

p-Raf-1 (Tyr 340/341): sc-16806

BACKGROUND

Raf-1 is a 72 to 76 kDa ubiquitously expressed cytoplasmic protein with intrinsic Serine/Threonine kinase activity. Raf-1, or c-Raf, is the cellular homolog of v-Raf, the product of the transforming gene of the 3611 strain of murine sarcoma virus. The unregulated kinase activity of the v-Raf protein is associated with cellular transformation and mitogenesis. Raf-1 is normally suppressed by its regulatory N-terminal domain. Raf-1 is activated in response to a variety of tyrosine kinase receptors as well as in response to pp60v-Src expression. Specifically, Raf-1 is phosphorylated in the catalytic domain at Ser 338 and, to a lesser extent, Ser 339. This phosphorylation requires the co-activation of PI 3-kinase and the Ras signaling pathway. Raf-1 is also phosphorylated on Tyr 340 and 341, which induces the phosphorylation of MEK. Phosphorylation of Ser 621 is essential for the catalytic activity of Raf-1 and down-regulation by c-AMP-dependent protein kinase A (PKA). PKA also phosphorylates Raf-1 on Ser 43 and Ser 259. PKA phosphorylation of Ser 259 inhibits Raf-1 and decreases the phosphorylation necessary for Raf-1 activation at Ser 338.

REFERENCES

1. Rapp, U.R., et al. 1983. Structure and biological activation of v-Raf, a unique oncogene transduced by a retrovirus. *Proc. Natl. Acad. Sci. USA* 80: 4218-4222.
2. Huleihel, M., et al. 1986. Characterization of murine A-Raf, a new oncogene related to the v-Raf oncogene. *Mol. Cell Biol.* 6: 2655-2662.
3. Heidecker, G., et al. 1990. Mutational activation of c-Raf-1 and definition of the minimal transforming sequence. *Mol. Cell Biol.* 10: 2503-2512.

CHROMOSOMAL LOCATION

Genetic locus: RAF1 (human) mapping to 3p25; Raf1 (mouse) mapping to 6.

SOURCE

p-Raf-1 (Tyr 340/341) is available as either goat (sc-16806) or rabbit (sc-16806-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Tyr 340 and Tyr 341 of Raf-1 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-16806 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

p-Raf-1 (Tyr 340/341) is recommended for detection of Tyr 340 and 341 dually phosphorylated Raf-1 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).

p-Raf-1 (Tyr 340/341) is also recommended for detection of correspondingly phosphorylated Tyr on Raf-1 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for Raf-1 siRNA (h): sc-29462, Raf-1 siRNA (m): sc-29463, Raf-1 shRNA Plasmid (h): sc-29462-SH, Raf-1 shRNA Plasmid (m): sc-29463-SH, Raf-1 shRNA (h) Lentiviral Particles: sc-29462-V and Raf-1 shRNA (m) Lentiviral Particles: sc-29463-V.

Molecular Weight of p-Raf-1: 74 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa + UV irradiated cell lysate: sc-2221 or HeLa + PMA/PE whole cell lysate: sc-24808.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-14268): use donkey anti-goat IgG-HRP: sc-2020 (range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (range: 1:2000-1:5000), for rabbit primary antibody (sc-14268-R): use goat anti-rabbit IgG-HRP: sc-2004 (range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) 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: for goat primary antibody (sc-14268): use donkey anti-goat IgG-FITC: sc-2024 (range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (range: 1:100-1:400), for rabbit primary antibody (sc-14268-R): use goat anti-rabbit IgG-FITC: sc-2012 (range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Bisht, K.S., et al. 2003. Geldanamycin and 17-allylamino-17-demethoxy-geldanamycin potentiate the *in vitro* and *in vivo* radiation response of cervical tumor cells via the heat shock protein 90-mediated intracellular signaling and cytotoxicity. *Cancer Res.* 63: 8984-8995.
2. Zhang, D., et al. 2004. Dual regulation of MMP-2 expression by the type 1 Insulin-like growth factor receptor: the phosphatidylinositol 3-kinase/Akt and Raf/ERK pathways transmit opposing signals. *J. Biol. Chem.* 279: 19683-19690.
3. Haraguchi, T., et al. 2007. Controlled release of basic fibroblast growth factor from gelatin hydrogel sheet improves structural and physiological properties of vein graft in rat. *Arterioscler. Thromb. Vasc. Biol.* 27: 548-555.