

## CERTIFICATE OF ANALYSIS

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**Product Description:** V-PLEX® and V-PLEX Plus Cytokine Panel 1 (mouse) Kit  
**Kit Catalog Numbers:** K15245-Series  
**Kit Lot Number:** K0080880  
**Expiration Date:** 30 Nov 2019

**Acceptance Data/ Percent Recovery Specifications:**

Spot	Name	Calibrator		Cytokine Panel 1 (mouse) Control 1		Cytokine Panel 1 (mouse) Control 2		Cytokine Panel 1 (mouse) Control 3	
		Recovery	CV	Recovery	CV	Recovery	CV	Recovery	CV
1	ms IL-9	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
2	ms MCP-1	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
3	ms IL-33	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
4	ms IL-27p28/IL-30	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
5	ms IL-15	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
6	ms IL-17A/F	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
7	ms MIP-1α	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
8	ms IP-10	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%
9	ms MIP-2	80% - 120%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%	75% - 125%	< 20%

Spot	Name	LLOQ			ULOQ		
		Value	Recovery	CV	Value	Recovery	CV
1	ms IL-9	21.9	75% - 125%	< 20%	2600	75% - 125%	< 20%
2	ms MCP-1	4.42	75% - 125%	< 20%	325	75% - 125%	< 20%
3	ms IL-33	1.85	75% - 125%	< 20%	1950	75% - 125%	< 20%
4	ms IL-27p28/IL-30	5.91	75% - 125%	< 20%	6500	75% - 125%	< 20%
5	ms IL-15	43.2	75% - 125%	< 20%	26000	75% - 125%	< 20%
6	ms IL-17A/F	1.39	75% - 125%	< 20%	1620	75% - 125%	< 20%
7	ms MIP-1α	0.380	75% - 125%	< 20%	390	75% - 125%	< 20%
8	ms IP-10	2.15	75% - 125%	< 20%	650	75% - 125%	< 20%
9	ms MIP-2	0.580	75% - 125%	< 20%	423	75% - 125%	< 20%

**Acceptance Data/ Non Specific Binding Specifications:**

Spot	Name	NSB Spec
1	ms IL-9	< 1.0%
2	ms MCP-1	< 1.0%
3	ms IL-33	< 1.0%
4	ms IL-27p28/IL-30	< 1.0%
5	ms IL-15	< 1.0%
6	ms IL-17A/F	< 1.0%
7	ms MIP-1α	< 1.0%
8	ms IP-10	< 1.0%
9	ms MIP-2	< 1.0%

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**Stock Concentration of Material Tested :**

Spot	Name	Item	Conc	Units
1	ms IL-9	Calibrator	3970	pg/mL
		Cytokine Panel 1 (mouse) Control 1	3430	pg/mL
		Cytokine Panel 1 (mouse) Control 2	835	pg/mL
		Cytokine Panel 1 (mouse) Control 3	219	pg/mL
2	ms MCP-1	Calibrator	482	pg/mL
		Cytokine Panel 1 (mouse) Control 1	489	pg/mL
		Cytokine Panel 1 (mouse) Control 2	149	pg/mL
		Cytokine Panel 1 (mouse) Control 3	64.9	pg/mL
3	ms IL-33	Calibrator	3320	pg/mL
		Cytokine Panel 1 (mouse) Control 1	2250	pg/mL
		Cytokine Panel 1 (mouse) Control 2	252	pg/mL
		Cytokine Panel 1 (mouse) Control 3	33.7	pg/mL
4	ms IL-27p28/IL-30	Calibrator	10400	pg/mL
		Cytokine Panel 1 (mouse) Control 1	8890	pg/mL
		Cytokine Panel 1 (mouse) Control 2	1310	pg/mL
		Cytokine Panel 1 (mouse) Control 3	193	pg/mL
5	ms IL-15	Calibrator	38100	pg/mL
		Cytokine Panel 1 (mouse) Control 1	30000	pg/mL
		Cytokine Panel 1 (mouse) Control 2	4440	pg/mL
		Cytokine Panel 1 (mouse) Control 3	795	pg/mL
6	ms IL-17A/F	Calibrator	2530	pg/mL
		Cytokine Panel 1 (mouse) Control 1	2170	pg/mL
		Cytokine Panel 1 (mouse) Control 2	228	pg/mL
		Cytokine Panel 1 (mouse) Control 3	20.3	pg/mL
7	ms MIP-1 $\alpha$	Calibrator	619	pg/mL
		Cytokine Panel 1 (mouse) Control 1	585	pg/mL
		Cytokine Panel 1 (mouse) Control 2	50.1	pg/mL
		Cytokine Panel 1 (mouse) Control 3	4.41	pg/mL
8	ms IP-10	Calibrator	910	pg/mL
		Cytokine Panel 1 (mouse) Control 1	883	pg/mL
		Cytokine Panel 1 (mouse) Control 2	251	pg/mL
		Cytokine Panel 1 (mouse) Control 3	82.7	pg/mL
9	ms MIP-2	Calibrator	635	pg/mL
		Cytokine Panel 1 (mouse) Control 1	563	pg/mL
		Cytokine Panel 1 (mouse) Control 2	66.6	pg/mL
		Cytokine Panel 1 (mouse) Control 3	10	pg/mL

Controls tested may not be the same lot as shipped.

