

**MILLIPLEX MAP
Human Angiogenesis/
Growth Factor Magnetic
Bead Panel 1**

HAGP1MAG-12K



Angiogenesis, the development of new vascular networks, is a key process in normal growth and development as well as in wound healing, with homeostasis maintained by a delicate balance of angiogenic factors and inhibitors. Consequently, insufficient or excessive blood vessel growth underlies many diseases, including cardiovascular disease, diabetic ulcers, macular degeneration and cancer. Angiogenesis plays a significant role in tumor growth and metastasis.

In tumors, dysregulated signaling and hypoxic conditions lead to sustained, almost uncontrolled angiogenesis, a necessary component of tumor growth and metastasis. Chronic inflammation mechanisms, such as the production of reactive oxygen species during infection and secretion of pro-inflammatory cytokines, can also foster angiogenesis in tumor progression. Angiogenic signaling in tumors is similar to normal angiogenesis, mediated by soluble growth factors, membrane-bound receptors, and cell-cell and cell-matrix interactions. Such signaling regulates cell migration, which is vital to angiogenesis. However, there are multiple differences between tumor angiogenesis and normal blood vessel formation. Tumor endothelial cells proliferate faster than non-tumor endothelial cells. Tumor vasculature differs from normal vasculature in morphology, enhanced leakiness, and structural abnormalities. Finally, tumor vessels are often not capable of transporting oxygen to and removing waste products from all of the tumor tissues, resulting in frequent tumor cell necrosis.

To identify specific angiogenic processes, it might be necessary to screen panels of vascular analytes and growth factors, often requiring some level of automation and/or high throughput. Magnetic Beads can make the process of automation and high throughput screening easier with features such as walk-away washing. Advantages even outside automation include:

- More flexible plate and plate washer options
- Improved performance with turbid serum/plasma samples
- Automated magnetic washing that avoids many problems associated with vacuum filtration washing

Therefore, the MILLIPLEX® MAP Human Angiogenesis / Growth Factor Magnetic Bead Panel 1 enables you to focus on your angiogenesis / vascular research. Coupled with the Luminex® xMAP® platform in a magnetic bead format, you receive the advantage of ideal speed and sensitivity, allowing quantitative multiplex detection of multiple analytes simultaneously, which can dramatically improve productivity.

