

Recombinant Mouse GDF11/BMP-11 Protein (His Tag)

Catalog Number: PDEM100251

Note: Centrifuge before opening to ensure complete recovery of vial contents.

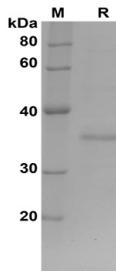
Description

Species	Mouse
Source	E.coli-derived Mouse GDF11 protein Thr136-Asn384, with an N-terminal His
Calculated MW	27.3 kDa
Observed MW	36 kDa
Accession	Q9Z1W4
Bio-activity	Not validated for activity

Properties

Purity	> 95% as determined by reducing SDS-PAGE.
Endotoxin	< 10 EU/mg of the protein as determined by the LAL method
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with 5% Trehalose and 5% Mannitol.
Reconstitution	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.5 mg/mL. Concentration is measured by UV-Vis.

Data



SDS-PAGE analysis of Mouse GDF11/BMP-11 proteins, 2 µg/lane of Recombinant Mouse GDF11/BMP-11 proteins was resolved with SDS-PAGE under reducing conditions, showing bands at 36 kDa.

Background

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Growth Differentiation Factor 11 (GDF-11), also known as BMP-11, is a member of the TGF-beta superfamily and is highly related to GDF-8. GDF-11 encodes a 407 amino acid (aa) prepropeptide which contains a signal sequence for secretion and an RXXR proteolytic processing site to yield a 109 aa residue carboxy-terminal mature protein. Mature GDF-11 contains the canonical 7-cysteine motif common to other TGF-beta superfamily members, however, like the TGF-beta s, Activins and GDF-8, GDF-11 also contains one extra pair of cysteine residues. At the amino acid sequence level, mature human, mouse, rat and chicken GDF-11 are 99-100% identical. As detected by *in situ* hybridization, GDF-11 is expressed in diverse regions of the mouse embryo: tailbud, somitic precursors, limbs, mandibular and branchial arches, dorsal neural tube, odontoblasts, nasal epithelium, and particular regions of the brain. Targeted deletion of GDF-11, in mice, results in a spectrum of abnormalities including palatal malformation, vertebral defects, elongated trunks with a reduced or absent tail, missing or malformed kidneys, and an increased number of neurons in the olfactory epithelium. GDF-11 signals through the Activin type II receptors and induces phosphorylation of Smad2 to mediate axial patterning. Systemic GDF-11 levels decline with age and administration of higher levels of GDF-11 can reverse age-related cardiac hypertrophy. In addition, systemic administration of recombinant GDF-11 protein restores genomic integrity and health of muscle stem cells, neurovasculature and enhances neurogenesis.

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