

# CERTIFICATE OF ANALYSIS

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**Product Description:** V-PLEX® and V-PLEX Plus Proinflammatory Panel 1 (human) Kit  
**Kit Catalog Numbers:** K15049-Series, K15052-Series, K15053-Series  
**Kit Lot Number:** K0080923  
**Expiration Date:** 31 Dec 2019

## Acceptance Data/ Percent Recovery Specifications:

| Spot | Name             | Calibrator |       | Proinflammatory Panel 1 (human) Control 1 |       | Proinflammatory Panel 1 (human) Control 2 |       | Proinflammatory Panel 1 (human) Control 3 |       |
|------|------------------|------------|-------|-------------------------------------------|-------|-------------------------------------------|-------|-------------------------------------------|-------|
|      |                  | Recovery   | CV    | Recovery                                  | CV    | Recovery                                  | CV    | Recovery                                  | CV    |
| 1    | hu IFN- $\gamma$ | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 2    | hu IL-1 $\beta$  | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 3    | hu IL-2          | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 4    | hu IL-4          | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 5    | hu IL-6          | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 6    | hu IL-8          | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 7    | hu IL-10         | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 8    | hu IL-12p70      | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 9    | hu IL-13         | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |
| 10   | hu TNF- $\alpha$ | 80% - 120% | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% | 80% - 120%                                | < 20% |

| Spot | Name             | LLOQ  |            |       | ULOQ  |            |       |
|------|------------------|-------|------------|-------|-------|------------|-------|
|      |                  | Value | Recovery   | CV    | Value | Recovery   | CV    |
| 1    | hu IFN- $\gamma$ | 7.47  | 80% - 120% | < 20% | 938   | 80% - 120% | < 20% |
| 2    | hu IL-1 $\beta$  | 2.14  | 80% - 120% | < 20% | 375   | 80% - 120% | < 20% |
| 3    | hu IL-2          | 0.890 | 80% - 120% | < 20% | 938   | 80% - 120% | < 20% |
| 4    | hu IL-4          | 0.450 | 80% - 120% | < 20% | 158   | 80% - 120% | < 20% |
| 5    | hu IL-6          | 1.58  | 80% - 120% | < 20% | 488   | 80% - 120% | < 20% |
| 6    | hu IL-8          | 1.13  | 80% - 120% | < 20% | 375   | 80% - 120% | < 20% |
| 7    | hu IL-10         | 0.680 | 80% - 120% | < 20% | 233   | 80% - 120% | < 20% |
| 8    | hu IL-12p70      | 1.22  | 80% - 120% | < 20% | 315   | 80% - 120% | < 20% |
| 9    | hu IL-13         | 4.21  | 80% - 120% | < 20% | 353   | 80% - 120% | < 20% |
| 10   | hu TNF- $\alpha$ | 0.690 | 80% - 120% | < 20% | 248   | 80% - 120% | < 20% |

## Acceptance Data/ Non Specific Binding Specifications:

| Spot | Name             | NSB Spec |
|------|------------------|----------|
| 1    | hu IFN- $\gamma$ | < 1.0%   |
| 2    | hu IL-1 $\beta$  | < 1.0%   |
| 3    | hu IL-2          | < 1.0%   |
| 4    | hu IL-4          | < 1.0%   |
| 5    | hu IL-6          | < 1.0%   |
| 6    | hu IL-8          | < 1.0%   |
| 7    | hu IL-10         | < 1.0%   |
| 8    | hu IL-12p70      | < 1.0%   |
| 9    | hu IL-13         | < 1.0%   |
| 10   | hu TNF- $\alpha$ | < 1.0%   |

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## Stock Concentration of Material Tested :

