SANTA CRUZ BIOTECHNOLOGY, INC.

GCP5 (E-1): sc-365837

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. GCP5 (γ-Tubulin complex component 5), also known as TUBGCP5, is a 1,024 amino acid member of the γ-Tubulin complex and is highly expressed in heart and skeletal muscle. Defects in the gene encoding GCP5 are implicated in Prader-Willi syndrome (PWS), a rare genetic disorder associated with obesity, compulsive behavior and lower intellectual ability.

CHROMOSOMAL LOCATION

Genetic locus: TUBGCP5 (human) mapping to 15q11.2; Tubgcp5 (mouse) mapping to 7 B5.

SOURCE

GCP5 (E-1) is a mouse monoclonal antibody raised against amino acids 41-340 mapping near the N-terminus of GCP5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GCP5 (E-1) is available conjugated to agarose (sc-365837 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365837 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365837 PE), fluorescein (sc-365837 FITC), Alexa Fluor® 488 (sc-365837 AF488), Alexa Fluor® 546 (sc-365837 AF546), Alexa Fluor® 594 (sc-365837 AF594) or Alexa Fluor® 647 (sc-365837 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365837 AF680) or Alexa Fluor® 790 (sc-365837 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

GCP5 (E-1) is recommended for detection of GCP5 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 GCP5 siRNA (h): sc-105392, GCP5 siRNA (m): sc-77388, GCP5 shRNA Plasmid (h): sc-105392-SH, GCP5 shRNA Plasmid (m): sc-77388-SH, GCP5 shRNA (h) Lentiviral Particles: sc-105392-V and GCP5 shRNA (m) Lentiviral Particles: sc-77388-V.

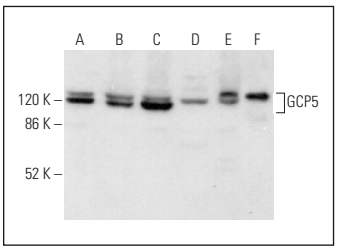
Molecular Weight of GCP5: 118 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, NIH/3T3 whole cell lysate: sc-2210 or Jurkat whole cell lysate: sc-2204.

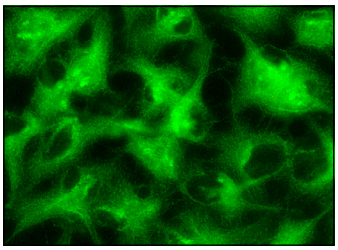
STORAGE

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

DATA



GCP5 (E-1): sc-365837. Western blot analysis of GCP5 expression in Jurkat (**A**), K-562 (**B**), AN3 CA (**C**), NIH/3T3 (**D**) and PC-12 (**E**) whole cell lysates and rat eye tissue extract (**F**).



GCP5 (E-1): sc-365837. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.

SELECT PRODUCT CITATIONS

1. Scheidecker, S., et al. 2015. Mutations in TUBGCP4 alter microtubule organization via the γ-Tubulin ring complex in autosomal-recessive micro-cephaly with chorioretinopathy. Am. J. Hum. Genet. 96: 666-674.
2. Farache, D., et al. 2016. Functional analysis of γ-Tubulin complex proteins indicates specific lateral association via their N-terminal domains. J. Biol. Chem. 291: 23112-23125.
3. Alfaro-Aco, R., et al. 2017. Structural analysis of the role of TPX2 in branching microtubule nucleation. J. Cell Biol. 216: 983-997.
4. 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.
5. 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.
6. Bon, C., et al. 2019. SINEUP non-coding RNAs rescue defective frataxin expression and activity in a cellular model of Friedreich's Ataxia. Nucleic Acids Res. 47: 10728-10743.
7. Liu, P., et al. 2020. Insights into the assembly and activation of the micro-tubule nucleator γ-TuRC. Nature 578: 467-471.
8. Chi, W., et al. 2021. PLK4-phosphorylated NEDD1 facilitates cartwheel assembly and centriole biogenesis initiations. J. Cell Biol. 220: e202002151.
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10. Rai, D., et al. 2024. CAMSAPs and nucleation-promoting factors control microtubule release from γ-TuRC. Nat. Cell Biol. 26: 404-420.

RESEARCH USE

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