

# Explore the Biology of Agriculture

## with nCounter® Gene Expression Analysis

Pathway-based gene expression studies have been used in agriculture research to better understand hardiness, disease pathogenesis, and drought-tolerance of food and cash crops.

nCounter Gene Expression Assays reduce time to data with a simple workflow of less than 15 minutes hands-on time and streamlined analysis, generating results in under 24 hours.

- Profile up to 800 genes from a single sample
- Flexible probe design allows you to select the organism/genes of your choice
- No amplification, RT or library prep with as little as 25 ng RNA
- nCounter platform cited in peer-reviewed publications
- No technical replicates required due to direct, digital counting
- Sample multiplexing with PlexSet reagents allows you to profile up to 96 genes in 96 samples at once, generating up to 9,216 data points



### Custom Solutions

Affordable for every lab and project

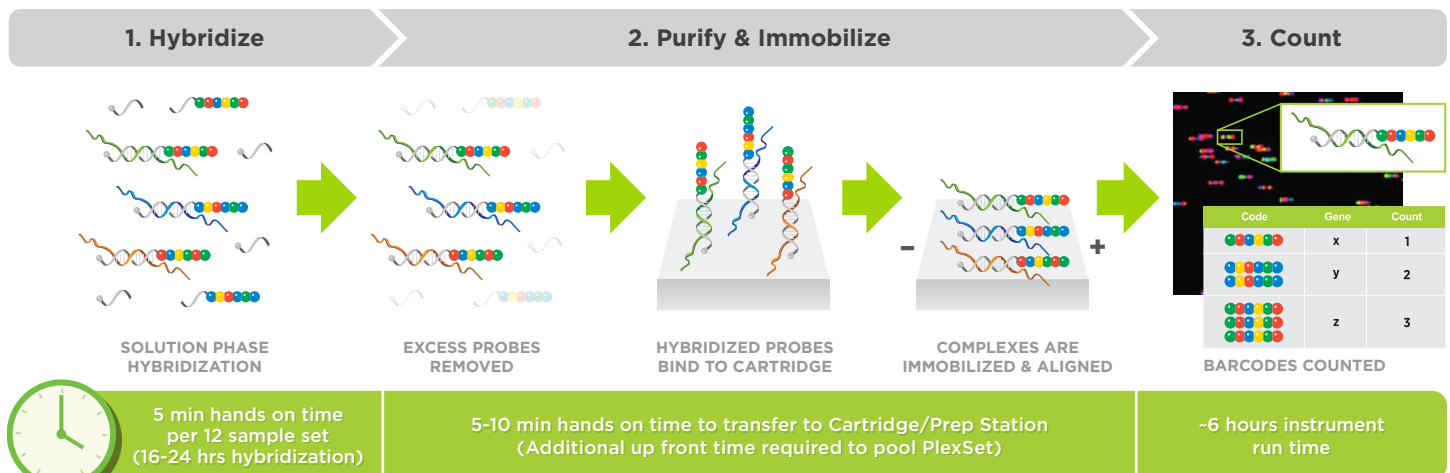
#### DID YOU KNOW?

nCounter probe sets have been designed for over 300 species, and there have been more than 6,000 probe designs made to date.

- Oil Palm
- Potato
- Rice
- Corn
- Tobacco
- Carrot
- Soy

Product	Assay Type	Maximum Targets	Daily Sample Throughput
Custom CodeSets	User-designed, turn-key solution that comes ready-to-use	800	24-96
Elements™ TagSets	Self-assembled, interchangeable probes, optimized for smaller validation projects with maximum flexibility.	216	24-96
PlexSet™ Reagents	Self-assembled, interchangeable probes for high-throughput, sample multiplexing projects	96	192-1152

### nCounter Workflow for Custom Gene Expression Assays



## Probe Design

Probe sequences are designed by NanoString bioinformaticians free of charge. Probes can be designed for any species of interest with a known transcriptome sequence.

### 1 SELECT GENES

Submit your RefSeq IDs to NanoString.

#### LEAD TIME

Customer-defined

### 2 PROBE DESIGN

NanoString designs probes, then creates and sends a Design Report.

#### LEAD TIME

3-5 days

### 3 CUSTOMER REVIEW

Customer reviews and approves Design Report.

#### LEAD TIME

Customer-defined

### 4 MANUFACTURE AND SHIP

NanoString manufactures and ships product to customer.

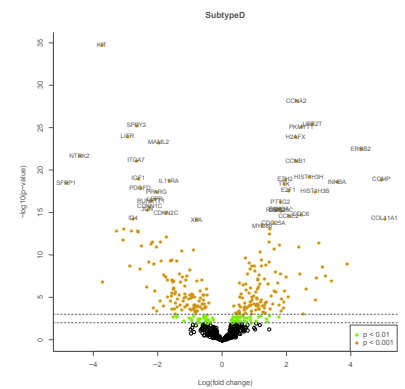
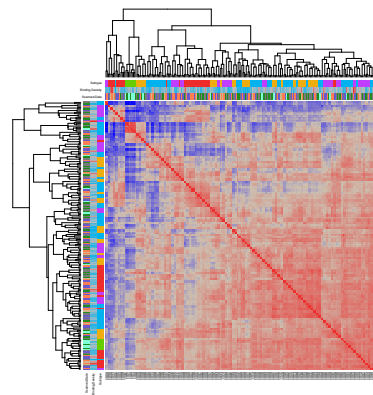
#### LEAD TIME

Custom CodeSets: 3-5 weeks  
Elements TagSets and PlexSet reagents: 1-3 days (*customer orders oligo probes from 3rd party using provided sequences*)

## Data Analysis

Generate highly-customizable reports, basic statistical outputs and publication-quality figures quickly and easily with our data analysis software.

- Recommended quality control on samples/lanes
- Tunable normalization and fold-change measurements
- Statistical significance testing



## Selected Publications:

1. Zhang, Y et al. A transportome-scale amiRNA-based screen identifies redundant roles of Arabidopsis ABCB6 and ABCB20 in auxin transport. *Nat Commun.* 2018;9(1):4204.
2. Tai, HH et al. Verticillium dahliae Disease Resistance and the Regulatory Pathway for Maturity and Tuberization in Potato. *Plant Genome.* 2018;11(1):1-15.
3. Greenham, K et al. Temporal network analysis identifies early physiological and transcriptomic indicators of mild drought in Brassica rapa. *Elife.* 2017;(6).
4. Neilson, J et al. Gene expression profiles predictive of cold-induced sweetening in potato. *Funct Integr Genomics.* 2017;17(4):459-476.
5. Gálvez, JH et al. The nitrogen responsive transcriptome in potato (*Solanum tuberosum* L.) reveals significant gene regulatory motifs. *Scientific Reports.* 2016;6:26090.
6. Tsai, YC et al. Characterization of genes involved in cytokinin signaling and metabolism from rice. *Plant Physiol.* 2012;158(4):1666-84.

Contact your local representative for a project consultation today and visit our website for more information: [nanosttring.com/custom-solutions](http://nanosttring.com/custom-solutions)

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