| Spot | Name             | Item                                      | Conc | Units |
|------|------------------|-------------------------------------------|------|-------|
| 1    | hu IFN- $\gamma$ | Calibrator                                | 1450 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 682  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 183  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 52.3 | pg/mL |
| 2    | hu IL-1 $\beta$  | Calibrator                                | 589  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 215  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 52   | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 11   | pg/mL |
| 3    | hu IL-2          | Calibrator                                | 1450 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 431  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 42.3 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 3.83 | pg/mL |
| 4    | hu IL-4          | Calibrator                                | 250  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 101  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 20.3 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 2.88 | pg/mL |
| 5    | hu IL-6          | Calibrator                                | 736  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 275  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 50.7 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 9.03 | pg/mL |
| 6    | hu IL-8          | Calibrator                                | 574  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 223  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 40.4 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 5.91 | pg/mL |
| 7    | hu IL-10         | Calibrator                                | 375  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 133  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 27.8 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 3.61 | pg/mL |
| 8    | hu IL-12p70      | Calibrator                                | 514  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 168  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 33.2 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 6.12 | pg/mL |
| 9    | hu IL-13         | Calibrator                                | 516  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 150  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 46.7 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 12.3 | pg/mL |
| 10   | hu TNF- $\alpha$ | Calibrator                                | 380  | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 1 | 89.6 | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 2 | 18   | pg/mL |
|      |                  | Proinflammatory Panel 1 (human) Control 3 | 2.72 | pg/mL |

Controls tested may not be the same lot as shipped.

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### Standard Curve Data:

| hu IFN- $\gamma$ - Spot 1 |               |     |
|---------------------------|---------------|-----|
| Conc.<br>pg/mL            | ECL<br>Signal | %CV |
| 1450                      | 225,000       | 1.8 |
| 363                       | 59,100        | 2.5 |
| 90.6                      | 15,700        | 2.8 |
| 22.7                      | 4,290         | 4.1 |
| 5.66                      | 1,490         | 2.9 |
| 1.42                      | 813           | 4.2 |
| 0.354                     | 607           | 4.3 |
| 0.00                      | 545           | 6.5 |

| hu IL-1 $\beta$ - Spot 2 |               |     |
|--------------------------|---------------|-----|
| Conc.<br>pg/mL           | ECL<br>Signal | %CV |
| 589                      | 1,490,000     | 2.0 |
| 147                      | 405,000       | 2.3 |
| 36.8                     | 109,000       | 2.2 |
| 9.20                     | 28,700        | 1.7 |
| 2.30                     | 8,290         | 2.3 |
| 0.575                    | 3,200         | 3.1 |
| 0.144                    | 1,850         | 3.0 |
| 0.00                     | 1,380         | 3.7 |

| hu IL-2 - Spot 3 |               |     |
|------------------|---------------|-----|
| Conc.<br>pg/mL   | ECL<br>Signal | %CV |
| 1450             | 1,070,000     | 1.8 |
| 363              | 300,000       | 1.8 |
| 90.6             | 84,000        | 2.7 |
| 22.7             | 22,000        | 1.9 |
| 5.66             | 6,220         | 2.7 |
| 1.42             | 2,100         | 3.1 |
| 0.354            | 1,020         | 3.5 |
| 0.00             | 613           | 6.5 |

| hu IL-4 - Spot 4 |               |      |
|------------------|---------------|------|
| Conc.<br>pg/mL   | ECL<br>Signal | %CV  |
| 250              | 711,000       | 4.1  |
| 62.5             | 204,000       | 3.6  |
| 15.6             | 58,100        | 3.1  |
| 3.91             | 14,900        | 4.1  |
| 0.977            | 4,120         | 6.1  |
| 0.244            | 1,300         | 5.8  |
| 0.0610           | 502           | 5.4  |
| 0.00             | 232           | 12.0 |

| hu IL-6 - Spot 5 |               |      |
|------------------|---------------|------|
| Conc.<br>pg/mL   | ECL<br>Signal | %CV  |
| 736              | 1,060,000     | 3.2  |
| 184              | 246,000       | 3.1  |
| 46.0             | 53,900        | 3.1  |
| 11.5             | 12,900        | 2.3  |
| 2.88             | 3,370         | 3.1  |
| 0.719            | 1,100         | 2.8  |
| 0.180            | 454           | 5.2  |
| 0.00             | 230           | 11.0 |

| hu IL-8 - Spot 6 |               |     |
|------------------|---------------|-----|
| Conc.<br>pg/mL   | ECL<br>Signal | %CV |
| 574              | 579,000       | 2.9 |
| 144              | 149,000       | 2.8 |
| 35.9             | 39,800        | 1.6 |
| 8.97             | 10,300        | 2.8 |
| 2.24             | 2,960         | 2.9 |
| 0.561            | 1,080         | 2.5 |
| 0.140            | 563           | 3.9 |
| 0.00             | 381           | 4.6 |

