

**Title:**

Multiplexing Protein and Gene Level Measurements on a Single Luminex Platform

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**Abstract:**

**Background:** The ability to accurately measure both proteins and genes is expected for comprehensive analysis from a single sample. Bottlenecks to multiplexing assays using a single starting sample include limited sample volume, time consuming experimental procedures, and complicated data analysis. Here, we utilize Luminex® xMAP® technology to measure multiple proteins or genes in a single well. **Purpose:** Our study examines ProcartaPlex™ and QuantiGene™ Plex assays to provide both protein and gene expression data from the same starting sample. **Experimental procedures:** We demonstrate two high throughput assays measuring genes and proteins and run on a Luminex platform. Human peripheral blood mononuclear cells (hPBMCs) were treated with lipopolysaccharide (LPS) and harvested at 24 and 72 hours. The treated cells were centrifuged and secreted cytokines were measured using the ProcartaPlex Human 65-plex Cytokine Panel, and the cell pellets were lysed and intracellular mRNA was measured with the QuantiGene Plex Human Cytokine Panel. **Summary of data:** Upon further examination, a subset of gene expression and analyte levels corresponds, namely IL-1β, IL-6, TNF-α, and MIP-1b.

**Conclusion:** These results show that sample can be conserved and produce targeted results.