



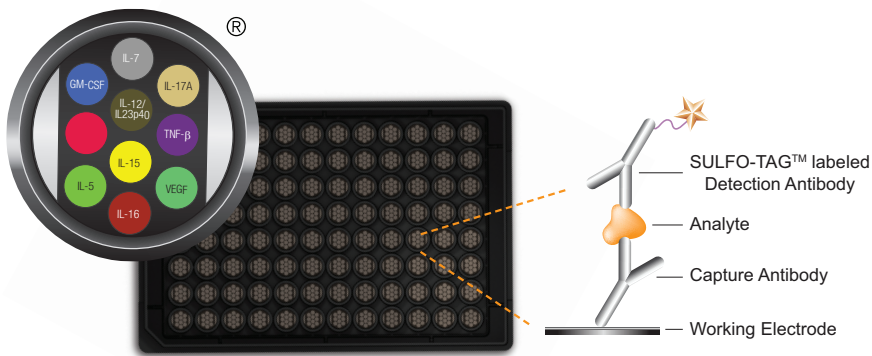
# Non-Human Primate (NHP) Cytokine Assays

For use with cell culture supernatants, serum, plasma, and urine

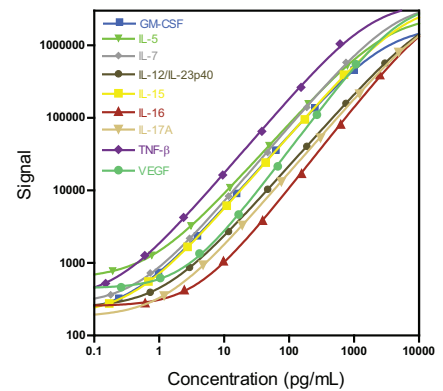
## V-PLEX™ New from Meso Scale Discovery® Validated Cytokine Assays for Unsurpassed Performance and Quality

- Confidence in your results from lot to lot
- Flexibility in your choice of matrices
- Validated in rhesus and cynomolgus monkey samples

### Proprietary immunoassay technology



### Wide dynamic range



The V-PLEX™ NHP Cytokine 24-Plex Kit includes the following:

#### Proinflammatory Panel 1 (NHP)

- IFN- $\gamma$
- IL-1 $\beta$
- IL-2
- IL-6
- IL-8
- IL-10

#### Cytokine Panel 1 (NHP)

- GM-CSF
- IL-5
- IL-7
- IL-12/IL23p40
- IL-15
- IL-16
- IL-17A
- TNF- $\beta$
- VEGF

#### Chemokine Panel 1 (NHP)

- MIP-1 $\beta$
- Eotaxin-3
- TARC
- IP-10
- MIP-1 $\alpha$
- IL-8 (HA\*)
- MCP-1
- MDC
- MCP-4

\* High Abundance (This assay quantitates high levels of IL-8.)

For Research Use Only. Not for use in diagnostic procedures.

