

## Scientific Abstract

We are studying the possibility of arresting the growth of ovarian cancer by increasing expression of the major gene responsible for hereditary ovarian cancer, BRCA1. We have demonstrated that gene transfer of BRCA1 into cancer cells inhibits their growth and reduces tumorigenesis of human cancer cells in nude mice. Because BRCA1 appears to be a secreted growth inhibitor, it is an ideal gene for gene therapy studies because transduction of only a moderate percentage of tumor cells apparently produces enough growth inhibitor to inhibit all tumor cells. The purpose of this study is to use a disabled mouse virus to introduce the BRCA1 gene into ovarian cancer cells to determine if this will inhibit the growth and spread of the cancer cells within the patient.

Experiments in mice have shown that the transfer of BRCA1 gene into cancer cells using a retroviral vector, results in a marked decrease in the growth and spread of the cancer. We have proven that the viral vector is not able to replicate and cannot spread within cells and have found no evidence of spread in cell culture or animal studies. There are no apparent toxic effects of the viral vectors in animal studies. Based upon these findings, we propose a human clinical trial for patients with ovarian cancer within the peritoneum. In this study, patients will undergo injection of viral vector into the cancerous fluid in an attempt to induce regression of the cancer, and to stop the spread of the cancer cells. The patient population consists of women who have failed standard therapy and have metastatic ovarian cancer with an expected survival of at least three months.