

Tpk1 (C-3): sc-376325

BACKGROUND

The guanine nucleotide exchange factor Cdc25 (also designated Ctn1) regulates adenyl cyclase via the small G proteins Ras1 and Ras2 (also known as Glc5 or Ctn5). The yeast RAS proteins regulate cell growth and development by cycling between an active GTP-bound state and an inactive GDP-bound state. Adenyl cyclase, encoded by the Cdc35 gene (also designated Cyr1, Hrs1 or Sra4), catalyzes the formation of the second messenger cAMP. cAMP exerts its effects via a cAMP-dependent kinase consisting of two regulatory subunits, encoded by Bcy1 (also designated Reg1 or Sra1), and two catalytic subunits, encoded by Tpk1 (also designated Pka1 or Sra3).

REFERENCES

- Broek, D., Samiy, N., Fosano, O., Fujiyama, A., Tamanoi, F., Northup, J. and Wigler, M. 1985. Differential activation of yeast adenylate cyclase by wild-type and mutant RAS proteins. *Cell* 41: 763-769.
- Kataoka, T., Broek, D. and Wigler, M. 1985. DNA sequence and characterization of the *S. cerevisiae* gene encoding adenylate cyclase. *Cell* 43: 493-505.
- Broek, D., Toda, T., Michaeli, T., Levin, L., Birchmeier, C., Zoller, M., Powers, S. and Wigler, M. 1987. The *S. cerevisiae* CDC25 gene product regulates the RAS/adenylate cyclase pathway. *Cell* 48: 789-799.
- Toda, T., Cameron, S., Sass, P., Zoller, M. and Wigler, M. 1987. Three different genes in *S. cerevisiae* encode the catalytic subunits of the cAMP-dependent protein kinase. *Cell* 50: 277-287.
- Toda, T., Cameron, S., Sass, P., Zoller, M., Scott, J.D., McMullen, B., Hurwitz, M., Krebs, E.G. and Wigler, M. 1987. Cloning and characterization of BCY1, a locus encoding a regulatory subunit of the cyclic AMP-dependent protein kinase in *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 7: 1371-1377.
- Oehlen, L.J.W.M., Scholte, M.E., de Koning, W. and van Dam, K. 1993. Inactivation of the CDC25 gene product in *Saccharomyces cerevisiae* leads to a decrease in glycolytic activity which is independent of cAMP levels. *J. Gen. Microbiol.* 139: 2091-2100.
- Mintzer, K.A. and Field, J. 1994. Interactions between adenyl cyclase, CAP and RAS from *Saccharomyces cerevisiae*. *Cell. Signal.* 6: 681-694.

SOURCE

Tpk1 (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 367-397 near the C-terminus of Tpk1 of *Saccharomyces cerevisiae* origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-376325 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Tpk1 (C-3) is recommended for detection of Tpk1 of *Saccharomyces cerevisiae* 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).

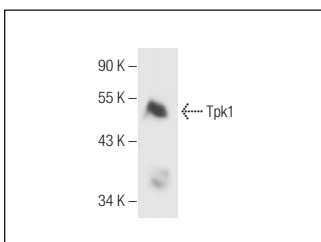
Molecular Weight of Tpk1: 48 kDa.

Positive Controls: *S. cerevisiae* whole cell lysate.

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



Tpk1 (C-3): sc-376325. Western blot analysis of Tpk1 expression in *S. cerevisiae* whole cell lysate.

SELECT PRODUCT CITATIONS

- Cañonero, L., Pautasso, C., Galello, F., Sigaut, L., Pietrasanta, L., Javier, A., Bermúdez-Moretti, M., Portela, P. and Rossi, S. 2022. Heat stress regulates the expression of TPK1 gene at transcriptional and post-transcriptional levels in *Saccharomyces cerevisiae*. *Biochim. Biophys. Acta Mol. Cell Res.* 1869: 119209.

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.