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Products Covered

Multiplex Kit	V-PLEX	V-PLEX Plus*
V-PLEX [®] Immune Response Panel (human) Kit	K15742D	K15742G
Individual Assay Kits		
Human GM-CSF V2	K151AVAD	K151AVAG
Human IFN- γ V2	K151AVCD	K151AVCG
Human IL-1 β V2	K151AWCD	K151AWCG
Human IL-2	K151QQD**	K151QQG**
Human IL-6 V2	K151AVED	K151AVEG
Human IL-12p70 V2	K151AWDD	K151AWDG
Human IL-10	K151QUD**	K151QUG**
Human IL-8 V2	K151AWFD	K151AWFG
Human IL-17A V2	K151AWGD	K151AWGG
Human TNF- α V2	K151AVGD	K151AVGG

*V-PLEX Plus kits contain 3 control reagents in addition to the components in the V-PLEX kit.

** Performance represented in this document is based on multiplex kit.

Product insert and certificates of analysis are available at https://www.mesoscale.com/en/products_and_services/assay_kits.

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

Introduction

The MESO SCALE DISCOVERY[®] (MSD) V-PLEX Immune Response Panel (human) Kit measures Granulocyte-macrophage colony-stimulating factor (GM-CSF), Interferon gamma (IFN- γ), Interleukin-1 beta, (IL-1 β), Interleukin-2 (IL-2), Interleukin-6 (IL-6), Interleukin-12p70 (IL-12p70), Interleukin-10 (IL-10), Interleukin-8 (IL-8), Interleukin-17A (IL-17A), and Tumor necrosis factor alpha (TNF- α). The markers of the V-PLEX Immune Response Panel 1 create a powerful multiplex for interrogating immune modulation including early indicators of inflammatory toxicity, T cell expansion, and cytotoxic T cell activity. These factors are produced following immune recognition and engagement of infected, stressed, or malignant target cells in both *in vitro* model systems and *in vivo* biological samples. The utility of this kit extends from autoimmune disorders to cancer therapeutics development.

This multiplex kit is validated using a simplified two-step immunoassay protocol that delivers results in under 3 hours.

V-PLEX Characteristics

V-PLEX biomarker products typically provide sensitivity in the pg/mL or better range, enabling detection across a wide range of analyte expression levels.

V-PLEX assays are available as singleplex kits or multiplex panels, which can be customized to create subsets ideal for specific research needs. Grouping the assays into panels by species, analytical compatibility, expression levels, and expected use ensures optimal and consistent performance.

Available reference standards and controls guarantee that every kit provides consistent performance and delivers results that are compatible with international standards. The inclusion of pre-coated V-PLEX plates ensures a simple and reliable workflow that limits sources of variability.

Analytical Validation Data

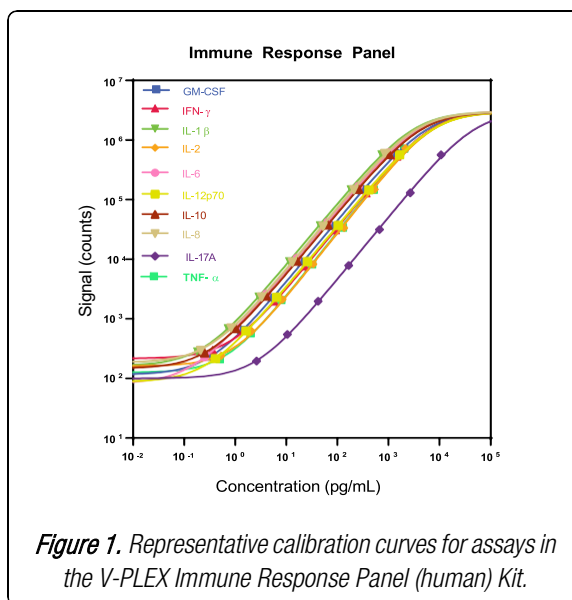
Analytical validation of the Immune Response Panel (human) Kit was performed using three kit lots. The Methodical Mind Enterprise[™] analysis software was used to convert electrochemiluminescence signal to analyte concentrations. Validation data is presented in the following sections.

