

عنوان مقاله:

MiR- $\delta\gamma$ inhibits cell proliferation and glucose metabolism by targeting IRS $_1$ and IRS $_2$ in human chronic myelogenous leukemia

محل انتشار:

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خلاصه مقاله:

Objective(s): Chronic myelogenous leukemia (CML) is a chronic myeloproliferative disorder characterized by the accumulation of myeloid cells with a chromosomal translocation known as the Philadelphia chromosome. In this study, we investigated the roles of miR- $\delta\gamma$ in CML development. **Materials and Methods:** Expression of miR- $\delta\gamma$ in CML samples and cell lines was determined by qRT-PCR. Glucose uptake and ATP concentration detection assays were used to analyze cell glucose metabolism. MTT and western blot assays were performed for cell proliferation and apoptosis, respectively. The targets of miR- $\delta\gamma$ were predicted by bioinformatics and confirmed using luciferase activity, qRT-PCR and western blot assays. **Results:** The expression levels of miR- $\delta\gamma$ were significantly reduced in CML clinical samples and cells. Overexpression of miR- $\delta\gamma$ inhibited cell proliferation, promoted apoptosis, and suppressed glucose metabolism in CML cells. Insulin receptor substrates (IRS) 1 and IRS2 were identified as direct

targets of miR-570. IRS1 or IRS2 were knocked down in K562 cells. Loss of IRS1/2 expression led to suppressed cell proliferation, elevated apoptosis, and decreased glucose metabolism in CML cells, which is consistent with their roles as miR-570 targets. Conclusion: MiR-570 directly targeted IRS1 and IRS2 in CML, suppressing cell proliferation and glucose metabolism. MiR-570 may provide a strategy for CML therapy

کلمات کلیدی:

Chronic myelogenous leukemia, IRS1, IRS2, miR-570

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