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### Ordering Information

MSD Customer Service  
Phone: 1-240-314-2795  
Fax: 1-301-990-2776  
Email: [CustomerService@mesoscale.com](mailto:CustomerService@mesoscale.com)

### Scientific Support

Phone: 1-240-314-2798  
Email: [ScientificSupport@mesoscale.com](mailto:ScientificSupport@mesoscale.com)

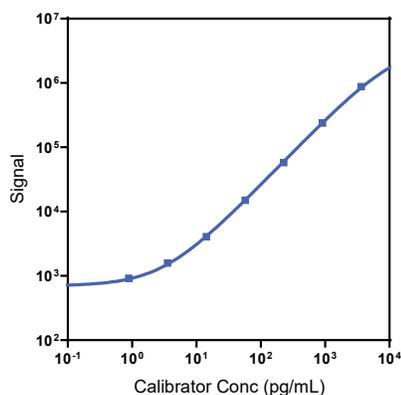
### Company Address

Meso Scale Discovery  
A division of  
Meso Scale Diagnostics, LLC.  
1601 Research Boulevard  
Rockville, MD 20850-3173 USA

Product Options	Catalog Number	Description
<b>Multiplex</b>	K15068M, K25068M	U-PLEX Biomarker Group 1 (NHP)
<b>Singleplex</b>	K156UCK-1/-2/-4	U-PLEX NHP TNF- $\alpha$ Assay with SECTOR™ plates
	K156UCK-21/-22/-24	U-PLEX NHP TNF- $\alpha$ Assay with QuickPlex Ultra™ plates
	K256UCK-2/-4	U-PLEX NHP TNF- $\alpha$ Assay with 384-well plates
<b>Antibody Set</b>	B26UC-2/-3	U-PLEX NHP TNF- $\alpha$ Antibody Set
<b>Assay Protocol</b>	U-PLEX Product Inserts are available at <a href="http://www.mesoscale.com">www.mesoscale.com</a>	

The MESO SCALE DISCOVERY<sup>®</sup> U-PLEX platform was designed to provide ultimate flexibility for detection of biomarkers in a wide variety of sample types. This datasheet provides the representative performance of the U-PLEX<sup>®</sup> NHP TNF- $\alpha$  Assay tested on U-PLEX 96-well SECTOR plates run as a multiplex. The data do not represent the product specifications. Under your experimental conditions, the assay may perform differently from the representative data. U-PLEX assays are offered in either singleplex or multiplex; both are available in 96- or 384-well plates. See a U-PLEX product insert for instrument compatibility.

### Representative Calibration Curve and Sensitivity



Assay	Median LLOD (pg/mL)	LLOD Range (pg/mL)
TNF- $\alpha$	0.54	0.34–0.70

The Calibrator curve was fitted with a 4-parameter logistic model with a  $1/Y^2$  weighting. The lower limit of detection (LLOD) is a calculated concentration corresponding to 2.5X the standard deviations above the background (zero Calibrator).

### Precision

	Control	Average Conc. (pg/mL)	Average Intra-run Conc. %CV	Inter-run Conc. %CV
TNF- $\alpha$	High	1,570	2.5	11.9
	Mid	151	2.4	15.7
	Low	12	3.4	22.0

Controls were made by spiking Calibrator into assay diluent at 3 levels within the quantitative range of the assay. Average intra-run concentration %CV is the average %CV of the control replicates within an individual run. Inter-run concentration %CV is the variability of controls across multiple runs.

