/mL in sterile PBS.

Shipping
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C

Stability & Storage
Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

TREM2 (Triggering Receptor Expressed on Myeloid cells-2) is a 35 kDa molecular weight type I transmembrane member of the TREM family and Ig superfamily. Mature human TREM2 consists of a 156 amino acid (aa) extracellular domain (ECD) with one V-type Ig-like domain, a 21 aa transmembrane (TM) domain, and a 35 aa cytoplasmic tail. Within the ECD, human TREM2 shares 73% and 74% aa sequence identity with mouse and rat TREM2, respectively. Two closely related transcripts were reported in mouse and designated TREM2a and TREM2b. Soluble forms of the TREM2 ECD are generated by alternative splicing or proteolytic cleavage, and the cytoplasmic domain can be liberated by gamma-Secretase mediated intramembrane cleavage. It is a pattern recognition receptor that binds anionic ligands. A positively charged lysine within the transmembrane segment allows association with the signal adapter protein, DAP12 to deliver an activating signal that plays a role in both innate and adaptive immune responses, including inhibition of macrophage activation. TREM2 is expressed on macrophages, immature myeloid dendritic cells, osteoclasts, microglia, and adipocytes. It promotes the differentiation and function of osteoclasts, the production of inflammatory cytokines by adipocytes, insulin resistance, and the phagocytic clearance of bacteria. In the CNS, TREM2 binds to ApoE, ApoA1, and ApoB and mediates the clearance of apoptotic neurons, amyloid plaques, and cell debris following demyelination. TREM2 also interacts with and modifies signaling through Plexin A1 on dendritic cells and osteoclasts. Mutations in TREM2 or DAP12 are associated with the development of Alzheimer's disease and Nasu-Hakola disease (NHD/PLOS1) which is characterized by presenile dementia and bone cysts. Soluble TREM2 is elevated in cerebrospinal fluid of patients with active multiple sclerosis (MS), and TREM2 blockade exacerbates disease symptoms in the experimental EAE model of MS.