

## Accepted Manuscript

Title: Breast cancer bone metastases: pathogenesis and therapeutic targets

Authors: Naomi Brook, Emily Brook, Arun Dharmarajan, Crispin R. Dass, Arlene Chan



PII: S1357-2725(18)30003-7  
DOI: <https://doi.org/10.1016/j.biocel.2018.01.003>  
Reference: BC 5284

To appear in: *The International Journal of Biochemistry & Cell Biology*

Received date: 7-11-2017  
Revised date: 31-12-2017  
Accepted date: 4-1-2018

Please cite this article as: Brook, Naomi., Brook, Emily., Dharmarajan, Arun., Dass, Crispin R., & Chan, Arlene., Breast cancer bone metastases: pathogenesis and therapeutic targets. *International Journal of Biochemistry and Cell Biology* <https://doi.org/10.1016/j.biocel.2018.01.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Title: Breast cancer bone metastases: pathogenesis and therapeutic targets****Short title:** Breast cancer metastasis to boneNaomi Brook<sup>a,b</sup>, Emily Brook<sup>a,b</sup>, Arun Dharmarajan<sup>a,b</sup>, Crispin R. Dass<sup>a,b</sup>, Arlene Chan<sup>c,\*</sup><sup>a</sup>*School of Pharmacy and Biomedical Science, Curtin University, Bentley 6102, Australia*<sup>b</sup>*Curtin Health Innovation Research Institute, Bentley 6102, Australia*<sup>c</sup>*School of Medicine, Curtin University, Bentley 6102, Australia***\*Correspondence:** arlenechan@me.com (A.Chan)**Mail** | Professor Arlene Chan,  
PO Box 909, Nedlands, WA 6909  
Australia.**Email** | arlenechan@me.com**Phone** | +61 8 94814522**Abstract**

Breast cancer is the most common cancer affecting women worldwide, with bone metastases presenting as the most common site of disease recurrence. Bone metastases secondary to breast cancer negatively impacts patient survival, mobility, and quality of life. Furthermore, the clinical complications of breast cancer bone metastases are associated with significant financial burden to the individual and society. The molecular mechanisms involved in the metastasis, colonisation, and proliferation of breast cancer cells in bone are complex and involve crosstalk between breast cancer cells and the bone microenvironment. The ability of metastatic breast cancer cells to hijack normal biological processes involved in bone remodelling is a key driver of osteolytic and osteoblastic bone lesions. As such, our understanding of how breast cancer cells manipulate normal bone remodelling pathways is essential for the development of new therapeutic agents to improve patient outcomes. In this review, we discuss bone remodelling under normal physiological conditions and explore key pathways dysregulated in breast cancer metastasis to bone. We provide an overview of systemic therapies currently recommended for the treatment of breast cancer bone metastases and highlight emerging therapeutic targets.

**Key words:** breast cancer; bone metastases; osteolysis; osteoblastic lesions; osteomimicry; targeted therapies

Download English Version:

<https://daneshyari.com/en/article/8322046>

Download Persian Version:

<https://daneshyari.com/article/8322046>

[Daneshyari.com](https://daneshyari.com)