

DESCRIPTION

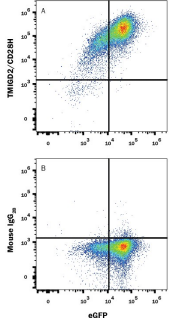
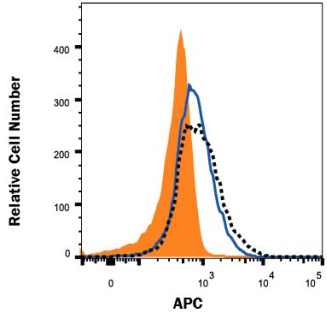
Species Reactivity	Human
Specificity	Detects human TMIGD2/CD28H in direct ELISAs.
Source	Monoclonal Mouse IgG _{2B} Clone # 953743
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human embryonic kidney cell line HEK293-derived human TMIGD2/CD28H Met1-Gly150 Accession # Q96BF3
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.

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
CytoF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Blockade of Receptor-ligand Interaction	In a functional flow cytometry test, 50 µg/mL of Mouse Anti-Human TMIGD2/CD28H Antibody (Catalog # MAB83162) will block the binding of 500 ng/mL Recombinant Human B7-H7 Fc Chimera (Catalog # 156-B7) to HEK293 human embryonic kidney cell line transfected with recombinant human TMIGD2/CD28H.	

DATA

<p>Flow Cytometry</p>  <p>Detection of TMIGD2/CD28H in HEK293 Human Cell Line Transfected with Human TMIGD2/CD28H and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with human TMIGD2/CD28H and eGFP was stained with and either (A) Mouse Anti-Human TMIGD2/CD28H Monoclonal Antibody (Catalog # MAB83162) or (B) Mouse IgG_{2A} Isotype Control (Catalog # MAB003) followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). View our protocol for Staining Membrane-associated Proteins.</p>	<p>Blockade of Receptor-ligand Interaction</p>  <p>B7-H7 binding to TMIGD2/CD28H-transfected HEK293 Human Cell Line is Blocked by Human TMIGD2/CD28H Antibody. In a functional flow cytometry test, Recombinant Human B7-H7 Fc Chimera (Catalog # 156-B7, 500 ng/mL) binds to HEK293 human embryonic kidney cell line transfected with recombinant human TMIGD2/CD28H (black dotted line). Binding is completely blocked (orange histogram) by 50 µg/mL of Mouse Anti-Human TMIGD2/CD28H Monoclonal Antibody (Catalog # MAB83162). Mouse IgG_{2B} Isotype Control (Catalog # MAB003) at 50 µg/mL was used as a control (blue line). Cells were stained with Mouse Anti-Human IgG₁ Fc APC-conjugated Monoclonal Antibody (Catalog # FAB110A).</p>
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PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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

CD28 homolog (CD28H), also called TMIG2 and IGPR-1, is a 55 kDa glycosylated transmembrane protein that shares approximately 10% amino acid (aa) sequence identity with CD28, CTLA-4, ICOS, and PD-1. CD28H is composed of a single extracellular immunoglobulin variable-like domain (IgV) (aa 23-109), a transmembrane domain (aa 151-171), and a long cytoplasmic domain (aa172-282). CD28H is constitutively expressed on naive T and NK cells. Similar to the interaction of B7 with CD28, the interaction of CD28H with B7-H7 activates the Akt-dependent signaling cascade and promotes the proliferation and activation of newly generated peripheral effector and memory T cells (1, 2). CD28H is additionally expressed in the skin and epithelium lining the lung, airway, mammary gland, and gastrointestinal tract (3). It regulates cellular morphology, focal adhesion contact formation, and cell migration (3, 4). CD28H also participates in angiogenesis *in vitro* (3). CD28H interacts with multiple cytoskeletal proteins including Actin, Paxillin, SPIN90, CACNB2, and BPAG1. Interactions between the cytoplasmic proline-rich domain of CD28H and SPIN90 modulate the activity of CD28H in both angiogenesis and cell adhesion (3, 5).

References:

1. Zhu, Y. *et al.* (2013) *Nat. Commun.* **4**:2043.
2. Parry, R.V. *et al.* (2003) *J. Immunol.* **171**:166.
3. Rahimi, N. *et al.* (2012) *Mol. Biol. Cell.* **23**:1646.
4. Huang, C. *et al.* (2003) *Nature* **424**:219.
5. Kaneko, T. *et al.* (2008) *Front. Biosci.* **13**:4938.