Breast Cancer and the Use of Biolog’s PM-M plates

Our group has been interested in understanding cancer cell metabolism, and more specifically what carbon sources might be used by cancer cells other than glucose and glutamine that support growth and cell division. While the Warburg hypothesis emphasizes the preferential use of glucose to drive glycolysis, our group has strong evidence suggesting that mitochondrial function is essential for tumor cells growth (1,2). We used the carbon energy and nitrogen substrate plates to assess whether other carbon sources can help drive cancer cell growth. Working with folks at the Biolog, Inc, who were incredibly helpful, we found that these plates worked beautifully to generate highly reproducible results. The 96 well format and simple assay kit provides for rapid throughput on multiple replicates. We were able to find that some breast cancer and metastatic melanoma cell lines were capable of metabolizing a wide array of carbon sources for growth, whereas others were much more restricted. We found that those cells with the highest levels of oxidative phosphorylation also were able to use long-chain fatty acids. This exciting work is being written up for publication now.

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