Techniques to monitor glycolysis.

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Public Summary:
An increased flux through glycolysis supports the proliferation of cancer cells by providing additional energy in the form of ATP as well as glucose-derived metabolic intermediates for nucleotide, lipid, and protein biosynthesis. Thus, glycolysis and other metabolic pathways that control cell proliferation may represent valuable targets for therapeutic interventions and diagnostic procedures. In this context, the measurement of glucose uptake and lactate excretion by malignant cells may be useful to detect shifts in glucose catabolism, while determining the activity of rate-limiting glycolytic enzymes can provide insights into points of metabolic regulation. Moreover, metabolomic studies can be used to generate large, integrated datasets to track changes in carbon flux through glycolysis and its collateral anabolic pathways. As discussed here, these approaches can reveal and quantify the metabolic alterations that underlie malignant cell proliferation.

Scientific Abstract:
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