10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PRAK Rabbit pAb

Catalog # AP99503

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q8IW41
Other Accession	Q8IW41
Reactivity	Rat, Human, Mouse
Predicted	Pig, Rabbit, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	54220
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human MAPKAPK5/PRAK
Epitope Specificity	89-190/473
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family.Contains 1 protein kinase domain.
SUBUNIT	Interacts with ERK3/MAPK6 and ERK4/MAPK4 (via FRIEDE motif); the interaction is direct. Interacts with YWHAE; the interaction prevents phosphorylation of HSP27/HSPB1 leading to disrupt F-actin polymerization. Interacts with SQSTM1.
Post-translational modifications	Phosphorylated on Thr-182 ERK3/MAPK6 or ERK4/MAPK4; which is the regulatory phosphorylation site and is located on the T-loop/loop 12, leading to activation. Phosphorylation at Thr-182 by p38-alpha/MAPK14, p38-beta/MAPK11 is subject to debate. Phosphorylated at Ser-115 by PKA/PRKACA, leading to localization to the cytoplasm. Autophosphorylated.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The serine/threonine kinase PRAK is activated in response to cellular stress and proinflammatory cytokines, through its phosphorylation by MAP kinases including MAPK1/ERK, MAPK14/p38 alpha, and MAPK11/p38 beta. PRAK has been reported to have a putative tumor suppressor function by mediating senescence upon activation by p38 in response to oncogenic ras. It is thought that phosphorylation of p53 by PRAK following activation of p38 MAPK by ras plays an important role in ras induced senescence and tumor suppression.

Additional Information

Gene ID	8550
Other Names	MAPKAP-K5; MK-5; MK5; NCFD; PRAK; MAPK5_HUMAN; MAPKAPK5; MAPK-activated protein kinase 5; MAPKAP kinase 5; MAPKAPK-5; p38-regulated/activated protein kinase (PRAK); 2.7.11.1; MAPK5_MOUSE; MAPK activated protein kinase 5; mitogen-activated protein kinase-activated

	protein kinase 5
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=2ug/Test
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	MAPKAPK5
Synonyms	PRAK
Function	Tumor suppressor serine/threonine-protein kinase involved in mTORC1 signaling and post-transcriptional regulation. Phosphorylates FOXO3, ERK3/MAPK6, ERK4/MAPK4, HSP27/HSPB1, p53/TP53 and RHEB. Acts as a tumor suppressor by mediating Ras-induced senescence and phosphorylating p53/TP53. Involved in post-transcriptional regulation of MYC by mediating phosphorylation of FOXO3: phosphorylation of FOXO3 leads to promote nuclear localization of FOXO3, enabling expression of miR-34b and miR-34c, 2 post-transcriptional regulators of MYC that bind to the 3'UTR of MYC transcript and prevent MYC translation. Acts as a negative regulator of mTORC1 signaling by mediating phosphorylation and inhibition of RHEB. Part of the atypical MAPK signaling via its interaction with ERK3/MAPK6 or ERK4/MAPK4: the precise role of the complex formed with ERK3/MAPK6 or ERK4/MAPK4 is still unclear, but the complex follows a complex set of phosphorylation events: upon interaction with atypical MAPK (ERK3/MAPK6 or ERK4/MAPK4), ERK3/MAPK6 (or ERK4/MAPK4) is phosphorylated and then mediates phosphorylation and activation of MAPKAPK5, which in turn phosphorylates ERK3/MAPK6 (or ERK4/MAPK4). Mediates phosphorylation of HSP27/HSPB1 in response to PKA/PRKACA stimulation, inducing F-actin rearrangement.
Cellular Location	Cytoplasm. Nucleus. Note=Translocates to the cytoplasm following phosphorylation and activation. Interaction with ERK3/MAPK6 or ERK4/MAPK4 and phosphorylation at Thr-182, activates the protein kinase activity, followed by translocation to the cytoplasm Phosphorylation by PKA/PRKACA at Ser-115 also induces nuclear export
Tissue Location	Expressed ubiquitously.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.