

## **AT-3 Mouse Breast Tumor Cell Line**

### **Summary**

The National Cancer Institute (NCI) seeks licensees for the AT-3 mouse breast tumor cell line derived from an autochthonous tumor model.

### **NIH Reference Number**

E-240-2016

### **Product Type**

- Research Tools

### **Keywords**

- Autologous Tumor Cell Line, Autochthonous Tumor, AT-3, Breast Cancer, Mouse, Murine, In Vitro Animal Model, Schlom

### **Collaboration Opportunity**

This invention is available for licensing.

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### **Description of Technology**

Tumor cell lines are important tools for the study of cancer. However, most tumor cell lines available today do not mimic physiological tumor development, progression, and host immune responses. Autochthonous tumors include spontaneously occurring tumors and chemical, viral, or physical carcinogen-induced tumors. They are considered to model human tumors more closely than transplanted tumors. Autochthonous tumors can be generated de novo in a model organism of interest and are thought to resemble physiological human tumor conditions. There is therefore a need for development of cell lines from autochthonous tumor models that recapitulate physiological tumor conditions to provide relevant tools for studying tumor development and progression, and host immune responses to cancers.

Researchers at the National Cancer Institute (NCI) have developed a mouse breast tumor cell line, AT-3, derived from cells of the primary mammary gland carcinoma of the MTAG model. The MTAG mouse model was developed using the mouse mammary tumor virus

(MMTV) long terminal repeat (LTR) promoter to specifically target the polyomavirus middle T antigen (Ag) expression in the mammary gland tissue of B6 mice. This strategy resulted in the generation of transgenic mice with autochthonous mammary carcinomas, with eventual metastatic spread to the lungs that occurs over an approximate 6-month life span. The AT-3 cell line has further been used to study tumor-specific immune dysfunction in the B6 mouse background.

NCI is seeking licensees for the AT-3 mouse breast tumor cell line.

### **Potential Commercial Applications**

- Breast cancer research
- Anti-breast cancer drug screening
- Development of other mouse models for breast cancer research

### **Competitive Advantages**

- Orthotopic growth
- Tumor histology devoid of transplantation introduced changes
- Metastasis via lymphatic and vascular vessels surrounding and within the primary tumor
- AT-3 cells were isolated from an autochthonous mouse mammary tumor from the MTAG mouse model
- Mammary tumor development and progression in MTAG mice closely mimic breast cancer development and progression in humans
- AT-3 cell line is a physiologically relevant tool for study of breast cancer in humans

### **Inventor(s)**

[Jeffrey Schlom Ph.D. \(NCI\)](#), [Scott Abrams Ph.D \(NCI\)](#)

### **Development Stage**

- Pre-clinical (in vivo)

### **Publications**

Stewart TJ & Abrams SI. Altered immune function during long-term host-tumor interactions can be modulated to retard autochthonous neoplastic growth. [[17709499](#)]

### **Patent Status**

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

### **Therapeutic Area**

- Cancer/Neoplasm

### **Updated**

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