

PRAK (H-180): sc-25419

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 p38a and p38b MAP kinases. Activated JNK, p38g or p38d 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

1. Stokoe, D., et al. 1992. MAPKAP kinase-2; a novel protein kinase activated by mitogen-activated protein kinase. *EMBO J.* 11: 3985-3994.
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. MAPKAPK5, a novel mitogen-activated protein kinase (MAPK)-activated protein kinase, is a substrate of the extracellular-regulated 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. Sun, P., et al. 2007. PRAK is essential for ras-induced senescence and tumor suppression. *Cell* 128: 295-308.

CHROMOSOMAL LOCATION

Genetic locus: MAPKAPK5 (human) mapping to 12q24.12; Mapkapk5 (mouse) mapping to 5 F.

SOURCE

PRAK (H-180) is a rabbit polyclonal antibody raised against amino acids 294-473 mapping at the C-terminus of PRAK 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.

STORAGE

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

APPLICATIONS

PRAK (H-180) is recommended for detection of PRAK 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

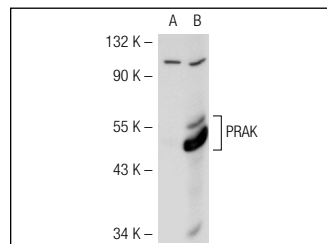
PRAK (H-180) is also recommended for detection of PRAK in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PRAK siRNA (h): sc-36310, PRAK siRNA (m): sc-36311, PRAK shRNA Plasmid (h): sc-36310-SH, PRAK shRNA Plasmid (m): sc-36311-SH, PRAK shRNA (h) Lentiviral Particles: sc-36310-V and PRAK shRNA (m) Lentiviral Particles: sc-36311-V.

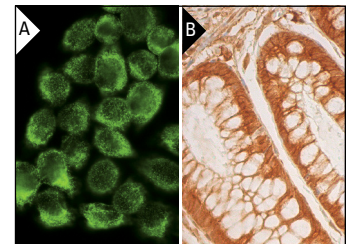
Molecular Weight of PRAK: 54 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, PRAK (m): 293T Lysate: sc-122746 or HeLa whole cell lysate: sc-2200.

DATA



PRAK (H-180): sc-25419. Western blot analysis of PRAK expression in non-transfected: sc-117752 (A) and mouse PRAK transfected: sc-122746 (B) 293T whole cell lysates.



PRAK (H-180): sc-25419. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic and nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Guil, S., et al. 2006. hnRNP A1 relocalization to the stress granules reflects a role in the stress response. *Mol. Cell. Biol.* 26: 5744-5758.
2. Aberg, E., et al. 2006. Regulation of MAPK-activated protein kinase 5 activity and subcellular localization by the atypical MAPK ERK4/MAPK4. *J. Biol. Chem.* 281: 35499-35510.

RESEARCH USE

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


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Try **PRAK (A-7): sc-46667** or **PRAK (7H10B4): sc-81705**, our highly recommended monoclonal alternatives to PRAK (H-180).