

PRAK (7H10B4): sc-81705

BACKGROUND

PRAK (p38-regulated/activated kinase), also referred to as mitogen-activated protein kinase (MAPK)-activated protein kinase (MAPKAPK)-5, is a ubiquitously expressed serine/threonine kinase regulated by p38 α and p38 β MAP kinases. Activated JNK, p38 γ or p38 δ are unable to induce phosphorylation of PRAK *in vitro*. Phosphorylation of PRAK occurs *in vivo* in response to p38 activation by stress-related extracellular stimuli including UV light, oxidation and proinflammatory cytokines. Two other substrates for p38, MAPKAPK-2 and MAPKAPK-3/3pK, share approximately 45% sequence homology with PRAK including the phosphorylation motif recognized by p38, Lys-X-Thr-Pro. Activated PRAK has been shown to specifically phosphorylate HSP 27 *in vitro*, suggesting that the protein may play a role in stress-induced small heat shock protein phosphorylation *in vivo*.

REFERENCES

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2. Raingeaud, J., et al. 1995. Pro-inflammatory cytokines and environmental stress cause p38 mitogen-activated protein kinase activation by dual phosphorylation on tyrosine and threonine. *J. Biol. Chem.* 270: 7420-7426.
3. McLaughlin, M.M., et al. 1996. Identification of mitogen-activated protein (MAP) kinase-activated protein kinase-3, a novel substrate of CSBp p38 MAP kinase. *J. Biol. Chem.* 271: 8488-8492.
4. New, L., et al. 1998. PRAK, a novel protein kinase regulated by the p38 MAP kinase. *EMBO J.* 17: 3372-3384.
5. Ni, H., et al. 1998. MAPKAPK-5, a novel mitogen-activated protein kinase related kinase (ERK) and p38 kinase. *Biochem. Biophys. Res. Commun.* 243: 492-496.
6. New, L., et al. 2003. Regulation of PRAK subcellular location by p38 MAP kinases. *Mol. Biol. Cell* 14: 2603-2616.
7. Gerits, N., et al. 2007. Transgenic mice expressing constitutive active MAPKAPK-5 display gender-dependent differences in exploration and activity. *Behav. Brain Funct.* 3: 58.
8. Sun, P., et al. 2007. PRAK is essential for Ras-induced senescence and tumor suppression. *Cell* 128: 295-308.
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CHROMOSOMAL LOCATION

Genetic locus: MAPKAPK5 (human) mapping to 12q24.12.

SOURCE

PRAK (7H10B4) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 337-473 of PRAK of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PRAK (7H10B4) is recommended for detection of PRAK of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PRAK siRNA (h): sc-36310, PRAK shRNA Plasmid (h): sc-36310-SH and PRAK shRNA (h) Lentiviral Particles: sc-36310-V.

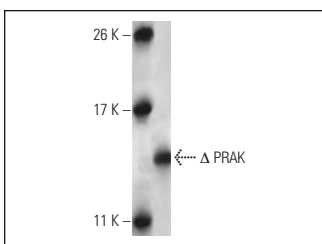
Molecular Weight of PRAK: 54 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PRAK (7H10B4): sc-81705. Western blot analysis of truncated human recombinant PRAK protein.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.