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

MSD® V-PLEX Immune Response Panel (human) Kit

Calibration Curves

For each plate, a calibration curve was generated by fitting signals from 7 calibrators and a blank to a 4-parameter logistic (4PL) model with $1/Y^2$ weighting. Calibrators were prepared by serial dilution of the recommended top calibrator concentration, with the range designed to ensure the lowest calibrator fell below the expected LLOQ to improve accuracy at low analyte concentrations. Representative calibration curves from one kit lot are presented in Figure 1.



Sensitivity

The lower limit of detection (LLOD) is a calculated concentration corresponding to the mean signal 2.5 standard deviations above the background (zero calibrator). The LLOD is calculated across multiple plates per lot; the median and range for a representative kit lot are reported in Table 1.

Table 1. LLOD, LLOQ, and ULOQ for each analyte in the Immune Response Panel (human) Kit

Analyte	Median LLOD (pg/mL)	LLOQ (pg/mL)	ULOQ (pg/mL)	Dynamic Range (pg/mL)
GM-CSF	0.20	0.676	910	0.20 – 910
IFN- γ	0.27	0.748	1,100	0.27 – 1,100
IL-1 β	0.10	0.351	481	0.10 – 481
IL-2	0.38	1.76	1,310	0.38 – 1,310
IL-6	0.12	0.436	780	0.12 – 780
IL-12p70	0.23	0.479	1,100	0.23 – 1,100
IL-10	0.14	0.354	650	0.14 – 650
IL-8	0.12	0.716	585	0.12 – 585
IL-17A	1.8	4.68	7800	1.8 – 7800
TNF- α	0.36	0.898	1360	0.36 – 1360

The lower limit of quantification (LLOQ) and upper limit of quantification (ULOQ) are established by measuring independent samples near the bottom and top of the calibration range, respectively, using the classical method. Each limit is set at the concentration where the %CV of back-calculated concentration values is less than 20% and concentration recovery is within 80–120% of the nominal value. Both limits were established across multiple kit lots, are verified for each kit lot, and are reported on the lot-specific Certificate of Analysis available at www.mesoscale.com.

The dynamic range of each assay spans from the LLOD to the ULOQ, typically covering 3–5 log units. The quantitative range, defined as the interval between the LLOQ and ULOQ, typically spans 3–4 log units.

MSD® V-PLEX Immune Response Panel (human) Kit

Precision

Independent quality control samples at three different concentrations for each analyte were run on every plate to assess performance of the kit. Precision was based on 48 runs performed by 4 operators. Each control was tested in triplicate over multiple days (Table 2).

Table 2. Intra-run and inter-run %CVs for each analyte in the Immune Response Panel (human) Kit

Analyte	Control	Average Conc. (pg/mL)	Average Intra-run %CV	Inter-run %CV	Inter-lot %CV
GM-CSF	Control 1	660	2.8	4.0	6.2
	Control 2	57	1.5	3.8	4.5
	Control 3	5.5	2.3	5.5	5.0
IFN- γ	Control 1	660	3.0	3.6	2.4
	Control 2	53	1.6	4.7	0.6
	Control 3	4.6	2.2	5.3	3.0
IL-1 β	Control 1	340	3.3	4.2	5.2
	Control 2	30	2.0	4.7	3.5
	Control 3	2.8	3.0	5.7	5.8
IL-2	Control 1	1,300	2.0	5.5	4.6
	Control 2	130	2.3	5.4	4.2
	Control 3	15.6	2.5	6.2	4.7
IL-6	Control 1	460	1.4	3.6	7.0
	Control 2	33	1.8	3.7	2.9
	Control 3	2.4	2.3	5.4	2.9
IL-12p70	Control 1	800	2.3	3.9	4.7
	Control 2	54	1.8	4.3	2.7
	Control 3	3.9	2.5	6.4	4.5
IL-10	Control 1	490	2.8	4.4	4.4
	Control 2	38	2.3	4.6	2.5
	Control 3	2.7	3.3	6.2	4.6
IL-8	Control 1	380	3.1	4.1	3.9
	Control 2	45	2.2	4.6	2.0
	Control 3	4.93	2.1	5.7	2.6
IL-17A	Control 1	4,900	2.9	3.4	3.2
	Control 2	380	2.3	6.9	2.9
	Control 3	30	3.5	6.1	1.6
TNF- α	Control 1	1,000	2.4	3.9	3.9
	Control 2	87	1.9	5.0	2.9
	Control 3	7.2	2.5	5.6	3.9

