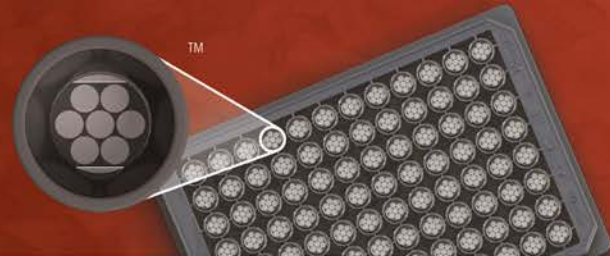# MSD® Rat Demonstration 7-Plex Ultra-Sensitive Kit

For quantitative determination in rat serum and plasma

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

1 = IL-1β
2 = KC/GRO/CINC
3 = IL-4
4 = IL-5
5 = TNF-α
6 = IFN-γ
7 = IL-13

MSD MULTI-SPOT®
96-Well 7-Spot Plate

SULFO-TAG™ Labeled Detection Antibody
Analyte
Capture Antibody
Working Electrode

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 Rat Demonstration 7-Plex Ultra-Sensitive Kit can be used to simultaneously assess the levels of 7 cytokines in serum and plasma samples; it may also be used with 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 human, rodent, canine, bovine, and non-human primate assays.

Catalog Numbers

Rat Demonstration 7-Plex Ultra-Sensitive Kit	
Kit size	
1 plate	K15014C-1
5 plates	K15014C-2
25 plates	K15014C-4

Ordering information

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

Assay Sensitivity

The following standard curves illustrate the dynamic range of the assays in the Rat Demonstration 7-Plex Ultra-Sensitive Kit.

	IL-1β	KC/GRO/CINC	IL-4	IL-5
LLOD (pg/mL)	25	1.3	1.6	25

	TNF-α	IFN-γ	IL-13
LLOD (pg/mL)	23	9.0	2.3

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.
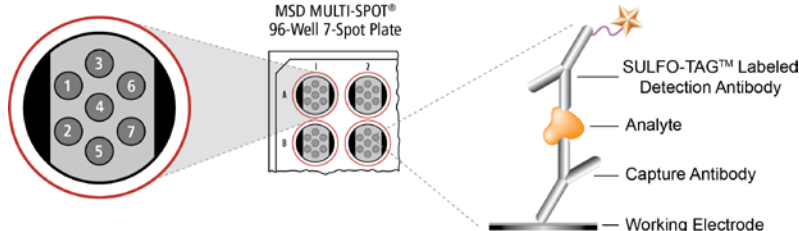
Company Address

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

www.mesoscale.com®

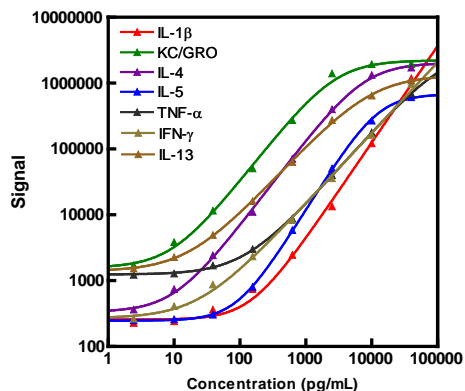For Research Use Only.
Not for use in diagnostic
procedures.

MSD Advantages

➢ **Mutiplexing:** Multiple analytes can be measured in one well using typical sample volumes of 25 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

For a complete list of products, please visit our website at www.mesoscale.com

Spot the Difference™

Specificity

Cross-reactivity of the assays within the same well was measured using a single analyte at 10 000 or 40 000 pg/mL. The high values were chosen to yield a high specific signal and to provide a stringent test for cross-reactivity. The signal measured for the other analytes were used to calculate cross-reactivity. The % cross-reactivity was less than 0.5% for all analytes.

	% Specificity						
	IL-1β	KC/GRO	IL-4	IL-5	TNF-α	IFN-γ	IL-13
IL-1β	**100**	0.12	0.12	0.09	0.04	0.08	0.02
KC/GRO	0.01	**100**	<0.01	<0.01	<0.01	<0.01	<0.01
IL-4	0.20	0.08	**100**	0.15	0.08	0.19	0.04
IL-5	0.08	0.11	0.08	**100**	0.06	0.12	0.04
TNF-α	0.42	0.17	0.24	0.37	**100**	0.11	0.35
IFN-γ	0.08	0.06	0.10	0.15	0.24	**100**	0.06
IL-13	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	**100**

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.

		%CV						
	Level	IL-1β	KC/GRO	IL-4	IL-5	TNF-α	IFN-γ	IL-13
Average Intra-Plate	Low	5.3	2.2	2.6	5.6	3.3	3.3	3.0
	Mid	4.5	2.7	5.4	2.3	3.7	3.5	2.6
	High	4.2	6.0	2.5	4.3	3.7	5.9	4.9
Inter-Plate	Low	8.9	9.2	6.1	9.5	8.0	9.6	10.5
	Mid	8.7	8.4	7.8	9.1	6.0	7.7	8.6
	High	5.4	7.9	9.3	5.4	9.9	7.1	7.1