

## **Theaflavins attenuate hepatic lipid accumulation through activating AMPK in human HepG2 cells.**

Black tea is one of the world's most popular beverages, and its health-promoting effects have been intensively investigated. The anti-obesity and hypolipidaemic effects of black tea have attracted increasing interest, but the mechanisms underlying these phenomena remain unclear. In the present study, the black tea major component theaflavins were assessed for their hepatic lipid lowering potential when administered in fatty acid overload conditions both in cell culture and an animal experimental model. In our results, we found that theaflavins significantly reduced lipid accumulation, suppressed fatty acid synthesis and stimulated fatty acid oxidation. Furthermore, theaflavins also inhibited ACC activities by stimulating AMPK through the LKB1 and ROS pathways. These observations support the idea that AMPK is a critical component of decreased hepatic lipid accumulation by theaflavin treatments. Our results show that theaflavins are bioavailable both in vitro and in vivo and may be active in the prevention of fatty liver and obesity.

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