The intra-run concentration %CV was computed using the triplicates within a plate. The inter-run concentration %CV was computed using all the replicates across the 48 runs. The inter-lot concentration %CV was computed from the average concentration measured within each kit lot. The results show that the average intra-run %CV and inter-lot %CV are all less than 10%. The inter-run %CV is typically less than 10%, well below the acceptance specification of 20%.

Accuracy and precision of controls are measured as part of lot release for each kit lot. Results are reported on the lot-specific Certificate of Analysis available at www.mesoscale.com and meet typical acceptance criteria of %CV less than 20% and recovery between 80–120%.

MSD® V-PLEX Immune Response Panel (human) Kit

Sample Ranges

Serum, EDTA plasma, heparin plasma, and citrate plasma were commercially sourced. Serum and plasma samples were diluted 2-fold. Results for each sample type are displayed in Table 3. Concentrations are corrected for sample dilution. The median and range are calculated from samples with concentrations at or above the LLOD. The percentage detected is the percentage of samples with concentrations at or above the LLOD.

Table 3. Human samples tested using the Immune Response Panel (human) Kit.

Analyte	Statistic	Serum (N=10)	EDTA Plasma (N=10)	Heparin Plasma (N=10)	Citrate Plasma (N=10)
GM-CSF	Median (pg/mL)	ND	ND	0.41	0.47
	Range (pg/mL)	-	-	0.38-0.45	0.37-0.56
	% Detected	0	0	20	20
IFN- γ	Median (pg/mL)	10	10	1.0	0.95
	Range (pg/mL)	1.4-19	1.1-19	0.78-18	0.85-17
	% Detected	20	20	50	70
IL-1 β	Median (pg/mL)	0.31	0.79	1.1	0.29
	Range (pg/mL)	0.30-0.32	0.79-0.80	0.36-2.2	0.24-0.42
	% Detected	20	20	40	60
IL-2	Median (pg/mL)	0.77	ND	0.82	0.93
	Range (pg/mL)	0.77	-	0.63-1.0	0.65-1.0
	% Detected	10	0	20	30
IL-6	Median (pg/mL)	1.5	1.2	2.2	1.6
	Range (pg/mL)	0.31-4.3	0.28-4.6	0.28-9.9	0.46-4.2
	% Detected	100	100	100	90
IL-12p70	Median (pg/mL)	ND	ND	0.64	0.53
	Range (pg/mL)	-	-	0.63-0.64	0.47-0.69
	% Detected	0	0	20	50
IL-10	Median (pg/mL)	0.74	0.64	0.79	0.49
	Range (pg/mL)	0.33-1.3	0.42-1.2	0.44-1.1	0.32-1.5
	% Detected	30	30	40	70
IL-8	Median (pg/mL)	7.2	3.8	5.3	2.6
	Range (pg/mL)	5.6-12	1.2-9.4	2.8-970	0.82-15
	% Detected	100	100	100	100
IL-17A	Median (pg/mL)	ND	ND	6.0	4.8
	Range (pg/mL)	-	-	4.0-6.1	3.5-7.4
	% Detected	0	0	30	70
TNF- α	Median (pg/mL)	8.8	7.8	8.1	7.7
	Range (pg/mL)	6.3-110	5.4-110	4.9-100	4.2-98
	% Detected	100	100	100	100

