

Recombinant Human GDF15 Protein

Cat. No. GDF15-17H **Lot. No.** (See product label)

SPECIFICATION

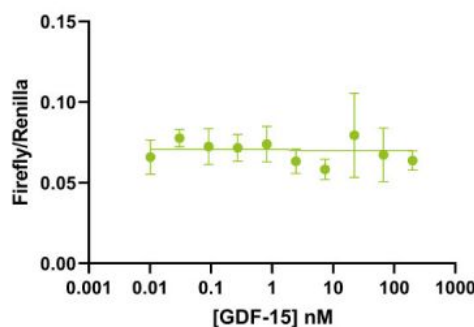
Product Overview	Recombinant human GDF-15 protein without tag was expressed in E. coli. Carrier protein-free. Mass spectrometry: single species with expected mass. Analytical reversed-phase: single sharp peak. Recovery from stock vial: >95%
Species	Human
Source	E.coli
Description	This gene encodes a secreted ligand of the TGF-beta (transforming growth factor-beta) superfamily of proteins. Ligands of this family bind various TGF-beta receptors leading to recruitment and activation of SMAD family transcription factors that regulate gene expression. The encoded preproprotein is proteolytically processed to generate each subunit of the disulfide-linked homodimer. The protein is expressed in a broad range of cell types, acts as a pleiotropic cytokine and is involved in the stress response program of cells after cellular injury. Increased protein levels are associated with disease states such as tissue hypoxia, inflammation, acute injury and oxidative stress.
Molecular Mass	25 kDa (dimer). Mature active protein is a disulfide-linked dimer.
Endotoxin	<0.005 EU/μg protein (below level of detection)
Applications	Biomarker for cellular stress; In vivo metabolic studies in mice (using human GDF15)

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Storage	Resuspend in 10mM HCl at >100 µg/mL, prepare single use aliquots, add carrier protein if desired and store frozen at -20 or -80 centigrade
Storage Buffer	Lyophilized from acetonitrile, TFA
GENE INFORMATION	
Gene Name	GDF15 growth differentiation factor 15 [Homo sapiens (human)]
Official Symbol	GDF15
Synonyms	GDF15; growth differentiation factor 15; PDF; MIC1; PLAB; MIC-1; NAG-1; PTGFB; GDF-15; growth/differentiation factor 15; NRG-1; NSAID (nonsteroidal anti-inflammatory drug)-activated protein 1; NSAID-activated gene 1 protein; NSAID-regulated gene 1 protein; PTGF-beta; macrophage inhibitory cytokine 1; non-steroidal anti-inflammatory drug-activated gene-1; placental TGF-beta; placental bone morphogenetic protein; prostate differentiation factor
Gene ID	9518
mRNA Refseq	NM_004864
Protein Refseq	NP_004855
MIM	605312
UniProt ID	Q99988



Bioactivity

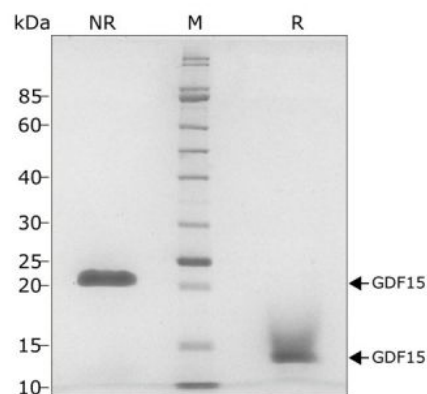
GDF15 signals through GRAL and co-receptor RET leading to RET phosphorylation and signalling through the ERK and AKT pathway. Commercial sources of GDF15, in particular those purified from mammalian expression systems, have been shown previously to be contaminated with trace amounts of TGF β . These trace contaminants cause misleading experimental results due to the picomolar or even femtomolar EC50s. Here we use a well-characterized SMAD2/3 activation assay to show that there is no contamination from other TGF β family proteins. Bioactivity is determined using a luciferase reporter assay in HEK293T cells. Cells are treated with a serial dilution of GDF15 or TGF β 1 for 6 hours. Firefly luciferase activity is measured and normalized to the control Renilla luciferase activity. EC50 = 0 pM (no contamination with TGF β or related growth factors).

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Purity



GDF15 migrates as a single band at 24 kDa in non-reducing and 13 kDa as a single monomeric species upon reduction (R). No contaminating protein bands are visible.

Purified recombinant protein was resolved using 15% w/v SDS-PAGE in reduced and non-reduced conditions and stained with Coomassie Brilliant Blue R250.