A hematopoietic dual-regulatable cell line has been established for the purpose of studying two important oncoproteins, Akt and c-Myc. This cell line creates an isogenic cell system in which activation of Akt and c-Myc are tightly regulated.

**Background:**
Cancer is a class of disease in which a group of cells display uncontrolled growth and invasion that intrudes upon and destroys adjacent tissue. The Warburg effect, describing the high glucose consumption of cancer cells, has been noted as a universal biochemical characteristic of cancer development. Thus, targeting the glycolysis pathway has been explored as an anti-cancer therapeutic strategy. In order to target the glycolysis pathway, there needs to be more research conducted at the cellular level.

**Technology Description:**
Dr. Wei-Xing Zong, from the department of Molecular Genetics and Microbiology at Stony Brook University, has created a hematopoietic dual-regulatable cell line for the purpose of studying two important oncoproteins, Akt and c-Myc. Oncoproteins such as Akt and c-Myc regulate cellular metabolism. The novel cell line permits researchers to regulate the expression of myristoylated Akt, as well as c-Myc using independent chemical activators, individually or simultaneously. This provides an expression system whereby the effect of these oncoproteins can be studied in identical genetic background. Additionally, this cell line enables the study of glucose compositions within a cell by studying the two oncoproteins simultaneously allowing researchers to identify and test new anti-cancer agents targeting glycolysis.

The figure above shows the relevance of c-Myc and Akt levels in modulating the Warburg effect.

**Patents/Publications:**

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**Advantages**
- New method for studying the effects of two oncoproteins simultaneously
- Dual-regulatable cell line permits tailored research studies
- Accurately mimics changes in the glycolysis pathway found in cancer cells

**Applications**
- Cancer Research
- Drug Development

**Adam M. DeRosa, Ph. D.**
Licensing Associate
Office of Technology Licensing & Industry Relations
N5002 Melville Library
Stony Brook University
Stony Brook, NY 11794-3369
631-632-6955 (voice)
631-632-1505 (fax)
Adam.DeRosa@stonybrook.edu
www.stonybrook.edu/research/otli