SANTA CRUZ BIOTECHNOLOGY, INC.

Cot (H-212): sc-9167

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The role of mitogen-activated protein kinases (MAPKs) in cell signaling pathways is well established. The rat gene Tpl-2, for tumor progression locus 2, and the human and mouse homologues c-Cot, for cancer osaka thyroid oncogene, encode a proto-oncogene serine/threonine protein kinase that was shown to play a role in the functional activation of the MAP kinase pathway. Overexpression of Cot induces MAP kinase activation in COS-1 and NIH/3T3 cells. Cot-mediated activation of MAP kinase is inhibited by both Ras N17, a dominant negative mutant of c-H-Ras, and Raf-1s621A, a dominant negative mutant of Raf-1, suggesting that Cot functions upstream of Ras and Raf-1. Other studies have shown that a kinase-negative, dominant negative mutant of Cot partially blocks Ras or Raf-1-induced MAP kinase activation, arguing that Cot functions downstream of Ras and Raf-1. To explain these contrasting findings, it has been suggested that Cot, Ras and Raf-1 may form a multimeric complex that phosphorylates MEK-1. Cot has also been shown to be implicated in T lymphocyte activation. Two forms of Cot, are produced by alternative initiation of translation.

REFERENCES

1. Haubruk, H., et al. 1991. Ras p21: effects and regulation. Biochim. Biophys. Acta 1072: 215-229.
2. Roberts, T.M. 1992. A signal chain of events. Nature 360: 534-535.
3. Nishida, E., et al. 1993. The MAP kinase cascade is essential for diverse signal transduction pathways. Trends Biochem. Sci. 18: 128-131.
4. Fabian, J.R, et al. 1993. Requirement for Raf and MAP kinase function during the meiotic maturation of *Xenopus* oocytes. J. Cell Biol. 122: 645-652.
5. Aoki, M., et al. 1993. The human cot proto-oncogene encodes two protein serine/threonine kinases with different transforming activities by alternative initiation of translation. J. Biol. Chem. 268: 22723-22732.
6. Patriotis, C., et al. 1994. Tpl-2 acts in concert with Ras and Raf-1 to activate mitogen-activated protein kinase. Proc. Natl. Acad. Sci. USA 91: 9755-9759.
7. Ballester, A., et al. 1998. Cot kinase activates tumor necrosis factor-alpha gene expression in a cyclosporin A-resistant manner. J. Biol. Chem. 273: 14099-14106.

CHROMOSOMAL LOCATION

Genetic locus: MAP3K8 (human) mapping to 10p11.23; Map3k8 (mouse) mapping to 18 A1.

SOURCE

Cot (H-212) is a rabbit polyclonal antibody raised against amino acids 256-467 mapping at the C-terminus of Cot of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cot (H-212) is recommended for detection of Cot of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Cot (H-212) is also recommended for detection of Cot in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Cot siRNA (h): sc-35095, Cot siRNA (m): sc-35096, Cot shRNA Plasmid (h): sc-35095-SH, Cot shRNA Plasmid (m): sc-35096-SH, Cot shRNA (h) Lentiviral Particles: sc-35095-V and Cot shRNA (m) Lentiviral Particles: sc-35096-V.

Molecular Weight of Cot: 52/58 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Wu, B., et al. 2008. Proteomics analysis of immunoprecipitated proteins associated with the oncogenic kinase cot. Mol. Cells 25: 43-49.

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 or our catalog for detailed protocols and support products.