PROJECT RESUME

This project aims to further our understanding of a key component of the DNA damage response, H2AX, in breast cancer development, progression and treatment. Cancer-derived cell cultures have long been used to address questions of the basic cell biology of cancer, however we now have methods to replicate aspects of the in vivo environment in the tissue culture dish, such as growing cells as spheroids. Four cell lines derived from either luminal A or B tumours and which have distinct H2AFX genotypes along with the non-tumourigenic breast–derived MCF10A cells, and the well characterised breast cancer cell line, MCF7 will be grown in spheroid cultures. The key hypothesis is that differences will be observed in the DNA damage response between cells grown in 2D versus spheroid cultures. Also differences in the expression of EMT (epithelial to mesenchymal transition) markers will be measured by qPCR and correlated with H2AX expression levels.

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