

GDF-5 (A-10): sc-373744

BACKGROUND

Growth/differentiation factors (GDFs) are members of the TGF superfamily. Members of the TGF superfamily are involved in embryonic development and adult tissue homeostasis. GDF-1 expression is almost exclusively restricted to the central nervous system and mediates cell differentiation events during embryonic development. Neither GDF-3 (Vgr-2) nor GDF-9 contains the conserved cysteine residue which is found in most other TGF superfamily members. GDF-3 is detectable in bone marrow, spleen, thymus and adipose tissue, whereas GDF-9 has only been detected in ovary. GDF-5 (also designated CDMP-1) has been shown to induce activation of plasminogen activator, thereby inducing angiogenesis. It is predominantly expressed in long bones during fetal embryonic development and is involved in bone formation. GDF-5 mutations have been identified in mice with the mutation brachypodism (bp), a mutation which affects the length and number of bones in limbs. GDF-6 and GDF-7 are closely related to GDF-5. GDF-8 has been shown to be a negative regulator of skeletal muscle mass.

CHROMOSOMAL LOCATION

Genetic locus: GDF5 (human) mapping to 20q11.22; Gdf5 (mouse) mapping to 2 H1.

SOURCE

GDF-5 (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 375-408 within an internal region of GDF-5 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-373744 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

GDF-5 (A-10) is recommended for detection of precursor and mature GDF-5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

GDF-5 (A-10) is also recommended for detection of precursor and mature GDF-5 in additional species, including avian.

Suitable for use as control antibody for GDF-5 siRNA (h): sc-39768, GDF-5 siRNA (m): sc-39769, GDF-5 shRNA Plasmid (h): sc-39768-SH, GDF-5 shRNA Plasmid (m): sc-39769-SH, GDF-5 shRNA (h) Lentiviral Particles: sc-39768-V and GDF-5 shRNA (m) Lentiviral Particles: sc-39769-V.

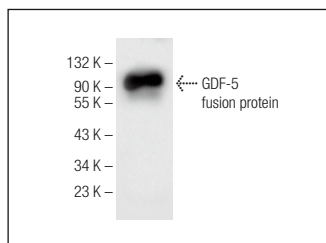
Molecular Weight of GDF-5 precursor/homodimer: 70/25 kDa.

Molecular Weight of mature GDF-5: 15 kDa.

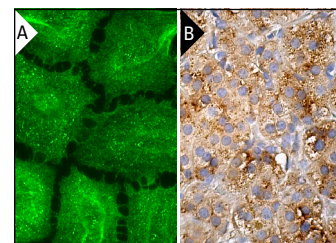
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohisto-mount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



GDF-5 (A-10): sc-373744. Western blot analysis of human recombinant GDF-5 fusion protein.



GDF-5 (A-10): sc-373744. Immunofluorescence staining of methanol-fixed HeLa cells showing cell surface localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Gruber, H.E., et al. 2014. Growth and differentiation factor-5 (GDF-5) in the human intervertebral annulus cells and its modulation by IL-1β and TNF-α *in vitro*. *Exp. Mol. Pathol.* 96: 225-229.
2. Hitachi, K., et al. 2019. Long non-coding RNA Myoparr regulates GDF5 expression in denervated mouse skeletal muscle. *Noncoding RNA* 5: 33.
3. Kim, M.G. and Lee, G.M. 2021. Blockage of undesirable endocytosis of recombinant human growth/differentiation factor-5 in Chinese hamster ovary cell cultures requires heparin analogs with specific chain lengths. *Biotechnol. J.* 16: e2100227.
4. Hasan, M.R., et al. 2023. RAB23 regulates musculoskeletal development and patterning. *Front. Cell Dev. Biol.* 11: 1049131.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.