

Pharmacological Inhibition of Myocardin-Family Proteins as a
Novel Strategy to Combat Metastatic Breast Cancer

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Breast cancer (BC) ranks second among cancer deaths in women in the United States, and the vast majority of these deaths are due to distant metastasis of cancer cells. Among the various molecular subtypes of breast cancer (BC), treatment of triple-negative breast cancer (TNBC: lacks hormone and HER2 receptors) has been the most challenging because of heterogeneity of the disease, absence of well-defined molecular targets for therapy, higher propensity to metastasize and extremely high rates of distal recurrence. The five-year survival of these patients is less than 30%, and almost all die despite of standard-of-care adjuvant chemotherapy. Therefore, there is a critical need to identify new molecular targets and therapeutic agents for metastatic TNBC. In the proposed project, we will explore pharmacological inhibition of MKL, a key transcriptional coactivator of SRF belonging to the myocardin protein family, as a potential chemical strategy to suppress metastatic growth of TNBC cells using cell culture and animal models. A successful completion of this study could potentially justify small molecule inhibitor of MKL as a novel therapeutic agent in TNBC for further evaluation.