

Bankhead-Coley Cancer Research Program

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Bridge
(1 year project)*

Project Title: Ovarian Cancer: Nuclear Envelope Defects

Project Summary: Based on the recent findings in our lab, we have designed experiments to test the idea that the loss of a nuclear envelope structural protein, lamin A/C, may be very important for the development of ovarian cancer. We speculate that loss of lamin A/C may be the cause of a deformed nuclear shape and an abnormal chromosomal number (aneuploidy), two prominent hallmarks of cancer. The plan was submitted as a research proposal and was rated highly by NIH review panel for high significance, cancer relevance, and innovation. The reviewers had several questions and made several suggestions. Some of the questions can be addressed satisfactorily and we are doing several experiments as suggested by the reviewers to further increase the merit and support of the original research proposal. The research plan is to address several specific comments on the lack of additional preliminary data. The main experiments are listed below. Aim 1: To study fallopian tube epithelial cells in addition to ovarian surface epithelial cells for the consequences of lamin A/C suppression. Aim 2: To provide additional results on the study of lamin A/C gene promoter and protein stability in five ovarian cancer cell lines. Aim 3: To develop further and make progress on the production of lamin A/C conditional knockout mice. Upon obtaining these results, estimated within a one-year period of work, I believe that we will have a much stronger proposal and will address all the concerns from the reviewers satisfactorily.