

Nanoscale Human Inflammation Cytokine Assay

Nanolnk developed the first and only commercially-available nanoscale cytokine array assay and has now updated it to be even higher throughput. The assay kit pairs Dip Pen Nanolithography® (DPN®)-deposited protein arrays with a simple, validated assay that can be conducted on the lab bench utilizing standard protocols and fluorescent detection methods or automated using Nanolnk's SBS compliant consumables and commercially available lab automation systems.

As part of a growing line of completely configured kits for miniaturized, multiplexed protein analysis, the Human Inflammation Cytokine Assay can simultaneously evaluate 10 clinically relevant biomarkers in a single sub-array: IL-1 α , IL-1 β , IL-2, IL-3, IL-4, IL-5, IL-6, IL-8, IFN γ and TNF α .

The power of nanoscale confers unparalleled assay sensitivity, so nanoarrays can detect proteins that other platforms may miss. And they do so in a multi-parallel, high-throughput format with the smallest of samples sizes.

2 μ l sample size

Ultrasensitive detection

Multiplex analysis

High-throughput assay

*Think big.
Work nanoscale.*

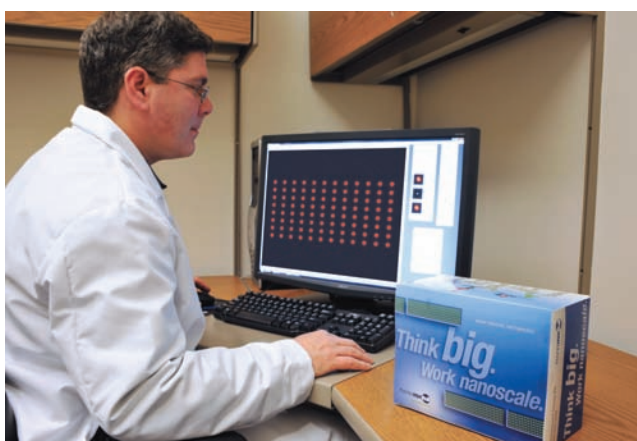


Figure 1:
Automated analysis of fluorescent data from cytokine array assay kit

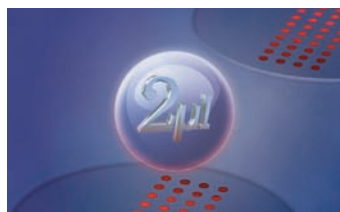


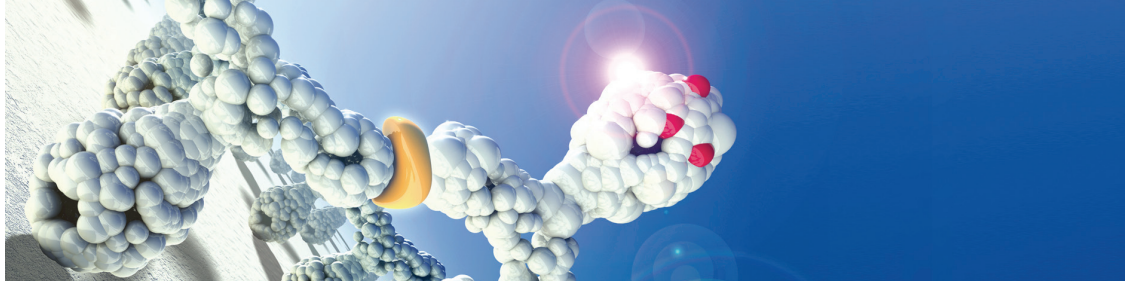
Figure 2: Nanolnk assays require just 2 μ l of sample

Minimal Sample Size

Multiplexed Nanolnk assays consume much smaller sample and reagent volumes than do traditional ELISA and bead-based assays, generating more data with less starting material and lowering assay costs for tests that are typically expensive to run. Nanolnk's small sample volume requirement is especially critical when working with rare and hard-to-collect samples like rodent serum, spinal fluid, tissue extracts, saliva, sweat, tears, and dried blood spots. Nanolnk assays enable the analysis of more samples, faster.

Ultraminaturized and Ultrasensitive

Nanolnk protein arrays can achieve significantly higher sensitivity than traditional microarrays. Unlike conventional microarray platforms, DPN® nanoarray deposition avoids sheer forces that can disrupt biological function and so preserves the integrity of arrayed proteins. DPN is also capable of printing highly reproducible features within every sub-array. The result is up to single femtogram/ml assay sensitivity, even with the smallest of sample sizes.

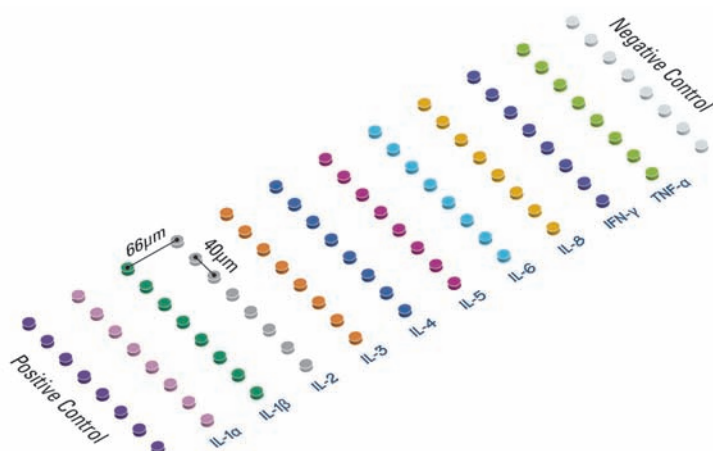


The Power of Nanoscale

While current microarray printing technologies suffer from poor spot-to-spot reproducibility, nanoarrays exhibit excellent uniformity and repeatability of features within and between arrays. And each nanoscale feature covers only a fraction of the surface area occupied by a single conventional microarray spot. As a result, the Human Inflammation Cytokine Assay empowers multi-parallel, high throughput analysis and reproducible results.

Each Human Inflammation Cytokine Assay kit includes nanoarrays of analyte-specific antibodies and controls deposited on 1" x 3" modified glass slides. Slides are composed of 48 sub-arrays, with 96 features per sub-array. Twelve different proteins (each printed in eight replicates) are represented within each 96-feature sub-array.

Figure 3: Schematic layout of 1 of 48 antibody sub-arrays



Comprehensive Line of Proteomic Products & Services

By combining DPN nanofabrication technology with optimized substrates and next-generation detection systems, NanoInk helps its customers address major proteomic challenges with a full spectrum of array-based instrument systems, assay kits, and contract services for nanoscale protein detection. Our full-service contract research programs include:

- Complete custom assay development and analysis
- Protein profiling
- Custom array printing

Additional NanoInk assays now in development will target proteins implicated in various disease states and toxicological responses.

Experience nanoscale now.

Find out more at www.nanoink.net/nanobio or 847-679-3432.



Figure 4: Human Inflammation Cytokine Assay kit
(NanoArray Processing Apparatus and associated parts are sold separately.)



Figure 5: NanoArray Assay System