

CERTIFICATE OF ANALYSIS

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Product Description: V-PLEX® and V-PLEX Plus Proinflammatory Panel 1 (mouse) Kit

Kit Catalog Numbers: K15048-Series

Kit Lot Number: K0080709

Expiration Date: 28 Feb 2019

Acceptance Data/ Percent Recovery Specifications:

| Spot | Name | Calibrator | | Proinflammatory Panel 1 (mouse) Control 1 | | Proinflammatory Panel 1 (mouse) Control 2 | | Proinflammatory Panel 1 (mouse) Control 3 | |
|------|------------------|------------|-------|---|-------|---|-------|---|-------|
| | | Recovery | CV | Recovery | CV | Recovery | CV | Recovery | CV |
| 1 | ms IFN- γ | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |
| 4 | ms IL-4 | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |
| 5 | ms IL-5 | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |
| 6 | ms IL-6 | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |
| 7 | ms KC/GRO | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |
| 8 | ms IL-10 | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |
| 9 | ms IL-12p70 | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |
| 10 | ms TNF- α | 80% - 120% | < 20% | 75% - 125% | < 25% | 75% - 125% | < 25% | 75% - 125% | < 25% |

| Spot | Name | LLOQ | | | ULOQ | | |
|------|------------------|-------|------------|-------|-------|------------|-------|
| | | Value | Recovery | CV | Value | Recovery | CV |
| 1 | ms IFN- γ | 0.390 | 75% - 125% | < 25% | 570 | 75% - 125% | < 25% |
| 4 | ms IL-4 | 2.58 | 75% - 125% | < 25% | 1060 | 75% - 125% | < 25% |
| 5 | ms IL-5 | 1.60 | 75% - 125% | < 25% | 590 | 75% - 125% | < 25% |
| 6 | ms IL-6 | 7.61 | 75% - 125% | < 25% | 3140 | 75% - 125% | < 25% |
| 7 | ms KC/GRO | 3.29 | 75% - 125% | < 25% | 1230 | 75% - 125% | < 25% |
| 8 | ms IL-10 | 19.8 | 75% - 125% | < 25% | 2030 | 75% - 125% | < 25% |
| 9 | ms IL-12p70 | 179 | 75% - 125% | < 25% | 20600 | 75% - 125% | < 25% |
| 10 | ms TNF- α | 0.980 | 75% - 125% | < 25% | 403 | 75% - 125% | < 25% |

Acceptance Data/ Non Specific Binding Specifications:

| Spot | Name | NSB Spec |
|------|-------------|----------|
| 1 | ms IFN-g | < 1.0% |
| 4 | ms IL-4 | < 1.0% |
| 5 | ms IL-5 | < 1.0% |
| 6 | ms IL-6 | < 1.0% |
| 7 | ms KC/GRO | < 1.0% |
| 8 | ms IL-10 | < 1.0% |
| 9 | ms IL-12p70 | < 1.0% |
| 10 | ms TNF-a | < 1.0% |

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Stock Concentration of Material Tested :

| Spot | Name | Item | Conc | Units |
|------|------------------|---|-------|-------|
| 1 | ms IFN- γ | Calibrator | 933 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 479 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 25.7 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 1.53 | pg/mL |
| 4 | ms IL-4 | Calibrator | 1700 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 505 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 75.1 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 16.9 | pg/mL |
| 5 | ms IL-5 | Calibrator | 961 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 381 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 54.7 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 9.53 | pg/mL |
| 6 | ms IL-6 | Calibrator | 5500 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 1740 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 240 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 38 | pg/mL |
| 7 | ms KC/GRO | Calibrator | 1920 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 902 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 111 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 16.2 | pg/mL |
| 8 | ms IL-10 | Calibrator | 3070 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 1140 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 289 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 113 | pg/mL |
| 9 | ms IL-12p70 | Calibrator | 31500 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 13100 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 3540 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 1120 | pg/mL |
| 10 | ms TNF- α | Calibrator | 653 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 1 | 172 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 2 | 27.4 | pg/mL |
| | | Proinflammatory Panel 1 (mouse) Control 3 | 4.25 | pg/mL |

Controls tested may not be the same lot as shipped.

