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The Lipid-lowing Mechanism of Dietary Fiber from *Flammulina velutipes*

X.Y. Chen^{a,b,*}, W.Y. Kang^{a,b}

* Corresponding author *E-mail address*: kangweny@hotmail.com

Abstract

To address the unclear mechanism of dietary fiber in reducing body fat, our experiments revealed that dietary fiber from the fruiting body of *Flammulina velutipes* effectively reduced body weight, blood lipids, hepatic lipid accumulation, and epididymal fat mass in obese rats, demonstrating favorable anti-obesity effects. Proteomic analysis combined with bioinformatics statistical analysis showed that the protein Isochorismatase Domain Containing 1 (ISOC1) and SIRT3 were significantly downregulated in the liver of obese rats, while PLIN2 proteins were markedly upregulated. These trends were significantly reversed in rats intervened with dietary fiber from *Flammulina velutipes*. Further integration of proteomics and protein network interaction analysis revealed strong interactions between ISOC1 and proteins SIRT3 and PLIN2. Literature review indicates that SIRT3 is a recognized lipid-regulating protein in the field [1], and PLIN2 is a lipid droplet stability protein [2]. These findings demonstrate that ISOC1 is involved in lipid metabolism, though its molecular mechanism remains to be elucidated.

References

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