

# MSD® Total Aurora A Kit

For quantitative determination in human whole cell lysate samples



Alzheimer's Disease  
BioProcess  
Cardiac  
**Cell Signaling**  
Clinical Immunology  
Cytokines  
Growth Factors  
Hypoxia  
Immunogenicity  
Inflammation  
Metabolic  
Oncology  
Toxicology  
Vascular

## Catalog Numbers

Total Aurora A Kit	
Kit Size	Catalog #
1 plate	K150QZD-1
5 plates	K150QZD-2
25 plates	K150QZD-4

## Ordering Information

MSD Customer Service  
Phone: 1-301-947-2085  
Fax: 1-301-990-2776  
Email: CustomerService@mesoscale.com

## Scientific Support

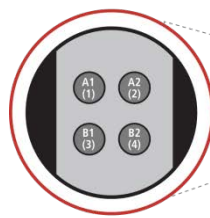
Phone: 1-301-947-2025  
Email: ScientificSupport@mesoscale.com

## Company Address

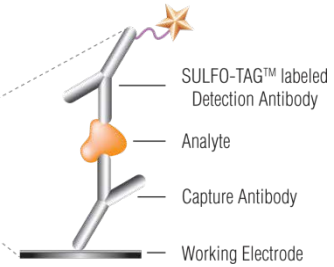
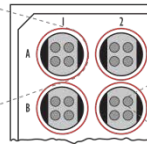
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A division of  
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Rockville, MD 20850-3173 USA  
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For Research Use Only.  
Not for use in  
diagnostic procedures.

1. Aurora A
2. BSA blocked
3. BSA blocked
4. BSA blocked



MSD MULTI-SPOT®  
96-Well 4-Spot Plate



**Aurora A kinase (AurA)** is a cell cycle-regulated, serine/threonine protein kinase.<sup>1</sup> This member of the AUR family of kinases plays a critical role in cell cycle progression<sup>2</sup> and associates with the centrosome and the spindle microtubules during mitosis.<sup>3</sup> It also plays a critical role in various mitotic events, such as mitotic spindle establishment; centrosome duplication, separation, and maturation; chromosomal alignment; spindle assembly checkpoint; and cytokinesis.<sup>4</sup>

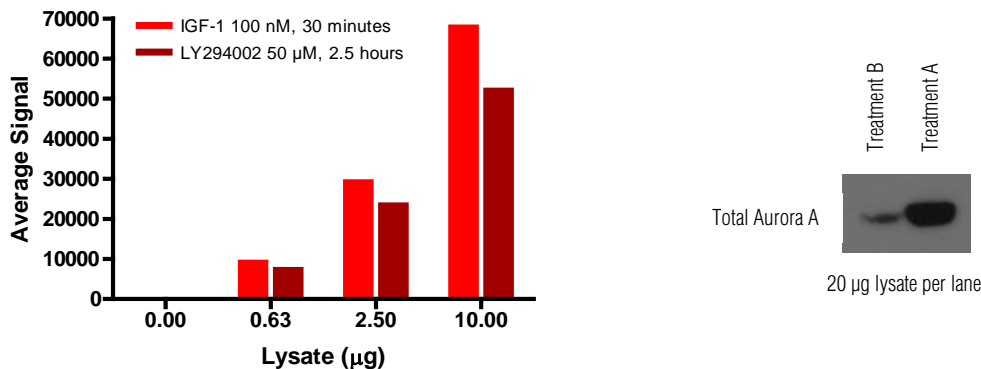
Interest in Aurora A has increased recently due to its overexpression and hyperactivation in a high percentage of tumors derived from breast, colon, ovary, and other tissues.<sup>5</sup> Overexpression or amplification of Aurora A in culture drives transformation and aneuploidy and negatively regulates p53. Loss of Aurora A leads to defective mitotic spindles and gross errors in chromosome segregation resulting in an increase in the levels of chromosomal instability.

The MSD Total Aurora A assay is available on 96-well, 4-spot plates. This datasheet outlines the performance of the assay.

## Typical Data

Representative results for the Total Aurora A Kit are illustrated below. The signal and ratio values provided are examples; individual results will vary depending upon the samples tested. Western blot analyses of each lysate type are shown for comparison.

Growing Hela cell lysates (treatment A) and lysates from Hela cells treated with 1 µg/ml nocodazole for 19 hours and 50 nM calyculin A for the final 30 minutes (treatment B) were used to create a dilution series that was measured using the Total Aurora A assay. Whole cell lysates were added to MSD MULTI-SPOT 4-spot plates coated with anti-total Aurora A antibody on one of the four spatially distinct electrodes in each well. Aurora A was detected with anti-total Aurora A antibody conjugated with MSD SULFO-TAG.



**Figure 1:** Sample data generated with Total Aurora A assay. Higher increased signal is observed with the titration of cell lysates with treatment A than treatment B. The Total Aurora A assay provides a quantitative measure of the data obtained with the traditional Western blot.

# MSD Phosphoprotein Assays

## Lysate Titration

Data for cell lysates using the Total Aurora A Kit are presented below.

Lysate ( $\mu$ g)/well	Treatment A			Treatment B		
	Average Signal	StdDev	%CV	Average Signal	StdDev	%CV
0	45	4	9.4	45	3.5	7.9
0.63	16934	168	1.0	2284	14.1	0.6
2.5	75489	1901	2.5	9670	117.4	1.2
10	157331	6120	3.9	43245	46.7	0.1

For a complete list of products, please visit our website at [www.mesoscale.com](http://www.mesoscale.com).

## The MSD Advantage

- **Multiplexing:** Multiple analytes can be measured in one well using typical sample volumes of 25  $\mu$ L or less without compromising speed or performance
- **Large dynamic range:** Linear range of up to five logs enables the measurement of native levels of biomarkers in normal and diseased samples without multiple dilutions
- **Minimal background:** The stimulation mechanism (electricity) is decoupled from the response (light signal), minimizing matrix interference
- **Simple protocols:** Only labels bound near the electrode surface are excited, enabling assays with fewer washes
- **Flexibility:** Labels are stable, non-radioactive, and conveniently conjugated to biological molecules

## References

1. Sen S, et al. A putative serine/threonine kinase encoding gene BTAK on chromosome 20q13 is amplified and overexpressed in human breast cancer cell lines. *Oncogene*. 1997 May 8;14(18):2195-200.
2. Hannak E, et al. Aurora-A kinase is required for centrosome maturation in *Caenorhabditis elegans*. *J Cell Biol*. 2001 Dec 24;155(7):1109-16.
3. Ma C, et al. Biphasic activation of Aurora-A kinase during the meiosis I- meiosis II transition in *Xenopus oocytes*. *Mol Cell Biol*. 2003 Mar;23(5):1703-16.
4. Crane R, et al. Aurora A, Meiosis and Mitosis. *Biol Cell* 2004 Apr;96(3):215-29.
5. Walter AO, et al. The mitotic serine/threonine kinase Aurora2/AIK is regulated by phosphorylation and degradation. *Oncogene*. 2000 Oct 5;19(42):4906-16.
6. Andrews, P. D. Aurora kinases: shining lights on the therapeutic horizon? *Oncogene* 2005 Jul 28;24(32):5005-15.

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