

XIAOPI formula inhibits pre-metastatic niche formation in breast cancer

Yifeng Zheng
Neng Wang
Shengqi Wang
Bowen Yang
Honglin Situ
Lidan Zhong
Yi Lin
Zhiyu Wang

Video Byte

Keywords: XIAOPI formula, premetastatic niche, tumor-associated macrophages, CXCL1, breast cancer, cancer, metastasis, traditional Chinese medicine, PMN, Cell Communication and Signaling

DOI: <https://doi.org/10.21203/rs.3.rs-37692/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

When diagnosed early, people with breast cancer often have a very good prognosis. But when cancer cells begin to metastasize, treatment becomes more difficult. Metastasis begins with the formation of a pre-metastatic niche (PMN), which has favorable conditions to direct the growth and migration of tumor cells. Inhibiting this process can prevent cancer metastasis and improve prognosis in cancer patients. In a recent study, researchers examined whether a traditional Chinese medicine treatment, XIAOPI formula, can prevent PMN formation. Using molecular and cell biology techniques, they found that through regulation of bone marrow hematopoietic stem cell progenitor mobilization, XIAOPI formula could inhibit PMN formation in breast cancer. It exerted its effects by preventing the secretion of a growth factor, CXCL1, by tumor-associated macrophages. In a mouse model of advanced-stage breast cancer, treatment with XIAOPI formula inhibited metastasis to the lungs by acting through this pathway. These results shed light on the mechanism behind the effects of this traditional medicine, providing important insight for targeting this pathway in breast cancer treatment.