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## Standard Curve Data:

ms IL-9 - Spot 1		
Conc. pg/mL	ECL Signal	%CV
3970	652,000	2.6
993	185,000	1.5
248	39,900	4.2
62.0	9,750	2.3
15.5	3,010	4.3
3.88	1,550	5.5
0.969	1,130	11.0
0.00	1,080	14.0

ms MCP-1 - Spot 2		
Conc. pg/mL	ECL Signal	%CV
482	823,000	3.5
121	111,000	4.2
30.1	14,600	4.9
7.53	2,550	4.0
1.88	805	5.7
0.471	411	7.4
0.118	316	6.5
0.00	283	5.0

ms IL-33 - Spot 3		
Conc. pg/mL	ECL Signal	%CV
3320	809,000	2.9
830	249,000	2.2
208	65,800	2.8
51.9	16,200	2.1
13.0	4,340	3.0
3.24	1,280	4.1
0.811	565	4.6
0.00	310	5.9

ms IL-27p28/IL-30 - Spot 4		
Conc. pg/mL	ECL Signal	%CV
10400	837,000	2.1
2600	298,000	1.7
650	79,200	1.9
163	20,000	3.6
40.6	4,990	1.8
10.2	1,510	1.9
2.54	568	4.2
0.00	298	14.0

ms IL-15 - Spot 5		
Conc. pg/mL	ECL Signal	%CV
38100	324,000	4.8
9530	128,000	4.9
2380	36,000	1.7
595	8,530	4.2
149	2,470	3.8
37.2	928	3.8
9.30	566	4.7
0.00	446	5.9

ms IL-17A/F - Spot 6		
Conc. pg/mL	ECL Signal	%CV
2530	1,020,000	2.2
633	284,000	3.0
158	69,900	4.3
39.5	17,500	3.2
9.88	4,710	3.1
2.47	1,380	4.0
0.618	529	5.6
0.00	254	5.5

ms MIP-1 $\alpha$ - Spot 7		
Conc. pg/mL	ECL Signal	%CV
619	1,230,000	2.2
155	285,000	2.7
38.7	66,600	3.6
9.67	16,100	3.2
2.42	4,150	4.3
0.604	1,280	3.9
0.151	539	4.5
0.00	296	5.2

ms IP-10 - Spot 8		
Conc. pg/mL	ECL Signal	%CV
910	867,000	3.3
228	289,000	2.0
56.9	72,200	2.6
14.2	18,800	3.0
3.55	4,660	4.1
0.889	1,470	4.3
0.222	620	7.6
0.00	393	12.0

ms MIP-2 - Spot 9		
Conc. pg/mL	ECL Signal	%CV
635	1,110,000	2.4
159	317,000	1.9
39.7	81,300	1.6
9.92	20,100	5.1
2.48	5,170	2.7
0.620	1,520	3.2
0.155	560	4.3
0.00	252	9.0

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**Components:**

Description	Lot Number	Storage Temperature	Expiration Date
Cytokine Panel 1 (mouse) Plate	Z0046622	2-8°C	31 Jan 2020
Anti-ms IL-9 Antibody	D0080988	2-8°C	31 Dec 2019
Anti-ms MCP-1 Antibody	D0081034	2-8°C	31 Mar 2020
Anti-ms IL-33 Antibody	D0080972	2-8°C	30 Nov 2019
Anti-ms IL-27p28/IL-30 Antibody	D0080973	2-8°C	30 Nov 2019
Anti-ms IL-15 Antibody	D0080974	2-8°C	30 Nov 2019
Anti-ms IL-17A/F Antibody	D0080975	2-8°C	30 Nov 2019
Anti-ms MIP-1 $\alpha$ Antibody	D0081035	2-8°C	31 Mar 2020
Anti-ms IP-10 Antibody	D0080977	2-8°C	30 Nov 2019
Anti-ms MIP-2 Antibody	D0080989	2-8°C	30 Nov 2019
Cytokine Panel 1 (mouse) Calibrator Blend	A0080135	2-8°C	30 Jun 2022
Diluent 41	M0410018	$\leq -10^{\circ}\text{C}$	30 Nov 2019
Diluent 45	M0450019	$\leq -10^{\circ}\text{C}$	31 Dec 2019
MSD Read Buffer T	Not Kit Specific	Not Kit Specific	N/A

Additional Components Included in V-PLEX Plus	
Plate Seals	Not Kit Specific
Wash Buffer (20x), 100 mL	Not Kit Specific
Cytokine Panel 1 (mouse) Control 1	Not Kit Specific
Cytokine Panel 1 (mouse) Control 2	Not Kit Specific
Cytokine Panel 1 (mouse) Control 3	Not Kit Specific

**Statement:**

The above product is intended for Research Use Only. Not for use in Diagnostic Procedures.

	Name	Function	Signature	Date
<b>Review/Approval</b>	Dawn Stollar	Quality Assurance	<i>Dawn Stollar</i>	22 DEC 2017