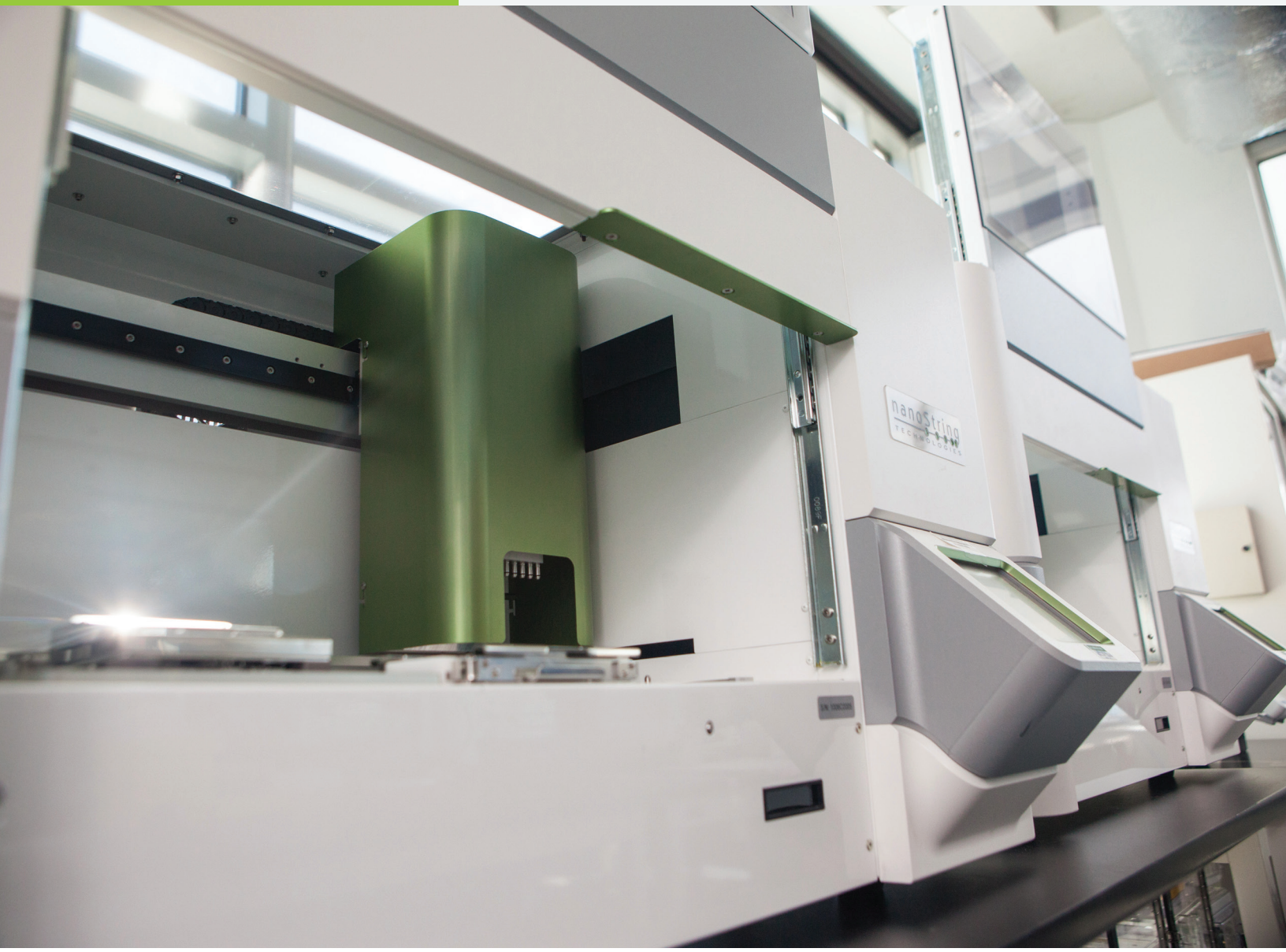
nCounter®
Analysis System

For Translational Research



nanostring.com

nanoString™

Faster than qPCR. Simpler than NGS.

The nCounter® platform provides a simple and cost-effective solution for multiplex analysis of up to 800 RNA, DNA, or protein targets from your precious samples.

