

NANOTRAP[®] PROTEIN CAPTURE KITS

Improve Analytical Efficiency

Capturing relevant peptides and proteins of interest in complex matrices is crucial in biomarker discovery. Nanotrap particles utilize affinity capture and size exclusion to attract and bind low abundance proteins, while excluding unwanted high abundance and high molecular weight interfering molecules, resulting in improved proteome coverage.

- > *Improve LC-MS/MS efficiency by excluding interfering proteins*
- > *Increase the enrichment of proteins below 60 kilodaltons*

Gain Time

Every lab is aiming for faster time-to-result without compromising downstream analysis. For With a scalable starting sample volume, the Nanotrap particle technology significantly reduces the time required for sample preparation by minimizing additional steps in traditional mass spectrometry workflows (Figure 1).

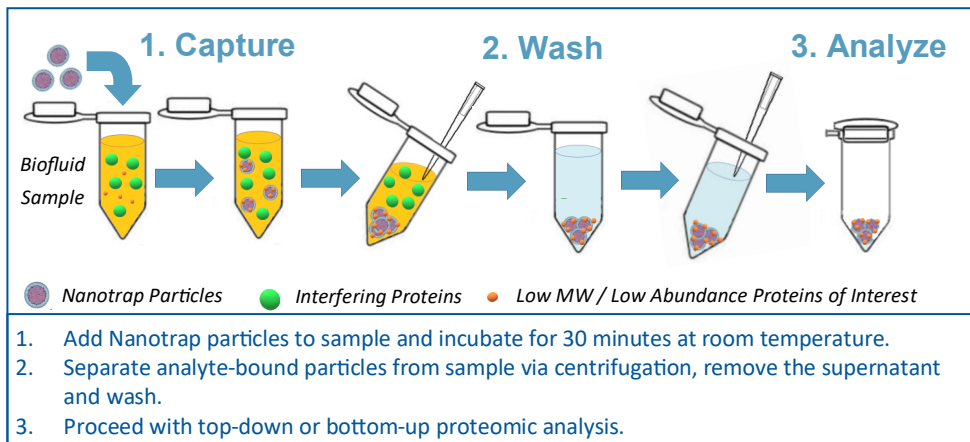


Figure 1. Simplified "on particle" digestion method which reduces processing time by performing protein digestion and clean up while the proteins are still bound to the Nanotrap particles.

"I cut my sample prep time by 4+ hours using Ceres' Nanotrap on-particle digestion method."

— Monika Dzieciatkowska, Ph.D.
Colorado University
Proteomics Core Manager

Improve Proteome Coverage

A high quality sample preparation workflow makes a significant difference in downstream biomarker discovery and protein profiling. The University of Colorado School of Medicine Biological Mass Spectrometry Facility compared sample preparation products from Bio-Rad (ProteoMiner™ Protein Enrichment beads) and R&D Systems (Proteome Purify™ 2 Immunodepletion Resin) to Nanotrap particles from Ceres Nanosciences. The Nanotrap Proteomics Kit out performed the other kits. The number of unique peptides and proteins identified in 60 µL of human plasma samples are reported in Figures 2 and 3.

Nanotrap particle processing led to a more than **2-fold increase** in the number of unique proteins identified over neat plasma.

Boost Your Resolution

Expand your dynamic range with improved low molecular weight resolution by incorporating Nanotrap particles to your sample preparation workflow. Researchers at Sapienza Università di Roma, evaluated Nanotrap particles, evaluated against other enrichment technologies and highlighted an overall 35% average improved protein detection at ≤ 20 kDa with the Nanotrap technology (Table 1).

Our Commitment to Your Success

Our dedicated scientific team takes a collaborative approach with our partners. In order to deliver the highest quality, most innovative solutions, we empower out-of-the box thinking through consultative development and support. Together we can solve your sample preparation challenges.

Please visit ceresnano.com to learn more.

Nanotrap kits are not intended or validated for use in the diagnosis of disease or other conditions.

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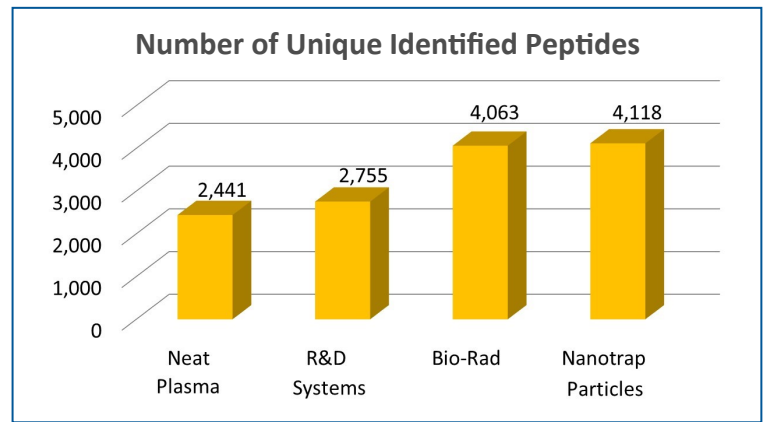


Figure 2. Product Comparison: Total Number of Unique Identified Peptides

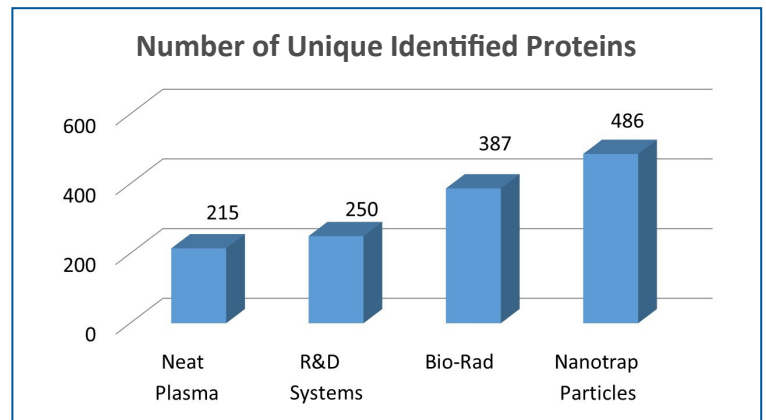


Figure 3. Product Comparison: Total Number of Unique Identified Proteins.

Molecular weight (MW)	Nanotrap Particles	ProteoMiner	Sartorius Vivaspin
MW ≤ 20 kDa	61 [30]	33 [6]	46 [23]
20 kDa ≤ MW ≤ 30 kDa	31 [10]	32 [15]	31 [17]
30 kDa ≤ MW ≤ 40 kDa	24 [8]	28 [13]	18 [7]

Table 1. Increased resolution of low molecular weight detection from 100 µL of serum. [Values] are the number of unique proteins identified.