

# GDF-9B (F-7): sc-271824



The Power to Question

## 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. Growth and differentiation factor 9B (GDF-9B), also known as bone morphogenetic protein 15 (BMP15), is expressed exclusively in the oocyte. GDF-9B is closely related to GDF-9, another oocyte-specific member of this superfamily which has been shown to be essential for early ovarian folliculogenesis.

## REFERENCES

1. Massagué, J. 1990. The transforming growth factor- $\beta$  family. *Annu. Rev. Cell Biol.* 6: 597-641.
2. McPherron, A.C., et al. 1997. Regulation of skeletal muscle mass in mice by a new TGF $\beta$  superfamily member. *Nature* 387: 83-90.
3. Laitinen, M., et al. 1998. A novel growth differentiation factor-9 (GDF-9) related factor is co-expressed with GDF-9 in mouse oocytes during folliculogenesis. *Mech. Dev.* 78: 135-140.
4. Aaltonen, J., et al. 1999. Human growth differentiation factor 9 (GDF-9) and its novel homolog GDF-9B are expressed in oocytes during early folliculogenesis. *J. Clin. Endocrinol. Metab.* 84: 2744-2750.
5. Galloway, S.M., et al. 2000. Mutations in an oocyte-derived growth factor gene (BMP15) cause increased ovulation rate and infertility in a dosage-sensitive manner. *Nat. Genet.* 25: 279-283.
6. Takebayashi, K., et al. 2000. Mutation analysis of the growth differentiation factor-9 and -9B genes in patients with premature ovarian failure and polycystic ovary syndrome. *Fertil. Steril.* 74: 976-979.
7. Galloway, S.M., et al. 2002. Bmp15 mutations and ovarian function. *Mol. Cell. Endocrinol.* 191: 15-18.

## CHROMOSOMAL LOCATION

Genetic locus: BMP15 (human) mapping to Xp11.22.

## SOURCE

GDF-9B (F-7) is a mouse monoclonal antibody raised against amino acids 268-350 mapping near the C-terminus of GDF-9B of human origin.

## PRODUCT

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

GDF-9B (F-7) is available conjugated to agarose (sc-271824 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271824 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271824 PE), fluorescein (sc-271824 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271824 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271824 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271824 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271824 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271824 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271824 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

GDF-9B (F-7) is recommended for detection of mature and precursor GDF-9B of human and hamster 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), 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-9B siRNA (h): sc-39778, GDF-9B shRNA Plasmid (h): sc-39778-SH and GDF-9B shRNA (h) Lentiviral Particles: sc-39778-V.

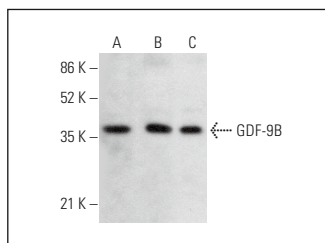
Molecular Weight of GDF-9B mature human doublet: 16/17 kDa.

Molecular Weight (predicted) of GDF-9B precursor: 45 kDa.

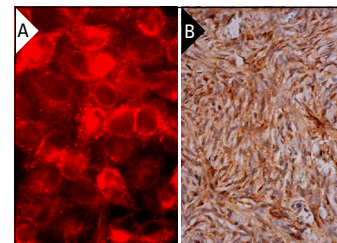
Molecular Weight (observed) of GDF-9B homodimer: 35 kDa.

Positive Controls: CHO-K1 cell lysate: sc-3809, CCRF-CEM cell lysate: sc-2225 or HeLa whole cell lysate: sc-2200.

## DATA



GDF-9B (F-7): sc-271824. Western blot analysis of GDF-9B expression in CHO-K1 (A), HeLa (B) and CCRF-CEM (C) whole cell lysates. Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-516102.



GDF-9B (F-7): sc-271824. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing cytoplasmic staining of ovarian stroma cells (B).

## SELECT PRODUCT CITATIONS

1. Daneshjou, D., et al. 2022. Sitagliptin/metformin improves the fertilization rate and embryo quality in polycystic ovary syndrome patients through increasing the expression of GDF-9 and BMP15: a new alternative to metformin (a randomized trial). *J. Reprod. Immunol.* 150: 103499.
2. Meng, L., et al. 2023. Identification of oogonial stem cells in chicken ovary. *Cell Prolif.* 56: e13371.

## 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.