

Public Abstract

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Graduation Term: SP 2014

Department: Biochemistry

Degree: PhD

Title: DEVELOPMENT OF NOVEL BREAST CANCER-TARGETED SPECT IMAGING PEPTIDES BY PHAGE DISPLAY

Breast cancer is the leading cause of cancer among women and the second leading cause of cancer-related death. While mammograms and breast exams have helped reduce mortality, there exists a need to detect breast cancer at an earlier stage to help treat the most dangerous aggressive forms. The purpose of this work was to develop molecules that could detect breast cancer at an early stage and inform doctors about its properties, helping to guide the treatment. The results demonstrated that a technology, termed bacteriophage display, could be used to develop molecules which were able to detect human breast cancer tumors in mice. The molecules, which were made of small pieces of protein called peptides, collected in tumors in mice, allowing for detection using a special machine called a SPECT/CT. These peptides may serve as the basis for further refinement and possible testing in human subjects.