

## **Non-technical Abstract**

We are studying the possibility of slowing the growth of metastatic breast cancer by inhibiting "oncogenes" (growth-promoting genes) within the cancer cells. The purpose is to introduce gene sequences which block the growth or spread of breast cancer cells by blocking the function of specific oncogenes by a genetic engineering technique called antisense. The oncogenes which we have selected for inhibition in these initial studies are named c-fos and c-myc. By transferring antisense sequences into breast cancer cells, using a disabled mouse virus called a "vector", we change gene expression within the cancer cells so the cancer cells now grow more slowly and their spread is diminished.

Experiments in mice have shown that the transfer of antisense sequences into breast cancers using viral vectors, results in a marked decrease in the growth and spread of the breast cancer. We have found no evidence of spread of the virus to other tissues within the body, and no apparent ill effects of the viral vectors. Based upon these findings, we propose a human clinical trial for patients with widespread breast cancer which has spread to produce fluid-filled spaces (effusions) which surround the brain, lungs, and abdomen. 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 breast cancer with an expected survival of a few months.