

GCM1 (R-06): sc-101173

BACKGROUND

GCM1 (glial cells missing homolog 1), also known as GCMA or hGCMA, is a 436 amino acid human homolog of the *Drosophila* glial cells missing protein (GCM). Localized to the nucleus and expressed specifically in placenta, GCM1 functions as a transcription factor that binds the novel sequence (A/G)CCCGCAT and, through this binding, regulates placental development. Additionally, GCM1 is thought to regulate syncytin SU-mediated trophoblastic fusion, an event that produces syncytiotrophoblast structures which, in turn, function as the outermost covering of the placental villi. GCM1 contains one N-terminal GCM (glial cell missing) DNA-binding domain, a conserved 150 amino acid residue that conveys DNA-binding activity for a variety of transcription factors involved in developmental processes.

REFERENCES

1. Akiyama, Y., et al. 1996. The GCM-motif: a novel DNA-binding motif conserved in *Drosophila* and mammals. *Proc. Natl. Acad. Sci. USA* 93: 14912-14916.
2. Yamada, K., et al. 1999. A GCM motif protein is involved in placenta-specific expression of human aromatase gene. *J. Biol. Chem.* 274: 32279-32286.
3. Yamada, K., et al. 2000. Genomic organization, chromosomal localization, and the complete 22 kb DNA sequence of the human GCMA/GCM1, a placenta-specific transcription factor gene. *Biochem. Biophys. Res. Commun.* 278: 134-139.

CHROMOSOMAL LOCATION

Genetic locus: GCM1 (human) mapping to 6p12.1.

SOURCE

GCM1 (R-06) is a mouse monoclonal antibody raised against amino acids 108-166 of GCM1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GCM1 (R-06) is recommended for detection of GCM1 of human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GCM1 siRNA (h): sc-75117, GCM1 shRNA Plasmid (h): sc-75117-SH and GCM1 shRNA (h) Lentiviral Particles: sc-75117-V.

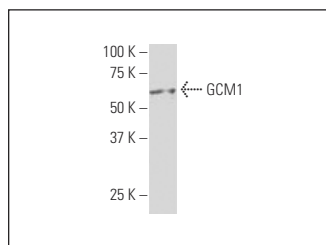
Molecular Weight of GCM1: 49 kDa.

Positive Controls: FHs 173We cell lysate: sc-2417.

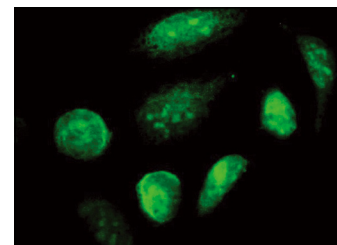
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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.

DATA



GCM1 (R-06): sc-101173. Western blot analysis of GCM1 expression in FHs 173WE whole cell lysate.



GCM1 (R-06): sc-101173. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. You, L., et al. 2015. The chromatin regulator brpf1 regulates embryo development and cell proliferation. *J. Biol. Chem.* 290: 11349-11364.
2. Tang, C., et al. 2016. Glioma-associated oncogene-2 is essential for trophoblastic fusion by forming a transcriptional complex with Glial cell missing-α. *J. Biol. Chem.* 291: 5611-5622.
3. Li, J., et al. 2021. Aberrant GCM1 expression mediates Wnt/β-catenin pathway activation in folate deficiency involved in neural tube defects. *Cell Death Dis.* 12: 234.
4. Zheng, Y., et al. 2022. Single-cell analysis of embryoids reveals lineage diversification roadmaps of early human development. *Cell Stem Cell* 29: 1402-1419.e8.
5. Zhao, Y., et al. 2023. Protocol to generate induced trophoblast stem cells from embryonic stem cells in mice. *STAR Protoc.* 4: 102092.
6. Rong, L., et al. 2024. The impact of dynamic caudal type homeobox 2 expression on the differentiation of human trophoblast lineage during implantation. *Cell Prolif.* E-published.

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.