

MSD® Human Angiopoietin-2 Kit

For quantitative determination in human serum and plasma



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

Catalog Numbers

Human Angiopoietin-2 Kit	
Kit size	
1 plate	K151KCD-1
5 plates	K151KCD-2
25 plates	K151KCD-4

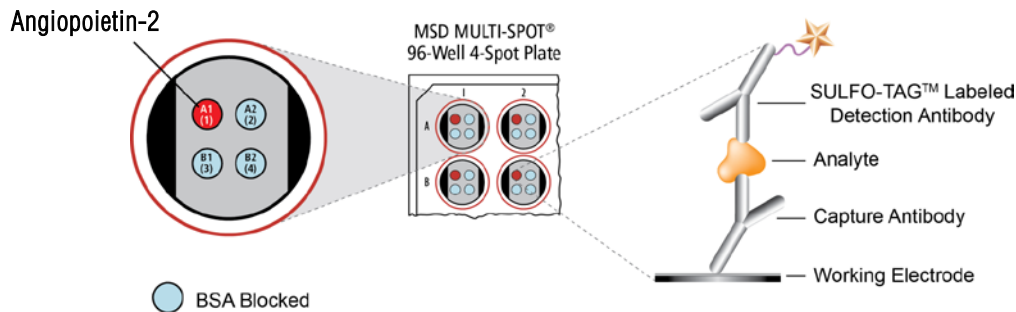
Ordering information

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

Company Address

MESO SCALE DISCOVERY®
division of
Meso Scale Diagnostics, LLC.
9238 Gaither Road
Gaithersburg, MD 20877 USA
www.mesoscale.com®

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procedures.



Angiopoietin-2 (Ang-2) is a 66 kDa protein that plays a crucial role in maturation and maintenance of the vascular and lymphatic systems. Ang-2 expression occurs primarily in Weibel-Palade bodies on endothelial cells and at sites of active vascular remodeling, such as the placenta, ovaries, and uterus.¹ Despite their often opposing regulatory roles in angiogenesis, both Angiopoietin-1 (Ang-1) and Ang-2 are ligands for the endothelial cell receptor tyrosine kinase, Tie-2. Ang-2/Tie-2 interactions are complex and often mediated by the local cytokine and growth factor microenvironment.²

Ang-2 modulates angiogenesis in a cooperative manner with vascular endothelial growth factor (VEGF), facilitating endothelial cell migration, proliferation, and vascular sprouting. However, in the absence of VEGF, Ang-2 induces endothelial cell death and vascular regression, and when bound to Tie-2, counteracts the blood vessel maturation and stability mediated by Ang-1.²⁻⁴ Ang-2 and its effect on angiogenesis have been implicated in human cancers of the lung, colon, liver, and gut and may be correlated with tumor progression and poor outcomes. Therefore, targeting Angiopoietin/Tie-2 signaling pathways is a fertile strategy in the development of novel anti-tumor therapeutics.^{3,4}

The MSD Human Angiopoietin-2 assay is available on 96-well 4-spot plates. This datasheet outlines the performance of the assay.

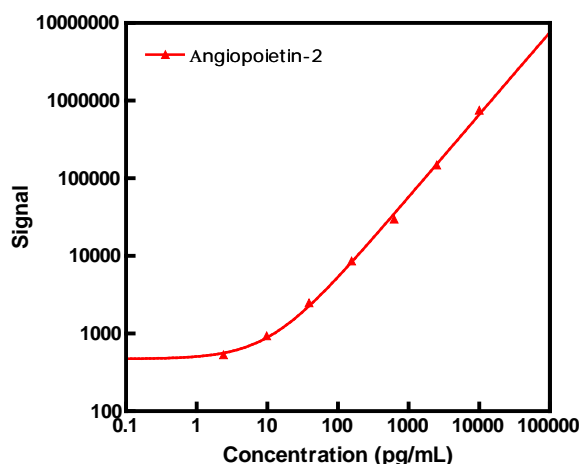
Assay Sensitivity

	Angiopoietin-2
LLOD (pg/mL)	1.2

The lower limit of detection (LLOD) is a calculated concentration based on a signal 2.5 standard deviations above the background.

Typical Standard Curve

The following standard curve is an example of the wide dynamic range of the Human Angiopoietin-2 assay.



Conc. (pg/mL)	Angiopoietin-2	
	Average Signal	%CV
0	382	5.2
2.4	534	9.0
9.8	937	2.6
39	2482	2.0
156	8583	0.1
625	29 756	7.4
2500	148 076	0.9
10 000	754 463	3.3

MSD Vascular Assays

MSD Advantage

- **Multiplexing:** Multiple analytes can be measured in one well 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 signal (light)
- **Simple protocols:** Only labels near the electrode surface are detected, enabling no-wash assays
- **Flexibility:** Labels are stable, non-radioactive, and conveniently conjugated to biological molecules
- **High sensitivity and precision:** Multiple excitation cycles of each label enhance light levels and improve sensitivity

For a complete list of products, please visit our website at www.mesoscale.com.

References

1. Fiedler U, Scharpfenecker M, Koidl S, Hegen A, Grunow V, Schmidt JM, Kriz W, Thurston G, Augustin HG. The Tie-2 ligand Angiopoietin-2 is stored in and rapidly released upon stimulation from endothelial cell Weibel-Palade bodies. *Blood*. 2004 103: 4150-6.
2. Yuan HT, Khankin EV, Karumanchi SA, et al. Angiopoietin 2 is a partial agonist/antagonist of Tie2 signaling in the endothelium. *Mol Cell Biol*. 2009 29:2011-22.
3. Wu X, Liu N. The role of Ang/Tie signaling in lymphangiogenesis. *Lymphology*. 2010 Jun;43(2):59-72.
4. Peters KG, Kontos CD, Lin PC, et al. Functional significance of Tie2 signaling in the adult vasculature. *Recent Prog Horm Res*. 2004 59:51-71.

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