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Aurora-A Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7002c

Product Information

Application	WB, IF, FC, E
Primary Accession	O14965
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	45823
Antigen Region	364-392

Additional Information

Gene ID	6790
Other Names	Aurora kinase A, 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
Target/Specificity	This Aurora-A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 364-392 amino acids from the C-terminal region of human Aurora-A.
Dilution	WB~~1:1000 IF~~1:10~50 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	Aurora-A Antibody (C-term) 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

Background

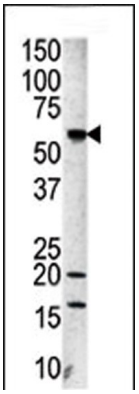
Chromosomal segregation during mitosis as well as meiosis is regulated by kinases and phosphatases. The

Aurora kinases, members of the Ser/Thr protein kinase family, associate with microtubules during chromosome movement and segregation. Auroria kinase A may play 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. It may be involved in microtubule formation and/or stabilization. This protein has also been postulated to play a key role during tumor development and progression. Aurora kinase A localizes on centrosomes in interphase cells and at each spindle pole in mitosis. It is highly expressed in testis, weakly in skeletal muscle, thymus and spleen, and also highly expressed in colon, ovarian, prostate, neuroblastoma, breast and cervical cancer cell lines. Expression is cell-cycle regulated, low in G1/S, accumulates during G2/M, and decreases rapidly afterward. Defects in Aurora kinase A are responsible for numerical centrosome aberrations including aneuploidy.

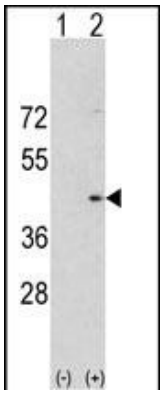
References

Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002). Tanaka, M., et al., J. Biol. Chem. 277(12):10719-10726 (2002). Nigg, E.A., Nat. Rev. Mol. Cell Biol. 2(1):21-32 (2001). Deloukas, P., et al., Nature 414(6866):865-871 (2001). Shindo, M., et al., Biochem. Biophys. Res. Commun. 244(1):285-292 (1998).

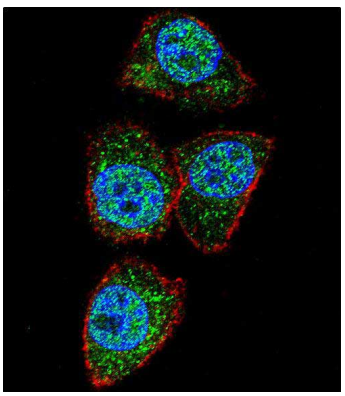
Images



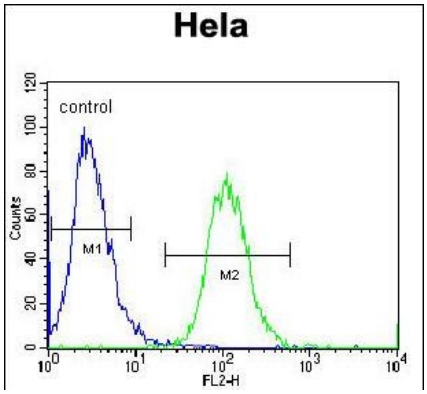
Western blot analysis of anti-Aurora-A Pab (Cat. #AP7002c) in A2058 cell line lysate.Aurora-A(arrow) was detected using the purified Pab.



Western blot analysis of Aurora-A (arrow) using rabbit polyclonal Aurora-A Antibody (C-term) (Cat. #AP7002c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the Aurora-A gene (Lane 2) (Origene Technologies).



Confocal immunofluorescent analysis of Aurora-A Antibody (C-term)(Cat#AP7002c) with Hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).



Aurora-A Antibody (C-term) (Cat. #AP7002c) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- The FOXM1 transcriptional factor promotes the proliferation of leukemia cells through modulation of cell cycle progression in acute myeloid leukemia.