Proteograph: Efficient and Automated Multi-Nanoparticle Platform for Deep, Unbiased Plasma Protein Profiling and Protein-Protein Interaction Biological Insight

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Core Technology - Nanoparticle Panels

Proteograph’s NPs accurately measure differences across samples

Representable and Custom Manufacturing

Different chemistries yield diverse but consistent NPs. Specific protein corona formation is determined by unique chemistries on each NP surface (a, b, c). Scanning electron microscopy (d, e, f) and dynamic light scattering (DLS, g, h, i) demonstrate that these NPs are highly reproducible in their physicochemical properties.

Accuracy

Proteograph’s NPs can interrogate a deeper proteome allowing more insights

Precision and Coverage of NPs

Each NP can detect more proteins than neat plasma

Proteograph offers significantly better protein coverage compared to alternative fractionation method

Proteograph allows better precision of measurements

Each NP’s protein coverage is complementary between particles

Benchmark Comparison

Proteograph offers significantly better protein coverage compared to alternative fractionation method

Proteograph allows better precision of measurements

Proteograph provides further insight into protein-protein interactions (PPI)

Exemplification

~4x improvement in protein IDs vs depleted plasma

Conclusions

1. Proteograph enables deeper and higher throughput protein profiling in a simple and convenient format, enabling large-scale studies analogous to the genomics space.

2. Direct comparison to a typical proteomics profiling workflow highlights Proteograph’s superior coverage, precision, and speed.

3. Exemplification demonstrates that high-throughput precision proteomics is both robust and efficient using Proteograph platform.

ProteographTM Workflow

100 250 500 750

0 25 50 75 100

0 0.8 1.0 0.6

-7 hs turnaround time from sample to peptides
-30m hands on time
To make high-throughput deep-proteomics practicable