ND = Not Detectable

MSD[®] V-PLEX Immune Response Panel (human) Kit

Dilution Linearity

To assess linearity, commercially sourced normal human samples were spiked with calibrator then diluted before testing as indicated. Percent recovery at each dilution level was normalized to the dilution-adjusted, 2-fold concentration. The average percent recovery shown below (Table 4) is based on samples within the quantitative range of the assay.

$$\% \text{ recovery} = \frac{\text{measured concentration}}{\text{expected concentration}} \times 100$$

Table 4a. Percent recovery at various dilutions in different sample types.

Analyte	Fold Dil.	Serum (N=8)		EDTA Plasma (N=8)		Heparin Plasma (N=8)		Citrate Plasma (N=8)	
		Av.% Rec.	%Rec. Range	Av.% Rec.	%Rec. Range	Av.% Rec.	%Rec. Range	Av.% Rec.	%Rec. Range
GM-CSF	2	100	-	100	-	100	-	100	-
	4	107	100-111	105	102-109	106	95-111	106	99-111
	8	108	100-114	106	101-111	106	93-114	105	97-113
	16	111	102-118	107	102-114	107	92-116	109	101-112
IFN- γ	2	100	-	100	-	100	-	100	-
	4	105	100-111	105	99-109	106	92-109	106	101-109
	8	107	104-112	105	99-109	107	92-113	107	102-110
	16	108	104-115	106	97-111	106	91-111	108	104-112
IL-1 β	2	100	-	100	-	100	-	100	-
	4	106	102-110	109	103-115	105	92-110	107	101-110
	8	109	103-116	111	103-118	110	96-116	110	105-116
	16	110	103-120	114	107-125	112	96-122	112	108-122
IL-2	2	100	-	100	-	100	-	100	-
	4	99	96-104	99	95-102	96	87-101	97	95-99
	8	96	90-102	97	92-101	96	86-102	94	91-97
	16	96	90-102	99	93-106	95	83-105	96	90-103
IL-6	2	100	-	100	-	100	-	100	-
	4	107	104-111	107	102-110	106	96-111	108	104-114
	8	108	106-114	109	106-112	108	97-114	110	106-117
	16	110	107-117	112	108-118	110	98-118	113	107-116
IL-12p70	2	100	-	100	-	100	-	100	-
	4	103	100-107	105	101-107	104	91-108	105	100-111
	8	104	100-108	106	102-108	106	91-111	106	101-114
	16	104	98-108	108	103-113	106	90-115	107	102-112
IL-10	2	100	-	100	-	100	-	100	-
	4	105	101-110	107	104-111	106	92-111	106	102-113
	8	108	102-116	111	106-118	111	98-119	110	104-119
	16	107	101-117	112	106-119	112	95-125	110	104-117
IL-8	2	100	-	100	-	100	-	100	-
	4	105	99-109	108	106-112	105	94-110	107	104-111
	8	105	96-111	109	105-114	105	95-111	107	102-112
	16	105	102-110	111	105-117	107	96-112	109	105-117
IL-17A	2	100	-	100	-	100	-	100	-
	4	101	92-117	105	97-120	104	88-117	105	100-121
	8	102	87-128	106	95-130	107	88-125	107	98-131
	16	102	88-128	108	95-139	109	89-131	110	99-132
TNF- α	2	100	-	100	-	100	-	100	-
	4	102	96-109	106	101-114	102	90-108	104	98-109
	8	105	92-122	108	98-127	106	91-122	106	98-120
	16	106	90-135	113	100-141	108	92-138	110	100-132

Fold Dil. = Fold Dilution, Av.% Rec. = Average % Recovery, %Rec. Range = % Recovery Range, ND = Not Detectable

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Table 4b. Percent recovery at various dilutions in different cell culture media types.

