

## CERTIFICATE OF ANALYSIS

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**Product Description:** V-PLEX® and V-PLEX Plus Cytokine Panel 1 (human) Kit  
**Kit Lot Number:** K0082410  
**Expiration Date:** 31 Jul 2025  
**Kit Catalog Numbers:** K15050-Series; K15057-Series; K151RC-Series; K151RG-Series; K156RC-Series; K156RG-Series; K151RE-Series; K156RE-Series

**Lot-Specific Components:**

Description	Lot Number	Storage Temperature	Expiration Date
Cytokine Panel 1 (human) Plate	Z0047943	2-8°C	30 Jun 2026
Anti-hu GM-CSF Antibody	D0081879	2-8°C	31 Dec 2025
Anti-hu IL-1 $\alpha$ Antibody	D0081948	2-8°C	31 Mar 2026
Anti-hu IL-5 Antibody	D0082039	2-8°C	30 Sep 2026
Anti-hu IL-7 Antibody	D0082040	2-8°C	30 Sep 2026
Anti-hu IL-12/23p40 Antibody	D0082041	2-8°C	30 Sep 2026
Anti-hu IL-15 Antibody	D0081992	2-8°C	31 Jul 2026
Anti-hu IL-16 Antibody	D0081856	2-8°C	30 Sep 2025
Anti-hu IL-17A Antibody	D0082043	2-8°C	30 Sep 2026
Anti-hu TNF- $\beta$ Antibody	D0082044	2-8°C	30 Nov 2026
Anti-hu VEGF Antibody	D0082097	2-8°C	31 Dec 2026
Cytokine Panel 1 (human) Calibrator Blend	A0080374	2-8°C	31 Jul 2028
Diluent 3	M0030120	$\leq -10^{\circ}\text{C}$	31 Jul 2025
Diluent 43	M0430053	$\leq -10^{\circ}\text{C}$	31 Jan 2026

Additional components may be provided to execute the assay. Additional components are not lot-specific.

**Precision and Accuracy 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 $\alpha$	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/IL-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- $\beta$	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%	80% - 120%	< 20%
10	VEGF-A	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 $\alpha$	2.85	80% - 120%	< 20%	278	80% - 120%	< 20%
3	IL-5	4.41	80% - 120%	< 20%	562	80% - 120%	< 20%
4	IL-7	0.851	80% - 120%	< 20%	563	80% - 120%	< 20%
5	IL-12/IL-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- $\beta$	0.465	80% - 120%	< 20%	458	80% - 120%	< 20%
10	VEGF-A	7.70	80% - 120%	< 20%	562	80% - 120%	< 20%

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### Non-Specific Binding Specifications:

Spot	Name	GM-CSF	IL-1 $\alpha$	IL-5	IL-7	IL-12/IL-23p40
1	GM-CSF	NA	< 1.0%	< 1.0%	< 1.0%	< 1.0%
2	IL-1 $\alpha$	< 1.0%	NA	< 1.0%	< 1.0%	< 1.0%
3	IL-5	< 1.0%	< 1.0%	NA	< 1.0%	< 1.0%
4	IL-7	< 1.0%	< 1.0%	< 1.0%	NA	< 1.0%
5	IL-12/IL-23p40	< 1.0%	< 1.0%	< 1.0%	< 1.0%	NA
6	IL-15	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
7	IL-16	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
8	IL-17A	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
9	TNF- $\beta$	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
10	VEGF-A	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%


Spot	Name	IL-15	IL-16	IL-17A	TNF- $\beta$	VEGF-A
1	GM-CSF	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
2	IL-1 $\alpha$	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
3	IL-5	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
4	IL-7	< 1.0%	< 1.0%	< 1.0%	< 1.0%	< 1.0%
5	IL-12/IL-23p40	< 1.0%	< 1.0%	< 3.0%	< 1.0%	< 1.0%
6	IL-15	NA	< 1.0%	< 1.0%	< 1.0%	< 1.0%
7	IL-16	< 1.0%	NA	< 1.0%	< 1.0%	< 1.0%
8	IL-17A	< 1.0%	< 1.0%	NA	< 1.0%	< 1.0%
9	TNF- $\beta$	< 1.0%	< 1.0%	< 1.0%	NA	< 1.0%
10	VEGF-A	< 1.0%	< 1.0%	< 1.0%	< 1.0%	NA

### Stock Concentration of Calibrator:

Spot	Name	Conc.	Units
1	GM-CSF	1080	pg/mL
2	IL-1 $\alpha$	407	pg/mL
3	IL-5	881	pg/mL
4	IL-7	881	pg/mL
5	IL-12/IL-23p40	3530	pg/mL
6	IL-15	821	pg/mL
7	IL-16	2990	pg/mL
8	IL-17A	7360	pg/mL
9	TNF- $\beta$	687	pg/mL
10	VEGF-A	1660	pg/mL

Dilution to Top of Curve = 1X

The above product is intended for Research Use Only. Not for use in Diagnostic Procedures.

	Name	Function	Signature	Date
Review/Approval	Karen Hamilla	Quality		06 Feb 2024