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Short communication

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SREBP1, PPARG and AMPK pathways mediated the Cu-induced change in intestinal lipogenesis and lipid transport of yellow catfish *Pelteobagrus fulvidraco*

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## Abstract

Cu could act as a modifier and influence lipid metabolism, but the potential mechanism was not explored. Juvenile yellow catfish were fed diet containing 0.71 (low Cu), 3.93 (intermediate Cu) and 88.81 (high Cu) mg Cu kg<sup>-1</sup>, for 8 weeks to explore the modulation of intestinal lipid metabolism following dietary Cu addition. Using specific pathway inhibitors (Fatostatin for SREBP1, T0070907 for PPARG and Compound C for AMPK), primary enterocytes of yellow catfish were used to explore the molecular mechanisms of Cu reducing intestinal lipid deposition. Dietary Cu addition triggered Cu accumulation but suppressed lipid deposition in the fore- and mid-intestine. The reduced lipid deposition was attributable to the suppressed lipogenesis and lipid absorption, and accelerated lipid transport. The PPARG, SREBP1 and AMPK signaling pathways mediated the Cu-induced changes in lipogenesis, lipid uptake and lipid transport in the intestine of yellow catfish.

**Keywords:** Copper; Intestine regionalization; Lipid metabolism; Signaling pathways;

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