**DESCRIPTION**

**Source**  
Mouse myeloma cell line, NS0-derived

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
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<tbody>
<tr>
<td>Mouse GDF-8 Propeptide (Asn25-Arg267) with a substitution Ser265Arg</td>
<td>IEGRMDP</td>
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<tr>
<td>Mouse IgG2a (Glu98-Lys330)</td>
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**N-terminal Sequence Analysis**  
Asn25  
Disulfide-linked homodimer

**Predicted Molecular Mass**  
54.9 kDa (monomer)

**SPECIFICATIONS**

**SDS-PAGE**  
66 kDa, reducing conditions

**Activity**  
Measured by its ability to inhibit rmGDF-8 activity in K562 human chronic myelogenous leukemia cells. Thies, R.S. et al. (2001) Growth Factors 18:251. The ED_{50} for this effect is 0.03-0.15 μg/mL in the presence of 40 ng/mL of Recombinant Mouse GDF-8/Myostatin.

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

**Purity**  
>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation**  
Lyophilized from a 0.2 μm filtered solution in MES, NaCl and CHAPS with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution**  
Reconstitute at 100 μg/mL in PBS containing at least 0.1% human or bovine serum albumin.

**Shipping**  
The product is shipped with polar packs. 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**

Growth Differentiation Factor 8 (GDF-8), also known as Myostatin, is a secreted TGF-β superfamily protein that is expressed specifically in developing and adult skeletal muscle. It controls myoblast proliferation and is a potent negative regulator of skeletal muscle mass (1-3). Mouse GDF-8 is synthesized as a 376 amino acid (aa) prepropeptide that consists of a 24 aa signal peptide, a 243 aa propeptide, and a 109 aa mature protein (2). Within the propeptide, mouse GDF-8 shares 96% and 99% aa sequence identity with human and rat GDF-8, respectively. GDF-8 is secreted as a prepropeptide that is cleaved by BMP-1 family proteases to separate the 35-40 kDa propeptide from the 12 kDa bioactive mature protein (4-6). This results in a latent complex containing a disulfide-linked dimer of the mature protein and two noncovalently-associated molecules of the propeptide (2, 6). The GDF-8 propeptide functions as an inhibitor of mature GDF-8, and GDF-8 activity can also be inhibited through association with Follistatin, FLRG, Decorin, or GASP3 (6-11). The uncleaved GDF-8 proprotein binds Latent TGF-β binding protein 3 (LTBP3) which can sequester it in the extracellular matrix and prevent the proteolytic cleavage of the propeptide (12). GDF-8 binds to the type II Activin receptor Activin RIIB which then associates with the type I receptors Activin RIB/ALK-4 or TGF-β RI/ALK-5 to induce signaling (13). GDF-8 additionally inhibits adipogenic differentiation of human bone marrow-derived mesenchymal stem cells and preadipocytes (14). Genetic deletion of GDF-8 or in vivo administration of the GDF-8 propeptide induces muscle hypertrophy as well as enhanced glucose utilization and insulin sensitivity and a reduction in overall fat mass (15, 16).

**References**