

Microenvironmental resource constraints in tumor progression and drug response

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Abstract- Tumor-microenvironment interactions are increasingly recognized to influence the course of tumor progression. To understand the role of the microenvironment in tumor progression, we experimentally parameterized a model of tumor evolution with phenotypic trait data gathered from a set of related mammary cell lines with normal, transformed, or tumorigenic properties. We find an important role of resource limitation in both progression and response to idealized cytotoxic therapy of our experimentally defined cell phenotypes. Implications for the process of tumor formation and aggressiveness will be discussed.