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第二十八屆生物醫學聯合學術年會 **ABSTRACT FORM （正本）**

Adiponectin 在人類軟骨細胞中會透過 PI3K 及 Akt 訊號路徑增加 VEGF 表現

Adiponectin increases VEGF expression in human chondrosarcoma through PI3K and Akt signaling pathway.

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Background:

Vascular endothelial growth factor (VEGF) is an angiogenic mediator in tumors and has been implicated in the pathogenesis and progression of cancer. Adiponectin is a protein hormone that modulates a number of metabolic processes, including glucose regulation and fatty acid oxidation. Recently, adiponectin was also shown to modulate angiogenesis. However, the effect of adiponectin on VEGF expression in human chondrosarcoma cells is mostly unknown.

Materials & Methods

The qPCR was used to examine the mRNA expression of VEGF. The PI3K and Akt phosphorylation was examined by using Western blot method. A transient transfection protocol was used to examine HIF activity.

Results

We found that adiponectin increased the VEGF expression in human chondrosarcoma cells. Adiponectin-mediated VEGF expression was attenuated by PI3K inhibitors (LY294002 and wortmannine), Akt inhibitor, and HIF-1α inhibitor. Activations of PI3K, Akt, and HIF-1α pathways after adiponectin treatment was demonstrated. Adiponectin-induced HIF-1α activation was inhibited by the specific inhibitor and mutant of PI3K and Akt cascade.

Conclusion

This study showed for the first time that the adiponectin mediates VEGF expression of human chondrosarcoma cells. One of the mechanisms underlying adiponectin induced VEGF expression was activation of PI3K, Akt, and HIF-1α pathways.

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