

# Tpk1 (F-3): sc-374592

## 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

1. Broek, D., et al. 1985. Differential activation of yeast adenylate cyclase by wild-type and mutant RAS proteins. *Cell* 41: 763-769.
2. Kataoka, T., et al. 1985. DNA sequence and characterization of the *S. cerevisiae* gene encoding adenylate cyclase. *Cell* 43: 493-505.
3. Broek, D., et al. 1987. The *S. cerevisiae* CDC25 gene product regulates the RAS/adenylate cyclase pathway. *Cell* 48: 789-799.
4. Toda, T., et al. 1987. Three different genes in *S. cerevisiae* encode the catalytic subunits of the cAMP-dependent protein kinase. *Cell* 50: 277-287.
5. Toda, T., et al. 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.
6. Oehlen, L.J.W.M., et al. 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.

## SOURCE

Tpk1 (F-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<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Tpk1 (F-3) is available conjugated to agarose (sc-374592 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374592 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374592 PE), fluorescein (sc-374592 FITC), Alexa Fluor® 488 (sc-374592 AF488), Alexa Fluor® 546 (sc-374592 AF546), Alexa Fluor® 594 (sc-374592 AF594) or Alexa Fluor® 647 (sc-374592 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374592 AF680) or Alexa Fluor® 790 (sc-374592 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374592 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

Tpk1 (F-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).

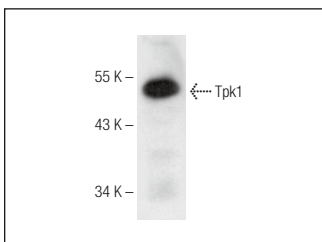
Molecular Weight of Tpk1: 48 kDa.

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 (F-3): sc-374592. Western blot analysis of Tpk1 expression in *S. cerevisiae* whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Roger, F., et al. 2020. Peroxiredoxin promotes longevity and H<sub>2</sub>O<sub>2</sub>-resistance in yeast through redox-modulation of protein kinase A. *Elife* 9: e60346.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. 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](http://www.scbt.com) for detailed protocols and support products.