Recombinant Mouse GDF-15 (CHO-expressed)

Catalog Number: 10596-GD

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived mouse GDF-15 protein Ser189-Ala303 Accession # Q9Z0J7.2
N-terminal Sequence Analysis	Ser189
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	13 kDa

SPECIFICATIONS

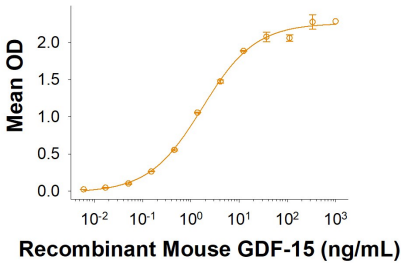
SDS-PAGE	11-13 kDa, under reducing conditions,
Activity	Measured by its binding ability in a functional ELISA. Recombinant Mouse GDF-15 (CHO-expressed) (Catalog # 10596-GD) binds to Recombinant Mouse GFRα-like Fc Chimera (Catalog # 9844-GR) with an ED_{50} of 0.500-5.00 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in HCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in 4 mM HCl.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

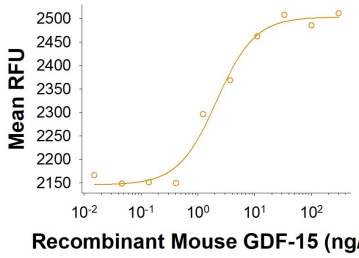
DATA

Binding Activity



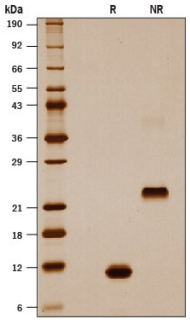
Recombinant Mouse GDF-15 (CHO-expressed) Protein Binding Activity. In a functional ELISA, Recombinant Mouse GDF-15 (CHO-expressed) (Catalog # 10596-GD) binds to Recombinant Mouse GFRα-like Fc Chimera (Catalog # 9844-GR) with an ED_{50} of 0.500-5.00 ng/mL.

Bioactivity



Recombinant Mouse GDF-15 (CHO-expressed) Protein Bioactivity. Recombinant Mouse GDF-15 (Catalog # 10596-GD) activates SRE-SEAP reporter in HEK293 human embryonic kidney cells transfected with human c-Ret and human GFRAL.

SDS-PAGE



Recombinant Mouse GDF-15 (CHO-expressed) Protein SDS-PAGE. 1 µg/lane of Recombinant Mouse GDF-15 (CHO-expressed) Protein (Catalog # 10596-GD) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 11-13 kDa and 22-26 kDa, respectively.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

Recombinant Mouse GDF-15 (CHO-expressed)

Catalog Number: 10596-GD

BACKGROUND

Growth Differentiation Factor 15 (GDF-15), also called Macrophage inhibitory cytokine-1 (MIC-1), placental transforming growth factor-beta, prostate-derived factor, and placental bone morphogenetic protein, is a divergent member of the transforming growth factor beta (TGF-beta) superfamily. GDF-15 is highly expressed in placenta and is expressed at lower levels in kidney, pancreas, prostate and colon. It is also widely expressed in brain. Similarly to other TGF-beta family proteins, GDF-15 is synthesized as a large precursor protein that is cleaved at the dibasic cleavage site (RXXR) to release the carboxy-terminal domain. The carboxy-terminal domain of GDF-15 contains the characteristic seven conserved cysteine residues necessary for the formation of the cysteine knot and the single interchain disulfide bond. Furthermore, the carboxy-terminal domain contains two additional cysteine residues that form a fourth intrachain disulfide bond. Biologically active GDF-15 is a disulfide-linked homodimer of the carboxy-terminal 112 amino acid residues. Mature mouse GDF-15 shares 59.6% and 91.9% amino acid sequence similarity with human and rat GDF-15, respectively. GDF-15 has been shown to have various functions, including inhibition of production of tumor necrosis factor alpha (TNF-alpha) from lipopolysaccharide-stimulated macrophages, induction of cartilage formation, early-stage endochonadal bone formation, and promotion of neuronal survival. GDF-15 is the functional ligand for the receptor GFRAL, facilitating weight-loss functions of the protein through c-Ret downstream signaling. GFRAL and GDF-15 signaling is implicated in diet-based obesity and insulin resistance (8-10).

References:

1. Bootcov, M.R. *et al.* (1997) Proc. Natl. Acad. Sci. USA **94**:11514.
2. Böttner, M. *et al.* (1999) Gene **237**:105.
3. Fairlie, W.D. *et al.* (1998) J. Leukoc. Biol **65**:2.
4. Fairlie, W.D. *et al.* (2001) J B.C **20**:16911.
5. Bauskin, A.R. *et al.* (2000) EMBO J. **19**:2212.
6. Strelau, J. *et al.* (2000) J. Neurosci. **20**:8597.
7. Schober, A. *et al.* (2001) J. Comp. Neurol. **439**:32.
8. Mullican, S. *et al.* (2017) Nat. Med **23**:1150.
9. Yang, L. *et al.* (2017) Nat. Med **23**:1158.
10. Emmerson, P. *et al.* (2017) Nat. Med **23**:1215.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475