Recombinant Human IL-35 Fc Chimera

Catalog Number: 8608-IL

DESCRIPTION

Source Human embryonic kidney cell, HEK293-derived

Human IL-27β/EBI3 (Arg21-Lys229) Accession # Q14213	$(GGGS)_4$	Human IL-12α/p35 Arg23-Ser219 Accession # P29459	IEGRMD	Human IgG_1 Pro100-Lys330)

N-terminal Sequence Analysis Arg21

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 73 kDa

SPECIFICATIONS

SDS-PAGE 81-97 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
When Recombinant Human IL-12 Rβ2 Fc Chimera (Catalog # 1959-B2) is immobilized at 5 µg/mL (100 µL/well), the concentration of Recombinant Human IL-35 Fc Chimera that produces 50% optimal binding response is approximately 20-120 ng/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >80%, by SDS-PAGE under reducing conditions and visualized by silver stain.

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.

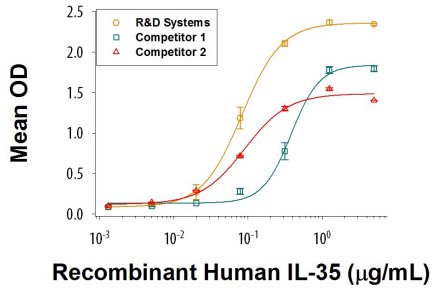
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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.

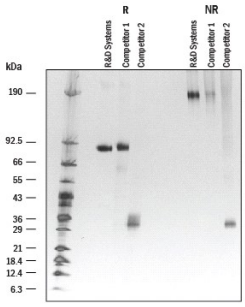
DATA

Bioactivity



When Recombinant Human IL-12 R beta 2 Fc Chimera (Catalog # 1959-B2) is immobilized at 5 µg/mL (100 µL/well), Recombinant Human IL-35 Fc Chimera (Catalog # 8608-IL) binds with an ED_{50} of 20-120 ng/mL. Recombinant Human IL-35 from the two competitors have much weaker Recombinant Human IL-12 R beta 2 Fc Chimera binding activity.

SDS-PAGE



1 µg/lane of Recombinant Human IL-35 Fc Chimera Protein from R&D Systems and two competitors was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining. Recombinant Human IL-35 Fc Chimera Protein (Catalog # 8608-IL) from R&D Systems shows single bands at 85 kDa and 185 kDa, respectively. The R&D Systems Protein offers a better purity than the competition.

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BACKGROUND

Interleukin 35 (IL-35) is a member of the IL-12 family of heterodimeric cytokines. Unlike other IL-12 family cytokines which stimulate the immune response, the predominant function of IL-35 is as an immunosuppressant. IL-12 cytokines are composed of an α and β subunit which, for IL-35 are the IL-12 p35 subunit and the EBI3 subunit, respectively (1-3). The IL-12 p35 subunit of IL-35 is synthesized as a 219 amino acid (aa) precursor protein with a 22 aa signal sequence and a 197 aa mature region. The EBI3 subunit of IL-35 is synthesized as a 229 aa precursor protein that contains a 20 aa signal sequence and a 209 aa mature region. Human and mouse IL-35 share 58% and 62% sequence homology in their IL-12 p35 and EBI3 subunits, respectively. IL-35 binds to the homodimeric receptors, IL-12 Rβ2 and gp130, as well as to the IL-12 Rβ2-gp130 receptor heterodimer (4). The expression pattern of IL-35 is thought to differ between mouse and humans (5). In mouse regulatory T cells, both subunits of IL-35 are constitutively expressed and the mature IL-35 is secreted. In humans, IL-12 p35 is the only subunit constitutively expressed in regulatory T cells. Immune activation can induce EBI3 expression and IL-35 secretion in human effector T cells (6-8). IL-35 is also expressed and secreted in human placental trophoblasts (1, 9). In both human and mouse IL-35 has been shown to suppress effector T cell proliferation, inhibit Th17 cell development, and promote the conversion of T cells and B cells into regulatory T and B cells, respectively (1, 4, 8, 10, 11). IL-35 is thought to be involved in infectious tolerance and inflammatory cytokine-mediated autoimmune disorders (1, 3, 5, 12). Serum levels of IL-35 are associated with acute graft-versus-host disease following hematopoietic stem cell transplantation (13, 14). IL-35 also functions as a regulator of tumor growth (2, 12, 15).

References:

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