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VRK1 Antibody (Center)(Ascites)

Mouse Monoclonal Antibody (Mab)
Catalog # AM2226a

Product Information

Application	WB, E
Primary Accession	Q99986
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	1015CT2.1.1
Calculated MW	45476

Additional Information

Gene ID	7443
Other Names	Serine/threonine-protein kinase VRK1, Vaccinia-related kinase 1, VRK1
Target/Specificity	Purified His-tagged VRK1 protein was used to produced this monoclonal antibody.
Dilution	WB~~1:5000 E~~Use at an assay dependent concentration.
Format	Mouse monoclonal antibody supplied in crude ascites with 0.09% (W/V) sodium azide.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	VRK1 Antibody (Center)(Ascites) is for research use only and not for use in diagnostic or therapeutic procedures.

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 kinase involved in Golgi disassembly during the cell cycle: following phosphorylation by PLK3 during mitosis, required to induce Golgi fragmentation. Acts by mediating phosphorylation of downstream target protein. Phosphorylates 'Thr-18' of p53/TP53 and may thereby prevent the interaction between p53/TP53 and MDM2. Phosphorylates casein and histone H3. 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.

References

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Barcia R., et al. Arch. Biochem. Biophys. 399:1-5(2002).
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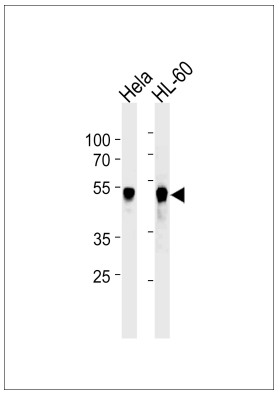
Images



VRK1 Antibody (Center)(Cat. #AM2226a) western blot analysis in Hela,HL-60 cell line lysates (35µg/lane).This demonstrates the VRK1 antibody detected the VRK1 protein (arrow).

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