SANTA CRUZ BIOTECHNOLOGY, INC.

p-MAPKAPK-2 (Thr 222): sc-31675

BACKGROUND

The p38 mitogen-activated protein kinase (MAPK) pathway is an important mediator of cellular responses to environmental stress. The MAPKAP kinases (MAP kinase activated protein kinases) are a group of MAP kinase substrates that are themselves kinases. In response to activation, the MAP kinases phosphorylate downstream components on a consensus Pro-X-Ser/Thr-Pro motif. p38 phosphorylates and activates the serine/threonine kinases MAPKAP kinase-2 and MAPKAP kinase-3 (also designated 3pK). The activated MAPKAPK-2 phosphorylates its nuclear targets, CREB/ATF1, serum response factor and E2A protein E47 and its cytoplasmic targets, HSP 25/27, LSP-1, 5-lipoxygenase, glycogen synthase and tyrosine hydroxylase. Phosphorylation of threonine 334, which is located between the kinase domain and the C-terminal regulatory domain, may serve as a switch for MAPKAPK-2 nuclear import and export. Threonine 222 which lies in the activation loop is also phosphorylated. Phosphorylated MAPKAPK-2 masks the nuclear localization signal at its C-terminus by binding to p38, and unmasks the nuclear export signal, carrying p38 to the cytoplasm.

CHROMOSOMAL LOCATION

Genetic locus: MAPKAPK2 (human) mapping to 1q32.1; Mapkapk2 (mouse) mapping to 1 E4.

SOURCE

p-MAPKAPK-2 (Thr 222) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 222 phosphorylated MAPKAPK-2 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-31675 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-MAPKAPK-2 (Thr 222) is recommended for detection of Thr 222 phosphorylated MAPKAPK-2 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).

Suitable for use as control antibody for MAPKAPK-2 siRNA (h): sc-35855, MAPKAPK-2 siRNA (m): sc-35856, MAPKAPK-2 shRNA Plasmid (h): sc-35855-SH, MAPKAPK-2 shRNA Plasmid (m): sc-35856-SH, MAPKAPK-2 shRNA (h) Lentiviral Particles: sc-35855-V and MAPKAPK-2 shRNA (m) Lentiviral Particles: sc-35856-V.

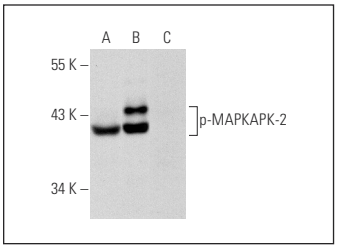
Molecular Weight of p-MAPKAPK-2: 47 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or HeLa + UV irradiated cell lysate: sc-2221.

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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 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.

DATA



p-MAPKAPK-2 (Thr 222): sc-31675. Western blot analysis of MAPKAPK-2 phosphorylation in untreated (**A**), UV irradiated (**B**) and UV irradiated and lambda protein phosphatase treated (**C**) HeLa whole cell lysates.

SELECT PRODUCT CITATIONS

1. Daily, A., et al. 2010. Abrogation of microcystin cytotoxicity by MAP kinase inhibitors and N-acetyl cysteine is confounded by OATPIB1 uptake activity inhibition. Toxicon 55: 827-837.
2. Nilsson, E.M., et al. 2010. Fibroblast growth factor 8 increases breast cancer cell growth by promoting cell cycle progression and by protecting against cell death. Exp. Cell Res. 316: 800-812.
3. Bobo, L.D., et al. 2013. MAPK-activated protein kinase 2 contributes to *Clostridium difficile*-associated inflammation. Infect. Immun. 81: 713-722.

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.