Customer service: service@abbkine.com
Technical support: support@abbkine.com
Website: https://www.abbkine.com

Human GDF 3 Protein

Cat #: PRP1070 Size: 5 μg/20 μg/100 μg/1 mg

Product Information

	Product Name: Human GDF 3 Protein		
REF	**Catalog Number:** PRP1070	LOT	**Lot Number:** Refer to product label
	Purity: > 96% as determined by SDS-PAGE		
	Storage: Store at -20°C		**Preparation method:** *E. coli*
	Shipping: The product is shipped at ambient temperature.		

Background:GDF-3 (previously called Vgr-2) is a TGF-beta superfamily member belonging to the growth/differentiation factor family. GDF-3 is expressed in undifferentiated embryonic stem (ES) cells, white adipose tissue and the brain. The 366 amino acid (aa) mouse GDF-3 contains a 22 aa signal sequence, a 230 aa propeptide and a 114 aa mature protein that contains one potential N-glycosylation site. The mature region contains a cysteine-knot structure that is conserved throughout family members. However, it lacks the fourth cysteine which is responsible for the formation of an inter-molecular disulfide bond, so GDF-3 may exist as a non-covalent homodimer. Mature human GDF-3 shares 83%, 83% aa sequence identity with mouse and rat GDF-3. Most of GDF-3 is present as the uncleaved prepro form. The uncleaved and the mature forms both appear to have activity, but that activity may differ. All forms can oppose BMPs. In ES cells, inhibition of BMP2 signaling by GDF-3 maintains pluripotency. GDF-3 also influences early cell fate decisions; for example, deletion of mouse GDF-3 produces defects in the anterior visceral endoderm of the pre-gastrulation embryo. GDF-3 cooperates with GDF-1 in embryogenesis, and the mature protein has nodal-like activity. Although GDF family members signal through BMP receptors (ALK1, 2, 3 and 6), which activate Smads 1, 5 and 8, GDF-3 signaling through ALK4 and ALK7, which activate Smads 2 and 3, has also been reported. In adipocytes, GDF-3 is induced by a high fat diet, promoting adipogenesis and obesity.

Sequence: Amino acid sequence derived from Human GDF 3(Q9NR23) (Ala251-Gly364) was expressed.

Protein length: The recombinant Human GDF 3 consists of 141 amino acids and predicts a molecular mass of 13 kDa.

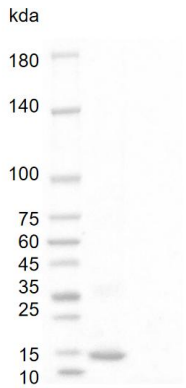
Biological Activity: Testing in progress.

Endotoxin: < 1 EU per μg of the protein as determined by the LAL method.

Formulation: Liquid in from 20mM Tris 150mM NaCl PH 8.0.

Storage Instructions: The recombinant Human GDF 3 protein product should be stored desiccated below -20°C.The protein should be stored at 4°C between 2-7 days and for future use below -20°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Usage notes: Always centrifuge tubes before opening. It is recommended to diluted the protein using the PBS buffer or Protein storage solution to working concentration.

	Fig. SDS-PAGE analysis of Human GDF 3 protein.

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