Analyte	DMEM + Glutamax		Neurobasal Medium		RPMI 1640	
	Av. % Rec.	%Rec. Range	Av. % Rec.	%Rec. Range	Av. % Rec.	%Rec. Range
GM-CSF	109	106-114	106	104-108	110	107-113
IFN- γ	104	100-109	105	103-107	104	104-104
IL-1 β	103	99-106	105	104-106	100	100-101
IL-2	89	82-95	90	86-95	90	88-93
IL-6	104	100-108	106	104-108	105	104-106
IL-12p70	103	100-108	105	103-109	101	101-102
IL-10	101	98-104	105	103-108	104	102-107
IL-8	103	96-109	107	105-111	101	100-102
IL-17A	96	94-100	102	99-106	101	98-105
TNF- α	94	92-97	96	94-99	94	93-95

MSD® V-PLEX Immune Response Panel (human) Kit

Parallelism

To assess linearity, commercially sourced samples were diluted as indicated before testing. Percent recovery at each dilution level was normalized to the dilution-adjusted, 2-fold concentration (Table 5).

Table 5. Percent recovery at various dilutions in different sample types.

Analyte	Fold Dil.	Serum (N=8)		EDTA Plasma (N=8)		Heparin Plasma (N=8)		Citrate Plasma (N=8)	
		Av.% Rec.	%Rec. Range	Av.% Rec.	%Rec. Range	Av.% Rec.	%Rec. Range	Av.% Rec.	%Rec. Range
GM-CSF	2	ND	ND	ND	ND	ND	ND	ND	ND
	4	ND	ND	ND	ND	ND	ND	ND	ND
	8	ND	ND	ND	ND	ND	ND	ND	ND
	16	ND	ND	ND	ND	ND	ND	ND	ND
IFN- γ	2	100	-	100	-	100	-	100	-
	4	103	103 - 103	99	99 - 99	109	109 - 109	104	104 - 104
	8	103	103 - 103	98	98 - 98	108	108 - 108	101	101 - 101
	16	104	104 - 104	94	94 - 94	115	115 - 115	99	99 - 99
IL-1 β	2	ND	ND	100	-	100	-	ND	ND
	4	ND	ND	ND	ND	121	119 - 123	ND	ND
	8	ND	ND	ND	ND	ND	ND	ND	ND
	16	ND	ND	ND	ND	ND	ND	ND	ND
IL-2	2	ND	ND	ND	ND	ND	ND	ND	ND
	4	ND	ND	ND	ND	ND	ND	ND	ND
	8	ND	ND	ND	ND	ND	ND	ND	ND
	16	ND	ND	ND	ND	ND	ND	ND	ND
IL-6	2	100	-	100	-	100	-	100	-
	4	261	108 - 854	108	104 - 114	113	108 - 118	111	109 - 112
	8	111	111 - 111	116	113 - 119	113	100 - 121	112	112 - 112
	16	ND	ND	ND	ND	110	100 - 120	ND	ND
IL-12p70	2	ND	ND	ND	ND	ND	ND	ND	ND
	4	ND	ND	ND	ND	ND	ND	ND	ND
	8	ND	ND	ND	ND	ND	ND	ND	ND
	16	ND	ND	ND	ND	ND	ND	ND	ND
IL-10	2	100	-	100	-	100	-	100	-
	4	112	112 - 112	117	117 - 117	121	121 - 121	ND	ND
	8	ND	ND	ND	ND	ND	ND	ND	ND
	16	ND	ND	ND	ND	ND	ND	ND	ND
IL-8	2	100	-	100	-	100	-	100	-
	4	107	102 - 111	103	99 - 111	111	106 - 120	108	105 - 115
	8	107	99 - 113	108	103 - 117	113	107 - 120	106	100 - 111
	16	106	106 - 106	ND	ND	119	113 - 126	120	107 - 133
IL-17A	2	ND	ND	ND	ND	100	-	ND	ND
	4	ND	ND	ND	ND	304	304 - 304	ND	ND
	8	ND	ND	ND	ND	ND	ND	ND	ND
	16	ND	ND	ND	ND	ND	ND	ND	ND
TNF- α	2	100	-	100	-	100	-	100	-
	4	106	100 - 114	107	100 - 114	108	101 - 115	103	97 - 112
	8	112	99 - 128	109	97 - 127	116	98 - 131	110	94 - 130
	16	118	101 - 146	130	109 - 151	124	93 - 155	125	101 - 148

