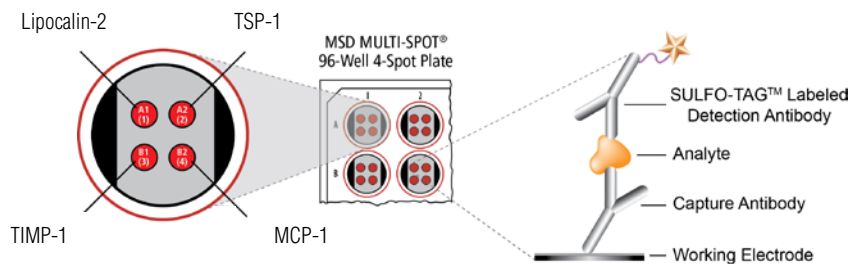


# MSD<sup>®</sup> Inflammation Panel 1 (rat) Kit



For quantitative determination in rat serum and plasma



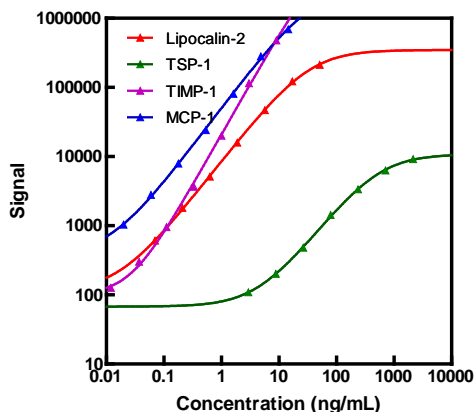
Increased levels of proinflammatory cytokines play a pivotal role in the pathogenesis of inflammatory diseases such as atherosclerosis, rheumatoid arthritis, and acute and chronic kidney injury. TIMP-1 and lipocalin-2 expression is indicative of inflammatory action following infection, ischemia, and endotoxic insults to the endothelium and stromal matrix. MCP-1 is uniformly upregulated at sites of vascular disease or injury and is one of the earliest cellular responses to atherogenesis. TSP-1, a key activator of TGF- $\beta$ 1, mediates wound healing, cell proliferation, and extracellular matrix formation at sites of injury and bleeding. TSP-1, secreted in response to inflammation, promotes the resolution of the inflammatory process and facilitates phagocytosis or apoptosis of damaged cells, protecting tissues from excessive damage. The Inflammation Panel 1 (rat) Kit is validated for the quantitative measurement of lipocalin-2, TSP-1, TIMP-1, and MCP-1 in rat serum and plasma. These assays are tested for sensitivity, specificity, spike recovery, dilution linearity, precision, accuracy, robustness, and sample handling. The assay is available on 96-well 4-spot plates. Representative data from assay development are presented below. Visit [www.mesoscale.com](http://www.mesoscale.com) for a complete listing of our products.

## Catalog Numbers

Inflammation Panel 1 (rat) Kit	
Kit size	
1 plate	K15179C-1
5 plates	K15179C-2
25 plates	K15179C-4

## Assay Sensitivity

The following standard curves illustrate the dynamic range of the assays in the Inflammation Panel 1 (rat).



	Lipocalin-2	TSP-1	TIMP-1	MCP-1
LLOD (ng/mL)	0.00234	1.42	0.00300	0.000840
LLOQ (ng/mL)	0.0330	29.7	0.0567	0.0447
ULOQ (ng/mL)	27.6	766	6.71	11.0

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

The lower limit of quantification (LLOQ) is the lowest concentration where the %CV of the calculated concentration is less than 20% and the percent recovery of the standard is between 80% and 120%.

The upper limit of quantification (ULOQ) is the highest concentration where the %CV of the calculated concentration is less than 25% and the percent recovery of the standard is between 75% and 125%.

## Ordering Information

MSD Customer Service  
Phone: 1-301-947-2085  
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Email: [CustomerService@mesoscale.com](mailto:CustomerService@mesoscale.com)

## Company Address

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## Tested Samples

Serum, EDTA plasma, and heparin plasma samples were collected from normal Sprague-Dawley rats, diluted 100-fold, and tested with the Inflammation Panel 1 (rat). Median and range of concentrations for each sample set are displayed below. Concentrations are corrected for sample dilution.

