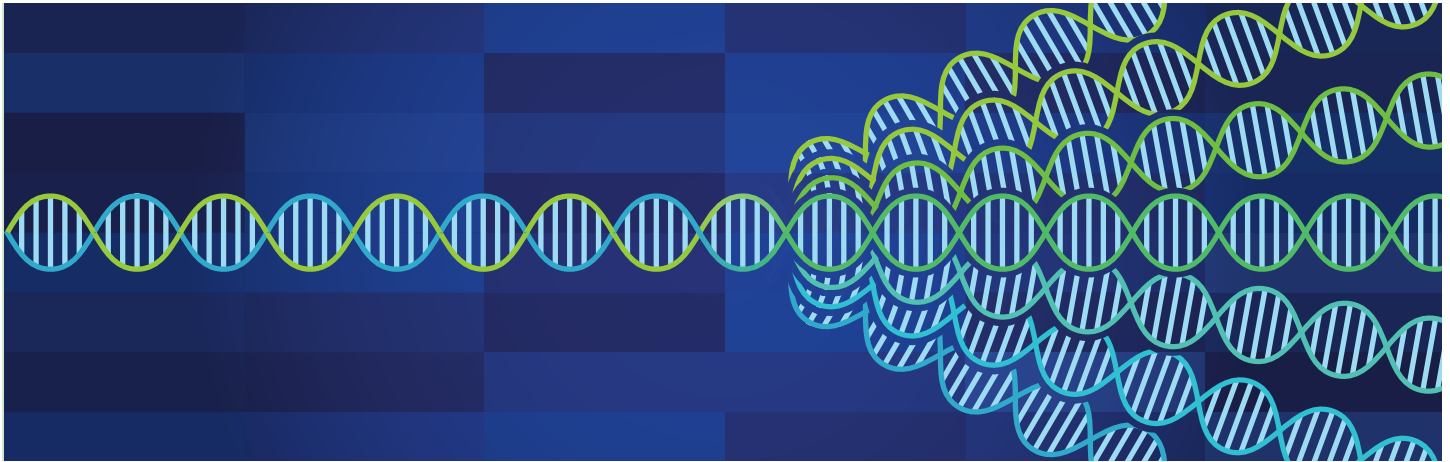


nCounter® Low RNA Input Kit



Product Highlights

High Sensitivity

- Perform gene expression analysis on up to 800-genes from as little as 1 ng of RNA

Optimized for FFPE

- Analyze FFPE & other degraded samples from as little as 10 ng of RNA

Simple Workflow

- Only 30 minutes of hands-on time

Detect Low Expressing Genes

- The nCounter Low RNA Input kit increases nCounter sensitivity & enables detection of low expressing genes

nCounter Gene Expression Assay Compatibility

- Primer pools are available for all nCounter Gene Expression Panels; Custom designs are available

