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Anti-VRK1 Picoband Antibody

Catalog # ABO12593

Product Information

Application	WB
Primary Accession	Q99986
Host	Rabbit
Reactivity	Human, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Serine/threonine-protein kinase VRK1(VRK1) detection. Tested with WB in Human;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	7443
Other Names	Serine/threonine-protein kinase VRK1, 2.7.11.1, Vaccinia-related kinase 1, VRK1
Calculated MW	45476
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Rat
Subcellular Localization	Cytoplasm. Nucleus. Cytoplasm, cytoskeleton, spindle . Dispersed throughout the cell but not located on mitotic spindle or chromatids during mitosis.
Tissue Specificity	Widely expressed. Highly expressed in fetal liver, testis and thymus. .
Source	Eukaryota
Protein Name	Serine/threonine-protein kinase VRK1
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human VRK1 (292-329aa EKNKPGEIAKYMETVKLLDYTEKPLYENLRDILLQGLK), different from the related mouse sequence by three amino acids.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also

be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Protein Information

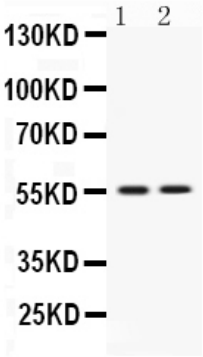
Name	VRK1 {ECO:0000303|PubMed:9344656, ECO:0000312|HGNC:HGNC:12718}
Function	Serine/threonine kinase involved in the regulation of key cellular processes including the cell cycle, nuclear condensation, transcription regulation, and DNA damage response (PubMed:14645249, PubMed:18617507, PubMed:19103756, PubMed:33076429). Controls chromatin organization and remodeling by mediating phosphorylation of histone H3 on 'Thr-4' and histone H2AX (H2aXT4ph) (PubMed:31527692, PubMed:37179361). It also phosphorylates KAT5 in response to DNA damage, promoting KAT5 association with chromatin and histone acetyltransferase activity (PubMed:33076429). Is involved in the regulation of cell cycle progression of neural progenitors, and is required for proper cortical neuronal migration (By similarity). Is involved in neurite elongation and branching in motor neurons, and has an essential role in Cajal bodies assembly, acting through COIL phosphorylation and the control of coilin degradation (PubMed:21920476, PubMed:31090908, PubMed:31527692). Involved in Golgi disassembly during the cell cycle: following phosphorylation by PLK3 during mitosis, it is required to induce Golgi fragmentation (PubMed:19103756). Phosphorylates BANF1: disrupts its ability to bind DNA, reduces its binding to LEM domain-containing proteins and causes its relocalization from the nucleus to the cytoplasm (PubMed:16495336). Phosphorylates TP53BP1 and p53/TP53 on 'Thr-18', preventing the interaction between p53/TP53 and MDM2 (PubMed:10951572, PubMed:31527692). Phosphorylates ATF2 which activates its transcriptional activity (PubMed:15105425). Phosphorylates JUN (PubMed:31527692).
Cellular Location	Nucleus. Cytoplasm. Nucleus, Cajal body. Note=Enriched on chromatin during mitosis.
Tissue Location	Widely expressed. Highly expressed in fetal liver, testis and thymus.

Background

Serine/threonine-protein kinase VRK1 is an enzyme that in humans is encoded by the VRK1 gene. This gene encodes a member of the vaccinia-related kinase (VRK) family of serine/threonine protein kinases. It is widely expressed in human tissues and has increased expression in actively dividing cells, such as those in testis, thymus, fetal liver, and carcinomas. Its protein localizes to the nucleus and has been shown to promote the stability and nuclear accumulation of a transcriptionally active p53 molecule and, in vitro, to phosphorylate Thr18 of p53 and reduce p53 ubiquitination. This gene, therefore, may regulate cell proliferation. This protein also phosphorylates histone, casein, and the transcription factors ATF2 (activating transcription factor 2) and c-JUN.

Images

Western blot analysis of VRK1 expression in rat thymus extract (lane 1) and JURKAT whole cell lysates (lane 2). VRK1 at 55KD was detected using rabbit anti- VRK1 Antigen Affinity purified polyclonal antibody (Catalog # ABO12593) at0.5 ??g/mL. The blot was developed using chemiluminescence (ECL) method .



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