Fold Dil. = Fold Dilution, Av.% Rec. = Average % Recovery, %Rec. Range = % Recovery Range, ND = Not Detectable

MSD[®] V-PLEX Immune Response Panel (human) Kit

Spike Recovery

Spike recovery measurements of different sample types were evaluated throughout the quantitative range of the assays (Table 6). Tested matrices were cell culture media and commercially sourced normal human samples. Samples were spiked with recombinant analyte protein at three levels (high, mid, and low) and then diluted 2-fold. The average percent recovery for each sample type is reported along with %CV and percent recovery range.

$$\% \text{ recovery} = \frac{\text{measured concentration}}{\text{expected concentration}} \times 100$$

Table 6a. Spike recovery measurements of sample matrices evaluated in the V-PLEX Immune Response Panel (human) Kit.

Analyte	Serum (N=8)			EDTA Plasma (N=8)			Heparin Plasma (N=8)			Citrate Plasma (N=8)		
	Av.% Rec.	%CV	%Rec. Range	Av.% Rec.	%CV	%Rec. Range	Av.% Rec.	%CV	%Rec. Range	Av.% Rec.	%CV	%Rec. Range
GM-CSF	103	2.4	94 – 112	101	2.1	90 – 116	104	2.7	93 – 117	102	2.5	93 – 111
IFN- γ	99	2.1	90 – 108	102	2.0	91 – 116	98	2.0	89 – 105	97	2.0	91 – 103
IL-1 β	89	1.9	76 – 98	89	1.7	78 – 106	88	2.3	75 – 99	94	1.7	85 – 100
IL-2	104	3.8	89 – 125	100	3.4	85 – 120	107	4.1	93 – 134	116	3.5	102 – 128
IL-6	88	3.2	80 – 98	91	2.0	83 – 107	91	2.0	84 – 104	93	1.7	86 – 100
IL-12p70	98	2.4	89 – 107	102	1.9	95 – 114	101	2.3	93 – 111	103	1.8	94 – 108
IL-10	95	2.0	83 – 104	95	1.8	85 – 109	97	1.8	88 – 109	96	2.1	92 – 103
IL-8	91	3.6	81 – 102	94	2.4	86 – 106	95	2.2	84 – 105	95	2.2	88 – 101
IL-17A	98	4.3	79 – 121	101	2.6	79 – 117	98	3.3	79 – 113	101	2.8	82 – 109
TNF- α	88	4.4	58 – 104	90	3.6	60 – 109	90	4.1	58 – 110	95	3.8	60 – 109

Av.% Rec. = Average % Recovery, %Rec. Range = % Recovery Range

Table 6b. Spike recovery measurements of cell culture media evaluated in the V-PLEX Immune Response Panel (human) Kit.

