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Shijie Sheng
Wayne State University, USA

The role of maspin in prostate epithelial homeostasis and tumor progression

Accumulated evidence demonstrates an anti-tumor effect of maspin on tumor growth, invasion and metastasis. The molecular mechanism underlying these biological functions of maspin is thought to be through histone deacetylase inhibition. Our research in our laboratory led to a working model that epithelial-specific maspin inhibits different serine protease-like targets in different subcellular compartments, and limits tumor cell plasticity that is microenvironment-dependent. The effects of maspin on the homeostasis of epithelial cells further direct anti-tumor stromal reactivities, including basement membrane-like extracellular matrix assembly, inhibition of angiogenesis, and anti-tumor immune response. This presentation covers several recent advancements including the identification of the biological function and regulation of maspin compartmentalized in the nucleus, the effect of epithelial maspin on immune reactivity in tumor microenvironment, and the stratification of tumor cell stemness and drug sensitivity by maspin. These new insights may underlie the clinical observation that maspin correlates with better diagnosis and prognosis, and suggest a unique window of maspin-based therapeutic strategy.

Biography

Shijie Sheng was one of the co-discoverers of the tumor suppressor gene maspin, and she continues to be a leader in the maspin field. Through her research over the last 17 years, she has published a total of 58 manuscripts on maspin, 37 of which were original reports. Together with her colleagues, She has made a number of breakthroughs in the study of the biological functions and underlying molecular mechanisms of maspin.

ssheng@med.wayne.edu

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