

## GATA-3 Reporter Plasmids for Revealing Underlying Mechanisms in Breast Cancer

### Summary (1024-character limit)

Researchers at the National Cancer Institute, Laboratory of Cancer Biology and Genetics believe that a better understanding of GATA-3 function and dysregulated during the onset and progression of breast cancer will lead to new strategies in diagnosing and treating the disease.

### NIH Reference Number

E-128-2009

### Product Type

- Research Tools

### Keywords

- GATA-3 expression
- breast cancer
- diagnostic
- prognostic

### Collaboration Opportunity

This invention is available for licensing and co-development.

### Contact

- John D. Hewes  
NCI - National Cancer Institute

240-276-5515

[John.Hewes@nih.gov](mailto:John.Hewes@nih.gov)

### Description of Technology

GATA-3 is a transcription factor that is highly expressed in normal cells of the mammary luminal epithelium. GATA-3 plays a regulatory role in determining the fate of cells in the mammary gland. Disruption of GATA-3 expression leads to defects in the development of mammary cells, including an inability to differentiate properly into the correct cell type. GATA-3 function is also disrupted in various breast cancer models indicating that GATA-3 has tumor suppressive properties in normal cells. Mammary cell differentiation during a cell's development and lifespan helps determine the progression, severity, and clinical outcome of disease for a breast cancer patient. Low or limited mammary GATA-3 expression is correlated with larger tumors, an increased likelihood of tumor-positive lymph nodes, and therefore predicts an overall poorer clinical outcome compared to patients with higher GATA-3

expression. Researchers at the National Cancer Institute, Laboratory of Cancer Biology and Genetics believe that a better understanding of GATA-3 function and dysregulated during the onset and progression of breast cancer will lead to new strategies in diagnosing and treating the disease. They are seeking statements of capability or interest from parties interested in collaborative research to co-develop, evaluate, or commercialize a research tool for the diagnosis or treatment of breast cancer.

### **Potential Commercial Applications**

- Possible identification of new targets for breast cancer therapy

### **Competitive Advantages**

- Useful for in vitro and in vivo assays

### **Inventor(s)**

Jeffrey Green M.D. (NCI)

### **Development Stage**

- Discovery (Lead Identification)

### **Publications**

H. Kouros-Mehr et al. GATA-3 and the regulation of the mammary luminal cell fate. [[PMID 18358709](#)]

### **Patent Status**

- **Research Material:** NIH will not pursue patent prosecution for this technology

### **Therapeutic Area**

- Cancer/Neoplasm