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Targeting metabolism in breast cancer, how far we can go?

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Abstract

Adjuvant therapies of breast cancer have achieved great success in recent years and early breast cancer has been taken as a curable disease or chronic disease. The targeted therapies including endocrine therapy and human epidermal growth factor receptor-2(HER-2) targeted therapy marked a new era of breast cancer treatment. But, for triple negative breast cancer, there still lack an efficient drug treatment except chemotherapy to improve the overall survival of breast cancer patients. Furthermore, a certain proportion of breast cancer patient could present resistance to drug therapy and it becomes much more difficult to control the deterioration of disease when resistance happens. Recently, altered energy metabolism has been taken one of hallmarks of cancer including breast cancer and it may be linked to drug resistance. Targeting cellular metabolism has becoming a promising strategy to overcome drug resistance in cancer therapy. This review discussed the metabolic reprogramming in breast cancer and the possible complex modulation mechanism of it. We also summarized the recent advances on the metabolic therapy targeted glycolysis, glutaminolysis and fatty acids synthesis in breast cancer.

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