

CERTIFICATE OF ANALYSIS

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

Kit Catalog Numbers: K15050-Series, K15057-Series, K151RC-Series, K151RG-Series, K156RG-Series, K156RC-Series, K151RE-Series, K156RE-Series

Kit Lot Number: K0081455

Expiration Date: 31 May 2022

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	1260	pg/mL
		Cytokine Panel 1 (human) Control 1	394	pg/mL
		Cytokine Panel 1 (human) Control 2	61.7	pg/mL
		Cytokine Panel 1 (human) Control 3	8.11	pg/mL
2	IL-1 α	Calibrator	320	pg/mL
		Cytokine Panel 1 (human) Control 1	174	pg/mL
		Cytokine Panel 1 (human) Control 2	57.6	pg/mL
		Cytokine Panel 1 (human) Control 3	17.1	pg/mL
3	IL-5	Calibrator	857	pg/mL
		Cytokine Panel 1 (human) Control 1	326	pg/mL
		Cytokine Panel 1 (human) Control 2	103	pg/mL
		Cytokine Panel 1 (human) Control 3	32.2	pg/mL
4	IL-7	Calibrator	807	pg/mL
		Cytokine Panel 1 (human) Control 1	342	pg/mL
		Cytokine Panel 1 (human) Control 2	52.4	pg/mL
		Cytokine Panel 1 (human) Control 3	8.16	pg/mL
5	IL-12/23p40	Calibrator	3380	pg/mL
		Cytokine Panel 1 (human) Control 1	1320	pg/mL
		Cytokine Panel 1 (human) Control 2	190	pg/mL
		Cytokine Panel 1 (human) Control 3	30.4	pg/mL
6	IL-15	Calibrator	941	pg/mL
		Cytokine Panel 1 (human) Control 1	259	pg/mL
		Cytokine Panel 1 (human) Control 2	40.7	pg/mL
		Cytokine Panel 1 (human) Control 3	7.82	pg/mL
7	IL-16	Calibrator	2910	pg/mL
		Cytokine Panel 1 (human) Control 1	1270	pg/mL
		Cytokine Panel 1 (human) Control 2	349	pg/mL
		Cytokine Panel 1 (human) Control 3	94.7	pg/mL
8	IL-17A	Calibrator	6040	pg/mL
		Cytokine Panel 1 (human) Control 1	2590	pg/mL
		Cytokine Panel 1 (human) Control 2	374	pg/mL
		Cytokine Panel 1 (human) Control 3	58.6	pg/mL
9	TNF- β	Calibrator	623	pg/mL
		Cytokine Panel 1 (human) Control 1	241	pg/mL
		Cytokine Panel 1 (human) Control 2	38.2	pg/mL
		Cytokine Panel 1 (human) Control 3	5.97	pg/mL
10	VEGF	Calibrator	1350	pg/mL
		Cytokine Panel 1 (human) Control 1	472	pg/mL
		Cytokine Panel 1 (human) Control 2	143	pg/mL
		Cytokine Panel 1 (human) Control 3	49.6	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
1260	456,000	1.7
315	131,000	2.0
78.8	34,900	2.4
19.7	9,320	2.3
4.92	2,690	3.0
1.23	954	5.4
0.308	460	6.7
0.00	317	13.0

IL-1 α - Spot 2		
Conc. pg/mL	ECL Signal	%CV
320	200,000	2.8
80.0	55,700	2.2
20.0	14,600	3.6
5.00	4,130	5.5
1.25	1,490	6.6
0.313	852	5.2
0.0781	701	9.7
0.00	701	23.0

IL-5 - Spot 3		
Conc. pg/mL	ECL Signal	%CV
857	817,000	2.5
214	231,000	2.7
53.6	61,700	2.9
13.4	15,800	6.4
3.35	4,570	4.1
0.837	1,510	2.9
0.209	708	6.4
0.00	438	11.0

IL-7 - Spot 4		
Conc. pg/mL	ECL Signal	%CV
807	460,000	2.7
202	118,000	2.1
50.4	29,900	2.7
12.6	7,900	2.3
3.15	2,240	3.4
0.788	798	4.9
0.197	354	9.1
0.00	272	10.0

IL-12/23p40 - Spot 5		
Conc. pg/mL	ECL Signal	%CV
3380	857,000	1.9
845	248,000	1.3
211	66,200	1.8
52.8	17,600	2.2
13.2	4,780	2.3
3.30	1,460	2.9
0.825	562	3.9
0.00	276	13.0

IL-15 - Spot 6		
Conc. pg/mL	ECL Signal	%CV
941	781,000	1.6
235	155,000	1.5
58.8	39,600	2.0
14.7	10,200	3.4
3.68	2,880	2.9
0.919	877	3.5
0.230	377	7.5
0.00	213	11.0

IL-16 - Spot 7		
Conc. pg/mL	ECL Signal	%CV
2910	934,000	3.3
728	159,000	2.4
182	24,000	3.5
45.5	4,130	4.6
11.4	1,210	3.8
2.84	477	5.6
0.710	284	11.0
0.00	238	15.0

IL-17A - Spot 8		
Conc. pg/mL	ECL Signal	%CV
6040	1,730,000	2.4
1510	495,000	2.2
378	131,000	2.9
94.4	33,500	2.4
23.6	8,790	3.8
5.90	2,430	5.0
1.47	727	4.8
0.00	178	19.0

TNF- β - Spot 9		
Conc. pg/mL	ECL Signal	%CV
623	875,000	2.4
156	197,000	2.0
38.9	46,700	2.5
9.73	11,900	1.7
2.43	3,360	3.5
0.608	1,100	2.9
0.152	510	6.0
0.00	305	7.4

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VEGF - Spot 10		
Conc. pg/mL	ECL Signal	%CV
1350	1,720,000	1.5
338	403,000	1.4
84.4	87,200	3.0
21.1	19,500	3.1
5.27	5,370	2.6
1.32	1,530	2.9
0.330	570	5.4
0.00	242	12.0

Components:

Description	Lot Number	Storage Temperature	Expiration Date
Cytokine Panel 1 (human) Plate	Z0047269	2-8°C	31 Aug 2022
Anti-hu GM-CSF Antibody	D0081360	2-8°C	28 Feb 2023
Anti-hu IL-1 α Antibody	D0081206	2-8°C	31 May 2022
Anti-hu IL-5 Antibody	D0081361	2-8°C	28 Feb 2023
Anti-hu IL-7 Antibody	D0081483	2-8°C	31 Aug 2023
Anti-hu IL-12/23p40 Antibody	D0081362	2-8°C	28 Feb 2023
Anti-hu IL-15 Antibody	D0081363	2-8°C	30 Apr 2023
Anti-hu IL-16 Antibody	D0081473	2-8°C	31 Jul 2023
Anti-hu IL-17A Antibody	D0081208	2-8°C	31 Mar 2023
Anti-hu TNF- β Antibody	D0081365	2-8°C	31 Mar 2023
Anti-hu VEGF Antibody	D0081393	2-8°C	30 Apr 2023
Cytokine Panel 1 (human) Calibrator Blend	A0080240	2-8°C	30 Nov 2024
Diluent 43	M0430037	$\leq -10^{\circ}\text{C}$	31 Aug 2022
Diluent 3	M0030096	$\leq -10^{\circ}\text{C}$	30 Jun 2022
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		13 MAY 2020