

CERTIFICATE OF ANALYSIS

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Product Description: V-PLEX® and V-PLEX Plus Cytokine Panel 1 (human) Kit

Kit Catalog Numbers: K151RC-Series; K151RG-Series; K156RC-Series; K156RG-Series; K15050-Series; K15057D-Series

Kit Lot Number: K0081209

Expiration Date: 30 Sep 2021

Acceptance Data/ Percent Recovery Specifications:

Spot	Name	Calibrator		Cytokine Panel 1 (human) Control 1		Cytokine Panel 1 (human) Control 2		Cytokine Panel 1 (human) Control 3	
		Recovery	CV	Recovery	CV	Recovery	CV	Recovery	CV
1	GM-CSF	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
2	IL-1 α	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
3	IL-5	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
4	IL-7	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
5	IL-12/23p40	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
6	IL-15	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
7	IL-16	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
8	IL-17A	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
9	TNF- β	80% - 120%	< 20%	80% - 120%*	< 20%	80% - 120%*	< 20%	80% - 120%*	< 20%
10	VEGF	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%

Spot	Name	LLOQ			ULOQ		
		Value	Recovery	CV	Value	Recovery	CV
1	GM-CSF	0.842	80% - 120%	< 20%	750	80% - 120%	< 20%
2	IL-1 α	2.85	80% - 120%	< 20%	278	80% - 120%	< 20%
3	IL-5	4.41	80% - 120%	< 20%	562	80% - 120%	< 20%
4	IL-7	0.546	80% - 120%	< 20%	563	80% - 120%	< 20%
5	IL-12/23p40	1.32	80% - 120%	< 20%	2250	80% - 120%	< 20%
6	IL-15	0.774	80% - 120%	< 20%	525	80% - 120%	< 20%
7	IL-16	19.1	80% - 120%*	< 20%	1870	80% - 120%	< 20%
8	IL-17A	3.19	80% - 120%	< 20%	3650	80% - 120%	< 20%
9	TNF- β	0.465	80% - 120%	< 20%	458	80% - 120%	< 20%
10	VEGF	7.70	80% - 120%	< 20%	562	80% - 120%	< 20%

Acceptance Data/ Non Specific Binding Specifications:

Spot	Name	NSB Spec
1	GM-CSF	< 1.0%
2	IL-1 α	< 1.0%
3	IL-5	< 1.0%
4	IL-7	< 1.0%
5	IL-12/23p40	< 1.0%
6	IL-15	< 1.0%
7	IL-16	< 1.0%
8	IL-17A	< 1.0%
9	TNF- β	< 1.0%
10	VEGF	< 1.0%

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Stock Concentration of Material Tested :

Spot	Name	Item	Conc	Units
1	GM-CSF	Calibrator	1145	pg/mL
		Cytokine Panel 1 (human) Control 1	408	pg/mL
		Cytokine Panel 1 (human) Control 2	64.1	pg/mL
		Cytokine Panel 1 (human) Control 3	9.7	pg/mL
2	IL-1 α	Calibrator	454	pg/mL
		Cytokine Panel 1 (human) Control 1	183	pg/mL
		Cytokine Panel 1 (human) Control 2	58.1	pg/mL
		Cytokine Panel 1 (human) Control 3	16.3	pg/mL
3	IL-5	Calibrator	868	pg/mL
		Cytokine Panel 1 (human) Control 1	343	pg/mL
		Cytokine Panel 1 (human) Control 2	109	pg/mL
		Cytokine Panel 1 (human) Control 3	32.7	pg/mL
4	IL-7	Calibrator	859	pg/mL
		Cytokine Panel 1 (human) Control 1	346	pg/mL
		Cytokine Panel 1 (human) Control 2	58	pg/mL
		Cytokine Panel 1 (human) Control 3	7.79	pg/mL
5	IL-12/23p40	Calibrator	3485	pg/mL
		Cytokine Panel 1 (human) Control 1	1430	pg/mL
		Cytokine Panel 1 (human) Control 2	204	pg/mL
		Cytokine Panel 1 (human) Control 3	32.6	pg/mL
6	IL-15	Calibrator	877	pg/mL
		Cytokine Panel 1 (human) Control 1	286	pg/mL
		Cytokine Panel 1 (human) Control 2	45	pg/mL
		Cytokine Panel 1 (human) Control 3	8	pg/mL
7	IL-16	Calibrator	3075	pg/mL
		Cytokine Panel 1 (human) Control 1	1200	pg/mL
		Cytokine Panel 1 (human) Control 2	334	pg/mL
		Cytokine Panel 1 (human) Control 3	100	pg/mL
8	IL-17A	Calibrator	5740	pg/mL
		Cytokine Panel 1 (human) Control 1	2020	pg/mL
		Cytokine Panel 1 (human) Control 2	277	pg/mL
		Cytokine Panel 1 (human) Control 3	42.9	pg/mL
9	TNF- β	Calibrator	646	pg/mL
		Cytokine Panel 1 (human) Control 1	247	pg/mL
		Cytokine Panel 1 (human) Control 2	37.9	pg/mL
		Cytokine Panel 1 (human) Control 3	5.75	pg/mL
10	VEGF	Calibrator	1080	pg/mL
		Cytokine Panel 1 (human) Control 1	384	pg/mL
		Cytokine Panel 1 (human) Control 2	114	pg/mL
		Cytokine Panel 1 (human) Control 3	37.5	pg/mL

Controls tested may not be the same lot as shipped.