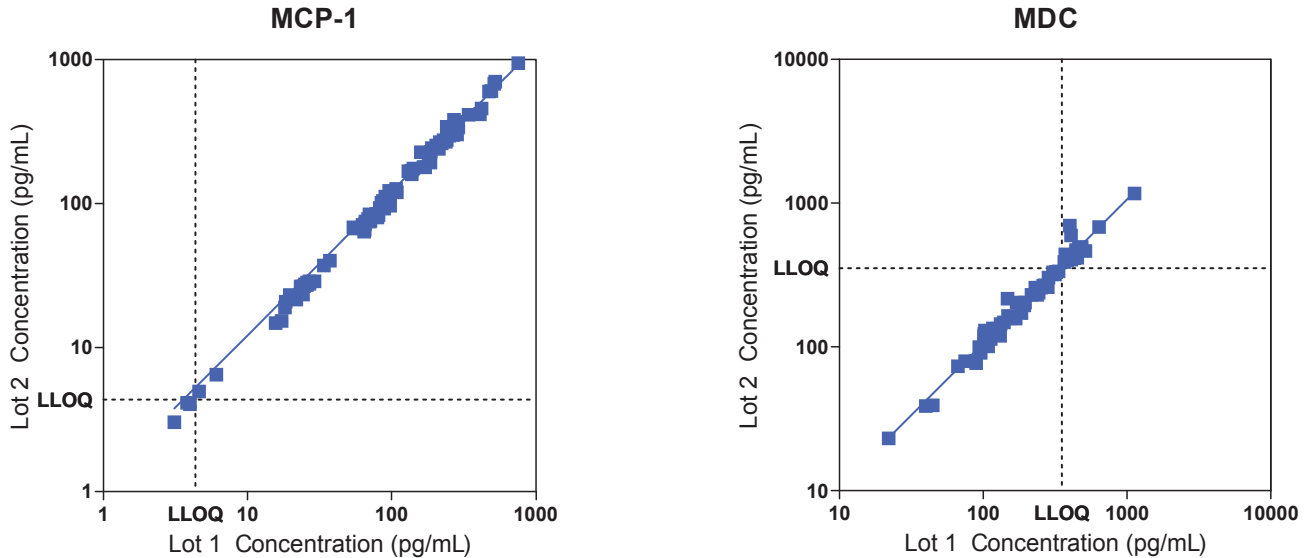


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## Lot-to-Lot Reproducibility

V-PLEX products are developed under design control and are fully validated in multiple matrices according to fit-for-purpose principles.<sup>1</sup> V-PLEX assays are organized into panels by species, analytical compatibility, clinical range, and expected use to ensure optimal and consistent performance from each assay while still providing the benefits and efficiencies of multiplexing.

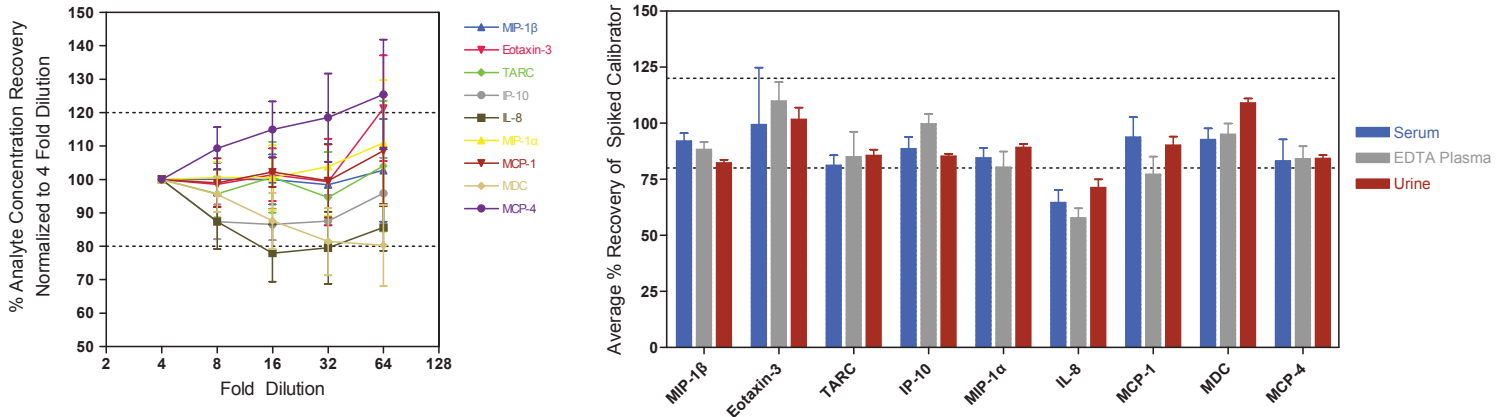
Shown below are representative data for MCP-1 and MDC, measured from a collection of rhesus serum, plasma, and urine samples using 2 kit lots.



## Dilution Linearity and Matrix Recovery

Dilution linearity and spike recovery tests were performed on multiple lots.

