



Award ID:
RP110508

Project Title:
Clinical Development of CaspaCIDE, a Cell Therapy Safety Switch

Award Mechanism:
Company Commercialization

Principal Investigator:
Kevin Slawin

Entity:
Bellicum Pharmaceuticals, Inc.

Lay Summary:

Many leukemia and lymphoma patients, including children and adults, are cured by a bone marrow transplant. However, cancer relapse, infection and GvHD are common in the months after a transplant. They cause suffering for the patient, are very difficult and expensive to manage, and are fatal for 30-50% of patients. The problem is that harmful T cells in the transplant cannot be separated from essential, helpful T cells. These helpful T cells are better at eliminating residual cancer cells than the patient's own T cells, they help the donor bone marrow cells become established, and they control infections that previously lay dormant. The harmful T cells cause GvHD by attacking the skin, the intestines and the liver, which they see as foreign. Depending on the "match" between the donor and patient, GvHD can be fatal, which is why, for the half of transplant candidates without a matched donor, a transplant is not usually performed. CaspaCIDE™ allows the doctor to separate the helpful and harmful T cells. It is a switch inserted into the donor T cells in advance, which the doctor can turn on if GvHD develops, by giving the patient a special drug. We have shown that the GvHDcausing cells die in as little as 30 minutes, while some good cells survive and repopulate, without recurrence of GvHD. This project will test CaspaCIDE™ in more patients, and could lead to it being approved by the FDA. It is a game changing technology for cancer patients counting on a transplant for a cure.