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Standard Curve Data:

GM-CSF - Spot 1		
Conc. pg/mL	ECL Signal	%CV
1150	405,000	2.4
286	118,000	1.9
71.6	31,700	3.1
17.9	8,660	3.6
4.47	2,440	2.1
1.12	822	4.4
0.280	350	4.9
0.00	251	14.0

IL-1 α - Spot 2		
Conc. pg/mL	ECL Signal	%CV
454	260,000	3.4
114	74,300	1.8
28.4	20,000	4.5
7.09	5,590	4.1
1.77	1,920	4.4
0.443	979	8.5
0.111	674	6.6
0.00	649	9.1

IL-5 - Spot 3		
Conc. pg/mL	ECL Signal	%CV
868	568,000	4.4
217	157,000	4.3
54.3	42,300	4.1
13.6	11,000	4.5
3.39	3,250	3.8
0.848	1,050	1.7
0.212	492	4.6
0.00	285	8.1

IL-7 - Spot 4		
Conc. pg/mL	ECL Signal	%CV
859	565,000	2.2
215	143,000	2.4
53.7	35,800	1.8
13.4	9,470	2.6
3.36	2,650	2.7
0.839	840	4.2
0.210	347	8.4
0.00	200	12.0

IL-12/23p40 - Spot 5		
Conc. pg/mL	ECL Signal	%CV
3490	634,000	3.2
871	188,000	2.0
218	51,200	2.5
54.5	13,600	3.4
13.6	3,780	2.5
3.40	1,110	3.1
0.851	395	3.9
0.00	190	15.0

IL-15 - Spot 6		
Conc. pg/mL	ECL Signal	%CV
877	724,000	3.0
219	138,000	2.4
54.8	34,200	3.1
13.7	9,020	3.5
3.43	2,560	4.5
0.856	747	4.0
0.214	298	7.9
0.00	147	19.0

IL-16 - Spot 7		
Conc. pg/mL	ECL Signal	%CV
3080	732,000	2.5
769	164,000	3.7
192	29,800	2.3
48.0	6,010	3.9
12.0	1,640	3.7
3.00	542	6.7
0.751	259	5.4
0.00	176	13.0

IL-17A - Spot 8		
Conc. pg/mL	ECL Signal	%CV
5740	1,390,000	5.1
1440	405,000	3.2
359	109,000	2.8
89.7	28,600	5.0
22.4	7,470	4.0
5.61	2,020	3.7
1.40	621	7.5
0.00	154	23.0

TNF- β - Spot 9		
Conc. pg/mL	ECL Signal	%CV
646	893,000	3.3
162	211,000	2.4
40.4	50,800	2.3
10.1	13,000	2.6
2.52	3,850	2.4
0.631	1,130	3.0
0.158	446	4.2
0.00	236	8.3

VEGF - Spot 10		
Conc. pg/mL	ECL Signal	%CV
1080	769,000	2.2
270	153,000	2.3
67.5	26,900	2.3
16.9	5,530	3.6
4.22	1,570	5.0
1.05	525	6.8
0.264	302	6.6
0.00	211	7.9

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Components:

Description	Lot Number	Storage Temperature	Expiration Date
Cytokine Panel 1 (human) Plate	Z0047047	2-8°C	31 Oct 2021
Anti-hu GM-CSF Antibody	D0081205	2-8°C	30 Jun 2022
Anti-hu IL-1 α Antibody	D0081144	2-8°C	28 Feb 2022
Anti-hu IL-5 Antibody	D0081184	2-8°C	30 Apr 2022
Anti-hu IL-7 Antibody	D0081185	2-8°C	30 Apr 2022
Anti-hu IL-12/23p40 Antibody	D0081186	2-8°C	30 Apr 2022
Anti-hu IL-15 Antibody	D0081145	2-8°C	30 Apr 2022
Anti-hu IL-16 Antibody	D0081207	2-8°C	31 May 2022
Anti-hu IL-17A Antibody	D0081187	2-8°C	30 Apr 2022
Anti-hu TNF- β Antibody	D0081147	2-8°C	28 Feb 2022
Anti-hu VEGF Antibody	D0081148	2-8°C	28 Feb 2022
Cytokine Panel 1 (human) Calibrator Blend	A0080188	2-8°C	30 Nov 2023
Diluent 43	M0430032	$\leq -10^{\circ}\text{C}$	30 Sep 2021
Diluent 3	M0030089	$\leq -10^{\circ}\text{C}$	30 Sep 2021
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), 100mL	Not Kit Specific
Cytokine Panel 1 (human) Control 1	Not Kit Specific
Cytokine Panel 1 (human) Control 2	Not Kit Specific
Cytokine Panel 1 (human) 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
Review/Approval	Karen Hamilla	Quality		24 JUN 2019