Save Time

- Expertly curated pre-formatted panels for human, mouse and non-human primate
- 15-minutes total hands-on time with no amplification, cDNA conversion or library prep required
- Sample to Publication ready figures in ~24 hours

Save Sample

- Combine RNA, DNA, and protein panels for a comprehensive 3D Biology™ view of each sample
- Optimized performance on difficult sample types including FFPE, tissue, lysates and biofluid samples

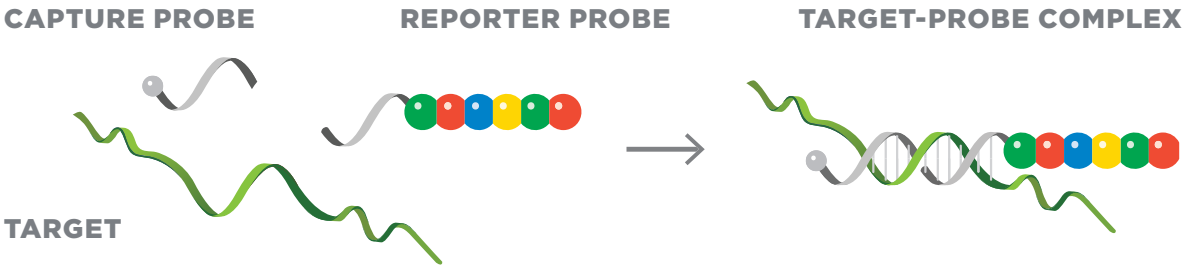
Save Resources

- Advanced analysis tools included with system reduce the need for Bioinformatics support
- Digital gene expression eliminates need for

Molecules That Count®

HIGHLY MULTIPLEXED SINGLE MOLECULE COUNTING

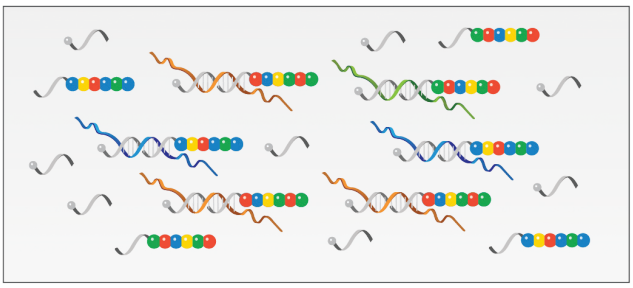
NanoString's patented molecular barcodes provide a true digital detection technology capable of highly multiplexed analysis*.



1 HYBRIDIZE

Two probes hybridize directly to a target molecule in solution. The Reporter Probe carries the fluorescent barcode and the Capture Probe contains a biotin moiety that immobilizes the hybridized complex for data collection.

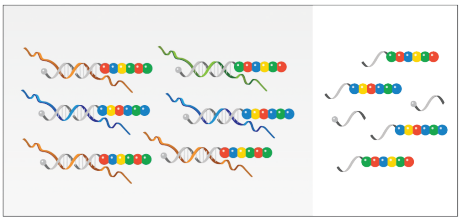
SOLUTION PHASE HYBRIDIZATION



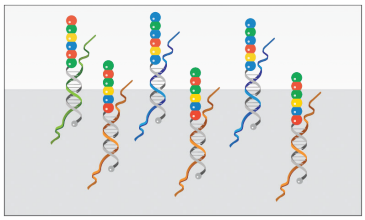
2 PURIFY + IMMOBILIZE

After hybridization, samples are transferred to an nCounter instrument which removes excess probes. Purified target-probe complexes are bound, immobilized and aligned on the imaging surface of the nCounter cartridge.

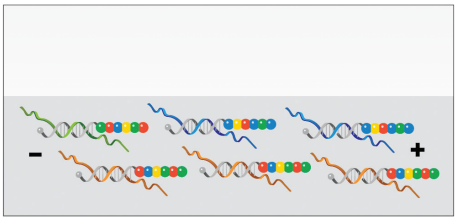
EXCESS PROBES REMOVED



HYBRIDIZED PROBES BIND TO CARTRIDGE



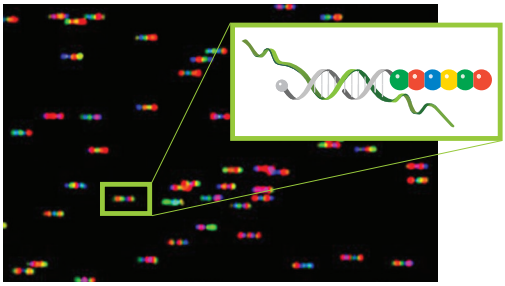
COMPLEXES ARE IMMOBILIZED AND ALIGNED ON CARTRIDGE



3 COUNT

Sample cartridges are scanned by an automated fluorescence microscope. Barcodes are counted for each target molecule and the data are exported as a simple CSV file.

