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## **Folate Receptor Gene Modulation for Cancer Diagnosis and Therapy**

Tumor markers are proteins that are either selectively expressed in cancerous tissues and/or are released into circulation by the tumor cells. Therefore, tumor markers can serve to detect cancers early and to monitor their recurrence after treatment. One example of a tumor marker is the folate receptor, which is produced by tumor cells in major gynecological and other cancers. In addition to detection of cancers, the use of tumor markers to target drug delivery systems can potentially greatly improve the outcome of cancer treatment, reduce the toxicity to normal tissues/cells, and dramatically increase the effectiveness of cancer therapeutics. However, human cancers are notoriously variable in the key characteristics utilized by targeted therapeutics. To be specific, all parts of the same tumor, or the same type of tumor from different individuals, will not produce an adequate amount of a marker protein (e.g. folate receptor) that earmarks the tumor for detection or for targeted therapeutics. This limitation also confounds the ability to use the folate receptor in cancer diagnosis assays of samples of body fluids and in imaging tumors. Therefore, a folate receptor inducer has been developed to address the problem of the variability and low levels of expression of the folate receptor in tumors.

The University of Toledo is seeking a company interested in utilizing this this folate receptor induction method to enable more effective application of a broad range of promising folate receptor-mediated cancer diagnostics and therapeutics.

### **Applications:**

1. Folate receptor-mediated cancer diagnosis assays
2. Folate receptor-mediated immunological therapies

### **Advantages:**

1. Striking increase in the expression of folate receptor
2. Potential to greatly improve the outcome of cancer treatment
3. Not expected to induce folate receptor expression in tissues that are ordinarily folate receptor negative

**This invention is patent pending**

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