Recombinant Mouse Fcε RIα mFc Chimera

Catalog Number: 11646-FC

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived mouse Fc epsilon RI alpha protein

Mouse FCER1a (Ala24-Gln204) Accession # P20489.2	IEGRMD	Mouse IgG1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Ala24
Structure / Form	Disulfide linked homodimer
Predicted Molecular Mass	48 kDa

SPECIFICATIONS

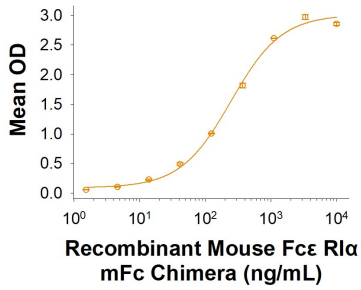
SDS-PAGE	67-73 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Recombinant Mouse Fcε RIα mFc Chimera binds to Human Fc epsilon RI alpha Antibody (Catalog # AF6678) with an ED_{50} of 80.0-800 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the 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 with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in water.
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.

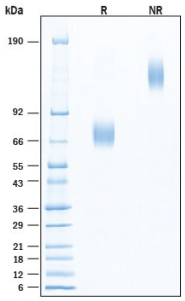
DATA

Binding Activity



Recombinant Mouse Fcε RIα mFc Chimera Protein Binding Activity. Measured by its binding ability in a functional ELISA. Recombinant Mouse Fcε RIα mFc Chimera Protein (Catalog # 11646-FC) binds to Human Fc epsilon RI alpha Antibody (Catalog # AF6678) with an ED_{50} of 80.0-800 ng/mL.

SDS-PAGE



Recombinant Mouse Fcε RIα mFc Chimera Protein SDS-PAGE. 2 µg/lane of Recombinant Mouse Fcε RIα mFc Chimera Protein (Catalog # 11646-FC) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 67-73 kDa and 130-150 kDa, respectively.

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BACKGROUND

The α subunit of the high affinity IgE receptor (Fcε RIα or FcεRIA) is an IgE-binding type I transmembrane glycoprotein of the multichain immune recognition (MIRR) family (1, 2). The receptor, Fcε RI, is a tetrameric complex of one α, one β and two γ subunits ($\alpha\beta\gamma_2$) on mast cells and basophils (1). An alternate trimeric form ($\alpha\gamma_2$) is expressed on human, but not rodent, mast cells, basophils, eosinophils and professional antigen presenting cells (3). While the γ subunit is essential for expression of Fcε RIα on the cell surface and for cell signaling, the β subunit, when present, increases the halflife of the Fcε RI complex on the cell surface (3, 4). An isoform of the β subunit, βT, blocks processing of the α subunit and its cell surface expression (2, 3, 5). Mouse Fcε RIα cDNA encodes 250 amino acids (aa) including a 23 aa signal sequence, a 181 aa extracellular domain containing two Ig-like domains, a 19 aa transmembrane domain and a 27 aa cytoplasmic sequence. Mouse Fcε RIα shares 52% and 71% aa sequence identity with human and rat Fcε RIα, respectively. Binding of IgE alone increases surface expression of Fcε RI, while crosslinking of IgE/Fcε RI complexes by IgE ligands (allergens) initiates receptor internalization and signaling (2, 4, 5). Mast cell and basophil activation by IgE/Fcε RI crosslinking causes degranulation, releasing histamine, leukotrienes, prostaglandins, and other mediators of immediate-type and late-phase allergic reactions. Circulating autoantibodies that crosslink Fcε RIα are often found in patients with chronic urticaria (6). Fcε RI on human antigen presenting cells mediates uptake and processing of allergens for presentation by class II MHC (2, 3). Fcε RI expression on human DC and Langerhans cells is up-regulated during allergic reactions (atopy) and correlates with serum IgE concentration (3).

References:

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2. Abramson, J. and I. Pecht (2007) Immunol. Rev. **217**:231.
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5. Brenzovich, J. *et al.* (2009) J. Leukoc. Biol. **86**:1351.
6. Kikuchi, Y. *et al.* (2001) J. Allergy Clin. Immunol. **107**:1056.

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