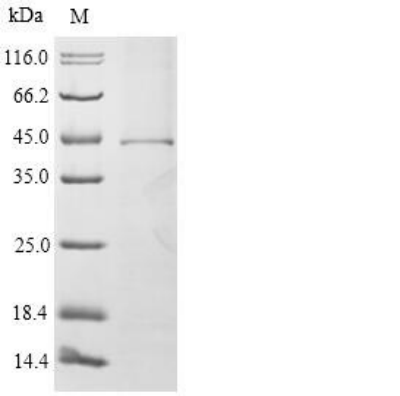
Recombinant Mouse High affinity immunoglobulin epsilon receptor subunit alpha (Fcer1a)

Product Code	CSB-CF008532MO
Relevance	Binds to the Fc region of immunoglobulins epsilon. High affinity receptor. Responsible for initiating the allergic response. Binding of allergen to receptor-bound IgE leads to cell activation and the release of mediators (such as histamine) responsible for the manifestations of allergy. The same receptor also induces the secretion of important lymphokines.
Abbreviation	Recombinant Mouse Fcer1a protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P20489
Product Type	Transmembrane Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	ATEKSVLTLDPPWIRIFTGEKVTLSCYGNNHLQMNSTTKWIHNGTVSEVNSSH LVIVSATVQDSGKYICQKQGLFKSKPVYLNVTQDWLLLQTSADMVLVHGSFDIR CHGWKNWNVRKVIYYRNDHAFNYSYESPVSIREATLNDSGTYHCKGYLRQVK YESDKFRIAVVKAYKCKYYWLQLIFPLLVAILFAVDTGLLLSTEEQFKSVLEIQKT GKYKKVETELLT
Research Area	Immunology
Source	in vitro E.coli expression system
Target Names	Fcer1a
Protein Names	Fc-epsilon RI-alpha
Expression Region	24-250aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-SUMO-tagged
Mol. Weight	44.7kDa
Protein Length	Full Length of Mature Protein
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Mouse High affinity immunoglobulin epsilon receptor subunit alpha (Fcer1a) is produced using an in vitro E.coli expression system, spanning the full mature protein length from amino acids 24 to 250. This protein carries an N-terminal 10xHis-SUMO tag, which provides easier purification and enhanced stability. The product achieves over 90% purity as confirmed by SDS-PAGE, making it appropriate for various research applications.

The High affinity immunoglobulin epsilon receptor subunit alpha (Fcer1a) appears to be a crucial component of the immunoglobulin E (IgE) receptor complex, largely involved in allergic responses. It likely plays a central role in the signal transduction pathway that triggers mediator release from mast cells and basophils. Understanding Fcer1a may be essential for research into allergy mechanisms and developing therapeutic interventions.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Antibody Development and Validation Studies

This recombinant mouse Fcer1a protein can function as an immunogen or coating antigen for developing monoclonal or polyclonal antibodies specific to the high affinity IgE receptor alpha subunit. The N-terminal His-SUMO tag enables purification and immobilization on different surfaces for ELISA-based antibody screening and characterization. Researchers might use this protein to validate antibody specificity through Western blot, immunoprecipitation, and competitive binding assays. The high purity (>90%) appears to ensure reliable and reproducible results in antibody development workflows.

2. Protein-Protein Interaction Studies

The recombinant Fcer1a protein works well in pull-down assays to identify and characterize binding partners or interacting proteins from mouse cell lysates or tissue extracts. The His-SUMO tag allows efficient immobilization on nickel-

based affinity matrices for capturing potential binding partners. This approach may help reveal protein complexes involving the IgE receptor alpha subunit and provide insights into receptor assembly mechanisms. The purified protein can also be applied in surface plasmon resonance or other biophysical techniques to measure binding kinetics with known interaction partners.

3. Structural and Biochemical Characterization

This recombinant protein serves as a useful tool for structural biology studies, including X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy experiments aimed at understanding the molecular architecture of the IgE receptor alpha subunit. The protein can undergo various biochemical analyses such as circular dichroism spectroscopy to assess secondary structure, thermal stability assays, and proteolytic mapping studies. When native protein structure is required for certain analytical applications, the SUMO tag can be removed by specific proteases.

4. Cell-Based Binding and Functional Assays

The recombinant Fcer1a protein works as a probe in flow cytometry or microscopy-based studies to investigate receptor expression patterns on various mouse cell types. Fluorescently labeled versions of this protein may serve as reagents for detecting cells expressing complementary receptor subunits or IgE molecules. The protein can also be applied in competitive binding assays using mouse cell lines to study receptor occupancy and binding specificity under different experimental conditions.

5. ELISA Development and Immunoassay Applications

This purified recombinant protein can function as a standard or capture reagent in enzyme-linked immunosorbent assays designed to quantify Fcer1a levels in mouse biological samples. The His-SUMO tag enables oriented immobilization on ELISA plates, potentially improving assay sensitivity and reproducibility. Researchers might develop sandwich ELISA formats using this protein in combination with specific antibodies for quantitative analysis of receptor expression in cell culture supernatants or tissue homogenates.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.