abcam

ab247643

Anti-Aurora A antibody [EPR5026] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR5026
Purification technique	Affinity purification Protein A
Dissociation constant	2.63 x 10^{-10} M
Concentration	0.985 - 1.015 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse, Human

Dilution info	-
Notes	-

WB

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human

Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information AURKA

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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab247643 is the carrier-free version of ab108353.

Species reactivity

Rat: We have preliminary internal testing data to indicate this antibody may not react with this species. Please contact us for more information.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Aurora A also known as Aurora kinase A is an important serine/threonine kinase with a protein mass of approximately 46 kDa. It is commonly found in various tissues but its expression is particularly high during mitosis in dividing cells. Aurora A operates primarily at the centrosomes where it is pivotal for processes such as centrosome maturation separation and the establishment of the mitotic spindle. The kinase activity of Aurora A is important for proper chromosome alignment and segregation. Scientists often use Aurora A as a marker in studies related to cell division and cancer.
Biological function summary	Aurora A plays key roles in the regulation of the cell cycle and mitosis. It functions as part of the Aurora mouse kinase complex associating with other proteins to ensure accurate chromosomal segregation and cytokinesis. Aurora A is involved in centrosome dynamics and interacts with proteins such as 35C1 aiding its localization to the correct cellular structures. The protein's role in the cell cycle and mitotic checkpoints makes it a subject of interest for researchers examining cancer proliferation.

Pathways	Aurora A integrates into both the mitotic spindle assembly checkpoint and DNA damage repair pathways. Within these pathways Aurora A partners with proteins like APC (Anaphase Promoting Complex) to ensure timely progression through mitosis and safeguard genomic stability. The spindle assembly pathway ensures that spindle fibers correctly attach to chromosomes a process in which Aurora A proves instrumental. Its interaction with other kinases and regulatory molecules in these pathways highlights its regulatory importance in cell proliferation.
Associated diseases and disorders	Research identifies Aurora A's association with oncological conditions such as breast and ovarian cancers. Overexpression or amplification of Aurora A correlates with tumor progression and poor prognosis as it can lead to chromosomal instability. In these diseases Aurora A activity is linked with dysregulated pathways involving proteins like p53 and BRCA1 which normally function in DNA damage response and repair. Targeted inhibition of Aurora A represents a promising avenue in cancer therapy as it might restore normal cell cycle control and reduce cancer cell viability.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

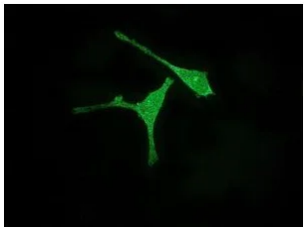
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

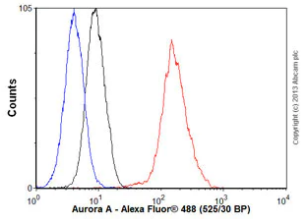
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-Aurora A antibody [EPR5026] - BSA and Azide free (ab247643)

Aurora A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Aurora A antibody

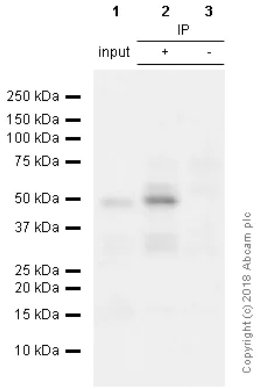
This data was developed using ab108353, the same antibody clone in a different buffer formulation.Immunofluorescent staining of HeLa cells using ab108353 at 1/100



Flow Cytometry (Intracellular) - Anti-Aurora A antibody [EPR5026] - BSA and Azide free (ab247643)

Aurora A Flow Cytometry (Intracellular) staining using rabbit Anti-Aurora A antibody

This data was developed using ab108353, the same antibody clone in a different buffer formulation.
Overlay histogram showing HeLa cells stained with ab108353 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab108353, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.



Immunoprecipitation - Anti-Aurora A antibody [EPR5026] - BSA and Azide free (ab247643)

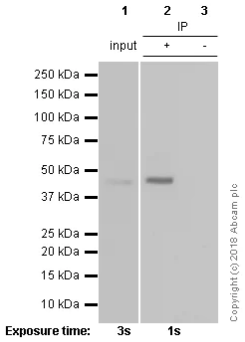
This data was developed using ab108353, the same antibody clone in a different buffer formulation.**Lane 1:** HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate 10µg
Lane 2: HepG2 cell lysate 350µg and ab109518 2µg
Lane 3: HepG2 cell lysate 350µg and rabbit IgG (ab172730) , 2µg

Purified ab108353 immunoprecipitating Aurora A in Neuro2a cell lysates. Primary antibody was used at a 1/60 dilution (20 µg/ml). For western blotting, ab108353 at 1/500 and VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1000 dilution.

Blocking and diluting buffer used: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-Aurora A antibody [EPR5026] - Centrosome Marker (ab108353)

Predicted band size: 45 kDa



Immunoprecipitation - Anti-Aurora A antibody [EPR5026] - BSA and Azide free (ab247643)

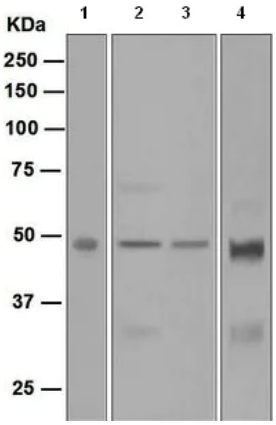
This data was developed using ab108353, the same antibody clone in a different buffer formulation.**Lane 1:** Neuro2a (Mouse neuroblastoma neuroblast) whole cell lysate, 10µg
Lane 2: Neuro2a cell lysate 350µg and ab109518 2µg
Lane 3: Neuro2a cell lysate, 350µg and rabbit IgG (ab172730) , 2µg

Purified ab108353 immunoprecipitating Aurora A in Neuro2a cell lysates. Primary antibody was used at a 1/60 dilution (20 µg/ml). For western blotting, ab108353 at 1/500 and VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1000 dilution.

Blocking and diluting buffer used: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-Aurora A antibody [EPR5026] - Centrosome Marker (ab108353)

Predicted band size: 45 kDa



Western blot - Anti-Aurora A antibody [EPR5026] - BSA and Azide free (ab247643)

This data was developed using ab108353, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Aurora A antibody [EPR5026] - Centrosome Marker (ab108353) at 1/1000 dilution

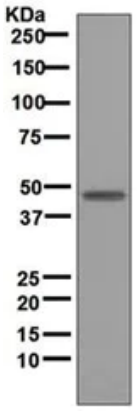
Lane 1:
BXPC-3 cell lysate at 10 µg

Lane 2:
LnCaP cell lysate at 10 µg

Lane 3:
SKBR-3 cell lysate at 10 µg

Lane 4:
HepG2 cell lysate at 10 µg

Predicted band size: 45 kDa

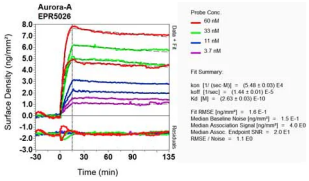


Western blot - Anti-Aurora A antibody [EPR5026] - BSA and Azide free (ab247643)

This data was developed using ab108353, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Aurora A antibody [EPR5026] - Centrosome Marker (ab108353) at 1/1000 dilution

All lanes:
Neuro-2a cell lysate at 10 µg

Predicted band size: 134 kDa, 45 kDa, 53 kDa, 86 kDa



OI-RD Scanning - Anti-Aurora A antibody [EPR5026] - BSA and Azide free (ab247643)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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