

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TMIGD2/CD28H in direct ELISAs.
Source	Monoclonal Mouse IgG _{2A} Clone # 953743
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human embryonic kidney cell line HEK-293-derived human TMIGD2/CD28H Met1-Gly150 Accession # Q96BF3
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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	0.25-1 µg/10 ⁶ cells	See Below

DATA

Flow Cytometry

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 either (A) human TMIGD2/CD28H or (B) irrelevant protein, and eGFP was stained with Mouse Anti-Human TMIGD2/CD28H Alexa Fluor® 647-conjugated Monoclonal Antibody (Catalog # FAB83162R). Quadrant markers were set based on Mouse IgG_{2A} Isotype Control (Catalog # IC003R). View our protocol for [Staining Membrane-associated Proteins](#).

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

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.

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