

# **Lamellipodin mRNA and Protein Expression Level as Prognostic Marker and Therapeutic Target for EGF-Mediated Metastatic Breast Cancer and Other Invasive/Metastatic Cancers**

Technology #18529

## **Applications**

This technology has applications as a prognostic marker for metastatic risk in breast cancer.

## **Problem Addressed**

Breast cancer is one of the most commonly diagnosed cancers in the US. Metastatic breast cancer has a poor prognosis, and disseminated metastatic breast cancer is the third most frequent cause of cancer related deaths in the US. Many tests for breast cancer subtype have been developed, but none of these provide prognostic information on the risk of metastasis. A method of determining which patients will develop metastatic disease is desperately needed in the field, and better prognostics for metastatic breast cancer would enhance doctors' ability to tailor treatment plans for each patient. These inventors describe a new prognostic marker for breast cancer metastasis.

## **Technology**

Lamellipodin (Lpd) is a protein that is involved in the migratory ability of cancer cells. These inventors demonstrate that Lpd is required for metastatic spread using *in vitro* and *in vivo* metastasis models. In human tumor samples, moderate levels of Lpd protein at the plasma membrane of tumor cells is highly correlated with a greater risk of metastatic dissemination, disease progression, and breast cancer related death. This technology could easily be included alongside the panel of immunohistochemical tests already commonly performed on breast cancer tumors to provide prognostic data on metastatic risk. Finally, the inventors also suggest the potential of targeting Lpd therapeutically, and they demonstrated that knockdown of Lpd leads to decreased metastasis in an *in vivo* mouse transplant model of breast cancer.

## **Advantages**

- Prognostic for determining risk of metastasis in breast cancer
- Predict risk of metastasis and breast cancer related death using Lamellipodin expression
- Easy incorporation with established immunohistochemistry testing

## **Categories For This Invention:**

Life Sciences  
Biotechnology  
Health

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Clinical Applications

Oncology

Diagnostics

Prognostics

Markers

## **Intellectual Property:**

Methods for identifying and treating invasive/metastatic cancers  
Issued US Patent

## **Inventors:**

Frank Gertler  
Guillame Carmona  
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## **Publications:**

Lamellipodin Promotes Invasive 3D Cancer Cell Migration via Regulated Interactions with Ena/VASP and SCAR/WAVE

Oncology

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## **External Links:**

Gertler Lab

<http://web.mit.edu/gertlerlab/>