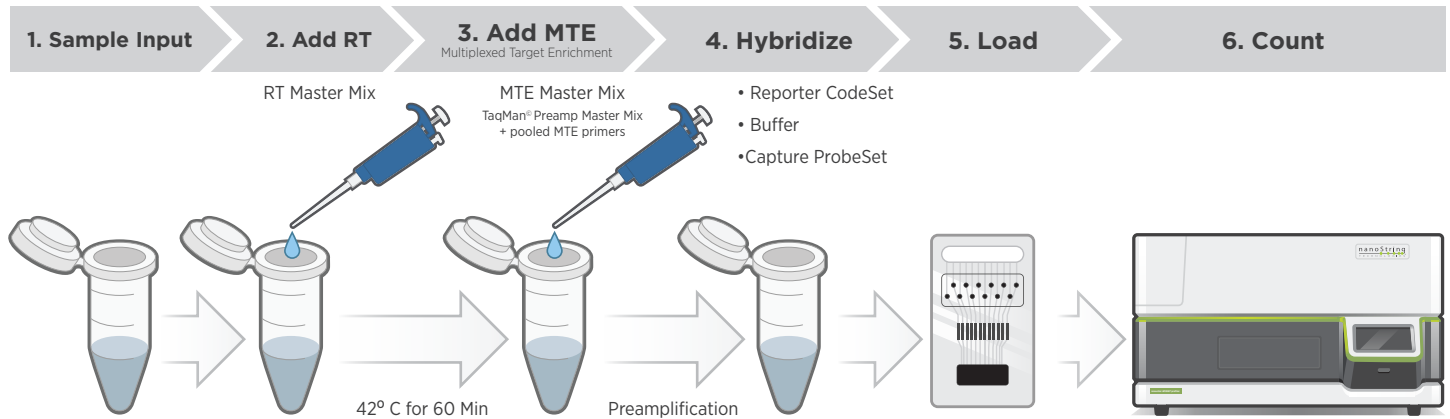
Discover More from Less Sample

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.

Low RNA Input Kit Specifications

| | |
|-------------------------------|--|
| Minimum Input Material | <ul style="list-style-type: none">• 1 ng Purified RNA (Fresh/Frozen)• 1 ng (-100 cells) Cell Lysate• 10 ng Purified FFPE |
| Number of Samples | 48 Reactions |
| Hands-on Time | 30 minutes |
| Assay Time | 2.5 Hours |
| Compatible Products | <ul style="list-style-type: none">• Pre-Configured NanoString Gene Expression Panels• Custom Panel Support |

Figure 1: nCounter Low RNA Input Workflow



Streamlined Workflow

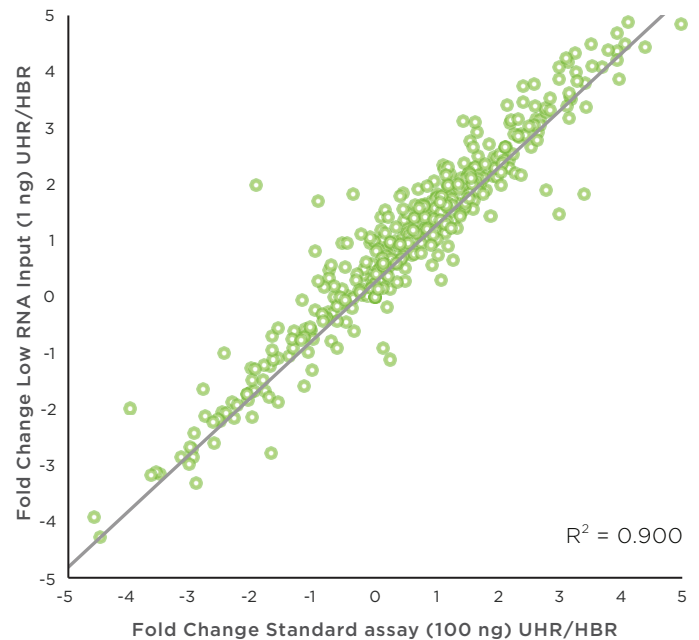
The Low RNA Input Kit enables researchers and laboratories with limited or low expressing samples to generate the same high-quality gene expression data of a typical NanoString assay using a fraction of the sample input. The Low RNA Input Kit provides an ultra-sensitive, reproducible method that utilizes single-tube, limited cycle PCR amplification to perform multiplexed target enrichment (MTE) of samples prior to nCounter hybridization. The workflow for 12 samples requires less than 30 minutes of hands-on time and can be completed in a few hours.

High Sensitivity with Linear Response

A Multiplexed Target Enrichment (MTE) step allows mRNA sample transcripts to be linearly amplified following a reverse transcription step.

A Multiplexed Target Enrichment (MTE) was performed with 800 primer pairs using 1 ng of either Human Reference or Brain Reference total RNA as sample input. Fold changes were calculated for all probes exhibiting significant detection and plotted against the fold changes observed in unamplified samples (100ng) for the same genes after hybridization with nCounter GX probes. The data in Figure 2 shows the high level of correlation in fold changes between assays, demonstrating the simultaneous, unbiased amplification of hundreds of target transcripts and preservation of fold change information that the Low RNA Input Kit offers nCounter users.

