

CERTIFICATE OF ANALYSIS

Page 1 of 4

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

Kit Catalog Numbers: K15050-series

Kit Lot Number: K0081042

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%
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	0.842	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	4.41	80% - 120%	< 20%	562	80% - 120%	< 20%
4	hu IL-7	0.546	80% - 120%	< 20%	563	80% - 120%	< 20%
5	hu IL-12/23p40	1.32	80% - 120%	< 20%	2250	80% - 120%	< 20%
6	hu IL-15	0.774	80% - 120%	< 20%	525	80% - 120%	< 20%
7	hu IL-16	19.1	80% - 120%	< 20%	1870	80% - 120%	< 20%
8	hu IL-17A	3.19	80% - 120%	< 20%	3650	80% - 120%	< 20%
9	hu TNF- β	0.465	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%

CERTIFICATE OF ANALYSIS

Page 2 of 4

Stock Concentration of Material Tested :

Spot	Name	Item	Conc	Units
1	hu GM-CSF	Calibrator	1100	pg/mL
		Cytokine Panel 1 (human) Control 1	374	pg/mL
		Cytokine Panel 1 (human) Control 2	64.7	pg/mL
		Cytokine Panel 1 (human) Control 3	9.35	pg/mL
2	hu IL-1 α	Calibrator	459	pg/mL
		Cytokine Panel 1 (human) Control 1	178	pg/mL
		Cytokine Panel 1 (human) Control 2	62.3	pg/mL
		Cytokine Panel 1 (human) Control 3	18.3	pg/mL
3	hu IL-5	Calibrator	877	pg/mL
		Cytokine Panel 1 (human) Control 1	322	pg/mL
		Cytokine Panel 1 (human) Control 2	105	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	348	pg/mL
		Cytokine Panel 1 (human) Control 2	56.4	pg/mL
		Cytokine Panel 1 (human) Control 3	8.49	pg/mL
5	hu IL-12/23p40	Calibrator	3690	pg/mL
		Cytokine Panel 1 (human) Control 1	1380	pg/mL
		Cytokine Panel 1 (human) Control 2	230	pg/mL
		Cytokine Panel 1 (human) Control 3	34.7	pg/mL
6	hu IL-15	Calibrator	842	pg/mL
		Cytokine Panel 1 (human) Control 1	288	pg/mL
		Cytokine Panel 1 (human) Control 2	46.3	pg/mL
		Cytokine Panel 1 (human) Control 3	8.87	pg/mL
7	hu IL-16	Calibrator	2800	pg/mL
		Cytokine Panel 1 (human) Control 1	1210	pg/mL
		Cytokine Panel 1 (human) Control 2	329	pg/mL
		Cytokine Panel 1 (human) Control 3	104	pg/mL
8	hu IL-17A	Calibrator	6480	pg/mL
		Cytokine Panel 1 (human) Control 1	2350	pg/mL
		Cytokine Panel 1 (human) Control 2	318	pg/mL
		Cytokine Panel 1 (human) Control 3	47.7	pg/mL
9	hu TNF- β	Calibrator	733	pg/mL
		Cytokine Panel 1 (human) Control 1	229	pg/mL
		Cytokine Panel 1 (human) Control 2	41	pg/mL
		Cytokine Panel 1 (human) Control 3	5.97	pg/mL
10	hu VEGF	Calibrator	1490	pg/mL
		Cytokine Panel 1 (human) Control 1	428	pg/mL
		Cytokine Panel 1 (human) Control 2	135	pg/mL
		Cytokine Panel 1 (human) Control 3	45.1	pg/mL

Controls tested may not be the same lot as shipped.

CERTIFICATE OF ANALYSIS

Standard Curve Data:

hu GM-CSF - Spot 1		
Conc. pg/mL	ECL Signal	%CV
1100	425,000	2.6
275	124,000	2.2
68.8	31,800	3.5
17.2	8,370	2.1
4.30	2,190	2.6
1.07	770	4.0
0.269	362	5.4
0.00	234	9.9

hu IL-1 α - Spot 2		
Conc. pg/mL	ECL Signal	%CV
459	241,000	3.1
115	63,900	4.1
28.7	16,300	3.2
7.17	4,190	4.7
1.79	1,300	6.7
0.448	522	4.9
0.112	316	8.1
0.00	250	12.0

hu IL-5 - Spot 3		
Conc. pg/mL	ECL Signal	%CV
877	826,000	3.5
219	235,000	2.1
54.8	62,500	3.3
13.7	16,000	2.8
3.43	4,550	3.6
0.856	1,510	3.7
0.214	768	3.5
0.00	504	5.4

hu IL-7 - Spot 4		
Conc. pg/mL	ECL Signal	%CV
881	507,000	2.8
220	124,000	1.6
55.1	29,800	2.0
13.8	7,580	2.7
3.44	1,970	2.5
0.860	680	3.4
0.215	324	9.6
0.00	213	10.0

hu IL-12/23p40 - Spot 5		
Conc. pg/mL	ECL Signal	%CV
3690	660,000	2.4
923	191,000	1.5
231	49,600	1.7
57.7	12,700	1.6
14.4	3,440	1.5
3.60	1,080	2.6
0.901	477	2.8
0.00	269	6.0

hu IL-15 - Spot 6		
Conc. pg/mL	ECL Signal	%CV
842	602,000	4.3
211	100,000	2.4
52.6	23,700	3.0
13.2	5,850	4.4
3.29	1,590	3.0
0.822	517	4.4
0.206	235	8.3
0.00	145	8.0

hu IL-16 - Spot 7		
Conc. pg/mL	ECL Signal	%CV
2800	671,000	3.8
700	133,000	4.9
175	23,800	3.4
43.8	4,930	4.3
10.9	1,400	2.8
2.73	512	4.5
0.684	287	6.0
0.00	214	12.0

hu IL-17A - Spot 8		
Conc. pg/mL	ECL Signal	%CV
6480	1,480,000	3.5
1620	407,000	1.6
405	102,000	2.2
101	25,700	2.0
25.3	6,410	2.7
6.33	1,790	3.7
1.58	606	7.3
0.00	206	22.0

hu TNF- β - Spot 9		
Conc. pg/mL	ECL Signal	%CV
733	825,000	1.8
183	183,000	1.7
45.8	40,800	1.5
11.5	10,000	1.6
2.86	3,150	1.6
0.716	990	3.2
0.179	447	4.4
0.00	263	9.3

CERTIFICATE OF ANALYSIS

hu VEGF - Spot 10		
Conc. pg/mL	ECL Signal	%CV
1490	1,320,000	1.3
373	256,000	1.7
93.1	43,500	2.9
23.3	8,970	3.9
5.82	2,420	2.4
1.46	776	2.8
0.364	373	6.1
0.00	224	9.2

Components:

Description	Lot Number	Storage Temperature	Expiration Date
Cytokine Panel 1 (human) Plate	Z0046750	2-8°C	31 Jul 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	D0080889	2-8°C	31 Jul 2019
Anti-hu IL-15 Antibody	D0080890	2-8°C	31 Jul 2019
Anti-hu IL-16 Antibody	D0080891	2-8°C	31 Jul 2019
Anti-hu IL-17A Antibody	D0081066	2-8°C	31 Jul 2020
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	A0080144	2-8°C	31 Aug 2022
Diluent 43	M0430027	\leq -10°C	31 Dec 2020
Diluent 3	M0030082	\leq -10°C	31 Oct 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), 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	<i>Dawn Stollar</i>	14 AUG 2018