

Plasma Proteomic Profiling

Product Overview

Broad Clinical Labs (BCL) offers Olink® Explore HT, a highly multiplexed, high-throughput protein biomarker platform, to profile the relative concentration of proteins in liquid biopsy samples. The platform uses Proximity Extension Assay (PEA) technology, coupled with a Next Generation Sequencing (NGS) readout (Fig. 1).



Figure 1: Because the PEA method detects a protein only when paired DNA oligos bind, cross reactivity is much lower than with traditional antibody-based assays (<https://olink.com/our-platform/our-pea-technology/>).

The Olink® Explore HT product is ideal for proteomics research targeting low-abundance inflammatory proteins, proteins that are actively secreted into blood circulation, approved and ongoing drug target proteins, organ-specific proteins that have leaked into blood circulation, and proteins representing more exploratory biomarkers.

The Olink® Explore HT kit enables access to ~5400 protein assays for each sample, via eight 384-plex blocks. BCL processes samples in 384-well plate based format, leveraging core competencies in process design, laboratory automation, and integrated LIMS tools.

BCL's Olink® Explore HT service includes sample preparation using the Olink Explore HT kit, Illumina® sequencing, and analysis using Olink's Normalized Protein eXpression (NPX) Explore tool. Customers will receive a normalized protein expression file and an analysis report.

As part of the validation process BCL participated in a concordance study with Olink. Regression analysis was performed to compare the concordance of data generated with the same set of samples at BCL and Olink's service lab (Fig 2).

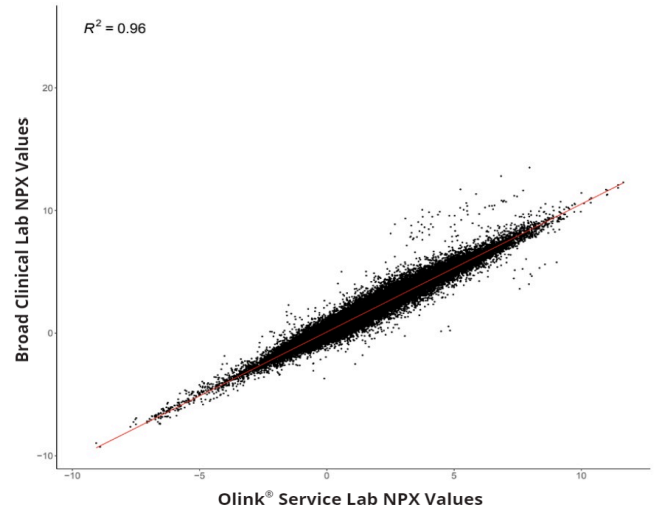


Figure 2: Normalized Protein Expression values¹ from Olink® Service Lab on the x-axis and Broad Clinical Labs on the y-axis. The regression line is fitted using a linear model.

What's Included

- Sample preparation using the Olink® Explore HT kit
- Illumina® Sequencing
- Analysis using Olink's NPX Explore HT tool
- Data delivery

Input Requirements

- 40µL Human plasma; the following are acceptable:
 - EDTA Plasma
 - Citrate Plasma
 - Heparin Plasma
- Minimum order size is 86 samples.

Data Deliverable

Analysis Report & Extended NPX file (sent as parquet file) that contains the following metrics for each sample and control:

- Normalized Protein Expression values¹
- Limit of detection (LOD)
- Missing Frequency (frequency of missing data below LOD)
- Pass or Fail QC
- Intra & Inter plate control QC

¹ The Olink® Explore HT system's raw data output is counts, where each combination of assay and sample is given an integer value based on the number of copies detected. These raw data counts are converted into Normalized Protein Expression (NPX) values for use in analysis.