

Recombinant Mouse FcγRI/CD64 (carrier-free)

Catalog# / Size	773802 / 10 µg 773804 / 25 µg 773806 / 100 µg
Regulatory Status	RUO
Other Names	High affinity immunoglobulin gamma Fc receptor I, IgG Fc receptor I, Fc gamma RI, FcRI, CD64, Fcγ1, FcγR1
Description	FcγRI, also known as CD64 and FcR I, is a type I transmembrane protein, belonging to the immunoglobulin superfamily. FcγRI is an Fc receptor that binds to monomeric IgG with high affinity. Human FcγRI binds to human IgG1, IgG3 and IgG4 with higher affinity, but no affinity for IgG2. However, murine FcγRI only binds to mouse IgG2a with high affinity, but it binds to mouse IgG2b and IgG3 with low affinity and no affinity for mouse IgG1. Upon binding to IgG, FcγRI associates with signal-transducing FcR common γ chain, and in turns conducts downstream signaling. Though Fc γ chain is dispensable to FcγRI ligand-binding capacity, the surface expression of FcγRI and signaling are impaired in Fc γ chain-deficient cells. FcγRI is exclusively expressed on myeloid cells, including monocytes/macrophages, dendritic cells, and inducible on neutrophils and mast cells. The expression can be upregulated by IFN-γ, IL-10 and G-CSF stimulation. Several studies demonstrated that FcγRI plays a role in antigen capture, IgG-induced cellular phagocytosis and antibody-dependent cellular cytotoxicity (ADCC). In FcγRI-deficient mouse macrophage, the IgG2a-induced phagocytosis and antibody-mediated killing were impaired. In addition, acute and chronic inflammatory responses and immune complex-dependent antigen presentation to primed T cells were disturbed in FcγRI-deficient mice.

Product Details

Source	Mouse FcγRI/CD64, amino acid Glu25-Pro297 (Accession #: P26151), with a C-terminal 6x His tag, was expressed in 293E cells.
Molecular Mass	The 279 amino acid recombinant protein has a predicted molecular mass of approximately 31.2 kD. The DTT-reduced and non-reduced protein migrates at approximately 50 kD respectively by SDS-PAGE. The predicted N-terminal amino acid is Glu.
Purity	> 95%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in 1x PBS.
Endotoxin Level	Less than 0.1 EU per µg protein as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	When mouse IgG2a (Cat. No. 400201) is immobilized at 1 µg/ml, mouse CD64 binds with EC ₅₀ of 2 - 8 ng/ml in a functional ELISA.
Application	Bioassay
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee . If you have any concerns, contact us at tech@biolegend.com .

Application References

(PubMed link indicates BioLegend citation)

1. van Vugt MJ, *et al.* 1996. *Blood*. 87: 3593.
2. Ravetch JV, Kinet JP. 1991. *Annu. Rev. Immunol.* 9: 457.
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4. Repp R, *et al.* 1991. *Blood*. 78: 885.
5. Wang AV, *et al.* 1994. *J. Exp. Med.* 180: 1165.
6. Bruhns. 2012. *Blood*. 119: 5640.
7. Ioan-Facsinay A, *et al.* 2002. *Immunity*. 16: 391.
8. Barnes N, *et al.* 2002. *Immunity*. 16: 379.

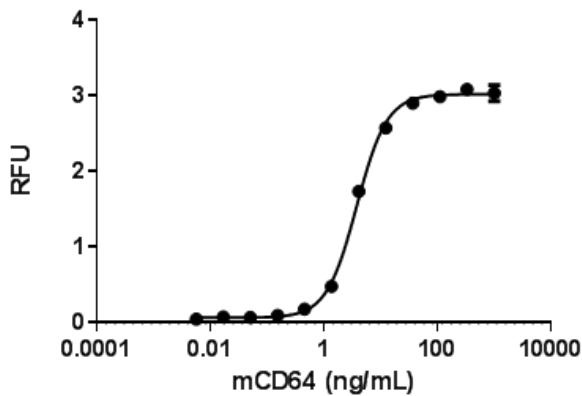
Product Citations

1. Su W, *et al.* 2021. *MBio*. 12:e0239521. [PubMed](#)

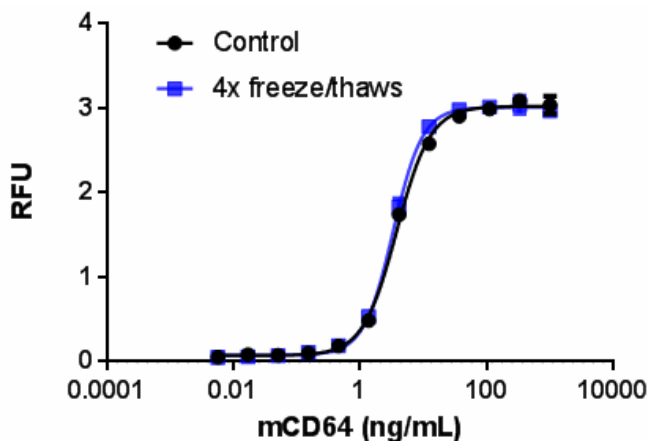
Antigen Details

Structure	Immunoglobulin family
Distribution	In human, Fc γ RI is restricted to monocytes, macrophage, dendritic cells, but inducible on neutrophils and mast cells. In mice, Fc γ RI is expressed on dendritic cells and on monocytes/macrophages; plasma membrane.
Function	Fc γ RI plays a role in antigen capture, IgG-induced cellular phagocytosis and antibody-dependent cellular cytotoxicity.
Interaction	Fc γ R subunit, src-type kinase Hck and Lyn.
Ligand/Receptor	Mouse IgG2a
Bioactivity	Measured by its ability to bind mouse IgG2a (Cat. No. 400201).
Biology Area	Immunology, Innate Immunity
Molecular Family	CD Molecules, Fc Receptors, Soluble Receptors
Gene ID	14129

Product Data



When mouse IgG2a (Cat. No. 400201) is immobilized at 1 μ g/ml, mouse CD64 binds in a dose dependent manner with EC₅₀ of 2 - 8 ng/mL.



Stability testing for Mouse CD64.

Mouse CD64 was aliquoted in PBS, pH 7.2 at 0.2 mg/ml. One aliquot was freeze and thawed four times (4x freeze/thaws), and compared to a control kept at 4°C (control). The samples were tested in a binding assay with mouse IgG2a.

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