

#86907

Store at -20C

**Human/Mouse/Rat GDF11
Recombinant Protein**

20 µg

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For Research Use Only. Not for Use in Diagnostic Procedures.**MW (kDa):**
25**UniProt ID:**
#O95390**Entrez-Gene Id:**
10220**Background**

Bone morphogenetic proteins (BMPs), also known as growth differentiation factors (GDFs), were first identified as molecules that can induce ectopic bone and cartilage formation (1,2). BMPs are synthesized as precursor proteins that are processed by cleavage to produce mature proteins. BMPs initiate signaling by binding to a receptor complex containing type I and type II serine/threonine receptor kinases that then phosphorylate Smad (mainly Smad1, 5, and 8), resulting in the translocation of Smad to the nucleus. BMP was also reported to activate MAPK pathways in some systems (3,4).

Growth differentiation factor 11 (GDF11), also known as BMP-11, belongs to the BMP family of transforming growth factor beta (TGF-β) superfamily and is very closely related to GDF8 (5). GDF11 plays a critical role in neurogenesis and mesodermal formation in early stages of development and is a key negative regulator of skeletal muscle mass (5-7). With age, GDF11 levels decline. Administration of high levels of GDF11 can result in age-related cardiac hypertrophy to be reversed (8). Additionally, administration of high levels of GDF11 is shown to have effects demonstrating the ability to restore regenerative functions, including muscle aging, reversal of age-related skeletal muscle and stem cell dysfunction, and enhanced neurogenesis (9,10).

Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1 µg h/m/rGDF11.

Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

Source / Purification

Recombinant human/mouse/rat GDF11 was expressed in *E. coli* and is supplied in a lyophilized form.

Bioactivity

The bioactivity of recombinant h/m/rGDF11 was determined by measuring the alkaline phosphatase activity in ATDC-5 cells. The ED₅₀ of each lot is less than or equal to 100 ng/mL.

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**Background
References**

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Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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