

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human 4-1BB Ligand/TNFSF9 in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 1% cross-reactivity with recombinant mouse 4-1BB Ligand, recombinant human (rh) APRIL, rhBAFF, rhEDA-A2, rhFas Ligand, rhGITR Ligand, rhLIGHT, rhOX40 Ligand, rhTNF- α , rhTRAIL, and rhTWEAK is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human 4-1BB Ligand/TNFSF9 Arg71-Glu254 Accession # P41273
Formulation	Lyophilized from a 0.2 μ m 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 μ m filtered solution in PBS.

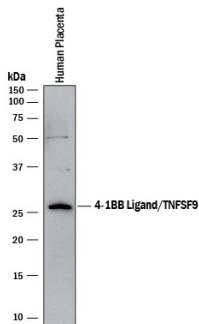
APPLICATIONS

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.

	Recommended Concentration	Sample
Western Blot	1 μ g/mL	See Below
Flow Cytometry	2.5 μ g/10 ⁶ cells	Daudi human Burkitt's lymphoma cell line
Immunohistochemistry	1-15 μ g/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

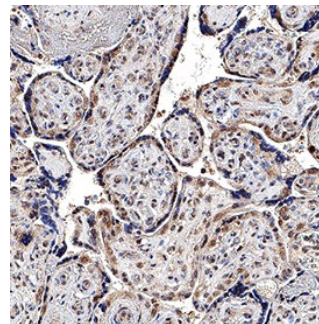
DATA

Western Blot



Detection of Human 4-1BB Ligand/TNFSF9 by Western Blot. Western blot shows lysates of human placenta tissue. PVDF membrane was probed with 1 μ g/mL of Goat Anti-Human 4-1BB Ligand/TNFSF9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2295) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for 4-1BB Ligand/TNFSF9 at approximately 26 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



4-1BB Ligand/TNFSF9 in Human Placenta. 4-1BB Ligand/TNFSF9 was detected in immersion fixed paraffin-embedded sections of human placenta using Goat Anti-Human 4-1BB Ligand/TNFSF9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2295) at 1 μ g/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to syncytiotrophoblasts. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

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. <ul style="list-style-type: none"> ● 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

4-1BB ligand (4-1BBL; also CD137L) is a 32 kDa type II transmembrane protein that belongs to the TNF superfamily (TNFSF) molecules (1-4). The human 4-1BBL cDNA encodes a 254 amino acid (aa) protein that contains a 25 aa N-terminal cytoplasmic domain, a 23 aa transmembrane segment, and a 206 aa C-terminal extracellular region (5). The extracellular domain (ECD) of 4-1BBL has a jelly-roll, β -sandwich tertiary structure that is similar to other TNFSF members. There is only one cysteine in the human ECD, and no potential N-linked glycosylation sites. The potential exists, however, for O-linked glycosylation. The human 4-1BBL ECD shares 32% and 35% aa identity with mouse and rat ECD, respectively. In the cytoplasmic domain, human 4-1BBL is 55 aa shorter than the equivalent region in rodents. 4-1BBL is expressed by activated B cells, macrophages, dendritic cells, activated T cells, neurons and astrocytes (2, 3, 6). A 26 kDa soluble form of 4-1BBL is known to occur in humans. Although it is presumably generated by MMP activity, its amino acid size is currently unreported (4). The soluble form is bioactive. Human 4-1BBL signals through both CD137/4-1BB and itself. Its cytoplasmic tail participates in reverse signaling that induces apoptosis in T cells and cytokine secretion (IL-6; TNF- α) by monocytes (7, 8). 4-1BBL binding to CD137/4-1BB produces a number of effects. It seems to play a key role in the T cell recall response. It maintains T cell numbers at the end of a primary response, and induces CD4⁺ and CD8⁺ T cells to proliferate and secrete cytokines such as IL-2 and IFN- γ in CD4⁺ cells, and IFN- γ in CD8⁺ cells (9, 10).

References:

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