A mouse model of prostate cancer bone metastasis in a syngeneic immunocompetent host

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Animal models of cancer allow the study of molecular mechanisms of disease progression and test new treatments across the disease sites; but an uncommon occurrence of spontaneous prostate cancer in mice and a lack of animal model systems that closely recapitulate the human PCa hampers the mechanistic understanding of metastatic progression and development of effective treatments for advanced PCa. While xenografts of human cell lines in immunodeficient mice remain the most commonly used models, PCa cell lines rarely metastasize from subcutaneous grafts, with an exception of a few cell lines that metastasize when injected orthotopically.

To overcome these problems, numerous genetically engineered mouse models of PCa have been developed over the years including the TRAMP model that displays PCa metastases to distant organs such as lung, but rarely to bones, a feature consistent in other transgenic mouse models as well.

Intracardiac injection of B6Ca P results in frequent skeletal metastases, making it an excellent pre-clinical model to study the mechanisms of metastasis in PCa.

The Schaeffer Research Team concluded that, taken together, B6Ca P line overcomes two critical limitations to study the skeletal metastasis of prostate cancer.


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