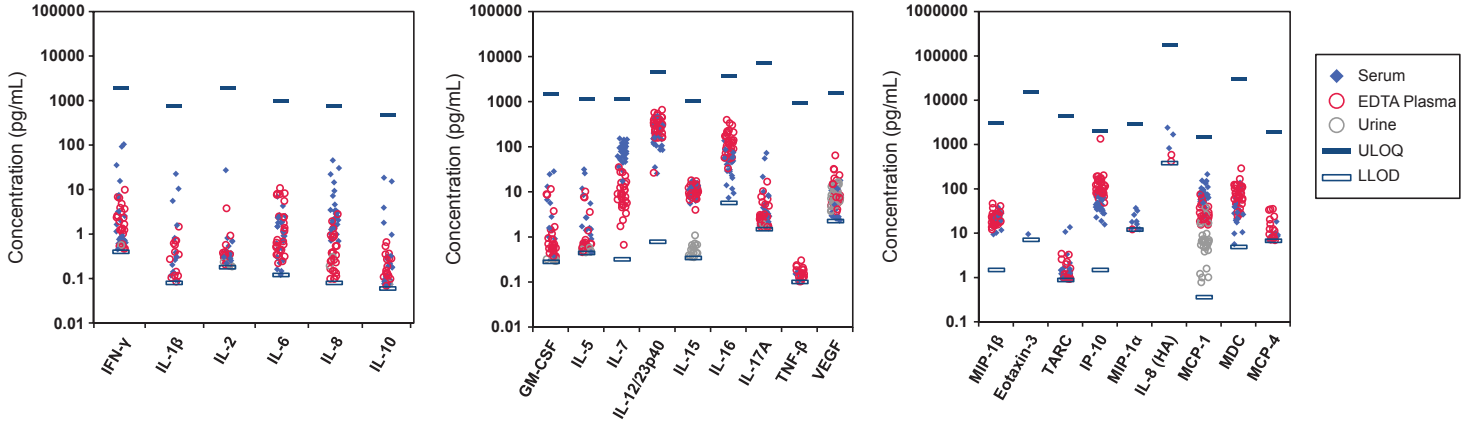
Representative data from the chemokine panel (1 kit lot) are shown below. Left: rhesus serum; right: multiple rhesus sample types



1. Lee JW, et al. Fit-for-purpose method development and validation for successful biomarker measurement. Pharm Res. 2006;23:312-28.

# NHP Native Samples

Endogenous levels were tested in serum, EDTA plasma, and urine from both rhesus and cynomolgus samples. Data from rhesus samples are shown below. The sensitivity and wide dynamic range of the V-PLEX assays make them suitable for quantitative analysis of all tested cytokines.



# Stimulated Samples

Peripheral blood mononuclear cells (PBMCs) from rhesus and cynomolgus monkeys were incubated with or without a stimulant. Spontaneous and stimulated cytokine levels were measured at 6, 24, and 48 hours. The table below reports fold increases relative to spontaneous changes.

+++ : > 100-fold    ++ : > 10-fold    + : > 2-fold

| Analyte   | Cynomolgus |     |     |     |             | Rhesus |     |     |     |             |
|-----------|------------|-----|-----|-----|-------------|--------|-----|-----|-----|-------------|
|           | ConA       | LPS | PHA | PWM | Spontaneous | ConA   | LPS | PHA | PWM | Spontaneous |
| GM-CSF    | +++        | +   | +++ | +++ | -           | +      | +   | +   | ++  | -           |
| IL-5      | ++         | -   | +++ | ++  | -           | -      | -   | +   | -   | -           |
| IL-7      | -          | -   | +   | +   | -           | -      | -   | -   | -   | -           |
| IL-12p40  | +          | -   | -   | +   | -           | -      | +   | -   | +   | -           |
| IL-15     | -          | -   | -   | -   | +           | -      | -   | -   | +   | ++          |
| IL-16     | -          | +   | +   | +   | -           | -      | +   | +   | -   | ++          |
| IL-17A    | ++         | +   | ++  | ++  | -           | +++    | +   | +++ | +++ | +           |
| TNF-β     | +++        | +   | +++ | +++ | -           | +++    | +   | ++  | +++ | -           |
| VEGF      | +          | +   | +   | +   | ++          | -      | +   | +   | +   | -           |
| IFN-γ     | +++        | -   | +++ | +++ | -           | +++    | +   | +++ | ++  | +           |
| IL-1β     | -          | +   | +   | +   | -           | +      | +   | +   | +   | -           |
| IL-2      | ++         | +   | ++  | ++  | +           | ++     | +   | ++  | +   | +           |
| IL-6      | +          | -   | +   | +   | -           | +      | -   | +   | +   | +           |
| IL-8      | +          | +   | ++  | +   | +           | +      | +   | ++  | +   | +           |
| IL-10     | +          | +   | -   | +   | ++          | +      | +   | +   | +   | +           |
| MIP-1β    | +          | +   | +   | ++  | ++          | -      | -   | +   | +   | +           |
| Eotaxin-3 | -          | ++  | -   | -   | -           | -      | +   | -   | +   | -           |
| TARC      | +          | -   | -   | -   | -           | ++     | -   | +   | +   | -           |
| IP-10     | +          | +   | +   | +   | +           | ++     | +   | +   | +   | +           |
| IL-8 (HA) | +          | +   | +   | ++  | +           | +      | +   | +   | ++  | ++          |
| MIP-1α    | +          | +   | ++  | ++  | ++          | -      | +   | -   | -   | +           |
| MCP-1     | +          | +   | +   | +   | -           | +      | +   | +   | +   | +           |
| MDC       | +          | +   | +   | +   | +           | -      | +   | +   | -   | +           |
| MCP-4     | -          | -   | +   | -   | +           | +      | -   | -   | +   | -           |



