

# GDF-15 (H-2): sc-515675

## 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. 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.
4. Strelau, J., et al. 2000. GDF-15/MIC-1 a novel member of the TGF $\beta$  superfamily. *J. Neural Transm. Suppl.* 60: 273-276.

## CHROMOSOMAL LOCATION

Genetic locus: GDF15 (human) mapping to 19p13.11; Gdf15 (mouse) mapping to 8 B3.3.

## SOURCE

GDF-15 (H-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 41-62 near the N-terminus of GDF-15 of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GDF-15 (H-2) is available conjugated to agarose (sc-515675 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515675 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515675 PE), fluorescein (sc-515675 FITC), Alexa Fluor<sup>®</sup> 488 (sc-515675 AF488), Alexa Fluor<sup>®</sup> 546 (sc-515675 AF546), Alexa Fluor<sup>®</sup> 594 (sc-515675 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-515675 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-515675 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-515675 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

GDF-15 (H-2) is recommended for detection of precursor and mature GDF-15 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

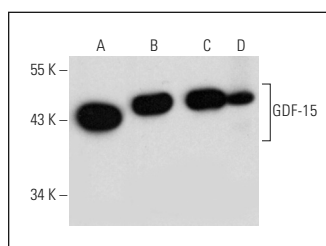
Suitable for use as control antibody for GDF-15 siRNA (h): sc-39798, GDF-15 siRNA (m): sc-39799, GDF-15 siRNA (r): sc-270687, GDF-15 shRNA Plasmid (h): sc-39798-SH, GDF-15 shRNA Plasmid (m): sc-39799-SH, GDF-15 shRNA Plasmid (r): sc-270687-SH, GDF-15 shRNA (h) Lentiviral Particles: sc-39798-V, GDF-15 shRNA (m) Lentiviral Particles: sc-39799-V and GDF-15 shRNA (r) Lentiviral Particles: sc-270687-V.

Molecular Weight of GDF-15 precursor: 40 kDa.

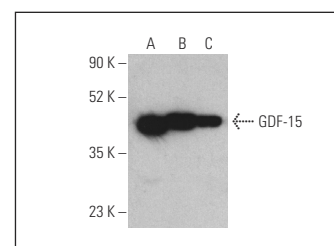
Molecular Weight of mature GDF-15: 30 kDa.

Positive Controls: mouse placenta extract: sc-364247, C6 whole cell lysate: sc-364373 or LNCaP cell lysate: sc-2231.

## DATA



GDF-15 (H-2): sc-515675. Western blot analysis of GDF-15 expression in LNCaP (A), C6 (B) and RIN-m5F (C) whole cell lysates and mouse placenta tissue extract (D).



GDF-15 (H-2) HRP: sc-515675 HRP. Direct western blot analysis of GDF-15 expression in LNCaP (A), C6 (B) and RIN-m5F (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. De Paepe, B., et al. 2020. The myokine GDF-15 is a potential biomarker for myositis and associates with the protein aggregates of sporadic inclusion body myositis. *Cytokine* 127: 154966.
2. Aguilar-Recarte, D., et al. 2021. GDF15 mediates the metabolic effects of PPAR $\beta/\delta$  by activating AMPK. *Cell Rep.* 36: 109501.
3. Gao, H.L., et al. 2021. Apigenin improves hypertension and cardiac hypertrophy through modulating NADPH oxidase-dependent ROS generation and cytokines in hypothalamic paraventricular nucleus. *Cardiovasc. Toxicol.* 21: 721-736.

## STORAGE

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

## RESEARCH USE

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