BARCODES COUNTED



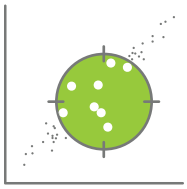
BARCODES	COUNTS	IDENTITY
	1	INSULIN
	2	FOX5
	3	XLSA

**The DNA SNV assay and samples run with the Low RNA Input Kit (enables analysis from 1 ng of RNA, 10 ng from FFPE) require amplification prior to sample processing and data collection.*

Exceptional
Reproducibility and Performance

Faster than qPCR, simpler than NGS

Fully automated and easy-to-use, the nCounter Analysis System provides everything you need to cost-effectively complete your projects in record time.

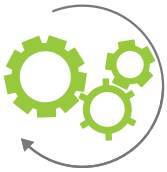


Strong analytical performance—sensitive, precise and quantitative digital data

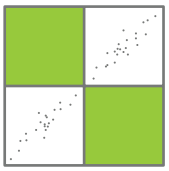
Flexible samples—optimized performance with most sample types including FFPE, PBMCs and FACS

Single tube multiplexing—up to 800 targets

Quality assurance—One platform for both basic research and clinical diagnostics; GMP compliant/ISO 13485 certified



Easy-to-use—fully automated, intuitive user interface



Data analysis—generate publication quality figures quickly and easily with nSolver™ Analysis Software

Amplification Free Analysis*

Most nCounter assays do not require amplification of target sequence for detection and can be performed with 25-100 ng of input material which is ideal for investigators working with precious samples.

This amount is equivalent to a single curl of FFPE tissue and data are comparable to that generated with matched fresh-frozen material.

**The DNA SNV assay and samples run with the Low RNA Input Kit (enables analysis from 1 ng of RNA, 10 ng from FFPE) require amplification prior to sample processing and data collection.*

nCounter® Systems

nCOUNTER *SPRINT*

nCOUNTER *MAX*

nCOUNTER *FLEX*

AN INSTRUMENT FOR EVERY NEED

	integrated benchtop system for **Research Labs**	for **Core Labs** and high sample throughput	for **Translational Labs** and clinical applications
nCOUNTER LIFE SCIENCE ASSAYS	✓	✓	✓
nCOUNTER ELEMENTS™	✓	✓	✓
EXPANDABLE with Additional Prep Station	No	✓	✓
ENTERPRISE PACKAGE	No	✓	✓
PROSIGNA optional add-on	No	No	✓
RUNS PER DAY	2	4*	4*
THROUGHPUT (LANES PER DAY)	24	48-96*	48-96*
HANDS ON TIME	10 min	15 min	15 min

** Additional Prep Station required for > 24 lanes per day.*

TENS OF THOUSANDS OF DATA POINTS EVERY DAY

	# of Genes per Run		Samples per Day		Data Points per Day
nCOUNTER SPRINT (1 sample per lane)	800 genes	×	24 samples	=	19,200
nCOUNTER FLEX (1 sample per lane)	800 genes	×	48 samples	=	38,400
nCOUNTER MAX (2 Prep Stations; 1 sample per lane)	800 genes	×	96 samples	=	76,800
nCOUNTER MAX (2 Prep Stations; 4 samples per lane)	200 genes	×	384 samples	=	76,800

INCREASE SAMPLE THROUGHPUT WITH nCOUNTER PLEXSET™ CHEMISTRY

	# of Genes per Run		Samples per Day		Data Points per Day
nCOUNTER MAX (2 Prep Stations; 8 samples per lane)	24 genes	×	768 samples	=	18,432
nCOUNTER SPRINT (2 prep stations; 8 samples per lane)	24 genes	×	192 samples	=	4,608

One Chemistry
Many Applications

NanoString's molecular barcoding technology uses color-coded molecular barcodes that can hybridize directly to many different types of target molecules. It is ideal for a range of applications requiring efficient, high-precision quantitation of hundreds of target molecules across a sample set. All nCounter assays generate high-quality results from challenging sample types, including FFPE and crude cell lysates.

