

SCIENTIFIC ABSTRACT

Replication incompetent, recombination incompetent retroviral vectors will be used to introduce chemotherapy resistance (MDR-1) cDNAs into the normal stem cells of autologous peripheral blood removed and stored following chemotherapy delivered to patients with breast cancer who are poor risk, and therefore at very high risk (80%) of dying of their disease. We estimate that between 0.6 and 2×10^6 CD34 positive cells/kg will be infused and that among these, 50% of the total CD34 selected cells infused will be exposed to a MDR-1 containing vector. We will look for the number of MDR-1 marked cells using a methylcellulose late progenitor colony culture system and a PCR assay for the MDR-1 gene. In addition, we will monitor the acquisition of chemotherapy resistance by stem cells of varying degrees of immaturity by using culture assays for these cells under chemotherapy selection (methylcellulose assay and colonies grown from Dexter cultures incubated for more than 35 days using PCR for MDR-1). These studies will help us evaluate if introduction of MDR-1 cDNA into peripheral blood will confer chemotherapy resistance on these cells, thus allowing therapy of a greater level of intensity of taxol to be delivered following transplant and therefore change the course of poor prognosis breast cancer in these patients.