



Of Mice and Women

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Have you ever wondered why we study breast cancer in laboratory mice? A soon-to-be released video will answer many of your questions.

In **“Of Mice and Women,”** Dr. Mary Helen Barcellos-Hoff, PhD, head of the Department of Cancer Biology and a senior scientist in the Life Sciences Division at the Lawrence Berkeley National Laboratory describes why and how different types of mouse models are used to study various aspects of breast cancer biology.

The term “breast cancer” no longer refers to a single disease. Like mouse models, there are various types of breast cancer, all of which differ in their:

- morphology (structure)
- histopathology (microscopic changes in tissues caused by disease)
- dependence on endogenous (developing from within) growth factors
- activation/inactivation of certain genes
- clinical outcomes (potential for metastasis)

Hence, there is not a single mouse model that can mimic all the features of “breast cancer.” Instead, there are a variety of models each being unique to a different subtype or a particular aspect of breast cancer. The superiority of one mouse model over another largely depends on the scientific question to be answered and on the study’s design.

The limitations, advantages and significant improvements in the technology of modeling human breast cancer in mice are reviewed in the video. As co-investigator of the Bay Area Breast Cancer and Environment Research Center biology study, Dr. Barcellos-Hoff’s focus is on defining the critical biological steps in breast mammary gland development and identifying what molecular events are responsible for breast tumor formation. Dr. Barcello-Hoff’s passion and interest in how normal breast development is regulated and how environmental exposure to low dose radiation affect the mammary gland at different stages (pre-puberty, puberty, pregnancy and aging) of development is evident throughout the video.

“Of Mice and Women” was produced in collaboration with Michael Hoff Productions, a major international producer of non-fiction television and the Community Outreach and Translation Core of the Bay Area Breast Cancer and Environment Research Center. This production was supported by National Institute of Environment Health Sciences (NIEHS) and National Institute of Health/ National Cancer Institute (NIH/NCI), Grant # UO1 ESO12801.

Go to www.zerobreastcancer.org for more information on why the mouse mammary gland is an excellent model system with which to study the development of the mammary gland and breast cancer. Also why the model provides a unique opportunity for the exploration of how genetics and environmental factors interact to give rise to breast cancer. *For additional information on the Bay Area Breast Cancer and Environment Research Center, visit www.bcerc.org*

