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Isolation and characterization of a hyperbranched proteoglycan from *Ganoderma lucidum* for anti diabetes

Ping Zhou

Fudan University, China

Inhibition of protein tyrosine phosphatase 1B (PTP1B) activity has been considered as a promising therapy approach to treat type-2 diabetes. In this work, a novel PTP1B activity inhibitor, named *FYGL* (Fudan-Yueyang-*G. lucidum*), was screened from the fruiting bodies of *Ganoderma lucidum* and showed an efficient PTP1B inhibitory potency with $IC_{50}=5.12\pm 0.05$ $\mu\text{g}/\text{mL}$. The type-2 diabetic animals treated orally by *FYGL* showed an obvious decrease in the plasma glucose level and comparable with those treated by metformin, a clinic drug. The toxicity of *FYGL* is very low. *FYGL* is a water soluble hyperbranched proteoglycan with molecular weight (M_n) of 105. In addition, it was also found that *FYGL* could protect kidney against the renal functional and morphologic injuries by increasing the activities of antioxidants and inhibiting the accumulation of oxidation. The results indicate that *FYGL* may serve as a drug candidate or a health care food for the diabetic therapy and renal functional protection.

Biography

Ping Zhou has completed her BS degree study from Fudan University, China and PhD degree and Post-doctoral studies from The Chinese University of Hong Kong. She was appointed as a Staff Member at Fudan University and promoted to full Professor in 2005. She has focused on the Research of Biomedicine Materials and developed new drugs from natural herbs for diabetes treatment. She has published more than 100 scientific papers and got Science and Technology Award (Natural Science), Ministry of Education of China (2004), Wang Tianjuan Award for Magnetic Resonance Spectroscopy in China (2006) and Shanghai Natural Science Award (2011).

pingzhou@fudan.edu.cn

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