

# Cot (N-17): sc-1717

## 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 multi-metric 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Cot (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-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.

Blocking peptide available for competition studies, sc-1717 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Cot (N-17) 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 (N-17) is also recommended for detection of Cot in additional species, including equine, canine, 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.

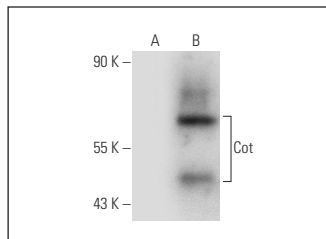
Molecular Weight of Cot: 52/58 kDa.

Positive Controls: Cot (h): 293T Lysate: sc-372867, human tonsil extract: sc-364263 or AML-193 whole cell lysate: sc-364182.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



Cot (N-17): sc-1717. Western blot analysis of Cot expression in non-transfected: sc-117752 (A) and human Cot transfected: sc-372867 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Lundkvist, G.B., et al. 1998. Expression of an oscillating interferon-γ receptor in the suprachiasmatic nuclei. *Neuroreport* 9: 1059-1063.
2. Hagemann, D., et al. 1999. Cot protooncoprotein activates the dual specificity kinases MEK-1 and SEK-1 and induces differentiation of PC12 cells. *Oncogene* 18: 1391-1400.
3. Zhu, J., et al. 2005. Induction of proinflammatory responses in macrophages by the glycosylphosphatidylinositols of *Plasmodium falciparum*: the requirement of extracellular signal-regulated kinase, p38, c-Jun N-terminal kinase and NFκB pathways for the expression of proinflammatory cytokines and nitric oxide. *J. Biol. Chem.* 280: 8617-8627.
4. Vincent, P., et al. 2006. Activation of p21-activated kinase 2 and its association with Nef are conserved in murine cells but are not sufficient to induce an AIDS-like disease in CD4C/HIV transgenic mice. *J. Biol. Chem.* 281: 6940-6954.
5. Jeong, J.H., et al. 2011. TPL2/COT/MAP3K8 (TPL2) activation promotes androgen depletion-independent (ADI) prostate cancer growth. *PLoS ONE* 6: e16205.
6. Zhang, N., et al. 2013. MicroRNA 375 mediates the signaling pathway of corticotropin-releasing factor (CRF) regulating pro-opiomelanocortin (POMC) expression by targeting mitogen-activated protein kinase 8. *J. Biol. Chem.* 288: 10361-10373.

## RESEARCH USE

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



Try **Cot (H-7): sc-373677**, our highly recommended monoclonal alternative to Cot (N-17). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Cot (H-7): sc-373677**.