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Fibroblast growth factor 21 (FGF21) attenuates tacrolimus-induced hepatic lipid accumulation through transcription factor EB (TFEB)-regulated lipophagy

Key words: Autophagy; Fibroblast growth factor 21; Lipid; Lipophagy; Lysosome; Tacrolimus; TFEB

Research Summary

This article mainly focuses on the disorders of lipid metabolism caused by tacrolimus after liver transplantation and demonstrates that:

- Tacrolimus downregulates FGF21 and thus exacerbates lipid accumulation by impairing the autophagy-lysosome pathway.
- Recombinant FGF21 protein can reverse TAC-caused lipid accumulation and hypertriglyceridemia by enhancing autophagy.

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Innovation points

A series of comprehensive Figures were generated to summarize the effect of FGF21 on tacrolimus-induced lipid accumulation.

Figure 1 | TAC induces hepatic lipid accumulation and hypertriglyceridemia.

Figure 2 | TAC induces lipid accumulation through autophagy inhibition.

Figure 3 | Overexpression of FGF21 reverses TAC-induced lipid accumulation.

Figure 4 | Recombinant FGF21 protein reverses defective lipid homeostasis.

Figure 5 | Recombinant FGF21 protein promoted TAC-impaired autophagy.

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