

Linking vascular inflammation to obesity and atherosclerosis

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New research reveals that $\text{IKK}\beta$ inhibitors reduce diet-induced obesity. These images show that fat mass is significantly decreased in mice treated with $\text{IKK}\beta$ inhibitors (right) compared with a control group (left). Credit: Sui et al., 2014

A study in *The Journal of Experimental Medicine* shows that I κ B kinase β (IKK β) functions in smooth muscle cells to regulate vascular inflammatory responses and atherosclerosis development.

Inflammatory responses are the driving force of atherosclerosis, a process that involves the hardening and thickening of artery walls due to excess fatty deposits. IKK β is a central coordinator of [inflammatory responses](#) that has been implicated in vascular diseases, but its role in atherosclerosis has been unclear.

Now, Changcheng Zhou and colleagues from the University of Kentucky show that deficiency of IKK β in [smooth muscle cells](#) decreases vascular inflammation and atherosclerosis development in mice. Surprisingly, the lack of IKK β also blocks the differentiation of [fat cells](#) and causes an accumulation of body fat precursor cells, thus protecting the animals from diet-induced obesity. These novel findings suggest that the kinase acts as a regulator of fat cell differentiation. The use of IKK β inhibitors may therefore provide an innovative treatment for atherosclerosis, obesity, and metabolic disorders.

More information: Sui, Y., et al. 2014. *J. Exp. Med.* [DOI: 10.1084/jem.20131281](#)

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