SANTA CRUZ BIOTECHNOLOGY, INC.

Cig2 (CIG2 3A11/5): sc-53223

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The Power to Question

BACKGROUND

Cig2 is a cyclin that functions as the catalytic subunit of cyclin-dependent kinases (Cdks) in the fission yeast *Schizosaccharomyces pombe*. It is a B-type, S phase cyclin that is required for both the G_1/S and G_2/M cell cycle transitions and is expressed in a sharp spike that peaks during the G_1/S period. Cig2 binds to Cdc2 (Cdk), and the resulting Cdc2/Cig2 complex controls the G_1/S transition of the cell cycle. Disruption of Cig2 delays the onset of mitosis. The expression of the Cig2 gene is dependent on Mlu1-binding factor (MBF), and the protein is destroyed during anaphase by the APC/cyclosome (APC/C) and Skp1/Cullin-1/F-box (SCF), thereby ensuring the spike expression pattern of Cig2. SCF regulates Cig2 levels in a dual manner, transcriptionally and post-translationally, while APC/C only destroys the protein.

REFERENCES

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2. Connolly, T. and Beach, D. 1994. Interaction between the Cig1 and Cig2 B-type cyclins in the fission yeast cell cycle. Mol. Cell. Biol. 14: 768-776.
3. Mondesert, O., McGowan, C.H. and Russell, P. 1996. Cig2, a B-type cyclin, promotes the onset of S in *Schizosaccharomyces pombe*. Mol. Cell. Biol. 16: 1527-1533.
4. Toda, T., Ochotorena, I. and Kominami, K. 2000. Two distinct ubiquitin-proteolysis pathways in the fission yeast cell cycle. Philos. Trans. R. Soc. Lond. B Biol. Sci. 354: 1551-1557.
5. Yamano, H., Kitamura, K., Kominami, K., Lehmann, A., Katayama, S., Hunt, T. and Toda, T. 2000. The spike of S phase cyclin Cig2 expression at the G_1/S border in fission yeast requires both APC and SCF ubiquitin ligases. Mol. Cell 6: 1377-1387.
6. Ayte, J., Schweitzer, C., Zarzov, P., Nurse, P. and DeCaprio, J.A. 2002. Feedback regulation of the MBF transcription factor by cyclin Cig2. Nat. Cell Biol. 3: 1043-1050.
7. Berset, C., Griac, P., Tempel, R., La Rue, J., Wittenberg, C. and Lanker, S. 2002. Transferable domain in the G_1 cyclin Cln2 sufficient to switch degradation of Sic1 from the E3 ubiquitin ligase SCF(Cdc4) to SCF(Grr1). Mol. Cell. Biol. 22: 4463-4476.

SOURCE

Cig2 (CIG2 3A11/5) is a mouse monoclonal antibody raised against purified Cig2 of *S. pombe* origin.

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.

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.

Cig2 (CIG2 3A11/5) is available conjugated to agarose (sc-53223 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53223 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53223 PE), fluorescein (sc-53223 FITC), Alexa Fluor® 488 (sc-53223 AF488), Alexa Fluor® 546 (sc-53223 AF546), Alexa Fluor® 594 (sc-53223 AF594) or Alexa Fluor® 647 (sc-53223 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53223 AF680) or Alexa Fluor® 790 (sc-53223 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cig2 (CIG2 3A11/5) is recommended for detection of Cig2 of *S. Pombe* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Molecular Weight of Cig2: 50 kDa.

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).

SELECT PRODUCT CITATIONS

1. Wang, X., Zheng, F., Yi, Y.Y., Wang, G.Y., Hong, L.X., McCollum, D., Fu, C., Wang, Y. and Jin, Q.W. 2022. Ubiquitination of CLIP-170 family protein restrains polarized growth upon DNA replication stress. Nat. Commun. 13: 5565.

RESEARCH USE

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