

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: K0080922
Expiration Date: 30 Jun 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%
2	hu IL-1 α	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%
7	hu IL-16	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%
2	hu IL-1 α	2.85	80% - 120%	< 20%	278	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%
7	hu IL-16	19.1	80% - 120%	< 20%	1870	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%
2	hu IL-1 α	< 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%
7	hu IL-16	< 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
2	hu IL-1 α	Calibrator	459	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	877	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	881	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	3690	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	842	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
7	hu IL-16	Calibrator	2800	pg/mL
		Cytokine Panel 1 (human) Control 1	1160	pg/mL
		Cytokine Panel 1 (human) Control 2	328	pg/mL
		Cytokine Panel 1 (human) Control 3	126	pg/mL
8	hu IL-17A	Calibrator	6480	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	733	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	1490	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	420,000	1.5
275	123,000	2.3
68.8	32,100	3.1
17.2	8,050	3.1
4.30	2,130	2.9
1.07	673	5.2
0.269	279	8.9
0.00	150	14.0

hu IL-1 α - Spot 2		
Conc. pg/mL	ECL Signal	%CV
459	353,000	4.0
115	97,200	5.1
28.7	25,500	3.7
7.17	6,330	4.9
1.79	1,890	4.8
0.448	698	9.6
0.112	466	22.0
0.00	364	18.0

hu IL-5 - Spot 3		
Conc. pg/mL	ECL Signal	%CV
877	782,000	2.2
219	226,000	1.9
54.8	60,500	2.0
13.7	15,200	2.0
3.43	4,380	2.1
0.856	1,530	2.7
0.214	792	4.3
0.00	540	7.6

hu IL-7 - Spot 4		
Conc. pg/mL	ECL Signal	%CV
881	531,000	1.8
220	131,000	2.0
55.1	32,500	1.9
13.8	8,060	2.8
3.44	2,100	2.5
0.860	647	5.0
0.215	257	8.2
0.00	118	21.0

hu IL-12/23p40 - Spot 5		
Conc. pg/mL	ECL Signal	%CV
3690	602,000	2.6
923	173,000	1.8
231	46,500	2.0
57.7	11,600	1.9
14.4	3,110	2.5
3.60	880	2.9
0.901	314	7.0
0.00	121	13.0

hu IL-15 - Spot 6		
Conc. pg/mL	ECL Signal	%CV
842	522,000	2.6
211	88,500	1.8
52.6	21,700	2.5
13.2	5,210	2.8
3.29	1,420	3.4
0.822	431	3.5
0.206	180	12.0
0.00	92	18.0

hu IL-16 - Spot 7		
Conc. pg/mL	ECL Signal	%CV
2800	694,000	2.6
700	140,000	2.2
175	26,700	2.8
43.8	5,460	3.6
10.9	1,470	3.3
2.73	445	4.2
0.684	195	11.0
0.00	118	14.0

hu IL-17A - Spot 8		
Conc. pg/mL	ECL Signal	%CV
6480	1,560,000	3.9
1620	461,000	1.8
405	121,000	2.3
101	30,100	2.3
25.3	7,670	2.8
6.33	2,140	6.4
1.58	633	5.4
0.00	151	25.0

hu TNF- β - Spot 9		
Conc. pg/mL	ECL Signal	%CV
733	804,000	2.9
183	180,000	1.6
45.8	41,600	1.6
11.5	10,000	2.4
2.86	3,080	2.1
0.716	914	2.7
0.179	372	4.8
0.00	184	18.0

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hu VEGF - Spot 10		
Conc. pg/mL	ECL Signal	%CV
1490	1,140,000	2.1
373	228,000	2.0
93.1	43,700	2.3
23.3	8,890	4.0
5.82	2,370	2.5
1.46	680	2.9
0.364	281	7.1
0.00	152	14.0

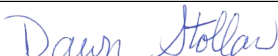
Components:

Description	Lot Number	Storage Temperature	Expiration Date
Cytokine Panel 1 (human) Plate	Z0046691	2-8°C	30 Apr 2020
Anti-hu GM-CSF Antibody	D0081052	2-8°C	30 Apr 2020
Anti-hu IL-1 α Antibody	D0080886	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	D0081040	2-8°C	31 Mar 2020
Anti-hu IL-15 Antibody	D0080983	2-8°C	31 Oct 2019
Anti-hu IL-16 Antibody	D0080891	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	D0081058	2-8°C	31 May 2020
Cytokine Panel 1 (human) Calibrator Blend	A0080144	2-8°C	31 Aug 2022
Diluent 43	M0430020	\leq -10°C	30 Jun 2019
Diluent 3	M0030074	\leq -10°C	30 Jun 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), 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	Dawn Stollar	Quality Assurance		10 JAN 2018