

## GDF-15 Protein, Human, Recombinant (hFc)

### General Information

Synonyms:	PTGFB;PLAB;MIC-1;MIC1;PDF;NAG-1;growth differentiation factor 15;GDF-15
Protein Construction:	A DNA sequence encoding the mature form of human GDF15 (NP_004855.2) (Ala 197-Ile 308) was expressed with the fused Fc region of human IgG1 at the N-terminus. Predicted N terminal: Glu 20
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q99988
Molecular Weight:	40.6 kDa (predicted); 44 kDa protein (reducing conditions)

### QC Testing

Biological Activity:	Immobilized Recombinant Human GFRAL Protein (His Tag) (Mature Form) at 2 µg/mL (100 µL/well) can bind Recombinant Human GDF-15 Protein (Fc Tag), the EC50 is 50-150 ng/mL.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing 100 mM Glycine, 10 mM NaCl, 50 mM Tris, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>

### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Growth-differentiation factor 15 (GDF15), also known as MIC-1, is a secreted member of the transforming growth factor (TGF)-β superfamily, as a novel antihypertrophic regulatory factor in the heart. GDF-15 / GDF15 is not expressed in the normal adult heart but is induced in response to conditions that promote hypertrophy and dilated cardiomyopathy and it is expressed highly in liver. GDF-15 / GDF15 has a role in regulating inflammatory and

apoptotic pathways in injured tissues and during disease processes. GDF-15 / GDF15 is synthesized as precursor molecules that are processed at a dibasic cleavage site to release C-terminal domains containing a characteristic motif of 7 conserved cysteines in the mature protein. GDF-15 / GDF15 overexpression arising from an expanded erythroid compartment contributes to iron overload in thalassemia syndromes by inhibiting hepcidin expression.

### Reference

Ago T, et al. (2006) GDF15, a cardioprotective TGF-beta superfamily protein. *Circ Res.* 98 (3): 294-297.

Hsiao E, et al. (2000) Characterization of growth-differentiation factor 15, a transforming growth factor beta superfamily member induced following liver injury. *Mol Cell Biol.* 20 (10): 3742-51.

Zimmers T, et al. (2005) Growth differentiation factor-15/macrophage inhibitory cytokine-1 induction after kidney and lung injury. *Shock.* 23 (6): 543-8.

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