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Standard Curve Data:

| ms IFN- γ - Spot 1 | | |
|---------------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 933 | 1,020,000 | 4.6 |
| 233 | 322,000 | 3.1 |
| 58.3 | 82,300 | 2.7 |
| 14.6 | 20,400 | 4.2 |
| 3.64 | 5,130 | 3.1 |
| 0.911 | 1,430 | 3.8 |
| 0.228 | 437 | 7.2 |
| 0.00 | 114 | 20.0 |

| ms IL-4 - Spot 4 | | |
|------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 1700 | 870,000 | 2.3 |
| 425 | 260,000 | 3.3 |
| 106 | 68,400 | 3.1 |
| 26.6 | 17,500 | 4.2 |
| 6.64 | 4,510 | 4.7 |
| 1.66 | 1,300 | 3.9 |
| 0.415 | 476 | 6.4 |
| 0.00 | 204 | 12.0 |

| ms IL-5 - Spot 5 | | |
|------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 961 | 1,530,000 | 4.1 |
| 240 | 374,000 | 2.5 |
| 60.1 | 86,700 | 3.9 |
| 15.0 | 20,700 | 4.9 |
| 3.75 | 5,410 | 4.8 |
| 0.938 | 1,480 | 3.0 |
| 0.235 | 474 | 6.0 |
| 0.00 | 129 | 16.0 |

| ms IL-6 - Spot 6 | | |
|------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 5500 | 738,000 | 3.5 |
| 1380 | 165,000 | 3.4 |
| 344 | 38,700 | 3.2 |
| 85.9 | 9,270 | 3.0 |
| 21.5 | 2,700 | 3.5 |
| 5.37 | 893 | 4.4 |
| 1.34 | 350 | 4.9 |
| 0.00 | 201 | 12.0 |

| ms KC/GRO - Spot 7 | | |
|--------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 1920 | 1,100,000 | 5.2 |
| 480 | 228,000 | 5.3 |
| 120 | 45,500 | 6.4 |
| 30.0 | 9,900 | 5.1 |
| 7.50 | 2,630 | 6.2 |
| 1.88 | 861 | 11.0 |
| 0.469 | 331 | 7.3 |
| 0.00 | 166 | 26.0 |

| ms IL-10 - Spot 8 | | |
|-------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 3070 | 583,000 | 7.3 |
| 768 | 135,000 | 4.6 |
| 192 | 33,300 | 4.8 |
| 48.0 | 8,350 | 6.5 |
| 12.0 | 2,400 | 4.6 |
| 3.00 | 971 | 6.9 |
| 0.750 | 567 | 11.0 |
| 0.00 | 467 | 20.0 |

| ms IL-12p70 - Spot 9 | | |
|----------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 31500 | 557,000 | 6.6 |
| 7880 | 102,000 | 6.1 |
| 1970 | 17,800 | 6.6 |
| 492 | 3,580 | 5.9 |
| 123 | 1,010 | 5.0 |
| 30.8 | 457 | 23.0 |
| 7.69 | 198 | 18.0 |
| 0.00 | 141 | 26.0 |

| ms TNF- α - Spot 10 | | |
|----------------------------|------------|------|
| Conc. pg/mL | ECL Signal | %CV |
| 653 | 767,000 | 2.3 |
| 163 | 172,000 | 3.0 |
| 40.8 | 41,200 | 3.9 |
| 10.2 | 10,100 | 3.6 |
| 2.55 | 3,100 | 4.8 |
| 0.638 | 1,300 | 9.5 |
| 0.159 | 653 | 17.0 |
| 0.00 | 464 | 20.0 |

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Components:

| Description | Lot Number | Storage Temperature | Expiration Date |
|--|------------------|----------------------------|-----------------|
| Proinflammatory Panel 1 (mouse) Plate | Z0046424 | 2-8°C | 31 Aug 2019 |
| Anti-ms IFN- γ Antibody | D0080851 | 2-8°C | 31 May 2019 |
| Anti-ms IL-4 Antibody | D0080854 | 2-8°C | 31 May 2019 |
| Anti-ms IL-5 Antibody | D0080855 | 2-8°C | 31 May 2019 |
| Anti-ms IL-6 Antibody | D0080856 | 2-8°C | 31 May 2019 |
| Anti-ms KC/GRO Antibody | D0080857 | 2-8°C | 31 May 2019 |
| Anti-ms IL-10 Antibody | D0080858 | 2-8°C | 31 May 2019 |
| Anti-ms IL-12p70 Antibody | D0080859 | 2-8°C | 31 May 2019 |
| Anti-ms TNF- α Antibody | D0080860 | 2-8°C | 31 May 2019 |
| Proinflammatory Panel 1 (mouse) Calibrator Blend | A0080110 | 2-8°C | 31 Dec 2021 |
| Diluent 41 | M0410015 | $\leq -10^{\circ}\text{C}$ | 30 Jun 2019 |
| Diluent 45 | M0450012 | $\leq -10^{\circ}\text{C}$ | 28 Feb 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 |
| Proinflammatory Panel 1 (mouse) Control 1 | Not Kit Specific |
| Proinflammatory Panel 1 (mouse) Control 2 | Not Kit Specific |
| Proinflammatory Panel 1 (mouse) 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 | Vanessa Castleberry | Quality Assurance | <i>Vanessa Castleberry</i> | 13JUN2017 |