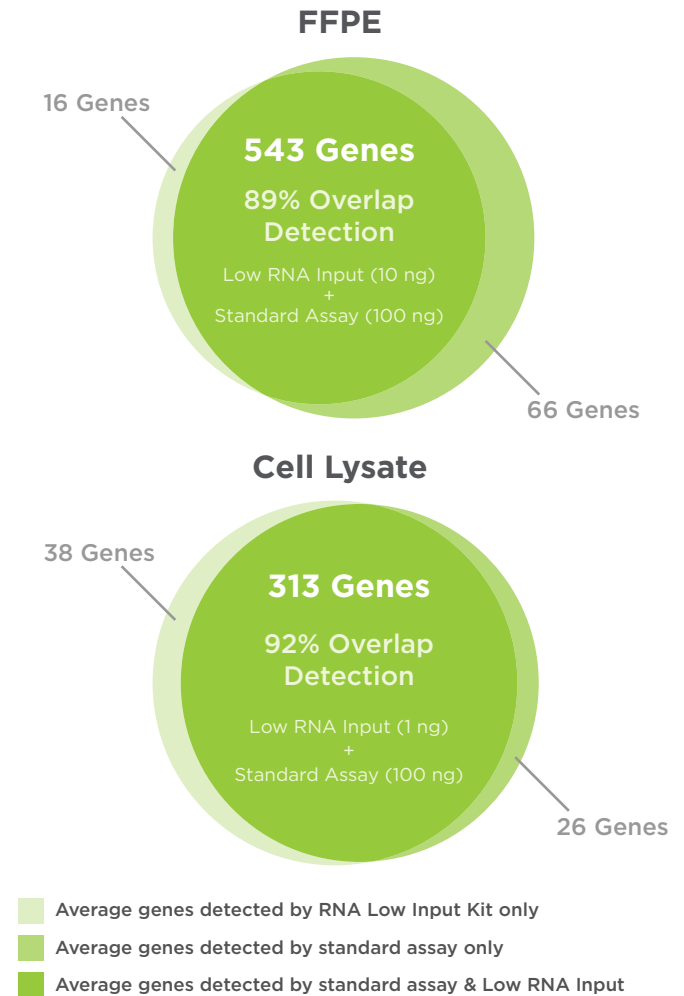
Figure 2: Gene Expression Fold Change of Low RNA Input Kit (1 ng with Pre-Amplification) vs. Standard NanoString Assay Input (100 ng, without pre-amplification)



Reliable Results from FFPE and Cell Lysates

The Low RNA Input Kit has been optimized to generate reliable results from challenging sample types including Formalin Fixed Paraffin Embedded (FFPE) tissue and crude cell lysates. The Low RNA Input Kit enables nCounter users to generate the high-quality data of a standard NanoString assay from less sample. To validate that the Low RNA Input Kit enables equivalent results at lower sample input amounts while increasing the ability to capture low expressing genes, 4 FFPE samples and 4 Cell Lysates were processed according to both the standard NanoString assay (100 ng cell lysate, 100 ng FFPE) and Low RNA Input Kit (1 ng cell lysate, 10 ng FFPE) protocols. The genes detected using 100 ng without pre-amplification were compared to the results using the Low RNA Input Kit and analyzed for concordance. Figure 3 demonstrates significant overlap in the genes detected in both the reduced sample inputs utilizing MTE and standard nCounter assay for both FFPE and lysates. Furthermore, the increased sensitivity to detect certain low expressing genes that without an MTE step may fall beneath the lower limit of detection using 100 ng and no pre-amplification is represented in the leftmost, light green portion of the Venn diagram.

Figure 3: Average number of genes detected and % overlap using Low RNA Input Kit (1 ng,10 ng) and Standard NanoString Assay (100 ng) for RNA/Cell lysate and FFPE samples (4 sample average)



List of Supported Panels

| | | | | | | |
|----------------------------------|------------------------------|-----------------------------|--|---|---|-----------------------------------|
| CAE Panel | Human Cancer Reference Panel | Human Stem Cell Panel | Human Immunology V2 | Human Inflammation V2 | Mouse Immunology V1 | Mouse Inflammation V2 |
| PanCancer Immune Profiling Panel | PanCancer Pathways Panel | PanCancer Progression Panel | PanCancer Mouse Immune Profiling Panel | nCounter Human Myeloid Innate Immunity V2 | nCounter Mouse Myeloid Innate Immunity V2 | NanoString Custom Panel Codesets* |

