

## BIOLUMINESCENT BLADDER CANCER CELL LINE FOR TRACKING CANCER PROGRESSION

### SUMMARY (1024-CHARACTER LIMIT)

Researchers at the National Cancer Institute (NCI) have developed a bioluminescent MB49-luciferase bladder cancer cell line that can be used in preclinical studies to evaluate anti-cancer agents in bladder cancer. NCI seeks parties to non-exclusively license this research material.

### NIH REFERENCE NUMBER

E-237-2018

### PRODUCT TYPE

- Research Materials

### KEYWORDS

- Bladder Cancer, MB49, Bioluminescence, Luciferase, Schlom

### COLLABORATION OPPORTUNITY

This invention is available for licensing.

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### STATUS

Active

### DESCRIPTION OF TECHNOLOGY

Bladder cancer is the fifth most common cancer in the United States and one of the costliest cancers to treat. Compared to other cancer types, bladder cancer has been understudied, and there is a need for informative mouse bladder cancer models that resemble the clinical situation and allow for evaluation of chemotherapeutic or immunotherapeutic agents. The orthotopic murine bladder cancer model MB49 resembles non-muscle invasive, nonmetastatic urothelial carcinomas and provides an opportunity to study the anti-tumor effects of immune cell checkpoint inhibitors. Moreover, successful tumor cell implantation of MB49 cells fails in ~25% of the animals due to low tumor- take rates. Thus, there is also a need for methods that assess tumor- take rates in orthotopic bladder tumor models.

Researchers at the National Cancer Institute (NCI) have developed a MB49-luciferase cell line that allows for intravital imaging to evaluate anti-cancer agents in bladder cancer. Furthermore, the MB49-luciferase cell line is helpful in assessing the tumor-take to select mice for treatment groups based on equivalent tumor burden. The inventors have demonstrated in vivo that MB49-luciferase bladder tumors are highly positive for the expression of programmed death-ligand 1 (PD-L1).

The [National Cancer Institute, Laboratory of Tumor Immunology and Biology](#), is seeking statements of capability or interest from parties interested in licensing this research material to evaluate anti-cancer agents in bladder cancer.

### **POTENTIAL COMMERCIAL APPLICATIONS**

- Use in preclinical studies to evaluate anti-cancer agents in bladder cancer

### **COMPETITIVE ADVANTAGES**

- Bioluminescence allows for assessment of tumor progression after treatment with anti-cancer agents
- Intravital imaging is helpful in assessing early tumor-take and the amount of radiance can be used to select mice accurately for treatment groups based on equivalent tumor burden
- Intravital imaging also allows for temporal assessment of tumor growth in real time

### **INVENTOR(S)**

[Jeffrey Schlom \(NCI\)](#), [John Greiner \(NCI\)](#)

### **DEVELOPMENT STAGE**

- Pre-clinical (in vivo)

### **PUBLICATIONS**

Vandever A, et al. Systemic immunotherapy of non-muscle invasive mouse bladder cancer with avelumab, an anti-PD-L1 immune checkpoint inhibitor [[PMID 26921031](#)]

### **PATENT STATUS**

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

### **RELATED TECHNOLOGIES**

- [E-132-2011 - Lentiviral Vectors with Dual Fluorescence/Luminescence Reporters](#)

### **THERAPEUTIC AREA**

- Cancer/Neoplasm
- Musculoskeletal