

GDF-8 Protein, Mouse, Recombinant (hFc)

General Information

Synonyms:	Cmpt;myostatin;Gdf8
Protein Construction:	A DNA sequence encoding the mature form of mouse MSTN (NP_034964.1) (Asp 268-Ser 376) was fused with the Fc region of human IgG1 at the N-terminus. Predicted N terminal: Glu 20
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	O08689
Molecular Weight:	40.8 kDa (predicted); 45 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 92 % 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 PBS, pH 7.4. 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:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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.

Actual storage temperature shall be subject to the COA.

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

Protein Background

GDF-8 / Myostatin / MSTN is a member of the bone morphogenetic protein (BMP) family and the TGF-beta superfamily. This group of proteins is characterized by a polybasic proteolytic processing site which is cleaved to produce a mature protein containing seven conserved cysteine residues. The members of this family are regulators of cell growth and differentiation in both embryonic and adult tissues. GDF-8 / Myostatin / MSTN is highly expressed in skeletal muscle, and myostatin loss-of-function leads to doubling of skeletal muscle mass.

Experiments in mice have improved that GDF-8 / Myostatin / MSTN is a key regulator of mesenchymal stem cell proliferation and differentiation, and mice lacking Myostatin encoding gene show decreased body fat and a generalized increase in bone density and strength. The increase in bone density is observed in most anatomical regions, including the limbs, spine, and jaw, and myostatin inhibitors have been observed to significantly increase bone formation. GDF-8 / Myostatin / MSTN is also expressed in the early phases of fracture healing, and GDF-8 / Myostatin / MSTN deficiency leads to increased fracture callus size and strength. Together, these data suggest that GDF-8 / Myostatin / MSTN has direct effects on the proliferation and differentiation of osteoprogenitor cells and that GDF-8/Myostatin/MSTN antagonists and inhibitors are likely to enhance both muscle mass and bone strength.

Reference

Elkasrawy MN, et al. (2010) Myostatin (GDF-8) as a key factor linking muscle mass and bone structure. *J Musculoskelet Neuronal Interact.* 10(1): 56-63.

Kambadur R, et al. (1997) Mutations in myostatin (GDF8) in double-muscléd Belgian Blue and Piedmontese cattle. *Genome Res.* 7 (9): 910-6.

McPherron AC, et al. (1997) Regulation of skeletal muscle mass in mice by a new TGF-beta superfamily member. *Nature.* 387 (6628): 83-90.

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