Gene Expression Analysis

- Rapidly analyze up to 800 genes simultaneously
- No RT, no enzyme and no amplification*
- Lyse and Go protocols for cells, blood and FFPE

miRNA Expression Analysis

- Multiplexed target profiling of miRNA transcriptomes in a single reaction
- Targeted miRNA discovery and validation on one platform
- Excellent specificity: accurately distinguish between highly similar miRNAs

miRGE™ Expression Analysis

- Simultaneously profile miRNA and mRNA expression in a single reaction
- No RT, no amplification and fewer pipetting steps

Fusion Gene Analysis

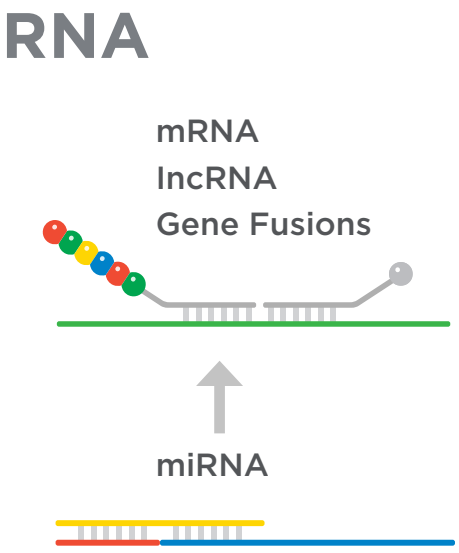
- Identify fusion events without knowledge of partner genes
- Characterize specific fusions by probing the junction sequence
- Study fusions and gene expression targets in the same assay

lncRNA Expression Analysis

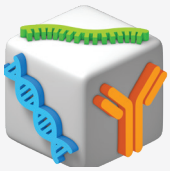
- High precision, digital quantification of lncRNAs
- Analyze up to 800 lncRNAs in a single reaction with no amplification

Single Cell Analysis

- Obtain single cell sensitivity with reverse transcription and limited amplification



Low RNA Input protocol available, requires amplification

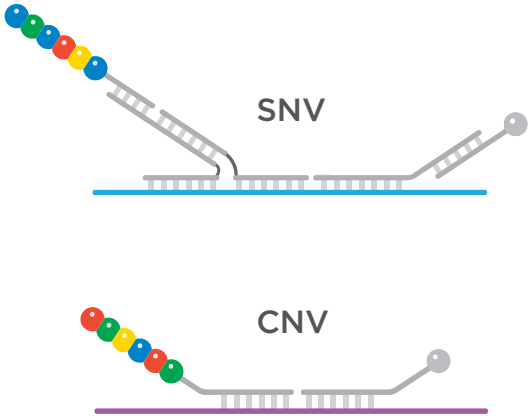


Small Sample.
Big Insight.

3D BIOLOGY™ TECHNOLOGY

- Profile combinations of DNA, RNA fusion, protein and phospho-protein targets up to 800-plex from a single sample
- Designed for mix and match flexibility
- Multi-analyte pre-matched assays
- Minimal sample input

DNA



Single Nucleotide Variation (SNV) Analysis

- Tumor-specific panels
- Built-in internal controls for amplification cycle and false discovery rates (FDRs)
- Detects SNVs, dinucleotide variants and small InDels

Copy Number Variation (CNV) Analysis

- Custom and cancer-specific panels
- Internal controls including invariant genomic regions and spike-in process controls
- Analyzes 0–4 bi-allelic and multi-allelic CNVs

PROTEIN

Protein and Phospho-protein Expression Analysis

- Multi-plex content focused on key areas in oncology research
- Profile 30 proteins simultaneously
- Customizable panels with our protein barcoding service
- Compatible with primary cells, fresh/frozen tissue, and FFPE

Panels to Accelerate Your Research

NanoString's pre-made panels are available for a number of important pathway and research areas. All panels are created with input from industry experts and current research topics and are updated regularly.

