Progress Toward Validation of the Meso Scale Discovery (MSD®) V-PLEX™ Proinflammatory Biomarker Panel 1 in Normal Human Serum (NHS)

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Abstract

The MSD® human Proinflammatory Panel 1 V-PLEX (a panel measuring IL-1α, IL-1β, IL-1Ra, IL-6, IL-8, IL-10, IL-12p70, IFN-γ, TNF-α, and TNF-β) was evaluated in NHS to determine its potential for the surveillance and monitoring of acute and chronic inflammation. This assay system is based on sandwich immunoassay principles whereby capture antibodies specific to analytes are immobilized onto a 96-well plate. A 5-PL curve fit for the CS yielded a mean R2 > 0.9 and %CV < 20% and %AR between 80-120%, respectively. MSD® calibration standards and controls functioned as specified in the instructions. Significant advances in preparation and characterization of BMVs have made it possible to approach clinical trial sample analysis. The approach recognizes that not all aspects of BMV are necessary for assay performance and that the high likelihood that the MSD® V-Plex Proinflammatory Biomarker Panel 1 in Normal Human Serum (NHS) will be completed.

Materials and Methods

A 4-plex assay was designed to further validate the human Proinflammatory Panel 1 V-PLEX from MSD® for the detection of proinflammatory cytokines in NHS. The system was characterized in its ability to provide consistent, reliable, and quantitative measurements of analytes in human serum. The cytokines included were IL-1α, IL-1β, IL-6, IL-8, IL-10, IL-12p70, IL-13, and TNF-α. The assay was performed in quadruplicate for each serum sample.

Results

A 5-PL curve fit for the CS yielded a mean R2 > 0.9 and %CV < 20% and %AR between 80-120%, respectively. MSD® calibration standards and controls functioned as specified in the instructions. Significant advances in preparation and characterization of BMVs have made it possible to approach clinical trial sample analysis. The approach recognizes that not all aspects of BMV are necessary for assay performance and that the high likelihood that the MSD® V-Plex Proinflammatory Biomarker Panel 1 in Normal Human Serum (NHS) will be completed.

Conclusions

The MSD® human Proinflammatory Panel 1 V-PLEX (a panel measuring IL-1α, IL-1β, IL-1Ra, IL-6, IL-8, IL-10, IL-12p70, IFN-γ, TNF-α, and TNF-β) was evaluated in NHS to determine its potential for the surveillance and monitoring of acute and chronic inflammation. This assay system is based on sandwich immunoassay principles whereby capture antibodies specific to analytes are immobilized onto a 96-well plate. A 5-PL curve fit for the CS yielded a mean R2 > 0.9 and %CV < 20% and %AR between 80-120%, respectively. MSD® calibration standards and controls functioned as specified in the instructions. Significant advances in preparation and characterization of BMVs have made it possible to approach clinical trial sample analysis. The approach recognizes that not all aspects of BMV are necessary for assay performance and that the high likelihood that the MSD® V-Plex Proinflammatory Biomarker Panel 1 in Normal Human Serum (NHS) will be completed.

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