

題目：Gut microbiota: DUSP6 and anti-obesity

摘要：

Obesity and its associated health problems have become an escalating issue worldwide and effective strategies of controlling the obesity epidemic are highly desired. With a high-fat diet-induced obese mouse model, we found that dual-specificity phosphatase 6 (*dusp6*)-deficient mice had reduced body weight gain and alleviated metabolic disorders.

Notably, 16S rRNA gene sequencing revealed that the gut/fecal microbiota in *dusp6*-deficient mice was more resistant to high-fat-diet-induced dysbiosis compared with wild-type mice. In accordance, we found fecal microbiota derived from *dusp6*-deficient mice increased energy expenditure in the recipient wild-type germ-free mice and conferred a partial diet-induced obesity protection.

Moreover, we further conducted RNA-seq analysis to analyze the gut transcriptome of *dusp6*-deficient mice to study the potential mechanisms driving the microbiota alteration in intestines. In short, these findings indicate that *dusp6*-deficiency is a novel host genetic factor that could modulate gut microbiome and inhibiting DUSP6 might be an exceedingly potent strategy to maintain the diversity of the gut microbiota and combat obesogenesis.