**DESCRIPTION**

**Source**
Mouse myeloma cell line, NS0-derived
Val26-Gln205, with a C-terminal 6-His tag
Accession # NP_001992

**N-terminal Sequence Analysis**
Val26

**Predicted Molecular Mass**
21.9 kDa

**SPECIFICATIONS**

**SDS-PAGE**
45-58 kDa, reducing conditions

**Activity**
Measured by its binding ability in a functional ELISA.
When Recombinant Human FcεRIα is immobilized at 0.1 μg/mL (100 μL/well), the concentration of human IgE that produces 50% of the optimal binding response is found to be approximately 0.05-0.2 μg/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. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution**
Reconstitute at 100 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**

The α subunit of the high affinity IgE receptor (FcεRIα or FcεRIA) is an IgE-binding type I transmembrane glycoprotein of the multichain immune recognition (MIRR) family (1, 2). The receptor, FcεRI, is a tetrameric complex of one α, one β and two γ subunits (αβγ₂) on mast cells and basophils (1). An alternate trimeric form (αγ₂) 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 FcεRI on the cell surface and for cell signaling, the β subunit, when present, increases the half-life of the FcεRI 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). Human FcεRIα cDNA encodes 257 amino acids (aa) including a 25 aa signal sequence, a 180 aa extracellular domain containing two Ig-like domains that bind IgE and an endoplasmic reticulum retention motif, a 21 aa transmembrane domain with a charged amino acid (Asp219) that contributes to intracellular transport, and a 32 aa cytoplasmic sequence (1, 3, 6). Human FcεRIα shares 50-62% aa sequence identity with mouse, rat, equine, ovine, bovine, porcine and canine FcεRIα.

Binding of IgE alone increases surface expression of FcεRI, while crosslinking of IgE/FcεRI complexes by IgE ligands (allergens) initiates receptor internalization and signaling (2, 4, 5). Mast cell and basophil activation by IgE/FcεRI crosslinking causes degranulation, releasing histamine, leukotrienes, prostaglandins, and other mediators of immediate-type and late-phase allergic reactions. Circulating autoantibodies that crosslink FcεRI are often found in patients with chronic urticaria (7). FcεRI on human antigen presenting cells mediates uptake and processing of allergens for presentation by class II MHC (2, 3). FcεRI expression on human DC and Langerhans cells is up-regulated during allergic reactions (atopy) and correlates with serum IgE concentration (3).

**References:**