

JOINT EVENT

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**Crosstalk of mTOR/HIF-1 $\alpha$ /PKM2 and STAT3/C-MYC signaling pathways regulate the energy metabolism and acidic microenvironment of gastric cancer**

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Cancer cells consume large amounts of glucose to produce lactate, even in the presence of ample oxygen. This phenomenon is called the Warburg effect. C-Myc is an important member of the Myc gene family and is involved in the development of various tumors. It plays an important role in the regulation of tumor energy metabolism which can regulate glycolysis to promote tumor Warburg effect. Our study aims to improve the malignant biological behavior by controlling the energy metabolism of gastric cancer through the mTOR/HIF-1 $\alpha$ /PKM2 and STAT3/c-Myc signaling pathway through a series experiments *in vitro* tests. Human gastric cancer AGS and HGC-27 cells were treated with PKM2 and C-Myc lentivirus, the effects of knockdown PKM2 or C-MYC were analyzed on cell proliferation, cell apoptosis, the ability of cell migration and growth signaling pathway *in vitro*. The expression of PKM2, C-MYC, LDHA, STAT3, P-STAT3, GLUT-1 gene was identified by quantitative real-time polymerase chain reaction and western blotting, Lactate and glucose levels were tested by the corresponding kit. Our findings showed that PKM2 and C-MYC were up-regulated in human gastric cancer. Knockdown C-MYC in gastric cancer cells suppressed cell proliferation capacity and glycolysis level, co-knockdown of PKM2 and C-MYC, the inhibitory effect on gastric cancer cells was more obvious compared to knockout PKM2 or C-MYC alone. And there was a correlation between mTOR/PKM2 and STAT3/C-myc signaling pathways. Our results suggest that C-MYC may be considered a potential therapeutic target for gastric cancer, and PKM2 combined with C-MYC can better inhibit the malignant biological behavior of gastric cancer.

**Biography**

Chen Min has completed her PhD from Wuhan University, School of Medicine. She is an associated Physician working in the affiliated Drum Tower Hospital of Nanjing University, Medical School, P R China for almost seven years. She is In Charge of teaching work in the Department as Teaching Secretary. She has published more than 10 papers in reputed journals. Her research field is about basic and clinical research in gastric cancer.

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