SANTA CRUZ BIOTECHNOLOGY, INC.

GCP4 (D-5): sc-271876

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The γ-Tubulin complex is composed of γ Tubulin and the γ-Tubulin complex-associated proteins GCP2, GCP3, GCP4, GCP5 and GCP6, all of which are essential components of microtubule organizing centers. γ-Tubulin complex components are localized to both the centrosome, where they are involved in microtubule nucleation, and to the cytoplasm, where they exist as soluble complexes that can be recruited to the centrosome as needed. Although the GCP proteins are related, they have distinct roles which contribute to the proper function of the γ-Tubulin complex. GCP4 (γ-Tubulin complex component 4), also known as TUBGCP4, is an ubiquitously expressed 667 amino acid member of the γ-Tubulin complex that localizes to the metaphase spindle during mitosis. In response to proteosome inhibition, GCP4 exhibits increased accumulation at the pericentriolar material where it participates in microtubule organization and nucleation.

CHROMOSOMAL LOCATION

Genetic locus: TUBGCP4 (human) mapping to 15q15.3; Tubgcp4 (mouse) mapping to 2 E5.

SOURCE

GCP4 (D-5) is a mouse monoclonal antibody raised against amino acids 11-310 mapping near the N-terminus of GCP4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GCP4 (D-5) is available conjugated to agarose (sc-271876 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271876 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271876 PE), fluorescein (sc-271876 FITC), Alexa Fluor® 488 (sc-271876 AF488), Alexa Fluor® 546 (sc-271876 AF546), Alexa Fluor® 594 (sc-271876 AF594) or Alexa Fluor® 647 (sc-271876 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271876 AF680) or Alexa Fluor® 790 (sc-271876 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

GCP4 (D-5) is recommended for detection of γ-Tubulin complex component 4 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GCP4 siRNA (h): sc-77350, GCP4 siRNA (m): sc-77351, GCP4 shRNA Plasmid (h): sc-77350-SH, GCP4 shRNA Plasmid (m): sc-77351-SH, GCP4 shRNA (h) Lentiviral Particles: sc-77350-V and GCP4 shRNA (m) Lentiviral Particles: sc-77351-V.

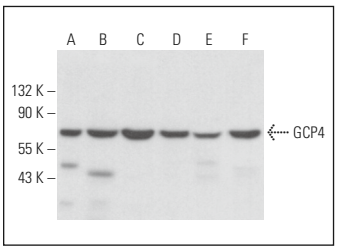
Molecular Weight of GCP4: 76 kDa.

Positive Controls: HCT-116 whole cell lysate: sc-364175, C6 whole cell lysate: sc-364373 or HL-60 whole cell lysate: sc-2209.

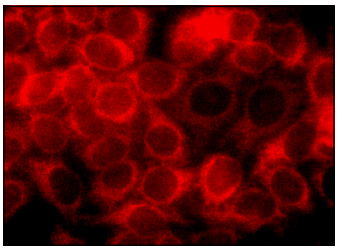
STORAGE

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

DATA



GCP4 (D-5): sc-271876. Western blot analysis of GCP4 expression in HCT-116 (**A**), RT-4 (**B**), HL-60 (**C**), M1 (**D**), SP2/0 (**E**) and C6 (**F**) whole cell lysates.



GCP4 (D-5): sc-271876. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Vinopal, S., et al. 2012. γ-Tubulin 2 nucleates microtubules and is down-regulated in mouse early embryogenesis. PLoS ONE 7: e29919.
2. Sulimenko, V., et al. 2015. Microtubule nucleation in mouse bone marrow-derived mast cells is regulated by the concerted action of GIT1/βPIX proteins and calcium. J. Immunol. 194: 4099-4111.
3. Song, J.G., et al. 2018. Mechanism of how augmin directly targets the γ-Tubulin ring complex to microtubules. J. Cell Biol. 217: 2417-2428.
4. Klebanovych, A., et al. 2019. Regulation of microtubule nucleation in mouse bone marrow-derived mast cells by protein tyrosine phosphatase SHP-1. Cells 8: 345.
5. Thawani, A., et al. 2019. Spatiotemporal organization of branched microtubule networks. Elife 8: e43890.
6. Li, Z., et al. 2020. Haploinsufficiency of GCP4 induces autophagy and leads to photoreceptor degeneration due to defective spindle assembly in retina. Cell Death Differ. 27: 556-572.
7. Gupta, H., et al. 2020. SAS-6 association with γ-Tubulin ring complex is required for centriole duplication in human cells. Curr. Biol. 30: 2395-2403.e4.
8. Nejedlá, M., et al. 2020. The Actin regulator profilin 1 is functionally associated with the mammalian centrosome. Life Sci. Alliance 4: e202000655.
9. Chi, W., et al. 2021. PLK4-phosphorylated NEDD1 facilitates cartwheel assembly and centriole biogenesis initiations. J. Cell Biol. 220: e202002151.
10. Klebanovych, A., et al. 2022. C53 interacting with UFM1-protein ligase 1 regulates microtubule nucleation in response to ER stress. Cells 11: 555.
11. Sulimenko, V., et al. 2024. Regulation of microtubule nucleation in mouse bone marrow-derived mast cells by ARF GTPase-activating protein GIT2. Front. Immunol. 15: 1321321.

RESEARCH USE

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