

**New Jersey State Commission on Cancer Research
LAY ABSTRACT OF RESEARCH PROJECT**

NAME OF PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR: **Jack Burton**

Project Title: **Doxorubicin-Immunoconjugate Therapy of Lymphoma**

Description: **This application addresses the efficacy of a drug-anti-CD74 immunoconjugate for pre-clinical therapy of systemic human lymphoma and the ability to overcome doxorubicin-induced cardiotoxicity by linking the drug to an tumor cell-directed antibody.**

Doxorubicin is a widely used drug for the treatment of many solid tumors and hematological cancers. As with other chemotherapeutic agents, delivering a sufficient amount of the drug to cancer cells while sparing normal healthy tissue is a big challenge. One drawback to doxorubicin use is the acute and chronic toxicity to cardiac tissue that it causes which limits the dose that can be given. To increase tumor-specific delivery of the drug, and reduce normal tissue side effects, many research labs have explored the approach of delivering drugs by chemically linking the drug to antibody proteins that recognize protein markers found in abundance on tumor cells. We have accumulated a large body of evidence showing that Doxorubicin conjugated to an antibody (called LL1) that recognizes a protein marker called the CD74 found on several cancer types (e.g., lymphoma, multiple myeloma, melanoma, renal cell carcinoma) can be highly therapeutic. This proposal will therefore address the utility of an LL1-Dox conjugate for treatment of several clinically relevant Non-Hodgkins Lymphoma (NHL) animal models. Single cycle dosing will be studied along with combination therapy schemes that include LL1-Dox with other novel drugs for lymphoma. The appropriate sequence and spacing will be addressed. We will also perform studies to compare structural damage to heart tissue when doxorubicin or the antibody-conjugated doxorubicin is administered.