nCOUNTER PANEL SPECIFICATIONS

GENE EXPRESSION PANELS

DESCRIPTION	NO. OF GENES
PanCancer IO 360™	770
PanCancer Human Pathways	770
PanCancer Human Immune Profiling	770
PanCancer Mouse Immune Profiling	770
PanCancer Human Progression	770
Neuropathology	770
Human Myeloid Innate Immunity	770
Mouse Myeloid Innate Immunity	754
Human Immunology v2	594
Mouse Immunology	561
Human Kinase v2	536
Human Inflammation v2	255
Mouse Inflammation v2	254
Human Cancer Reference	236
Human Stem Cell	199
Customer Assay Evaluation	47
Human Reference	18

miRNA TARGETED DISCOVERY PANELS

DESCRIPTION	NO. OF miRNAS
Human v3	800
Mouse v1.5	600
Rat v1.5	423

HUMAN KARYOTYPE PANEL

DESCRIPTION	REGIONS
Human Karyotype monitors gross chromosomal abnormalities; includes 338 individual loci to quickly monitor cells as they passage	8 probes per arm

CANCER CN PANEL V2

DESCRIPTION	NO. OF GENES
CNVs (~3 probes per region) commonly amplified or deleted in cancer	87

nCOUNTER® VANTAGE 3D™ ASSAYS - MIX AND MATCH

RNA PANELS

DESCRIPTION	NO. OF GENES
Adaptive Immunity	192
Innate Immunity	192
Cancer Metabolism	192
Intracellular Signaling	192
Cellular Profiling	192
Wnt Pathways	192
DNA Damage and Repair	192
MAPK-PI3K Pathways	192
Heme	192
Lung Fusion	63
Leukemia Fusion	42

PROTEIN PANELS

DESCRIPTION	NO. OF PROTEINS
Immune Cell Profiling for cell suspensions	30
Immune Cell Signaling for cell suspensions	26
Solid Tumor for lysate	28
Solid Tumor for FFPE	26
Heme for lysate	**
Heme for FFPE	**

DNA SNV PANELS

DESCRIPTION	NO. OF MUTATIONS
DNA SNV Solid Tumor	104
DNA SNV Heme	Inquire**

nCOUNTER® VANTAGE 3D™ ASSAYS - PRE-MATCHED

COMBINATION PANELS

DESCRIPTION	
RNA:Protein Immune Cell Profiling for cell suspensions	
RNA:Protein Immune Cell Signaling for cell suspensions	
RNA:Protein Solid Tumor for FFPE	
RNA:Protein Solid Tumor for lysate	
DNA:RNA:Protein Solid Tumor for lysate	up to 800 plex
DNA:RNA:Protein Solid Tumor for FFPE	
DNA:Fusion:Protein Lung for lysate	
DNA:Fusion:Protein Lung for FFPE	
DNA:RNA:Protein Heme for lysate**	
DNA:RNA:Protein Heme for FFPE**	

** Available late 2017. Ask your account representative about availability.

Say Hello to nDesign™ Gateway

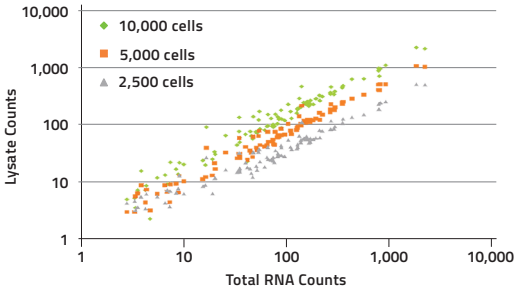
For a complete list of genes in each panel, visit **STORE.NANOSTRING.COM**

Insight from Difficult Samples

nCounter assays can accept samples such as purified total RNA, raw cell or blood lysates and formalin-fixed paraffin-embedded (FFPE) extracts with no loss in precision. Even severely degraded RNA can be a viable sample input.

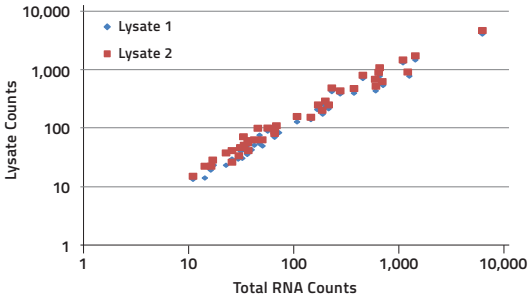
Crude Cell Lysates

Three cell lysates (2,500, 5,000, and 10,000 cells) were compared to 100 ng of purified total RNA. Results using cell lysates were highly correlated with purified RNA (R2 > 0.97 for all three) and demonstrated that comparable data can be achieved with either protocol.



