

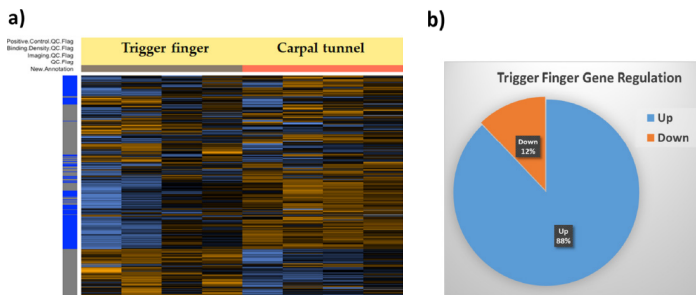
# Identification of the Gene Expression Profile in Trigger Finger Samples using NanoString® Technology

## Background

- Trigger finger (stenosing tenosynovitis) is a musculoskeletal disorder in which finger gets “locked” in either a flexed or extended position due to disproportion between the diameter of that finger’s tendon and pulley system.
- While genetic characteristics of fibrotic tissue in trigger finger have been studied, the pathways that govern the initiation and propagation of fibrosis are still unknown.

## Research Question

Can NanoString’s nCounter gene expression profiling assay uncover possible trigger finger molecular etiologies?



**Figure 1.**

a) Heatmap of normalized data generated via unsupervised clustering by NanoString nSolver software. Heatmap is scaled to give all genes equal variance. Control samples (n=4) are organized under the orange column, and trigger finger samples (n=4) are organized under the gray column. Within the gene clusters, orange indicates high expression, and blue indicates low expression.

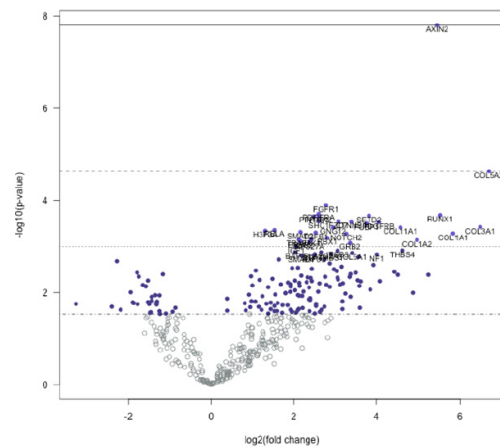
b) Pie chart showing the percentage of genes up- and downregulated in trigger finger compared to carpal tunnel samples.

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## Experimental Setup

Sample Type	Frozen
Tissue Type	Human phalanges
Assay	PanCancer Pathways Panel
Analyte	RNA
Instrument	nCounter® Analysis System



**Figure 2.**

Volcano plot displaying each gene tested plotted comparing log<sub>10</sub> (p-value) and log<sub>2</sub> fold change. Horizontal lines on the plot describe statistical significance; thus, highly significant values are at the top of the plot. Highly differentially expressed genes are at the horizontal extremes of the plot. The 40 most statistically significant values are highlighted in the plot.

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## Results & Conclusions

- Identified 165 statistically significant genes differentially regulated in samples from patients with trigger finger, compared to carpal tunnel.
- Study (pilot) identified several genes and signaling pathways dysregulated in the trigger finger and might be involved in pathogenesis.
- Outcome of study will further help in understanding molecular signaling pathways involved in pathogenesis and designing therapeutic strategies for treatment of trigger finger.

For more information, please visit [nanosttring.com/PanCancerPathways](https://nanosttring.com/PanCancerPathways)

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