SANTA CRUZ BIOTECHNOLOGY, INC.

GCP3 (C-3): sc-373758

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. GCP3 (γ-Tubulin complex component 3), also known as TUBGCP3 or SPBC98, localizes to the centrosome and is a ubiquitously expressed 907 amino acid member of the γ-Tubulin complex. Like GCP2 and γ Tubulin, GCP3 is conserved in all eukaryotes, suggesting that it is part of a core unit involved in eukaryotic microtubule nucleation. Three isoforms of GCP3 exist due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: TUBGCP3 (human) mapping to 13q34.

SOURCE

GCP3 (C-3) is a mouse monoclonal antibody raised against amino acids 1-303 mapping at the N-terminus of GCP3 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.

GCP3 (C-3) is available conjugated to agarose (sc-373758 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373758 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373758 PE), fluorescein (sc-373758 FITC), Alexa Fluor® 488 (sc-373758 AF488), Alexa Fluor® 546 (sc-373758 AF546), Alexa Fluor® 594 (sc-373758 AF594) or Alexa Fluor® 647 (sc-373758 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373758 AF680) or Alexa Fluor® 790 (sc-373758 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

GCP3 (C-3) is recommended for detection of GCP3 isoforms 1, 2 and 3 of 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 GCP3 siRNA (h): sc-77348, GCP3 shRNA Plasmid (h): sc-77348-SH and GCP3 shRNA (h) Lentiviral Particles: sc-77348-V.

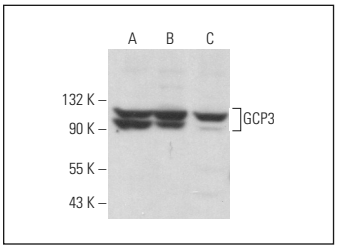
Molecular Weight of GCP3: 104 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203,3, COLO 205 whole cell lysate: sc-364177 or SJRH30 cell lysate: sc-2287.

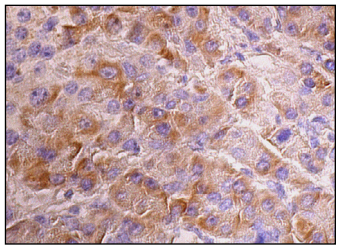
RECOMMENDED SUPPORT REAGENTS

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



GCP3 (C-3): sc-373758. Western blot analysis of GCP3 expression in K-562 (**A**), COLO 205 (**B**) and SJRH30 (**C**) whole cell lysates.



GCP3 (C-3): sc-373758. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Draberova, E., et al. 2015. Overexpression and nucleolar localization of γ-Tubulin small complex proteins GCP2 and GCP3 in glioblastoma. J. Neuropathol. Exp. Neurol. 74: 723-742.
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. 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.
4. Chi, W., et al. 2021. PLK4-phosphorylated NEDD1 facilitates cartwheel assembly and centriole biogenesis initiations. J. Cell Biol. 220: e202002151.
5. Zhang, Y., et al. 2022. Reconstitution and mechanistic dissection of the human microtubule branching machinery. J. Cell Biol. 221: e202109053.

STORAGE

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

PROTOCOLS

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