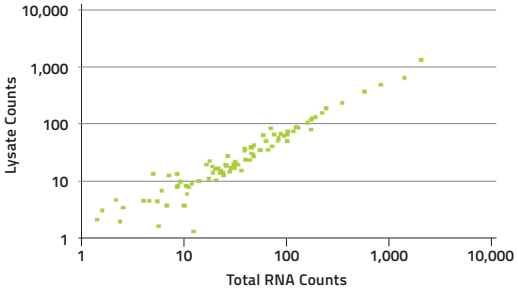
Whole Blood Lysates

Two PAXgene™-lysed whole blood replicates compared to 100 ng of matched purified total RNA. Results using blood lysates were highly correlated with purified RNA (R2 > 0.96 and R2 > 0.97) and demonstrated that high quality data can be obtained using PAXgene-lysed whole blood. (PAXgene is a trademark of QIAGEN®.)



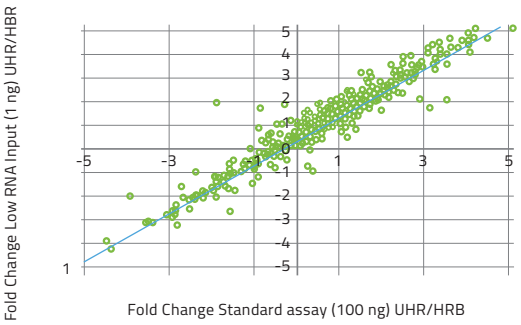
Formalin-Fixed paraffin-embedded tissue

FFPE-derived and purified total RNA compared to matched purified total RNA from fresh tissue. Results using FFPE-derived tissue were highly correlated with purified RNA (R2 > 0.97) and demonstrated that high quality data can be achieved from FFPE.



Expanded Options with nCounter Low RNA Input Kit (1-10 ng)

The nCounter Low RNA Input Kit enables high quality gene expression profiling of up to 800 gene targets from as little as 1 ng of sample. The kit is optimized for use with RNA from Formalin Fixed Paraffin Embedded (FFPE) tissue as well as crude cell lysates. Additionally, the kit can be utilized in the study of low expressing genes. The streamlined, user friendly workflow and reliable results enable gene expression studies of small samples or low expressing genes to be completed quickly and efficiently.

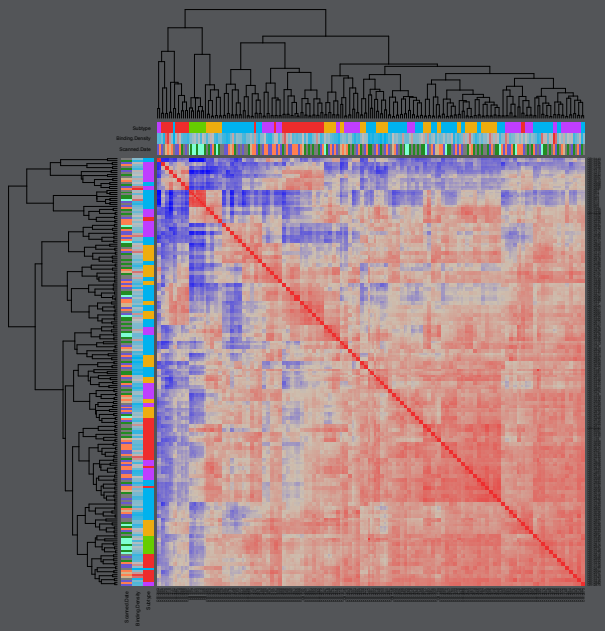


Powerful
Data Analysis

VISUALIZE RESULTS WITH nSOLVER™ ANALYSIS SOFTWARE

nSolver Analysis Software is an integrated analysis platform for storage, custom QC, and custom normalization of nCounter data. Generate highly-customized exports, basic statistical outputs, and publication-quality figures quickly and easily with the no incremental cost.

