

# Recombinant Mouse GDF11/BMP-11 protein (His tag)

Catalog Number:PDEM100045



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

## Description

<b>Synonyms</b>	Growth/differentiation factor 11;GDF-11;Bone morphogenetic protein 11;BMP-11
<b>Species</b>	Mouse
<b>Expression Host</b>	E.coli
<b>Sequence</b>	Thr 136-Asn 384
<b>Accession</b>	Q9Z1W4
<b>Calculated Molecular Weight</b>	27.3 kDa
<b>Observed molecular weight</b>	35 kDa
<b>Tag</b>	N-His

## Properties

<b>Purity</b>	> 95 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	Please contact us for more information.
<b>Storage</b>	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.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

## Background

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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