

MiR-34a/SIRT1 Axis Modulating Therapeutic Effect of Olaparib on Pancreatic Cancer through Suppressing PARP1 and EMT

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ABSTRACT This study analyzed functions of miR-34a and SIRT1 in modulating efficacy of Olaparib in pancreatic cancer in vitro. RNA expressions of miR-34a and SIRT1 were evaluated through RT-qPCR in HPDE6-C7, SW1990, PANC-1 and MIA PaCa-2 cells. MiR-34a was promoted in cancer cell lines while SIRT1 was decreased. Luciferase reporter assay verified bindings between miR-34a and SIRT1. Moreover, E-cadherin was promoted by miR-34a mimics and SIRT1 suppression while N-cadherin and Vimentin were both downregulated. Additionally, PARP1 protein expression was increased after miR-34a promotion and SIRT1 downregulation. Besides that, PARP1 protein levels and EMT were significantly inhibited after treated by Olaparib (0, 0.5, 1 and 1.5 μ M). In Olaparib-treated cancer cells, SIRT1, PARP1 and EMT were all distinctly decreased after SIRT1 suppression and overexpression of miR-34a induced much lower level of SIRT1.