

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human VSIG4 in direct ELISAs.
Source	Monoclonal Mouse IgG _{2A} Clone # 528912
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived human VSIG4 Arg20-Pro283 Accession # Q9Y279
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.

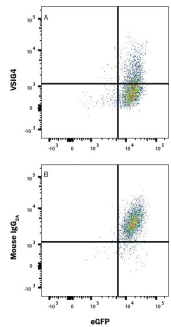
APPLICATIONS

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
Blockade of Receptor-ligand Interaction	50 µg/mL	In a functional flow cytometry test, 50 µg/mL of Mouse Anti-Human VSIG4 Antibody (Catalog # MAB46462) will block the binding of Recombinant Human Siglec-7/Fc protein (Catalog # 1138-SL) to HEK293 human embryonic kidney cell line transfected with recombinant human VSIG4.

DATA

Blockade of Receptor-ligand Interaction



Siglec-7 protein binding to VSIG4-transfected Human Cell Line is Blocked by VSIG4 Antibody. In a functional flow cytometry test. Recombinant Human Siglec-7/Fc protein (Catalog # 1138-SL) binds to HEK293 human embryonic kidney cell line transfected with recombinant human VSIG4 and eGFP. (A) Binding is completely blocked by 50 µg/mL of Mouse Anti-Human VSIG4 Monoclonal Antibody (Catalog # MAB46462) but not by (B) Mouse IgG2A Isotype Control (Catalog # MAB003). Protein binding was detected with Mouse Anti-Human IgG Fc APC-conjugated Monoclonal Antibody (Catalog # FAB110A). Staining was performed using our Staining Membrane-Associated Proteins protocol.

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	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

VSIG4 (Vset and immunoglobulin domain containing 4), also known as complement receptor immunoglobulin (CRIg) and Z39IG, is a 45 kDa, type I transmembrane protein of the B7 family within the Ig superfamily that is expressed only in tissue resident macrophages (1-4). The gene is located on the X chromosome (2). The human VSIG4 cDNA encodes 399 amino acids (aa) including a 19 aa signal sequence, a 264 aa extracellular domain (ECD) containing a V-type and a C2-type Ig domain, a 21 aa transmembrane domain and a 95 aa cytoplasmic domain (3). The human VSIG4 ECD shares 84% aa identity with canine VSIG4. Within the IgV domain, it shares 90%, 80% and 78% aa identity with bovine, mouse and rat VSIG4, respectively; these animals lack the C2-type domain. Splice isoforms of 321, 305, 272, 201 and 199 aa lack all or part of the cytoplasmic domain, the C2-type Ig domain and/or the transmembrane domain (5). VSIG4 is specifically expressed on macrophages in the thymic medulla, peritoneum, alveoli, synovia, adipose and heart, liver Kupffer cells, placental Hofbauer cells, and atherosclerotic foam cells (1-4, 6-9). It is absent on infiltrating macrophages (8). VSIG4 is a complement receptor that binds C3b and iC3b fragments, internalizes them to recycling endosomes, and is recycled to the cell surface (4, 6). It contributes significantly to innate immunity by binding and phagocytosis of complement opsonized invading pathogens (4, 8, 10). Binding of either native or recombinant soluble VSIG4 to C3b inhibits complement amplification through the alternative, but not classical, pathway (10, 11). VSIG4 is also a negative regulator of mouse and human T cell activation (2). Although VSIG4 engagement may activate NFκB and thus be proinflammatory in some cases, many of its activities are important in resolving, rather than initiating, inflammation (1, 2, 7, 10, 11). There is emerging evidence in human conditions that VSIG4 may be a valuable biomarker in infection and immunity, inflammatory conditions and cancer prognosis (12, 13, 14).

References:

1. He, J.Q. *et al.* (2008) *Mol. Immunol.* 40:41.
2. Vogt, L. *et al.* (2006) *J. Clin. Invest.* 116:2817.
3. Langnaese, K. *et al.* (2000) *Biochim. Biophys. Acta* 1492:522.
4. Helmy, K. *et al.* (2006) *Cell* 124:915.
5. Entrez protein Accession # EAX05393, NP_001093901, CAI42052, CAI4205, EAX05394.
6. Tanaka, M. *et al.* (2008) *Clin. Exp. Immunol.* 154:38.
7. Lee, M.Y. *et al.* (2006) *J. Leukoc. Biol.* 80:922.
8. Gorgani, N.N. *et al.* (2008) *J. Immunol.* 181:7902.
9. Walker, M.G. (2002) *Biochim. Biophys. Acta* 1574:387.
10. Wiesmann, C. *et al.* (2006) *Nature* 444:217.
11. Katschke, K.J. *et al.* (2007) *J. Exp. Med.* 204:1319.
12. Small, A.G. *et al.* (2016) *Swiss Med Wkly.* 5:146.
13. Roh J. *et al.* (2017) *Oncotarget.* 8:58122.
14. Kim K.H. *et al.* (2016) *Autophagy.* 12:1647.