Performance Specifications

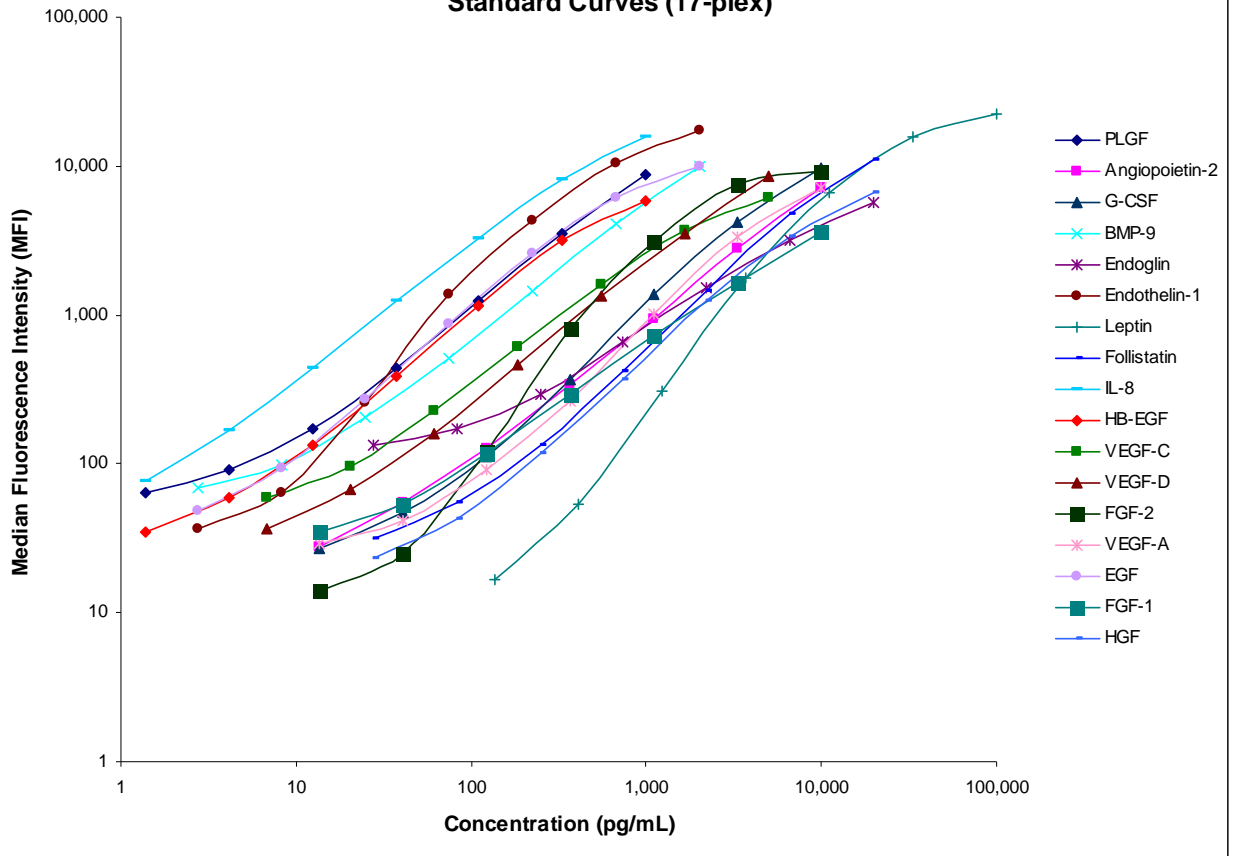
Specificity

Cross-reactivity between the antibodies and any of the other analytes in this panel is non-detectable or negligible.

Assay Applications

- This is an overnight incubation assay requiring 25 µL of 1:3 dilution plasma or serum, or 25 µL cell culture supernatant per well.
 - This kit may be used for the analysis of all or any combination of the cancer biomarkers in serum, plasma or tissue/cell lysate and culture supernatant

Human Angiogenesis / Growth Factor Magnetic Bead Panel 1 Standard Curves (17-plex)



Analyte	Standard Curve Range (pg/mL)	Sensitivity +2SD (pg/mL)	Precision		Accuracy (%)
			Intra-Assay (%CV)	Inter-Assay (%CV)	
Angiopoietin-2	13.7 – 10,000	3.0	<15	< 5	71
BMP-9	2.7 – 2,000	1.4			107
EGF	2.7 – 2,000	1.2			83
Endoglin	27.4 – 20,000	22.6			85
Endothelin-1	2.7 – 2,000	1.9			131
FGF-1/ FGF acidic	13.7 – 10,000	7.4			86
FGF-2/ FGF basic	13.7 – 10,000	10.5			88
Follistatin	27.4 – 20,000	13.6			42
G-CSF	13.7 – 10,000	6.4			89
HB-EGF	1.4 – 1,000	0.6			96
HGF	27.4 – 20,000	10.4			81
IL-8	1.4 – 1,000	0.3			86
Leptin	137.2 – 100,000	51.9			79
PLGF	1.4 – 1,000	0.9			74
VEGF-A	13.7 – 10,000	10.6			99
VEGF-C	6.9 – 5,000	2.8			77
VEGF-D	6.9 – 5,000	2.4			130

Ordering Information

Description	Quantity	Cat. No.
MILLIPLEX MAP Human Angiogenesis/ Growth Factor Magnetic Bead Panel 1	96-well	HAGP1MAG-12K

Related Immunoassays

- Human Circulating Cancer Biomarker Panel 1 (HCCBP1MAG-58K)
- Human Circulating Cancer Biomarker Panel 2 (HCCBP2MAG-58K)
- MILLIPLEX MAP multiplex kits including Cytokines/Chemokines, MMP, TIMP, TGF β and IGF Binding Protein panels
- MILLIPLEX MAP EpiQuant and traditional Cell Signaling panels and MAPmates

For a complete list please visit our website at www.millipore.com/bmia (biomarkers and immunoassays).

BioPharma Services

- Millipore's **BioMarker Services** has been performing immunoassays for over 25 years
- Services available for RIAs, ELISAs, IRMAs and multiplex assays
- Quality control, reproducible results, and confidentiality are of paramount importance to our Assay Services team
- Millipore's **Regulatory Compliant Laboratory** is uniquely positioned to provide bioanalytical services to support your preclinical and clinical studies

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