Sample Type	Statistic	Lipocalin-2	TSP-1	TIMP-1	MCP-1
Serum	Median (ng/mL)	140	15457	9.73	12.7
	Range (ng/mL)	66.3– 2681	11540– 22288	7.19– 17.5	6.39– 30.5
	Number of Samples	12	12	12	12
EDTA Plasma	Median (ng/mL)	129	3330	9.06	6.22
	Range (ng/mL)	5.40– 245	1712– 6225	7.11– 13.4	3.14– 13.9
	Number of Samples	13	13	13	13
Heparin Plasma	Median (ng/mL)	132	5011	6.53	5.31
	Range (ng/mL)	4.30– 235	1842– 8273	4.70– 10.6	3.65– 10.6
	Number of Samples	14	14	14	14

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Not for use in diagnostic procedures.

# MSD Toxicology Assays

## Spike Recovery

Normal rat serum, EDTA plasma, and heparin plasma were diluted 100-fold then spiked with calibrators at multiple levels throughout the range of the assay. Values in italics were less than the assay LLOQ. % Recovery=measured/expected\*100

Sample Type	Lipocalin-2				TSP-1			
	Spike Conc. (ng/mL)	Measured Conc. (ng/mL)	Measured Conc. %CV	% Recovery	Spike Conc. (ng/mL)	Measured Conc. (ng/mL)	Measured Conc. %CV	% Recovery
Serum	0	1.22	4.4		0	129	8.9	
	1.18	2.33	6.9	97	54.4	173	7.4	94
	3.53	4.65	8.4	98	163	264	1.5	90
	10.6	10.9	3.3	92	490	496	3.0	80
EDTA Plasma	0	1.03	1.1		0	<i>21.7</i>	<i>7.2</i>	
	1.18	2.09	8.0	95	54.4	79.0	14.3	105
	3.53	4.07	3.4	89	163	185	9.6	100
	10.6	10.2	10.7	88	490	459	6.2	90
Heparin Plasma	0	0.833	5.2		0	46.5	2.8	
	1.18	1.94	0.3	97	54.4	103	5.6	102
	3.53	4.24	3.3	97	163	202	4.8	96
	10.6	10.8	1.8	95	490	481	7.5	90
Sample Type	TIMP-1				MCP-1			
	Spike Conc. (ng/mL)	Measured Conc. (ng/mL)	Measured Conc. %CV	% Recovery	Spike Conc. (ng/mL)	Measured Conc. (ng/mL)	Measured Conc. %CV	% Recovery
Serum	0	0.0910	8.3		0	0.0550	0.6	
	0.186	0.270	3.2	98	0.307	0.319	4.5	88
	0.559	0.620	4.4	95	0.920	0.931	12.0	95
	1.68	1.77	3.0	100	2.76	2.76	4.6	98
EDTA Plasma	0	0.101	7.0		0	0.0460	4.2	
	0.186	0.270	9.8	94	0.307	0.309	11.5	88
	0.559	0.614	7.2	93	0.920	0.819	4.5	85
	1.68	1.83	12.3	103	2.76	2.63	2.3	94
Heparin Plasma	0	<i>0.0570</i>	<i>9.6</i>		0	0.0570	4.7	
	0.186	0.220	6.5	92	0.307	0.343	3.0	94
	0.559	0.539	8.6	88	0.920	0.934	5.5	96
	1.68	1.70	10.5	98	2.76	2.94	1.0	104

## Precision

Rat serum-based controls (high and mid controls) and diluent-based control (low control) were measured in quadruplicates on 16 runs over 5 days. Average intra-run %CV is the average %CV of the control replicates within an individual run. Inter-run %CV is the variability of controls across 16 runs over 5 days. Inter-lot %CV is the variability of controls across 2 kit lots.

	Control	Runs	Average Conc.(ng/mL)	Average Intra-run %CV	Inter-run %CV	Inter-lot %CV
Lipocalin-2	High	16	8.81	4.6	6.4	4.6
	Mid	16	1.10	3.5	6.1	4.5
	Low	16	0.253	3.5	8.3	5.9
TSP-1	High	16	1118	10.9	14.5	7.1
	Mid	16	707	6.6	9.8	8.7
	Low	16	70.0	5.7	8.6	3.7
TIMP-1	High	16	3.84	3.9	5.2	5.2
	Mid	16	0.518	3.5	8.2	4.6
	Low	16	0.242	3.8	8.3	4.6
MCP-1	High	16	8.64	4.6	5.1	6.1
	Mid	16	0.806	5.9	7.5	9.4
	Low	16	0.0956	6.5	9.4	7.8

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