Analyte	DMEM + Glutamax			Neurobasal medium			RPMI		
	Av.% Rec.	%CV	%Rec. Range	Av.% Rec.	%CV	%Rec. Range	Av.% Rec.	%CV	%Rec. Range
GM-CSF	101	3.2	95 - 105	101	2.6	97 - 104	99	4.6	95 - 104
IFN- γ	99	3.2	92 - 102	100	3.0	95 - 103	99	3.4	95 - 101
IL-1 β	104	2.5	100 - 108	104	2.3	102 - 109	106	2.7	104 - 109
IL-2	119	4.2	109 - 125	121	5.0	111 - 126	116	5.6	109 - 120
IL-6	99	3.3	95 - 105	99	3.2	93 - 101	100	5.1	95 - 105
IL-12p70	106	1.9	104 - 109	107	2.0	103 - 110	109	2.6	106 - 112
IL-10	99	3.5	94 - 106	100	1.8	98 - 103	100	1.6	98 - 101
IL-8	96	3.9	92 - 102	97	5.3	89 - 102	99	4.0	95 - 103
IL-17A	111	2.7	104 - 114	108	3.6	101 - 112	109	2.2	106 - 111
TNF- α	112	3.7	104 - 116	115	2.2	111 - 118	110	3.9	106 - 114

Specificity

To assess specificity, each assay in the panel was tested individually. Nonspecific binding was less than 1% for all assays in the kit. Non-specificity reported in the COA for this panel is measured using blended calibrators and individual detection antibodies.

$$\% \text{ nonspecificity} = \frac{\text{nonspecific signal}}{\text{specific signal}} \times 100$$



MSD® V-PLEX Immune Response Panel (human) Kit

Assay Components

Calibrators

Table 7. Expression systems used for the calibrators in the Immune Response Panel (human) Kit.

Calibrator	Source
GM-CSF	<i>E. coli</i>
IFN- γ	<i>E. coli</i>
IL-1 β	<i>E. coli</i>
IL-2	<i>E. coli</i>
IL-6	<i>E. coli</i>
IL-12p70	Sf21
IL-10	Sf21
IL-8	<i>E. coli</i>
IL-17A	<i>E. coli</i>
TNF- α	<i>E. coli</i>

Calibration

All the assays in the panel are calibrated against a reference calibrator generated at MSD.

MSD reference calibrators for the following analytes were evaluated against the NIBSC/WHO International Standards; the ratios of International Units of biological activity per mL (IU/mL) of NIBSC/WHO standard relative to pg/mL of MSD calibrator are shown in the table below. To convert MSD concentrations to biological activity relative to the NIBSC/WHO International Standard, multiply the MSD concentration by the ratio provided.

Table 9. NIBSC to MSD conversion for analytes in the Immune Response Panel (human) Kit.

Analyte	Standard	NIBSC pg/mL : MSD pg/mL	NIBSC IU/mL : MSD pg/mL
GM-CSF	88/646	0.344	0.00344
IFN- γ	87/586	1.87	0.0373
IL-1 β	86/680	0.739	0.0739
IL-2	86/500	1.01	0.0139
IL-6	21/308	1.23	0.0529
IL-12p70	95/544	3.43	0.0343
IL-10	93/722	1.86	0.00927
IL-8	89/520	1.38	0.00138
IL-17A	01/420	0.755	0.00755
TNF- α	12/154	1.45	0.0623

Antibodies

Table 10. Source of the capture and detection antibodies in the Immune Response Panel (human) Kit.

Antigen	Capture	Detection	Assay Generation
GM-CSF	Recombinant Monoclonal	Recombinant Monoclonal	B
IFN- γ	Recombinant Monoclonal	Recombinant Monoclonal	D
IL-1 β	Recombinant Monoclonal	Recombinant Monoclonal	D
IL-2	Recombinant Monoclonal	Recombinant Monoclonal	B
IL-6	Recombinant Monoclonal	Recombinant Monoclonal	D
IL-12p70	Recombinant Monoclonal	Recombinant Monoclonal	C
IL-10	Recombinant Monoclonal	Recombinant Monoclonal	B
IL-8	Recombinant Monoclonal	Recombinant Monoclonal	C
IL-17A	Recombinant Monoclonal	Recombinant Monoclonal	C
TNF- α	Recombinant Monoclonal	Recombinant Monoclonal	C

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