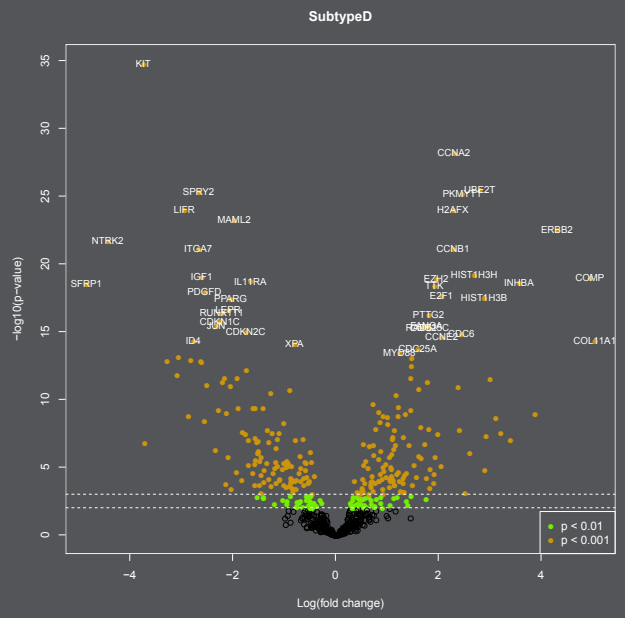
- Recommended quality control on samples/lanes
- Tunable normalization and fold-change measurements
- Statistical significance testing
- Compatible with standard analysis programs including; Ingenuity Pathway Analysis, Partek Genomics Suite, BioDiscovery Nexus Copy Number, Advaita iPathwayGuide



SIMPLE, ADVANCED DATA ANALYSIS

nCounter Advanced Analysis is a free, wizard-based add-on to nSolver™ Analysis Software for deeper data insights based on robust R statistics. Examine experimental trends, identify pathway-specific responses, and profile immune cell populations in shareable HTML reports.

- Support for all mRNA and protein CodeSets, including custom reagents and panels
- Quick Analysis option for one-click data QC, normalization, and differential expression testing
- Automatic incorporation of biological annotations and logical defaults for each panel



Data analysis services for large projects are available.
For more information please contact: DAS@nanostring.com

Customize your Solution

DESIGN A CUSTOM CODESET SPECIFIC TO YOUR RESEARCH

- Standard chemistry enables processing of up to 96 samples/day x 800 (depending on system)
- PlexSet™ chemistry enables sample multiplexing of up to 8 samples per lane, increasing sample throughput

CUSTOMIZE A PANEL

Add up to 30 additional genes or a collection of specific controls to make your panel unique to that experiment.

1 SELECT GENES

Submit your RefSeq IDs for up to 800 target genes to NanoString.

LEAD TIME
Customer-defined

2 PROBE DESIGN

NanoString designs probes then creates and sends a Design Report.

LEAD TIME
Custom GEx: 3-5 days
Custom CNV: 10-15 days

3 CUSTOMER REVIEW

Customer reviews and approves Design Report.

LEAD TIME
Customer-defined

4 MANUFACTURE AND SHIP

NanoString manufactures and ships CodeSet to customer.

LEAD TIME
3-5 weeks (dependent on gene number and scale)

