

MSD® Muscle Injury Panel 2 (rat) Kit

For quantitative determination in rat serum and plasma

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

Catalog Numbers

Muscle Injury Panel 2 (rat) Kit	
Kit size	
1 plate	K15180C-1
5 plates	K15180C-2
25 plates	K15180C-4

Ordering information

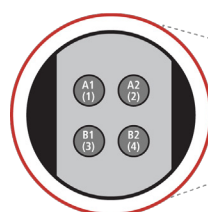
MSD Customer Service
Phone: 1-301-947-2085
Fax: 1-301-990-2776
Email: CustomerService@mesoscale.com

Company Address

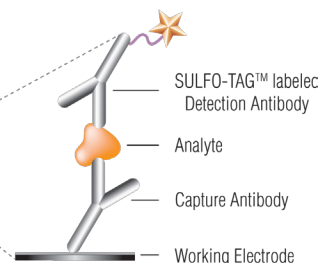
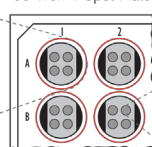
MESO SCALE DISCOVERY®
division of
Meso Scale Diagnostics, LLC.
1601 Research Blvd.
Rockville, MD 20850 USA

www.mesoscale.com®

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



MSD MULTI-SPOT®
96-Well 4-Spot Plate

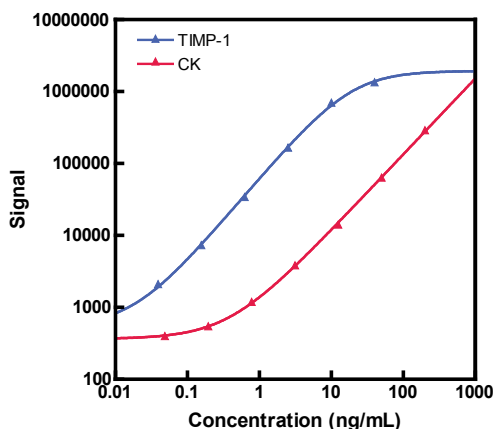


1. BSA Blocked
2. TIMP-1
3. CK
4. BSA Blocked

MSD produces high performance, multiplex panels to measure biomarkers of muscle injury. The Muscle Injury Panel 2 (rat) allows monitoring of energy homeostasis, calcium-dependent protease action, and neuromuscular disturbances that are often associated with muscle toxicity. We developed biomarker assays for creatine Kinase (CK) and TIMP-1 under design control through a phase-gated process that follows "fit-for-purpose" principles, FDA Bioanalytical Method Validation guidance, and CLSI documents. The individual assays are optimized 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 Muscle Injury Panel 2 (rat).



	TIMP-1	CK
Average LLOD (ng/mL)	0.014	0.093

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 20 runs.

MSD Advantage

- **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

MSD Toxicology Assays

Spike Recovery

Normal rat serum, EDTA plasma, and heparin plasma samples were diluted 20-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.

% Recovery=measured/expected*100

Sample Type	TIMP-1			CK		
	Spike Conc. (ng/mL)	Average % Recovery	% Range	Spike Conc. (ng/mL)	Average % Recovery	% Range
Serum (N=6)	1.2	110	93–122	5.9	109	101–115
	3.6	111	101–125	18	110	93–118
	11	115	97–127	53	109	89–116
EDTA Plasma (N=4)	1.2	108	93–124	5.9	112	102–126
	3.6	112	103–122	18	111	104–119
	11	115	101–124	53	109	101–116
Heparin Plasma (N=3)	1.2	107	96–115	5.9	106	97–110
	3.6	109	98–125	18	107	94–114
	11	112	102–129	53	103	95–108

Tested Samples

Serum, EDTA plasma, and heparin plasma samples were collected from normal Sprague-Dawley rats, diluted 20-fold, and tested with the Muscle Injury Panel 2 (rat). Median and range of concentrations for each sample set are displayed below. Concentrations are corrected for sample dilution.

Sample Type	Statistic	TIMP-1	CK
Serum	Median (ng/mL)	11	126
	Range (ng/mL)	6.7–16	1.4–2304
	Number of Samples	12	12
EDTA Plasma	Median (ng/mL)	6.6	60
	Range (ng/mL)	5.0–11	17–698
	Number of Samples	6	6
Heparin Plasma	Median (ng/mL)	8.6	179
	Range (ng/mL)	7.6–12	72–277
	Number of Samples	4	4

Precision

Rat serum based controls (controls 1 and 2) and diluent-based control (control 3) were measured using a minimum of 2 replicates on 17 runs over 9 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 17 runs.

	Control	Plates	Average Conc. (ng/mL)	Average Intra-run %CV	Inter-run %CV
TIMP-1	Control 1	17	11	4.8	8.8
	Control 2	17	0.36	5.7	9.4
CK	Control 1	17	61	4.5	13.2
	Control 2	17	9.2	3.5	15.1
	Control 3	17	2.5	4.6	7.6

MESO SCALE DISCOVERY, MESO SCALE DIAGNOSTICS, MSD, DISCOVERY WORKBENCH, MULTI-ARRAY, MULTI-SPOT, QUICKPLEX, SECTOR, SECTOR PR, SECTOR HTS, SULFO-TAG, V-PLEX, STREPTAVIDIN GOLD, MESO, www.mesoscale.com, SMALL SPOT (design), 96 WELL 1, 4, 7, & 10-SPOT (designs), 384 WELL 1 & 4-SPOT (designs), MSD (design), and SPOT THE DIFFERENCE are trademarks and/or service marks of Meso Scale Diagnostics, LLC.

©2013 Meso Scale Diagnostics, LLC. All rights reserved.

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

