

nCounter® Pro Analysis System

Fully Automated, Multi-application System

The nCounter Pro Analysis System from NanoString offers a simple, cost-effective way to profile hundreds of mRNA, microRNA, or DNA targets simultaneously with high sensitivity and precision. The digital detection of target molecules and high levels of multiplexing eliminate the compromise between data quality and data quantity, producing gold-standard sensitivity and reproducibility for studies of hundreds of targets. The system uses molecular “barcodes” and single molecule imaging to detect and count hundreds of unique transcripts in a single reaction. Unlike other methods, the protocol does not include any amplification steps that might introduce bias to the results. The nCounter Analysis System is an integrated system comprised of a fully automated prep station, a digital analyzer, the CodeSet (molecular barcodes) and all of the reagents and consumables needed to perform the analysis. Analysis on the nCounter system consists of in-solution hybridization, posthybridization processing, digital data acquisition, and normalization in one simple workflow. Easy-to-use touch screens provide simple instructions for each step of the automated process.

Software

nSolver™ Analysis Software	Data analysis software program that offers nCounter users the ability to quickly and easily QC, normalize and analyze their data. Provides seamless integration and compatibility with other software packages designed for more complex analyses and visualizations. For deeper insights into your data, nCounter Advanced Analysis is a free, wizard-based add-on to the nSolver™ Analysis Software based on robust R statistics.
ROSALIND® Platform	ROSALIND is a cloud-based software platform for life science research that enables scientists to analyze and interpret differential gene expression data without the need for bioinformatics or programming skills. The platform is always up to date: ROSALIND operates in a browser, eliminating the need to download software updates continually. ROSALIND makes analysis of nCounter data easy, with guided modules for quality control, normalization, pathway analysis, cell type profiling, differential expression, and gene set analysis. ROSALIND is free of charge for nCounter customers; a free account can be created at www.rosalind.bio/nanostring .



Product Highlights

- Strong analytical performance**
 Sensitive, precise, and quantitative
- Single tube multiplexing**
 Up to 800 genes or regions
- Ease-of-use**
 Fully automated, intuitive user interface
- Flexible sample requirements**
 Small samples from a variety of sources, including FFPE
- Comprehensive Content**
 Off-the-shelf gene expression panels for human, mouse, non-human primate, and canine available for a variety of research areas
- Flexible Experimental Design**
 Tailor assay content to meet individual project needs by adding up to 55 user-defined targets with Panel Plus
- Expandable Throughput**
 Increase sample capacity by adding a second Prep Station and multiplex up to 96 samples in one cartridge with PlexSet reagents

nCounter Reagents

CodeSets	Custom or pre-designed sets of barcoded probes pre-mixed with a comprehensive set of system controls.
Master Kit	Consumables and reagents for sample processing – ready-to-load, requiring no additional preparation.
Panel Standards	Panel Standards contain a pool of synthetic DNA oligonucleotides that correspond to the target sequence of each of the unique probes in the associated panel. They enable for correction of technical variability not related to sample quality or sample input, which is critical when comparing data within many study designs.
Low Input Kit	Enables high quality gene expression profiling of up to 800 gene targets from as little as 1 ng of sample. For use with panel-specific primer pools (sold separately).



nCounter Prep Station

The nCounter Prep Station is the automated liquid handling component of the nCounter Analysis System. It processes samples post hybridization in preparation for data collection on the nCounter Digital Analyzer. On the deck of the Prep Station, hybridized samples are purified and immobilized in a sample cartridge for data collection. All consumable components and reagents required for sample processing on the Prep Station are provided in the nCounter Master Kit and are ready to load on the deck of the robot. Reagent preparation or dilutions are not required. The Prep Station can process up to 12 samples per run in less than 2.5 hours.



nCounter Digital Analyzer

The nCounter Digital Analyzer collects data by taking magnified images of the immobilized fluorescent reporters with a CCD camera through a microscope objective lens. Hundreds of images are collected for each sample, yielding hundreds of thousands of target molecule counts per sample. Images are processed internally and the results are exported as a comma separated values (.csv) file that can be directly processed through the nSolver Analysis Software or ROSALIND Platform. Data collection takes under 15 minutes per sample enabling a complete cartridge of 12 samples to be processed in under 3 hours. Up to six cartridges can be loaded on the analyzer to process up to 72 samples unattended.

Specifications	Prep Station	Digital Analyzer
Operating Temperature	18°C - 28°C	18°C - 28°C
Humidity	20 - 80% (non-condensing)	20 - 80% (non-condensing)
Pollution degree	2	2
Power Source	100 - 240 VAC 50 - 60 Hz	100 - 240 VAC 50 - 60 Hz
Power Draw	610 VA	610 VA
Dimensions	67 cm D x 89 cm W x 63 cm H	66 cm D x 66 cm W x 47 cm H
Weight	120 kg	67 kg
Warranty	1 Year	1 Year

Description	Specification
Level of multiplexing	800+ targets
Recommended amount of starting material	RNA: 1ng - 100ng DNA: 5ng - 300ng
Sample types supported	Total RNA, cell lysates in GTIC, FFPE - derived total RNA and PAXgene-lysed whole blood
Reaction volume	Up to 30 µL
Limit of detection 0.5 fM spike-in control	15 zeptomole spike-in control in 15 µL hybridization
Fold change sensitivity	>1.5-fold (if >5 copies per cell) >2-fold (if >1 copy per cell) R ² > 0.95
Spike in correlation	R ² > 0.95
Linearity	Linear regression correlation coefficient R ² > 0.95
Linear dynamic range	6 x 10 ⁵ total counts
Prep Station throughput	12 lanes per 2.5 hours
Digital Analyzer throughput	12 samples per 2.7 hours
Controls	Assay dependent

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