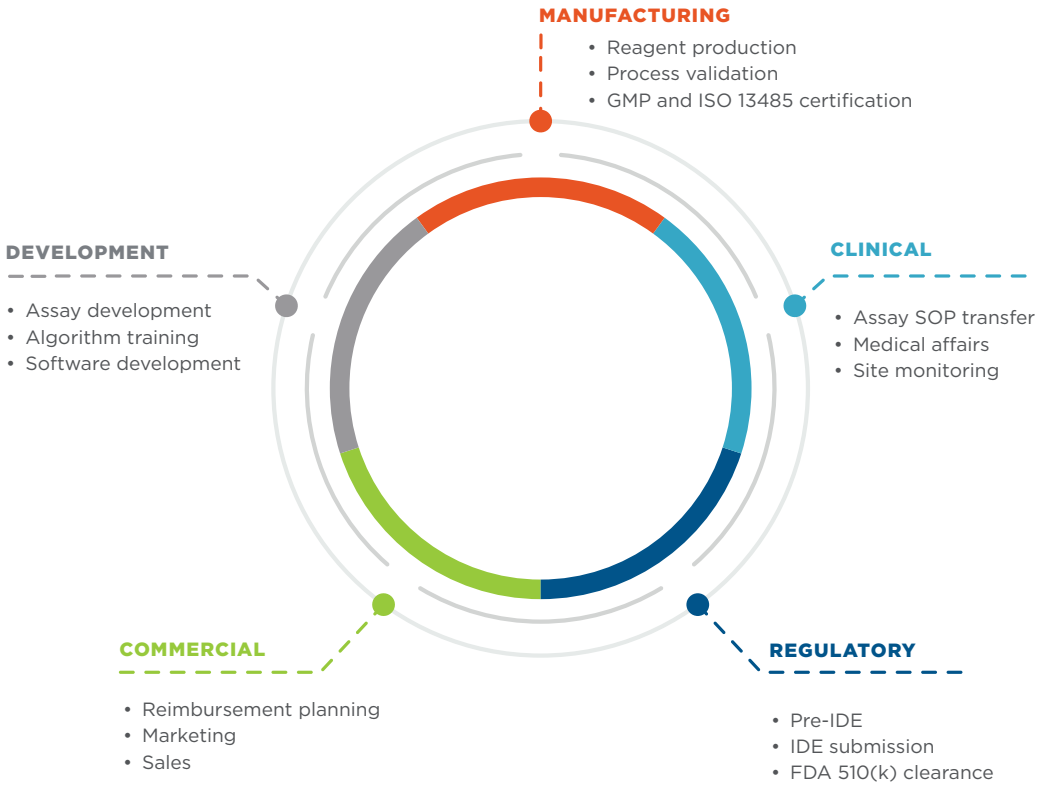
Say Hello to nDesign™ Gateway

For a complete list of genes in each panel, visit **STORE.NANOSTRING.COM**

One Instrument from Lab to Clinic

CLINICAL DIAGNOSTICS CAPABILITIES

Our experience developing, testing and marketing Prosigna® demonstrates our commitment to establishing nCounter as a truly multi-purpose platform for research and clinical use.

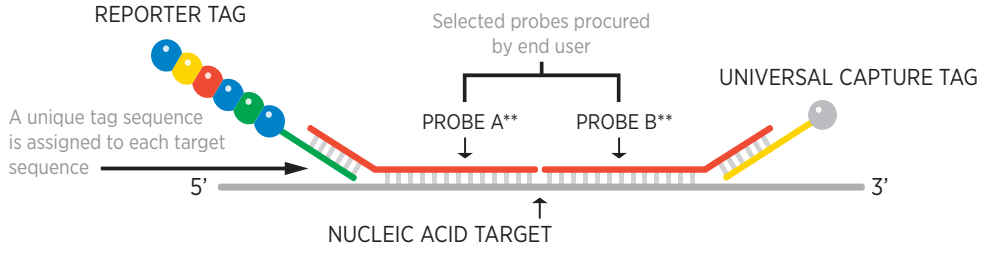


The nCounter FLEX is manufactured under GMP guidelines and ISO 13485 to ensure quality and compliance with international standards.

In Life Sciences mode, nCounter FLEX can perform all nCounter Life Science and nCounter Elements assays for research use. Diagnostics mode provides a secondary interface for running diagnostic assays such as the Prosigna Breast Cancer Prognostic Gene Signature Assay.

VALIDATE YOUR OWN IVD ASSAYS

nCounter Elements™ are a set of reagents and consumables that are registered with the FDA and are intended for use with nCounter technology to enable the end-user to validate diagnostic assays.



Your Trusted Advisor

A team of highly dedicated support and service personnel are available to ensure your success with all nCounter products.

- **Field Applications Scientists** and **Technical Services Scientists** are highly trained experts who are available to assist you before, during and after your project.
- **Field Service Engineers** will ensure your system is operating at peak performance and will qualify your instrument as needed through a variety of service offerings.

LET US HELP YOU MAXIMIZE THE BIOLOGICAL INFORMATION CONTAINED WITHIN YOUR SAMPLES THROUGH THESE PRODUCTS AND SERVICES:

CONSULTATION	TRAINING	CUSTOM SEMINARS
Experimental Design Strategies	New System Training	Technology Overviews
Application Design	New Application Training	New Technologies
Product Selection Strategies	Data Analysis/Advanced Analysis Training	

TROUBLESHOOTING	SERVICE	DATA ANALYSIS
Assay Optimization	Tiered Service Contracts	nSolver and Basic Analysis Support
Log File Interpretation	IQ/OQ/PQs	Data Analysis Project Services (for fee)

Contact Support

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