| hu IL-10 - Spot 7 |               |     |
|-------------------|---------------|-----|
| Conc.<br>pg/mL    | ECL<br>Signal | %CV |
| 375               | 583,000       | 1.9 |
| 93.8              | 165,000       | 2.3 |
| 23.4              | 44,800        | 1.8 |
| 5.86              | 11,700        | 2.7 |
| 1.46              | 3,420         | 1.8 |
| 0.366             | 1,280         | 3.6 |
| 0.0916            | 655           | 3.6 |
| 0.00              | 477           | 8.7 |

| hu IL-12p70 - Spot 8 |               |      |
|----------------------|---------------|------|
| Conc.<br>pg/mL       | ECL<br>Signal | %CV  |
| 514                  | 383,000       | 6.8  |
| 129                  | 112,000       | 3.6  |
| 32.1                 | 30,600        | 2.5  |
| 8.03                 | 8,120         | 2.0  |
| 2.01                 | 2,290         | 3.7  |
| 0.502                | 870           | 5.1  |
| 0.125                | 468           | 6.1  |
| 0.00                 | 356           | 14.0 |

| hu IL-13 - Spot 9 |               |      |
|-------------------|---------------|------|
| Conc.<br>pg/mL    | ECL<br>Signal | %CV  |
| 516               | 840,000       | 2.4  |
| 129               | 130,000       | 1.2  |
| 32.3              | 16,300        | 2.6  |
| 8.06              | 2,490         | 3.8  |
| 2.02              | 716           | 3.4  |
| 0.504             | 322           | 8.2  |
| 0.126             | 220           | 9.6  |
| 0.00              | 188           | 10.0 |

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| hu TNF- $\alpha$ - Spot 10 |               |     |
|----------------------------|---------------|-----|
| Conc.<br>pg/mL             | ECL<br>Signal | %CV |
| 380                        | 311,000       | 2.6 |
| 95.0                       | 73,100        | 2.8 |
| 23.8                       | 18,900        | 2.9 |
| 5.94                       | 4,910         | 4.6 |
| 1.48                       | 1,660         | 2.4 |
| 0.371                      | 807           | 4.9 |
| 0.0928                     | 553           | 5.0 |
| 0.00                       | 473           | 7.8 |

### Components:

| Description                                      | Lot Number       | Storage Temperature | Expiration Date |
|--------------------------------------------------|------------------|---------------------|-----------------|
| Proinflammatory Panel 1 (human) Plate            | Z0046649         | 2-8°C               | 28 Feb 2020     |
| Anti-hu IFN- $\gamma$ Antibody                   | D0081014         | 2-8°C               | 31 Jan 2020     |
| Anti-hu IL-1 $\beta$ Antibody                    | D0081016         | 2-8°C               | 31 Jan 2020     |
| Anti-hu IL-2 Antibody                            | D0081011         | 2-8°C               | 31 Dec 2019     |
| Anti-hu IL-4 Antibody                            | D0081017         | 2-8°C               | 31 Jan 2020     |
| Anti-hu IL-6 Antibody                            | D0081018         | 2-8°C               | 31 Jan 2020     |
| Anti-hu IL-8 Antibody                            | D0081012         | 2-8°C               | 31 Dec 2019     |
| Anti-hu IL-10 Antibody                           | D0081024         | 2-8°C               | 31 Jan 2020     |
| Anti-hu IL-12p70 Antibody                        | D0081019         | 2-8°C               | 31 Jan 2020     |
| Anti-hu IL-13 Antibody                           | D0081059         | 2-8°C               | 30 Apr 2020     |
| Anti-hu TNF- $\alpha$ Antibody                   | D0081020         | 2-8°C               | 31 Jan 2020     |
| Proinflammatory Panel 1 (human) Calibrator Blend | A0080151         | 2-8°C               | 30 Sep 2022     |
| Diluent 2                                        | M0020098         | $\leq$ -10°C        | 28 Feb 2020     |
| Diluent 3                                        | M0030078         | $\leq$ -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), 100mL                      | Not Kit Specific |
| Proinflammatory Panel 1 (human) Control 1     | Not Kit Specific |
| Proinflammatory Panel 1 (human) Control 2     | Not Kit Specific |
| Proinflammatory 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 |  | 24 JAN 2018 |