| Panels                               | Assays  | Catalog Numbers |
|--------------------------------------|---|-----------------|
| <b>NHP Cytokine Panel 24-Plex</b>    | IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-6, IL-8, IL-10, Eotaxin-3, IL-8 (HA*), IP-10, MCP-1, MCP-4, MDC, MIP-1 $\alpha$ , MIP-1 $\beta$ , GM-CSF, IL-5, IL-7, IL-12/IL-23p40, IL-15, IL-16, IL-17A, TNF- $\beta$ , VEGF | K15058D         |
| <b>Proinflammatory Panel 1 (NHP)</b> | IFN- $\gamma$ , IL-1 $\beta$ , IL-2, IL-4, IL-6, IL-8, IL-10  | K15056D         |
| <b>Chemokine Panel 1 (NHP)</b>       | Eotaxin-3, IL-8 (HA*), IP-10, MCP-1, MCP-4, MDC, MIP-1 $\alpha$ , MIP-1 $\beta$ , TARC  | K15055D         |
| <b>Cytokine Panel 1 (NHP)</b>        | GM-CSF, IL-5, IL-7, IL-12/IL-23p40, IL-15, IL-16, IL-17A, TNF- $\beta$ , VEGF   | K15057D         |

\* High Abundance (This assay quantitates high levels of IL-8.)

| Assays        | Catalog Numbers |
|---------------|-----------------|
| IFN- $\gamma$ | K156QOD         |
| IL-1 $\beta$  | K156QPD         |
| IL-2          | K156QQD         |
| IL-6          | K156QXD         |
| IL-8          | K156RAD         |
| IL-10         | K156QUD         |

| Assays        | Catalog Numbers |
|---------------|-----------------|
| GM-CSF        | K156RID         |
| IL-5          | K156QSD         |
| IL-7          | K156RCD         |
| IL-12/IL23p40 | K156RJD         |
| IL-15         | K156RDD         |
| IL-16         | K156RED         |
| IL-17A        | K156RFD         |
| TNF- $\beta$  | K156RGD         |
| VEGF          | K156RHD         |

| Assays         | Catalog Numbers |
|----------------|-----------------|
| MIP-1 $\beta$  | K156NRD         |
| Eotaxin-3      | K156NUD         |
| TARC           | K156NTD         |
| IP-10          | K156NVD         |
| MIP-1 $\alpha$ | K156NQD         |
| MCP-1          | K156NND         |
| MDC            | K156NPD         |
| MCP-4          | K156NOD         |

#### V-PLEX kits include:

- Blended calibrator
- Individual detection antibodies
- Diluents
- Comprehensive product insert
- Certificate of analysis

#### V-PLEX Plus kits include:

- Blended calibrator
- Individual detection antibodies
- Diluents
- Comprehensive product insert
- Certificate of analysis
- Controls
- Wash buffer
- Plate seals

Custom combinations of the assays above may be ordered online at [www.mesoscale.com/V-PLEX](http://www.mesoscale.com/V-PLEX).

Phone: 1-240-314-2795 . Fax: 1-301-990-2776

Email: [customerservice@mesoscale.com](mailto:customerservice@mesoscale.com)

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