SANTA CRUZ BIOTECHNOLOGY, INC.

GCP3 (h): 293 Lysate: sc-111109

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, sug-gesting that it is part of a core unit involved in eukaryotic microtubule nucleation. Three isoforms of GCP3 exist due to alternative splicing events.

REFERENCES

1. Murphy, S.M., Urbani, L. and Stearns, T. 1998. The mammalian γ Tubulin complex contains homologues of the yeast spindle pole body components spc97p and spc98p. J. Cell Biol. 141: 663-674.
2. Fava, F., Raynaud-Messina, B., Leung-Tack, J., Mazzolini, L., Li, M., Guillemot, J.C., Cachot, D., Tollon, Y., Ferrara, P. and Wright, M. 1999. Human 76p: a new member of the γ Tubulin-associated protein family. J. Cell Biol. 147: 857-868.
3. Hillman, R.T., Green, R.E. and Brenner, S.E. 2004. An unappreciated role for RNA surveillance. Genome Biol. 5: R8.
4. Rush, J., Moritz, A., Lee, K.A., Guo, A., Goss, V.L., Spek, E.J., Zhang, H., Zha, X.M., Polakiewicz, R.D. and Comb, M.J. 2005. Immunoaffinity profiling of tyrosine phosphorylation in cancer cells. Nat. Biotechnol. 23: 94-101.
5. Delgehyr, N., Sillibourne, J. and Bornens, M. 2005. Microtubule nucleation and anchoring at the centrosome are independent processes linked by Ninein function. J. Cell Sci. 118: 1565-1575.
6. Arbildua, J.J., Brunet, J.E., Jameson, D.M., López, M., Nova, E., Lagos, R. and Monasterio, O. 2006. Fluorescence resonance energy transfer and molecular modeling studies on 4',6-diamidino-2-phenylindole (DAPI) complexes with Tubulin. Protein Sci. 15: 410-419.
7. Stirling, P.C., Cuéllar, J., Alfaro, G.A., El Khadali, F., Beh, C.T., Valpuesta, J.M., Melki, R. and Leroux, M.R. 2006. PhLP3 modulates CCT-mediated Actin and Tubulin folding via ternary complexes with substrates. J. Biol. Chem. 281: 7012-7021.
8. Van Thuan, N., Wakayama, S., Kishigami, S. and Wakayama, T. 2006. Donor centrosome regulation of initial spindle formation in mouse somatic cell nuclear transfer: roles of γ Tubulin and nuclear mitotic apparatus protein 1. Biol. Reprod. 74: 777-787.
9. Lüders, J., Patel, U.K. and Stearns, T. 2006. GCP-WD is a γ Tubulin targeting factor required for centrosomal and chromatin-mediated microtubule nucleation. Nat. Cell Biol. 8: 137-147.

CHROMOSOMAL LOCATION

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

PRODUCT

GCP3 (h): 293 Lysate represents a lysate of human GCP3 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

GCP3 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive GCP3 antibodies. Recommended use: 10-20 µl per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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