Reviewer's report

Title: A Mouse Model of Breast Cancer-Specific Osteolysis that Resembles Human Bone Metastatic Microenvironment and Predicts a Novel Therapeutic Target

Version: 2 Date: 2 November 2010

Reviewer: Thiruvengadam Arumugam

Reviewer's report:

The authors have developed the mouse model of bone metastasis by injecting mouse breast cancer cell lines to the calvariae bone of BALB/C mice and developed syngenic model of bone metastasis. They also studied the expression of mRNA in tumor-bone interface and tumor tissue. They compared the gene signature and identified gene signature altered specifically in tumor microenvironment and it is comparable with human samples. This team has previously published few other articles in the same field and this article is in continuation of their effort in developing mouse model for bone-metastasis. This article has an elegant series of experiments to demonstrate specific gene signature associated with bone metastatic microenvironment. I think the methods used are adequate and the data obtained are important.

Discretionary Revisions

Authors identified hundreds of genes specifically increased or decreased in tumor-bone interface. They need to pick at least few (5?) highly reduced or increased gene and need to verify their microarray data by Q-RT-PCR.

IHC localization of at least two important gene products in their mouse tissue and also human samples will be confirmatory of their studies.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

'I declare that I have no competing interests'