

MSD® Inflammation Panel 3 (cyno) Kit

For quantitative determination in cynomolgus (cyno) serum and plasma



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

Catalog Numbers

Inflammation Panel 3 (cyno) Kit	
Kit size	
1 plate	K15191D-1
5 plates	K15191D-2
25 plates	K15191D-4

Ordering information

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

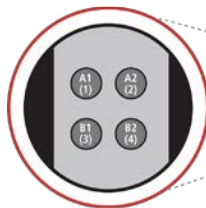
Company Address

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

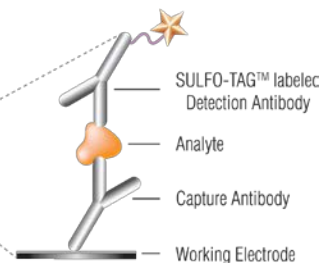
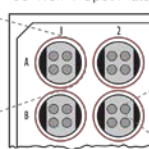
www.mesoscale.com®

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

1. MCP-1
2. NGAL
3. TIMP-1
4. BSA Blocked



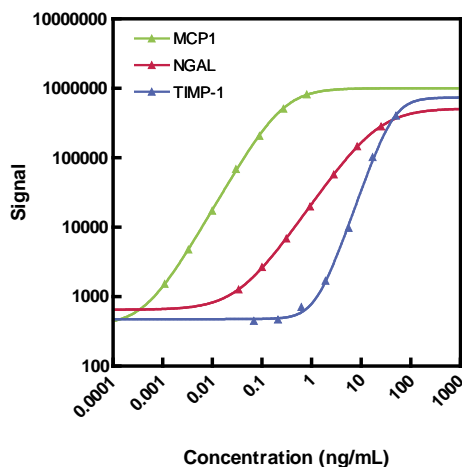
MSD MULTI-SPOT®
96-Well 4-Spot Plate



Non-human primates (NHPs) are often used in pre-clinical research related to HIV, teratology, stroke, xenotransplantation, and several inflammatory disease states. These efforts typically utilize NHPs as a second species in the late phases of drug discovery and development to assess the efficacy and safety of new drugs and their mechanism of action. To aid these efforts, MSD continues to develop assays to monitor the levels of critical inflammatory mediators such as MCP-1, NGAL, and TIMP-1. Increased levels of these markers may play a pivotal role in the pathogenesis of inflammatory diseases such as atherosclerosis, rheumatoid arthritis, and acute kidney injury. TIMP-1 and NGAL expression can indicate inflammatory action following infection, ischemia, and endotoxic insults to the endothelium and stromal matrix. MCP-1 is uniformly upregulated at these sites of vascular disease or injury and is one of the earliest cellular responses to atherogenesis. The assays were tested for sensitivity, specificity, spike recovery, dilution linearity, precision, accuracy, robustness, and sample handling. The panel is available on 96-well 4-spot plates. Representative data from assay development are presented below. Visit www.mesoscale.com for a complete listing of our products.

Assay Sensitivity

The following standard curves illustrate the dynamic range of the assays in the Inflammation Panel 3 (cyno) Kit.



	MCP-1	NGAL	TIMP-1
Average LLOD (ng/mL)	0.00030	0.015	0.36

The lower limit of detection (LLOD) is a calculated concentration based on a signal 2.5 standard deviations above the background (zero calibrator blank). The LLOD shown above was calculated based on 21 runs.

MSD Advantage

- **Multiplexing:** Multiple analytes can be measured in one well using typical sample volumes of 50 µL 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

MSD Toxicology Assays

Spike Recovery

Normal cynomolgus monkey serum, EDTA plasma, and heparin plasma samples were diluted 25-fold then spiked with calibrators at multiple levels throughout the range of the assay. The average percent recovery shown below was calculated from samples with values above the LLOD.

$$\% \text{ Recovery} = \text{measured/expected} * 100$$

Sample Type	MCP-1			NGAL			TIMP-1		
	Spike Conc. (ng/mL)	Average % Recovery	% Range	Spike Conc. (ng/mL)	Average % Recovery	% Range	Spike Conc. (ng/mL)	Average % Recovery	% Range
Serum (N=10)	0.020	109	97–131	0.63	100	93–104	1.3	100	97–105
	0.080	96	85–103	2.5	99	85–106	5.0	103	92–110
	0.32	92	80–100	10	100	86–107	20	98	87–106
EDTA Plasma (N=5)	0.020	113	97–110	0.63	96	90–102	1.3	102	97–110
	0.080	101	99–104	2.5	103	101–105	5.0	108	104–112
	0.32	98	94–103	10	106	102–111	20	113	109–117
Heparin Plasma (N=5)	0.020	107	102–113	0.63	103	100–110	1.3	99	88–108
	0.080	100	99–103	2.5	100	94–106	5.0	100	90–116
	0.32	94	87–100	10	97	94–102	20	92	78–100

Tested Samples

Normal cynomolgus monkey, EDTA plasma, and heparin plasma samples were tested at 25-fold dilutions with the Inflammation Panel 3 (cyno). Median and range of concentrations for each sample set are displayed below. Concentrations are corrected for sample dilution.

Sample Type	Statistic	MCP-1	NGAL	TIMP-1
Serum	Median (ng/mL)	0.083	14	347
	Range (ng/mL)	0.027–0.39	6.4–56	213–501
	Number of Samples	20	20	20
	Samples above LLOD	20	20	20
EDTA Plasma	Median (ng/mL)	0.047	7.6	90
	Range (ng/mL)	0.015–0.081	3.2–19	49–264
	Number of Samples	10	10	10
	Samples above LLOD	10	10	10
Heparin Plasma	Median (ng/mL)	0.036	7.2	48
	Range (ng/mL)	0.0092–0.092	1.5–48	<LLOD–202
	Number of Samples	10	10	10
	Samples above LLOD	10	10	9

Precision

Controls were made by spiking calibrator into cynomolgus monkey serum at levels throughout the range of the assay. Analyte levels were measured using a minimum of 2 replicates on 15 runs over 11 days. Average intra-run %CV is the average %CV of the control replicates on an individual run. Inter-run %CV is the variability of controls across 15 runs.

	Control	Runs	Average Conc. (ng/mL)	Average Intra-run %CV	Inter-run %CV
MCP-1	High	15	0.28	4.6	10.3
	Mid	15	0.028	3.3	5.9
	Low	15	0.0023	3.7	7.3
NGAL	High	15	9.0	3.2	9.2
	Mid	15	1.2	2.9	6.5
	Low	15	0.14	4.1	11.0
TIMP-1	High	15	18	2.4	8.6
	Mid	15	6.8	2.9	8.1
	Low	15	0.91	6.0	11.9

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