

Mechanisms of microRNA 200a in Hepatic Insulin Resistance by Interleukin-6

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Aim To explore the mechanisms of microRNA 200a in hepatic insulin resistance induced by interleukin-6 (IL-6), specifically to investigate the role of microRNA 200a in hepatic glucogen and insulin signal pathway transduction. **Methods** The cell model for hepatic insulin resistance was induced by IL-6 (10 $\mu\text{g/L}$) for 24 hours in NCTC 1469 cell. The level of glucogen was reduced. The expression of microRNA 200a was tested by q-PCR. The level of glucogen was quantified in NCTC 1469 transfected with microRNA 200a mimics. The target gene of microRNA 200a was predicted by bio-information software. The protein level of the target gene was tested by Western Blotting. **Results** The level of glucogen and the insulin signal pathway was inhibited in NCTC 1469 cells treated by IL-6. The expression of microRNA 200a was decreased in NCTC 1469 cell induced by IL-6. The level of glucogen and the insulin signal pathway were stimulated in NCTC 1469 cell transfected by microRNA 200a mimics. The protein level of Pten was decreased by overexpression of microRNA 200a. **Conclusions** IL-6 downregulates the expression of microRNA 200a in hepatic insulin resistant NCTC 1469 cells. The microRNA 200a stimulates biosynthesis of glucogen as well as insulin signal pathway accompanied by down-regulating the expression of Pten.

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