

**DESCRIPTION**

<b>Source</b>	<i>E. coli</i> -derived Ala197-Ile308 Accession # Q99988
<b>N-terminal Sequence Analysis</b>	Ala197
<b>Structure / Form</b>	Disulfide-linked homodimer
<b>Predicted Molecular Mass</b>	12 kDa

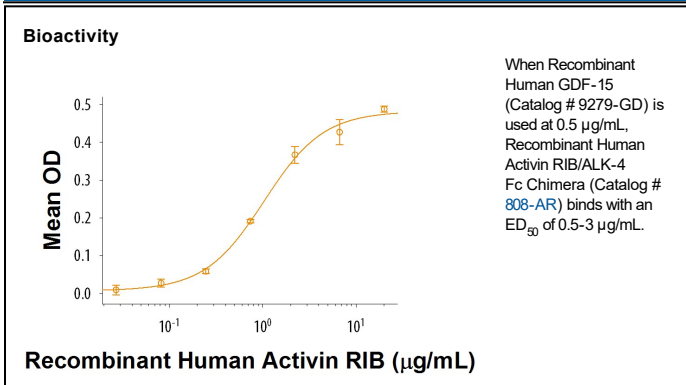
**SPECIFICATIONS**

<b>SDS-PAGE</b>	12 kDa, reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. When Recombinant Human GDF-15 is used at 0.5 µg/mL, the concentration of Recombinant Human Activin RIB/ALK-4 Fc Chimera (Catalog # 808-AR) that produces 50% of the optimal binding response is approximately 0.5-3 µg/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in HCl. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 500 µg/mL in 4 mM HCl.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**DATA**



**BACKGROUND**

Growth Differentiation Factor 15 (GDF-15), also called Macrophage Inhibitory Cytokine 1 (MIC-1), Placental Transforming Growth Factor  $\beta$ , Prostate-derived Factor, and Placental Bone Morphogenetic Protein, is a divergent member of the TGF- $\beta$  superfamily (1, 2). Human GDF-15 shares 66% and 68% amino acid sequence identity with the rat and mouse proteins, respectively (3). GDF-15 is highly expressed in placenta and brain, and it is expressed at lower levels in kidney, pancreas, prostate, and colon. Similar to other TGF- $\beta$  family proteins, the GDF-15 proprotein is cleaved at a dibasic cleavage site (RxxR) to release the mature protein (4). The C-terminal domain of GDF-15 contains seven characteristic conserved cysteine residues necessary for the formation of the cysteine knot and the single interchain disulfide bond (5). Biologically active GDF-15 is a disulfide-linked homodimer of the mature protein and signals through the heterodimeric receptor composed of TGF- $\beta$  RI/ALK-5 and TGF- $\beta$  RII (6). GDF-15 has been shown to have various functions, including inhibition of TNF- $\alpha$  production from lipopolysaccharide-stimulated macrophages and the induction of cartilage formation (1, 5). GDF-15 also promotes neuronal survival, and hypothalamic expression of GDF-15 causes appetite suppression via modulation of Neuropeptide Y and Pro-opiomelanocortin levels (7-9). GDF-15 is cardioprotective via inhibition of platelet activation, limiting atherosclerosis, inhibiting CXCL1-induced neutrophil adhesion, regulating angiogenesis, and inhibiting norepinephrine-induced myocardial hypertrophy (6, 10-15).

**References:**

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