BACTERIOPHAGE DISPLAY SELECTIONS OF OVARIAN CANCER AVID PEPTIDES

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ABSTRACT

Ovarian cancer is the most fatal gynecological malignancy. The poor outcomes of ovarian cancer are a direct result of inadequate detection methods and development of drug resistant disease. This dissertation describes the utilization of phage display technology to identify novel ovarian cancer targeting agents, in the form of peptides and phage particles, for use in radionuclide mediated imaging and therapy. A novel ovarian cancer targeting peptide (J18) was selected by a two-tier phage display selection, and was successfully employed in single photon emission computed tomography (SPECT) imaging of xenografted human ovarian tumors (SKOV-3) in mice. Further, two phage clones, pM6 and pM9, were identified by phage display and successfully employed in optical imaging of SKOV-3 tumors in xenografted mice. In conclusion, these peptides and phage particles may be utilized in detection of ovarian cancer, and may lead to an improvement in the overall survival rate of ovarian cancer patients.