

## **GATA-3 REPORTER PLASMIDS FOR REVEALING UNDERLYING MECHANISMS IN BREAST CANCER**

### **SUMMARY**

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.

### **REFERENCE NUMBER**

E-128-2009

### **PRODUCT TYPE**

- Diagnostics
- Research Materials

### **KEYWORDS**

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

### **COLLABORATION OPPORTUNITY**

This invention is available for licensing and co-development.

### **CONTACT**

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### **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.

### COMPETITIVE ADVANTAGES

- Useful for in vitro and in vivo assays
- Possible identification of new targets for breast cancer therapy

### INVENTOR(S)

[Jeffrey Green, M.D.](#)

### DEVELOPMENT STAGE

- Discovery (Lead Identification)

### PUBLICATIONS

H. Kouros-Mehr, et al. GATA-3 and the regulation of the mammary luminal cell fate. *Curr Opin Cell Biol.* 2008 Apr;20(2):164-170. [[PubMed: 18358709](#)]

### PATENT STATUS

- **U.S. Issued:** Research Tool. Patent protection is not being pursued for this technology.

### THERAPEUTIC AREA

- Cancer/Neoplasm