

Myostatin Active Protein | GDF8 active protein

Human Myostatin Recombinant

CATALOG #	HOST
AAA76059	E Coli (Host protein expression may be lot-specific and can be subject to change during production, including bulk orders)

PRODUCT SYNONYMS

Myostatin; Human Myostatin Recombinant; MSTN; myostatin; gdf8; GDF8 active protein

PRODUCT SPECIFICATIONS

Host	E Coli (Host protein expression may be lot-specific and can be subject to change during production, including bulk orders)
Purity/Purification	>97%, as determined by SDS-PAGE and HPLC
Form/Format	Recombinant Myostatin was lyophilized from a 0.2 um filtered Tris solution pH 8.0.
Sequence Length	375
Biological Activity	The ED(50) was determined by the dose-dependent proliferation inhibition of human MPC-11 cells was found to be in the range of 0-40.0 ng/ml.
Host Note	Optimized DNA sequence encoding Human Myostatin mature chain was expressed in Escherichia Coli.
Endotoxin	Endotoxin content was assayed using a LAL gel clot method. Endotoxin level was found to be less than 0.1 ng/ug (1EU/ug).
Reconstitution	A quick spin of the vial followed by reconstitution in distilled water to a concentration not less than 0.1 mg/mL. This solution can then be diluted into other buffers
Molecular Weight Note	Native human Myostatin, generated by the proteolytic removal of the signal peptide and propeptide, molecule has a calculated molecular mass of approximately 13 kDa. Recombinant human Myostatin is a disulfide-linked homodimeric protein consisting of two 110 amino acid residue subunits, and migrates as an approximately 25 kDa protein under non-reducing conditions and as a 13kDa protein under reducing conditions in SDS-PAGE.
Preparation and Storage	The lyophilized protein is stable for at least 2 years from date of receipt at -20 degree C. Upon reconstitution, this cytokine can be stored in working aliquots at 2 degree - 8 degree C for one month, or at -20 degree C for six months, with a carrier protein without detectable loss of activity. Avoid repeated freeze/thaw cycles.

ADDITIONAL INFORMATION

Related Product Information for GDF8 active protein	Growth differentiation Factor 8 (GDF-8), also known as myostatin, is a secreted 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. GDF-8 belongs to the transforming growth factor β (TGF- β) superfamily, which includes the TGF- β s, bone morphogenetic proteins (BMPs), growth differentiation factors (GDFs), activins, inhibins, leftys, nodal, Mullerian inhibitory substance (MIS) and the glial cell line-derived neurotrophic factors (GDNFs). ² All TGF- β superfamily members are synthesized and secreted as a homodimeric prepropeptide that is cleaved by proprotein convertases such as furin to generate the dimeric N-terminal propeptide and the dimeric C-terminal mature active protein. The C-terminal mature protein contains the characteristic conserved cysteine residues involved in the formation of the cysteine knot domain. Mouse GDF-8 cDNA encodes a 376 amino acid residue (aa) preproprotein with a putative 24 aa signal peptide, a 243 aa propeptide and a 109 aa mature protein. ¹ As is the case with most TGF- β family proteins, GDF-8 is highly conserved across species. Mature human, mouse, rat, and cow GDF-8 share 100% aa sequence identity. Among TGF- β family members, GDF-8 is most closely related to GDF-11/BMP-11. The two proteins share 65% overall aa sequence, within their mature regions, the two proteins differ only by 11 aa.residues. Similarly to TGF- β 1, 2, and 3, the GDF-8 homodimeric propeptide and mature protein remained non-covalently linked after proteolytic cleavage, and is released as a biologically inactive latent complex that does bind its receptor. ³ In serum, GDF-8 has also been found to exist in a large latent complex that also included FLGR (follistatin-related gene) and GASP-1 (growth and differentiation factor- associated serum protein-1) in addition to the propeptide. ⁴ R&D Systems' recombinant GDF-8 propeptide is capable of associating with the active GDF-8 with high-affinity to reconstitute the latent complex and is potent GDF-8 antagonist.
Product Categories/Family for GDF8 active protein	Cytokines
References	• relation between extent of Myostatin depletion and muscle growth in mature mice .Am J Physiol Endocrinol Metab, Oct 2009; 297: E935 - E940. • Myostatin inhibits igf-i induced myotube hypertrophy through akt .Am J Physiol Cell Physiol, Sep 2009; 10.1152/ajpcell.00043.2009. • Myostatin represses physiological hypertrophy of the heart and excitation-contraction coupling .J. Physiol., Sep 2009; 10.1113/jphysiol.2009.172544. • Myostatin inhibition enhances the effects of exercise on performance and metabolic outcomes in aged mice .J Gerontol A Biol Sci Med Sci, Sep 2009; 64A: 940 - 948. • inhibition of Myostatin does not ameliorate disease features of severe spinal muscular atrophy mice .Hum. Mol. Genet., Sep 2009; 18: 3145 - 3152.

NCBI AND UNIPROT INFORMATION

NCBI GI #	4885259
NCBI GeneID	2660
NCBI Accession #	NP_005250.1
NCBI GenBank Nucleotide #	NM_005259.2
UniProt Accession #	O14793; Q6B0H2; A1C2J7; A1C2K0; Q53S46
NCBI Official Full Name	growth/differentiation factor 8
UniProt Protein Name	Growth/differentiation factor 8
UniProt Gene Name	MSTN
UniProt Synonym Gene Names	GDF8; GDF-8
UniProt Entry Name	GDF8_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.