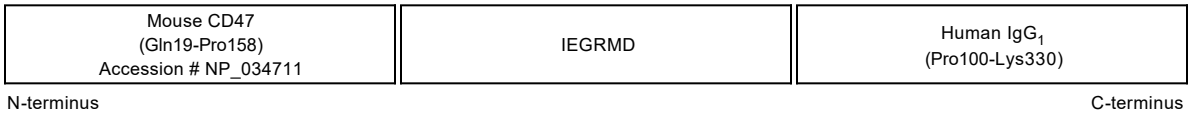
Recombinant Mouse CD47 Fc Chimera

Catalog Number: 1866-CD

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived



N-terminal Sequence Analysis	Gln19 predicted, no results obtained, sequencing might be blocked
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	42.3 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	60-70 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Mouse SIRPα/CD172a Fc Chimera (Catalog # 7154-SA) is coated at 2 µg/mL, Recombinant Mouse CD47 Fc Chimera binds with an apparent K_d <0.6 nM. Also measured by its ability to antagonize mouse red blood cell adhesion to immobilized Recombinant Mouse SIRPα/CD172a Fc Chimera (Catalog # 7154-SA). The ED_{50} for this effect is 2.0-8.0 µg/mL. **Optimal dilutions should be determined by each laboratory for each application.**
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

CD47, also known as Integrin-Associated Protein (IAP) and OA3, is a 40-60 kDa variably glycosylated atypical member of the immunoglobulin superfamily (1, 2). Mouse CD47 is an integral membrane protein that consists of a 122 amino acid (aa) extracellular domain (ECD) with a single Ig-like domain, five membrane-spanning regions with short intervening loops, and a 16 aa C-terminal cytoplasmic tail (3). Alternate splicing of mouse CD47 generates an additional isoform with an insertion of 21 aa following the Ig-like domain (3). Within the N-terminal ECD, mouse CD47 shares 63% and 84% aa sequence identity with human and rat CD47, respectively. A portion of the N-terminal ECD can by shed from smooth muscle cells by MMP-2-mediated proteolysis (4). The ubiquitously expressed CD47 binds to SIRP family members on macrophages, neutrophils, and T cells (5, 6). These interactions prevent macrophage-mediated clearance of healthy CD47-expressing cells and promote immune cell transmigration across the vascular endothelium (5-8). The CD47-SIRPα interaction is species specific, and this lack of cross-species interaction has been implicated in xenotransplantation rejection (16). CD47 associates *in cis* with Fas on T cells and enhances Fas-mediated apoptosis; its ligation promotes T cell anergy and dampens Th1 immune responses (9-11). CD47 also associates *in cis* with Integrins α4β1, αVβ3, α2bβ3, and α2β1 which can positively or negatively modulate Integrin-mediated function (2, 12). In the vasculature, CD47 binding by Thrombospondin-1 inhibits the angiogenic and vasorelaxant effects of nitric oxide (2, 13, 14). On dendritic cells and myeloma cells, CD47 ligation by TSP-1 induces giant cell formation and osteoclast differentiation (15).

References:

1. Sarfati, M. *et al.* (2009) Curr. Drug Targ. **9**:842.
2. Isenberg, J.S. *et al.* (2008) Arterioscler. Thromb. Vasc. Biol. **28**:615.
3. Lindberg, F.P. *et al.* (1993) J. Cell Biol. **123**:485.
4. Maile, L.A. *et al.* (2008) Mol. Endocrinol. **22**:1226.
5. Oldenborg, P.-A. *et al.* (2000) Science **288**:2051.
6. Liu, Y. *et al.* (2002) J. Biol. Chem. **277**:10028.
7. Stefanidakis, M. *et al.* (2008) Blood **112**:1280.
8. de Vries, H.E. *et al.* (2002) J. Immunol. **168**:5832.
9. Manna, P.P. *et al.* (2005) J. Biol. Chem. **280**:29637.
10. Avice, M.-N. *et al.* (2001) J. Immunol. **167**:2459.
11. Bouguermouh, S. *et al.* (2008) J. Immunol. **180**:8073.
12. Barazi, H.O. *et al.* (2002) J. Biol. Chem. **277**:42859.
13. Isenberg, J.S. *et al.* (2009) Nitric Oxide **21**:52.
14. Isenberg, J.S. *et al.* (2009) Matrix Biol. **28**:110.
15. Kukreja, A. *et al.* (2009) Blood **114**:3413.
16. Wang H. *et al.* (2007) Blood **109**:836.

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