PRODUCT INFORMATION

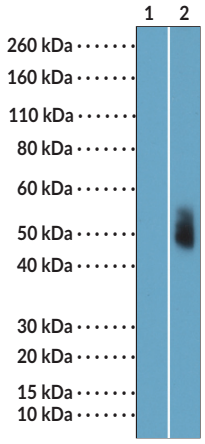
Aurora A (Phospho-Thr^{288})/Aurora B (Phospho-Thr^{232})/Aurora C (Phospho-Thr^{198}) Rabbit Monoclonal Antibody (Clone RM454)

Item No. 35904

Overview and Properties

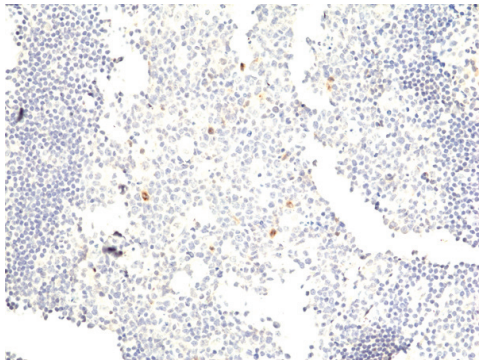
Contents:	This vial contains 100 µl protein A-affinity purified monoclonal antibody.
Immunogen:	A phospho-peptide corresponding to Phospho-Aurora A (Thr^{288})/Aurora B (Thr^{232})/Aurora C (Thr^{198})
Cross Reactivity:	(+) Aurora A (Thr^{288})/Aurora B (Thr^{232})/Aurora C (Thr^{198}); (-) Aurora A/Aurora B/Aurora C without phosphorylation at Aurora A (Thr^{288})/Aurora B (Thr^{232})/Aurora C (Thr^{198})
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM454
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:50-1:200 for IHC and 1:1,000-1:3,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: HeLa cell lysates untreated
Lane 2: HeLa cell lysates treated

WB of HeLa cell lysates untreated or treated with nocodazole and calyculin A using Aurora A (Phospho-Thr^{288})/Aurora B (Phospho-Thr^{232})/Aurora C (Phospho-Thr^{198}) Rabbit Monoclonal Antibody (Clone RM454) at a dilution of 1:2,500.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue using Aurora A (Phospho-Thr^{288})/Aurora B (Phospho-Thr^{232})/Aurora C (Phospho-Thr^{198}) Rabbit Monoclonal Antibody (Clone RM454) at a dilution of 1:50.

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Description

The Aurora kinases, Aurora A, -B, and -C, are a family of serine/threonine kinases encoded by distinct genes, *AURKA*, *AURKB*, and *AURKC*, respectively, that have roles in mitosis and meiosis.[1,2] They are composed of an ATP-binding N-terminal domain, a highly conservated catalytic domain, and a short C-terminal domain that contains an activation loop and mediates cofactor binding.[1] Each Aurora kinase contains a key threonine residue in its C-terminal activation loop, threonine 288 (Thr^{288}), Thr^{232}, and Thr^{198} in Aurora A, -B, and -C, respectively, that is autophosphorylated upon cofactor binding, inducing a conformational change that mediates kinase activation.[1,2] Aurora A and Aurora B have roles in mitosis, whereas Aurora C regulates meiosis.[2] Aurora A and Aurora B are constitutively expressed in mitotic cells, where Aurora A localizes to the spindle poles and Aurora B localizes to the central spindle.[2] Aurora A has roles in mitotic entry, centrosome maturation and separation, and spindle assembly, whereas Aurora B regulates chromosome condensation and alignment, spindle assembly, and cytokinesis. Aurora C is expressed in germ cells during meiosis, localizes to the chromosome midbody, and is required for spermatogenesis.[2,3] Aurora A, -B, and -C are overexpressed in a variety of cancers, including breast, colorectal, ovarian, and cervical cancers, and the pan-Aurora kinase inhibitor AMG 900 (Item No. 19176) inhibits tumor growth in an HCT116 mouse xenograft model.[3,4] Cayman's Aurora A (Phospho-Thr^{288})/Aurora B (Phospho-Thr^{232})/Aurora C (Phospho-Thr^{198}) Rabbit Monoclonal Antibody (Clone RM454) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Willems, E., Dedobbeleer, M., Digregorio, M., *et al.* The functional diversity of Aurora kinases: A comprehensive review. *Cell Div.* **13**, 7 (2018).
2. Goldenson, B. and Crispino, J.D. The aurora kinases in cell cycle and leukemia. *Oncogene* **34(5)**, 537-545 (2015).
3. Tang, A., Gao, K., Chu, L., *et al.* Aurora kinases: Novel therapy targets in cancers. *Oncotarget* **8(14)**, 23937-23954 (2017).
4. Payton, M., Bush, T.L., Chung, G., *et al.* Preclinical evaluation of AMG 900, a novel potent and highly selective pan-aurora kinase inhibitor with activity in taxane-resistant tumor cell lines. *Cancer Res.* **70(23)**, 9846-9854 (2010).

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