



**Non-Confidential
Technology Disclosure**

Title	Bone Marrow Stem Cells as the Origin for Epithelial Cancers
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Description	An animal model of cancer in which genetically modified bone marrow derived cells (BMDCs) are transplanted into recipient animals. Mesenchymal Stem Cells, a subset of BMDCs, are recruited to replace damaged tissues when peripheral stem cells are exhausted, but are inherently mutagenic. When challenged by chronic inflammation, recipient animals develop invasive and metastatic tumors that more closely mimic human cancers than current models.
Application	This model for preneoplastic and neoplastic states allows for identifying and evaluating agents for treating, preventing, or delaying the onset of cancer. BMDCs labeled with markers allow for tracking and may aid in developing new optical imaging methods for determining local growth, metastatic cells and their response to therapeutics <i>in vivo</i> . Labeled cells can be isolated after intervention/therapy for study as homogenous populations.
Advantage	Mice are easily transplanted with BMDCs. The model can be tailored to target a disease/organ of interest. Current transgenic models rely on administering carcinogens which alter genetic and metabolic factors making distinguishing these changes from a cancerous state difficult, and often do not mimic human tumors or progress to advanced disease. This model circumvents confounding factors present in nude mice and xenograft models and is valuable for evaluating biomarkers, targets, and therapies and investigating molecular mechanisms underlying metastasis and tumor formation.
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Licensing Status	Available to License
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