

# GDF-15 (E-19): sc-10607

## BACKGROUND

Growth differentiation factor 15 (GDF-15), also known as PDF, MIC-1, PLAB, NAG-1 or PTGF- $\beta$ , is a member of the transforming growth factor  $\beta$  (TGF $\beta$ ) superfamily. Synthesized intracellularly, the protein is secreted as a dimer linked by disulfide bonds. Epithelial cells and macrophages are the sites of strongest GDF-15 expression, although it is widely expressed in adult tissue. In the brain, GDF-15 expression occurs in the choroid plexus, from which the protein is secreted into the cerebrospinal fluid. The gene for GDF-15 is responsive to p53 tumor suppressor protein, and in cultured cerebellar granule neurons GDF-15 can prevent cell death by the activation of Akt and inhibition of ERK. GDF-15 acts as a trophic factor for certain classes of neurons, promoting cell survival and differentiation. Overexpression of GDF-15 occurs in prostate cancer, and may be a means of diagnosis. In the uterus, GDF-15 may work to suppress maternally derived proinflammatory cytokines, thereby promoting fetal survival.

## REFERENCES

1. Fairlie, W.D., et al. 1999. MIC-1 is a novel TGF $\beta$  superfamily cytokine associated with macrophage activation. *J. Leukoc. Biol.* 65: 2-5.
2. Bottner, M., et al. 1999. Expression of a novel member of the TGF $\beta$  superfamily, growth/differentiation factor-15/macrophage-inhibiting cytokine-1 (GDF-15/MIC-1) in adult rat tissues. *Cell Tissue Res.* 297: 103-110.
3. Strelau, J., et al. 2000. GDF-15/MIC-1 a novel member of the TGF $\beta$  superfamily. *J. Neural Transm. Suppl.* 60: 273-276.
4. Moore, A.G., et al. 2000. The transforming growth factor  $\beta$  superfamily cytokine macrophage inhibitory cytokine-1 is present in high concentrations in the serum of pregnant women. *J. Clin. Endocrinol. Metab.* 85: 4781-4788.
5. Bauskin, A.R., et al. 2000. The propeptide of macrophage inhibitory cytokine (MIC-1), a TGF $\beta$  superfamily member, acts as a quality control determinant for correctly folded MIC-1. *EMBO J.* 19: 2212-2220.
6. Kim, K.S., et al. 2002. Expression and regulation of nonsteroidal anti-inflammatory drug-activated gene (NAG-1) in human and mouse tissue. *Gastroenterology* 122: 1388-1398.

## CHROMOSOMAL LOCATION

Genetic locus: *Gdf15* (mouse) mapping to 8 B3.3.

## SOURCE

GDF-15 (E-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GDF-15 of rat origin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10607 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GDF-15 (E-19) is recommended for detection of precursor and mature GDF-15 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GDF-15 siRNA (m): sc-39799, GDF-15 shRNA Plasmid (m): sc-39799-SH and GDF-15 shRNA (m) Lentiviral Particles: sc-39799-V.

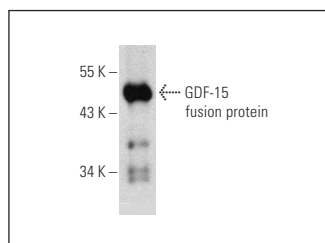
Molecular Weight of GDF-15 precursor: 40 kDa.

Molecular Weight of mature GDF-15: 30 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



GDF-15 (E-19): sc-10607. Western blot analysis of mouse recombinant GDF-15 fusion protein.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.