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AURKA Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1513a

Product Information

Application	WB, IHC, E
Primary Accession	O14965
Reactivity	Human, Rat, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	4G10
Isotype	IgG1
Calculated MW	45823
Description	Aurora A plays a role in cell cycle regulation during anaphase and/or telophase, in relation to the function of the centrosome/spindle pole region during chromosome segregation. Aurora A plays a key role during tumor development and progression and is overexpressed in many human cancers including breast, ovarian and colorectal. Aurora A is viewed as a potential target for anticancer drug treatment.Tissue specificity: Highly expressed in testis and weakly in skeletal muscle, thymus and spleen. Also highly expressed in colon, ovarian, prostate, neuroblastoma, breast and cervical cancer cell lines.
Immunogen	Purified recombinant fragment of human AURKA expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	6790
Other Names	Aurora kinase A, 2.7.11.1, Aurora 2, Aurora/IPL1-related kinase 1, ARK-1, Aurora-related kinase 1, hARK1, Breast tumor-amplified kinase, Serine/threonine-protein kinase 15, Serine/threonine-protein kinase 6, Serine/threonine-protein kinase aurora-A, AURKA
Dilution	WB~~1/500 - 1/2000 IHC~~1/500 - 1/2000 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	AURKA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name

AURKA (HGNC:11393)

Function

Mitotic serine/threonine kinase that contributes to the regulation of cell cycle progression (PubMed:11039908, PubMed:12390251, PubMed:17125279, PubMed:17360485, PubMed:18615013, PubMed:26246606). Associates with the centrosome and the spindle microtubules during mitosis and plays a critical role in various mitotic events including the establishment of mitotic spindle, centrosome duplication, centrosome separation as well as maturation, chromosomal alignment, spindle assembly checkpoint, and cytokinesis (PubMed:14523000, PubMed:26246606). Required for normal spindle positioning during mitosis and for the localization of NUMA1 and DCTN1 to the cell cortex during metaphase (PubMed:27335426). Required for initial activation of CDK1 at centrosomes (PubMed:13678582, PubMed:15128871). Phosphorylates numerous target proteins, including ARHGEF2, BORA, BRCA1, CDC25B, DLGP5, HDAC6, KIF2A, LATS2, NDEL1, PARD3, PPP1R2, PLK1, RASSF1, TACC3, p53/TP53 and TPX2 (PubMed:11551964, PubMed:14702041, PubMed:15128871, PubMed:15147269, PubMed:15987997, PubMed:17604723, PubMed:18056443, PubMed:18615013). Phosphorylates MCRS1 which is required for MCRS1- mediated kinetochore fiber assembly and mitotic progression (PubMed:27192185). Regulates KIF2A tubulin depolymerase activity (PubMed:19351716). Important for microtubule formation and/or stabilization (PubMed:18056443). Required for normal axon formation (PubMed:19812038). Plays a role in microtubule remodeling during neurite extension (PubMed:19668197). Also acts as a key regulatory component of the p53/TP53 pathway, and particularly the checkpoint- response pathways critical for oncogenic transformation of cells, by phosphorylating and destabilizing p53/TP53 (PubMed:14702041). Phosphorylates its own inhibitors, the protein phosphatase type 1 (PP1) isoforms, to inhibit their activity (PubMed:11551964). Inhibits cilia outgrowth (By similarity). Required for cilia disassembly via phosphorylation of HDAC6 and subsequent deacetylation of alpha-tubulin (PubMed:17604723, PubMed:20643351). Regulates protein levels of the anti-apoptosis protein BIRC5 by suppressing the expression of the SCF(FBXL7) E3 ubiquitin-protein ligase substrate adapter FBXL7 through the phosphorylation of the transcription factor FOXP1 (PubMed:28218735).

Cellular Location

Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome, centriole {ECO:0000250|UniProtKB:P97477}. Cell projection, neuron projection {ECO:0000250|UniProtKB:P97477}. Cell projection, cilium. Cytoplasm, cytoskeleton, cilium basal body. Basolateral cell membrane {ECO:0000250|UniProtKB:F1PNY0}. Note=Detected at the neurite hillock in developing neurons (By similarity). Localizes at the centrosome in mitotic cells from early prophase until telophase, but also localizes to the spindle pole MTs from prophase to anaphase (PubMed:17229885, PubMed:21225229, PubMed:9606188). Colocalized with SIRT2 at centrosome (PubMed:22014574). Moves to the midbody during both telophase and cytokinesis (PubMed:17726514). Associates with both the pericentriolar material (PCM) and centrioles (PubMed:22014574). The localization to the spindle poles is regulated by AAAS (PubMed:26246606) {ECO:0000250|UniProtKB:P97477, ECO:0000269|PubMed:17229885, ECO:0000269|PubMed:17726514, ECO:0000269|PubMed:21225229, ECO:0000269|PubMed:22014574, ECO:0000269|PubMed:26246606, ECO:0000269|PubMed:9606188}

Tissue Location

Highly expressed in testis and weakly in skeletal muscle, thymus and spleen. Also highly expressed in colon, ovarian, prostate, neuroblastoma, breast and

cervical cancer cell lines

References

1. Cell Cycle. 2008 Nov 15;7(22):3525-33. 2. Oncogene. 2008 Nov 20;27(51):6539-49.

Images

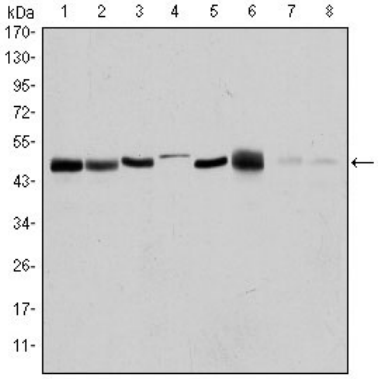


Figure 1: Western blot analysis using AURKA mouse mAb against HEK293 (1), Sw620 (2), MCF-7 (3), Jurkat (4), Hela (5), HepG2 (6), Cos7 (7) and PC-12 (8) cell lysate.

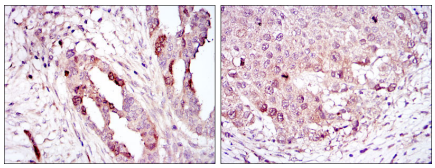


Figure 2: Immunohistochemical analysis of paraffin-embedded ovarian cancer (left) and lung cancer (right) using AURKA mouse mAb with DAB staining.

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