*Upon request, NanoString will provide MTE primer designs flanking the target sequences for custom CodeSets. As part of the CodeSet design process, NanoString can also provide sufficient information to design alternate primers if desired. For additional information or questions about primer design, please contact NanoString Support at support@nanosttring.com

Ordering Information

| Type | Product Name | Product Description | Units | Catalog # |
|--|---|--|---------------|-----------------|
| Low RNA Input Reagent Kit | Low RNA Input Kit | 48 reactions kit for profiling from low sample input amounts | 48 Reactions | LOW-RNA-48 |
| Panel-Specific Primer Pools for Use with Low RNA Input Kit | CAE Panel Primer Pool | MTE primer pool for Low Input RNA profiling 47 MAQC genes cancer-related human genes. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-CAE-12 |
| | Human Cancer Reference Panel Primer Pool | MTE primer pool for Low Input RNA profiling 233 cancer-related human genes. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-CR-12 |
| | Human Stem Cell Panel Primer Pool | MTE primer pool for Low Input RNA profiling 181 cancer-related human genes + 6 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-SC-12 |
| | Human Immunology V2 Primer Pool | MTE primer pool for Low Input RNA profiling (584 genes) 569 cancer-related human genes + 15 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-HIM2-12 |
| | Human Inflammation V2 Primer Pool | MTE primer pool for Low Input RNA profiling (249 genes) 243 cancer-related human genes + 6 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-HIN2-12 |
| | Mouse Immunology V1 Primer Pool | MTE primer pool for Low Input RNA profiling (559 genes) 549 cancer-related human genes + 14 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-MIM1-12 |
| | Mouse Inflammation V2 Primer Pool | MTE primer pool for Low Input RNA profiling (248 genes) 242 cancer-related human genes + 6 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-MIN2-12 |
| | PanCancer Immune Profiling Panel Primer Pool | MTE primer pool for Low Input RNA profiling (768 genes) 728 cancer-related human genes + 40 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-HIP1-12 |
| | PanCancer Pathways Panel Primer Pool | MTE primer pool for Low Input RNA profiling (739 genes) 733 cancer-related human genes + 6 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-PATH-12 |
| | PanCancer Progression Panel Primer Pool | MTE primer pool for Low Input RNA profiling (770 genes) 730 cancer-related human genes + 40 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-PROG1-12 |
| | PanCancer Mouse Immune Profiling Panel Primer Pool | MTE primer pool for Low Input RNA profiling (770 genes) 750 cancer-related human genes + 20 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-MIP1-12 |
| | nCounter Human Myeloid Innate Immunity V2 Panel Primer Pool | MTE primer pools for Low Input RNA profiling (770 genes) 730 immune related human genes + 40 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-HMII2-12 |
| | nCounter Mouse Myeloid Innate Immunity V2 Panel Primer Pool | MTE primer pools for Low Input RNA profiling (754 genes) 734 immune-related human genes + 20 internal reference controls. Master Kit, Low RNA Input Kit & Panel CodeSet Required | 12 Reactions | PP-MMII2-12 |
| Instrument Consumables for Use with Low RNA Input Kit | nCounter Master Kit (Max or Flex Systems) | Reagents, cartridges, and consumables necessary for sample processing on nCounter MAX and FLEX Systems. | 12 Reactions | NAA-AKIT-012 |
| | nCounter SPRINT Cartridge | Sample Cartridge for nCounter SPRINT System | 12 Reactions | SPRINT-CAR-1.0 |
| | nCounter SPRINT Reagent Pack | nCounter SPRINT Reagent Pack containing Reagents A,B,C & Hybridization Buffer | 192 Reactions | SPRINT-REAG-KIT |

NanoString Technologies, Inc.

530 Fairview Avenue North
Seattle, Washington 98109

CONTACT US

info@nanosttring.com
Tel: (888) 358-6266
Fax: (206) 378-6288
www.nanosttring.com

SALES CONTACTS

United States: us.sales@nanosttring.com
EMEA: europe.sales@nanosttring.com
Asia Pacific & Japan: apac.sales@nanosttring.com
Other Regions: info@nanosttring.com

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