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

## Spike Recovery

	Spike Level	Serum		Plasma		Cell Culture Media	
		Average % Recovery	% Recovery Range	Average % Recovery	% Recovery Range	Average % Recovery	% Recovery Range
Cynomolgus Monkey	High	73	63-84	84	74-93	124	119-129
	Mid	82	71-97	90	82-100	126	118-137
	Low	83	70-99	89	83-100	132	128-137
Rhesus Monkey	High	49	19-81	91	86-94	—	—
	Mid	51	12-87	93	88-101	—	—
	Low	67	14-119	93	88-100	—	—

Normal serum, EDTA plasma, and cell culture media were spiked with Calibrator at 3 levels. Spiked samples were diluted 2-fold to determine the expected concentration of the analyte. Samples may benefit from additional dilution with assay diluent to reduce matrix effects. dash (—) = not available

$$\% \text{ Recovery} = (\text{measured concentration} / \text{expected concentration}) \times 100$$

## Tested Samples

	Sample Type	Serum	Plasma	Stimulated PBMC Sample
Cynomolgus Monkey	Median (pg/mL)	NA	NA	142
	Range (pg/mL)	NA	NA	0.10-648
	% Detected	0	0	100
Rhesus Monkey	Median (pg/mL)	NA	NA	733
	Range (pg/mL)	NA	NA	1.9-5,850
	% Detected	0	0	100

Normal serum, EDTA plasma, and cell culture media were diluted 2-fold prior to the assay. NA = not applicable due to 0% detected

## Dilution Linearity

	Fold Dilution	Serum		Plasma			Cell Culture Media		
		Average % Recovery	% Recovery Range	Average % Recovery	% Recovery Range	Average % Recovery	% Recovery Range		
Cynomolgus Monkey	2	119	103-137	2	104	89-122	2	91	91-93
	4	137	120-158	4	118	112-127	4	88	86-90
	8	150	124-181	8	121	112-134	8	92	89-94
Rhesus Monkey	2	183	115-301	2	108	103-113	2	—	—
	4	246	121-466	4	108	107-110	4	—	—
	8	264	122-523	8	109	106-113	8	—	—

Normal serum, EDTA plasma, and cell culture media were spiked with Calibrator and tested at different dilutions. Undiluted samples were tested to determine the expected concentration of the analyte. Samples may benefit from additional dilution with assay diluent to reduce matrix effects. dash (—) = not available

$$\% \text{ Recovery} = (\text{measured concentration} / \text{expected concentration}) \times 100$$

# MSD U-PLEX NHP TNF- $\alpha$

## Specificity

To assess specificity, the TNF- $\alpha$  Antibody Set was tested individually against a larger panel of analytes for nonspecific binding (CTACK, Eotaxin, Eotaxin-2, Eotaxin-3, ENA-78, FLT3L, Fractalkine, G-CSF, GM-CSF, GRO- $\alpha$ , I-309, IFN- $\alpha$ 2a, IFN- $\alpha$ , IL-1 $\alpha$ , IL-1 $\beta$ , IL-1RA, IL-2, IL-2R $\alpha$ , IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12/IL-23p40, IL-12p70, IL-13, IL-15, IL-16, IL-17A, IL-17A/F, IL-17B, IL-17C, IL-17D, IL-17F, IL-18, IL-22, IL-23, IP-10, I-TAC, MCP-1, MCP-2, MCP-3, MCP-4, M-CSF, MDC, MIF, MIP-1 $\alpha$ , MIP-1 $\beta$ , MIP-3 $\alpha$ , MIP-3 $\beta$ , MIP-5, SDF-1 $\alpha$ , TARC, TNF- $\alpha$ , TNF- $\beta$ , TPO, TRAIL, VEGF-A, and YKL-40). Nonspecific binding was less than 0.5%.

$$\% \text{ Nonspecificity} = (\text{nonspecific signal} / \text{specific signal}) \times 100$$

## Diluent Compatibility

Diluents 57 and 3 are provided with this assay. MSD offers a range of assay and antibody diluents for separate purchase. Depending on your assay needs, other diluents may be tested.

## Assay Components

**Calibrator:** TNF- $\alpha$  is included in Calibrator 1 blend. The full-length recombinant protein is expressed in *E. coli*.

**Antibodies:** The U-PLEX NHP TNF- $\alpha$  Assay uses a rat monoclonal antibody for capture and a goat polyclonal antibody for detection.

**Assay generation:** B

**Note:** This datasheet contains representative assay performance data. In custom multiplex formats, the assay may perform differently than the representative data shown.

