

GDF-15 (G-5): sc-377195

BACKGROUND

Growth differentiation factor 15 (GDF-15), also known as PDF, MIC-1, PLAB, NAG-1 or TGF- β , is a member of the transforming growth factor β (TGF- β) 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.

CHROMOSOMAL LOCATION

Genetic locus: GDF15 (human) mapping to 19p13.11.

SOURCE

GDF-15 (G-5) is a mouse monoclonal antibody raised against amino acids 1-308 representing full length GDF-15 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GDF-15 (G-5) is available conjugated to agarose (sc-377195 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377195 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377195 PE), fluorescein (sc-377195 FITC), Alexa Fluor[®] 488 (sc-377195 AF488), Alexa Fluor[®] 546 (sc-377195 AF546), Alexa Fluor[®] 594 (sc-377195 AF594) or Alexa Fluor[®] 647 (sc-377195 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377195 AF680) or Alexa Fluor[®] 790 (sc-377195 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GDF-15 (G-5) is recommended for detection of precursor and mature GDF-15 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 shRNA Plasmid (h): sc-39798-SH and GDF-15 shRNA (h) Lentiviral Particles: sc-39798-V.

Molecular Weight of GDF-15 precursor: 40 kDa.

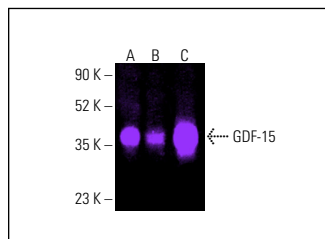
Molecular Weight of mature GDF-15: 30 kDa.

Positive Controls: JAR cell lysate: sc-2276, Caki-1 cell lysate: sc-2224 or LNCaP cell lysate: sc-2231.

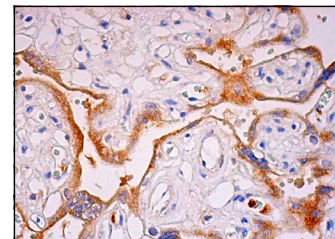
STORAGE

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

DATA



GDF-15 (G-5): sc-377195. Fluorescent western blot analysis of GDF-15 expression in JAR (A), Caki-1 (B) and LNCaP (C) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgG $_1$ BP-CFL 555: sc-533662.



GDF-15 (G-5): sc-377195. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells.

SELECT PRODUCT CITATIONS

- Cheng, Y., et al. 2015. The long non-coding RNA HOTTIP enhances pancreatic cancer cell proliferation, survival and migration. *Oncotarget* 6: 10840-10852.
- Chung, H.K., et al. 2017. GDF-15 deficiency exacerbates chronic alcohol- and carbon tetrachloride-induced liver injury. *Sci. Rep.* 7: 17238.
- McClatchy, D.B., et al. 2018. Quantitative temporal analysis of protein dynamics in cardiac remodeling. *J. Mol. Cell. Cardiol.* 121: 163-172.
- Hanson, R.L., et al. 2019. Protein stability of p53 targets determines their temporal expression dynamics in response to p53 pulsing. *J. Cell Biol.* 218: 1282-1297.
- Takenouchi, Y., et al. 2020. Growth differentiation factor 15 facilitates lung fibrosis by activating macrophages and fibroblasts. *Exp. Cell Res.* 391: 112010.
- Serras, A.S., et al. 2021. The secretome of human neonatal mesenchymal stem cells modulates doxorubicin-induced cytotoxicity: impact in non-tumor cells. *Int. J. Mol. Sci.* 22: 13072.
- Katsumura, S., et al. 2022. Deadenylase-dependent mRNA decay of GDF-15 and FGF21 orchestrates food intake and energy expenditure. *Cell Metab.* 34: 564-580.e8.
- Miyahara, H., et al. 2023. Neuropathological hallmarks in autopsied cases with mitochondrial diseases caused by the mitochondrial 3243A>G mutation. *Brain Pathol.* 33: e13199.
- Wang, S.F., et al. 2023. Growth differentiation factor 15 induces cisplatin resistance through upregulation of xCT expression and glutathione synthesis in gastric cancer. *Cancer Sci.* 114: 3301-3317.

RESEARCH USE

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

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