

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

Kit Lot Number: K0080873

Expiration Date: 31 Jul 2019

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	hu GM-CSF	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
3	hu IL-5	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
4	hu IL-7	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
5	hu IL-12/23p40	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
6	hu IL-15	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
8	hu IL-17A	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
9	hu TNF-β	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
10	hu VEGF	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%

Spot	Name	LLOQ			ULOQ		
		Value	Recovery	CV	Value	Recovery	CV
1	hu GM-CSF	1.90	80% - 120%	< 20%	750	80% - 120%	< 20%
3	hu IL-5	6.28	80% - 120%	< 20%	562	80% - 120%	< 20%
4	hu IL-7	1.37	80% - 120%	< 20%	563	80% - 120%	< 20%
5	hu IL-12/23p40	5.68	80% - 120%	< 20%	2250	80% - 120%	< 20%
6	hu IL-15	1.40	80% - 120%	< 20%	525	80% - 120%	< 20%
8	hu IL-17A	9.32	80% - 120%	< 20%	3650	80% - 120%	< 20%
9	hu TNF-β	1.15	80% - 120%	< 20%	458	80% - 120%	< 20%
10	hu VEGF	7.70	80% - 120%	< 20%	562	80% - 120%	< 20%

Acceptance Data/ Non Specific Binding Specifications:

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

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Stock Concentration of Material Tested :

Spot	Name	Item	Conc	Units
1	hu GM-CSF	Calibrator	1100	pg/mL
		Cytokine Panel 1 (human) Control 1	362	pg/mL
		Cytokine Panel 1 (human) Control 2	55.8	pg/mL
		Cytokine Panel 1 (human) Control 3	9.8	pg/mL
		Cytokine Panel 1 (human) Control 1	167	pg/mL
		Cytokine Panel 1 (human) Control 2	57.8	pg/mL
		Cytokine Panel 1 (human) Control 3	19.3	pg/mL
3	hu IL-5	Calibrator	844	pg/mL
		Cytokine Panel 1 (human) Control 1	371	pg/mL
		Cytokine Panel 1 (human) Control 2	123	pg/mL
		Cytokine Panel 1 (human) Control 3	33.7	pg/mL
4	hu IL-7	Calibrator	844	pg/mL
		Cytokine Panel 1 (human) Control 1	241	pg/mL
		Cytokine Panel 1 (human) Control 2	42	pg/mL
		Cytokine Panel 1 (human) Control 3	7.3	pg/mL
5	hu IL-12/23p40	Calibrator	3400	pg/mL
		Cytokine Panel 1 (human) Control 1	1290	pg/mL
		Cytokine Panel 1 (human) Control 2	208	pg/mL
		Cytokine Panel 1 (human) Control 3	35.5	pg/mL
6	hu IL-15	Calibrator	789	pg/mL
		Cytokine Panel 1 (human) Control 1	241	pg/mL
		Cytokine Panel 1 (human) Control 2	36.5	pg/mL
		Cytokine Panel 1 (human) Control 3	8	pg/mL
8	hu IL-17A	Calibrator	6100	pg/mL
		Cytokine Panel 1 (human) Control 1	2590	pg/mL
		Cytokine Panel 1 (human) Control 2	327	pg/mL
		Cytokine Panel 1 (human) Control 3	57.5	pg/mL
9	hu TNF- β	Calibrator	714	pg/mL
		Cytokine Panel 1 (human) Control 1	196	pg/mL
		Cytokine Panel 1 (human) Control 2	31.7	pg/mL
		Cytokine Panel 1 (human) Control 3	5.4	pg/mL
10	hu VEGF	Calibrator	1400	pg/mL
		Cytokine Panel 1 (human) Control 1	373	pg/mL
		Cytokine Panel 1 (human) Control 2	127	pg/mL
		Cytokine Panel 1 (human) Control 3	56.1	pg/mL

Controls tested may not be the same lot as shipped.

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Standard Curve Data:

hu GM-CSF - Spot 1		
Conc. pg/mL	ECL Signal	%CV
1100	429,000	3.3
275	129,000	3.0
68.8	33,400	3.7
17.2	8,660	3.8
4.30	2,310	3.4
1.07	719	3.9
0.269	299	8.5
0.00	154	17.0

hu IL-5 - Spot 3		
Conc. pg/mL	ECL Signal	%CV
844	681,000	7.2
211	201,000	7.6
52.8	54,000	5.6
13.2	13,300	4.9
3.30	3,840	5.2
0.824	1,230	6.0
0.206	574	7.1
0.00	342	5.8

hu IL-7 - Spot 4		
Conc. pg/mL	ECL Signal	%CV
844	504,000	3.1
211	125,000	2.7
52.8	30,600	2.4
13.2	7,620	3.0
3.30	2,040	2.3
0.824	621	4.3
0.206	261	7.4
0.00	138	19.0

hu IL-12/23p40 - Spot 5		
Conc. pg/mL	ECL Signal	%CV
3400	628,000	3.5
850	181,000	2.8
213	46,800	3.7
53.1	11,900	3.8
13.3	3,140	2.8
3.32	916	3.3
0.830	333	6.7
0.00	135	9.2

hu IL-15 - Spot 6		
Conc. pg/mL	ECL Signal	%CV
789	596,000	3.0
197	111,000	3.4
49.3	25,300	4.8
12.3	6,100	4.0
3.08	1,780	3.0
0.771	529	5.4
0.193	221	10.0
0.00	133	28.0

hu IL-17A - Spot 8		
Conc. pg/mL	ECL Signal	%CV
6100	1,350,000	3.2
1530	371,000	3.0
381	91,300	2.2
95.3	22,800	3.5
23.8	5,870	4.1
5.96	1,740	2.8
1.49	604	7.8
0.00	260	19.0

hu TNF-β - Spot 9		
Conc. pg/mL	ECL Signal	%CV
714	712,000	2.5
179	158,000	2.1
44.6	36,300	2.9
11.2	8,740	2.4
2.79	2,770	2.7
0.697	843	4.7
0.174	373	11.0
0.00	245	25.0

hu VEGF - Spot 10		
Conc. pg/mL	ECL Signal	%CV
1400	1,240,000	2.0
350	259,000	2.7
87.5	45,700	2.8
21.9	9,470	2.8
5.47	2,580	2.2
1.37	774	4.6
0.342	333	10.0
0.00	250	31.0

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Components:

Description	Lot Number	Storage Temperature	Expiration Date
Cytokine Panel 1 (human) Plate	Z0046613	2-8°C	31 Jan 2020
Anti-hu GM-CSF Antibody	D0080885	2-8°C	31 Jul 2019
Anti-hu IL-5 Antibody	D0080887	2-8°C	31 Jul 2019
Anti-hu IL-7 Antibody	D0080888	2-8°C	31 Jul 2019
Anti-hu IL-12/23p40 Antibody	D0080889	2-8°C	31 Jul 2019
Anti-hu IL-15 Antibody	D0080890	2-8°C	31 Jul 2019
Anti-hu IL-17A Antibody	D0080984	2-8°C	31 Oct 2019
Anti-hu TNF-β Antibody	D0080893	2-8°C	31 Jul 2019
Anti-hu VEGF Antibody	D0080894	2-8°C	31 Jul 2019
Cytokine Panel 1 (human) Calibrator Blend	A0080121	2-8°C	28 Feb 2022
Diluent 43	M0430023	≤ -10°C	31 Dec 2019
Diluent 3	M0030078	≤ -10°C	31 Jan 2020
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)	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	Dawn Stollar	Quality Assurance	<i>Dawn Stollar</i>	07 NOV 2017