

Abstract Submitted
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Serine, Glycine and One-carbon Metabolism in Colorectal Cancer Cell in Heterogeneous Microenvironment KE-CHIH LIN, ROBERT AUSTIN, GREG DUCKER, JAMES STURM, JAMES STURM, Princeton University — The up-regulation of serine metabolism associated with one-carbon metabolism has been identified to support cellular biosynthesis and redox maintenance of tumors. The consistently over-expressed one-carbon genes have been targeted for potential drug development. To investigate the biological function of specific enzymes, we had genetic engineered HCT116 cell lines, methylenetetrahydrofolate dehydrogenase (MTHFD) and phosphoglycerate dehydrogenase (PHGDH) deleted cell lines, growing in the artificial microhabitats array with serine and glycine gradient across. The impact of depletion of serine and the blocking of biosynthesis pathway will be shown in terms of cell morphology, proliferation rate, and cell motility. The evolution dynamic and migration rate can also be tracked throughout the experiments.

Robert Austin
Princeton University

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