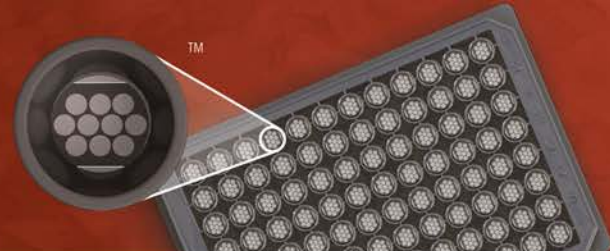


MSD® Human ProInflammatory 9-Plex Ultra-Sensitive Kit

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 ProInflammatory 9-Plex Ultra-Sensitive Kit	
Kit size	
1 plate	K15007C-1
5 plates	K15007C-2
25 plates	K15007C-4

Ordering information

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

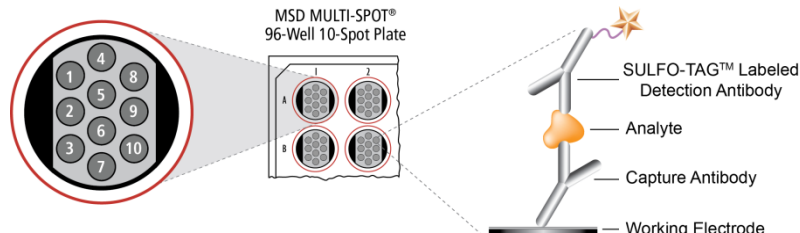
Company Address

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

www.mesoscale.com®

For Research Use Only.
Not for use in diagnostic
procedures.

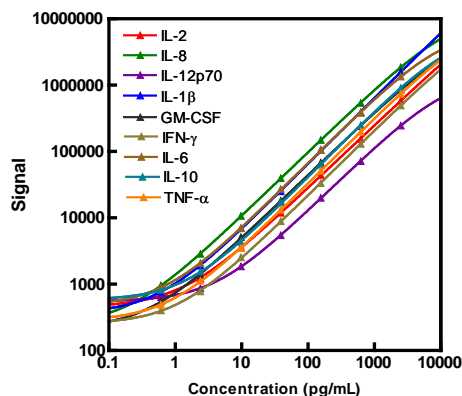
- | | |
|------------------|------------------------|
| 1 = IL-2 | 6 = <i>BSA Blocked</i> |
| 2 = IL-8 | 7 = IFN- γ |
| 3 = IL-12p70 | 8 = IL-6 |
| 4 = IL-1 β | 9 = IL-10 |
| 5 = GM-CSF | 10 = TNF- α |



Cytokines are immunomodulating agents mediating a number of physiological responses, including immunity, inflammation, and a variety of pathophysiological conditions. In disease states, the circulating levels of cytokines are altered, making them valuable biomarkers that can be associated with many clinical conditions. MESO SCALE DISCOVERY® offers a wide range of cytokine assays in singleplex and multiplex formats. The Human ProInflammatory 9-Plex Ultra-Sensitive Kit can be used to simultaneously assess the levels of 9 cytokines in serum and plasma samples; it may also be used with sputum, bronchial lavage, wound fluids, urine, and other biological samples. Tissue culture kits are available for cell supernatant samples. Visit www.mesoscale.com for a complete list of assays, including those developed for human, rodent, canine, bovine, and non-human primate samples.

Assay Sensitivity

The following standard curves illustrate the dynamic range of the assays in the Human ProInflammatory 9-Plex Ultra-Sensitive Kit.



	IL-2	IL-8	IL-12p70	IL-1 β	GM-CSF
LLOD (pg/mL)	0.35	0.090	1.4	0.36	0.20

	IFN- γ	IL-6	IL-10	TNF- α
LLOD (pg/mL)	0.53	0.27	0.21	0.50

The lower limit of detection (LLOD) is a calculated concentration based on a signal 2.5 standard deviations above the blank (zero) calibrator. The values shown represent the average LLOD over multiple kit lots.

MSD Advantages

- **Multiplexing:** Multiple analytes can be measured in one well using typical sample volumes of 25 μ 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 signal (light)
- **Simple protocols:** Only labels near the electrode surface are detected, enabling assays with fewer washes
- **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

MSD Cytokine Assays

Spike Recovery

Normal pooled serum and plasma samples were spiked with calibrator at multiple values throughout the range of the assay. Each sample was run in triplicate. % Recovery = measured / expected x 100

Sample Type	Spike Conc. (pg/mL)	Average % Recovery								
		IL-2	IL-8	IL-12p70	IL-1 β	GM-CSF	IFN- γ	IL-6	IL-10	TNF- α
Serum	9.8	95	93	94	91	88	83	95	88	93
	156	103	93	97	81	107	87	87	86	98
	625	107	100	94	84	88	87	95	86	93
EDTA Plasma	9.8	96	72	79	88	77	73	88	74	86
	156	94	68	72	84	74	79	87	70	93
	625	102	74	72	87	81	88	95	74	93
Heparin Plasma	9.8	100	104	89	92	96	95	88	88	93
	156	103	101	93	80	100	95	87	93	93
	625	104	103	95	76	95	99	93	90	88

Precision

Control samples were spiked with high, mid, and low levels of each analyte and were run in triplicate over multiple days (n>3) using multiple plate lots. Average Intra-plate %CV is the average %CV of the control replicates within an individual plate. Inter-plate %CV expresses the variability of controls across 13 plates over multiple days.

	Level	%CV								
		IL-2	IL-8	IL-12p70	IL-1 β	GM-CSF	IFN- γ	IL-6	IL-10	TNF- α
Average Intra-Plate	Low	3.5	5.8	5.8	7.0	4.4	5.8	7.9	4.4	4.4
	Mid	3.3	6.2	7.6	6.9	3.6	3.9	8.7	4.2	4.6
	High	4.1	4.8	7.5	7.4	3.8	4.3	6.8	4.3	4.4
Inter-Plate	Low	10	13	9.5	8.2	11	9.9	11	8.0	9.5
	Mid	6.6	11	7.4	7.0	7.6	9.5	8.8	6.3	8.4
	High	6.9	8.0	6.7	11	5.7	8.5	12	5.9	7.0

Samples

Endogenous levels of the nine proinflammatory cytokines were quantified in normal human samples. Eight individual sera, EDTA plasma, and heparin plasma samples were measured and the concentrations are shown below. <LLOD indicates that the value was below the lower limit of detection for the assay.

		Concentration (pg/mL)								
		IL-2	IL-8	IL-12p70	IL-1 β	GM-CSF	IFN- γ	IL-6	IL-10	TNF- α
Serum	Min	<LLOD	2.2	<LLOD	<LLOD	<LLOD	<LLOD	1.0	<LLOD	2.8
	Max	15	12	34	0.5	1.5	1.6	4.6	5.0	6.1
	Median	<LLOD	7.4	2.2	<LLOD	<LLOD	0.8	1.8	1.0	4.2
EDTA Plasma	Min	<LLOD	5.3	<LLOD	<LLOD	<LLOD	<LLOD	1.0	0.3	4.4
	Max	11	46	29	1.1	2.7	1.8	3.3	5.2	7.9
	Median	<LLOD	6.9	3.0	0.5	<LLOD	0.9	1.8	1.0	5.8
Heparin Plasma	Min	<LLOD	2.4	<LLOD	<LLOD	<LLOD	<LLOD	1.1	<LLOD	6.0
	Max	10	15	28	2.1	2.8	1.7	3.1	6.3	9.7
	Median	<LLOD	5.8	2.2	0.6	0.2	0.7	1.8	0.9	7.6

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