



LIPIDOMIC ANALYSIS, CAROTENOIDS CONTENT, AND *IN VITRO* ANTIOXIDANT ACTIVITIES OF DIFFERENT PARTS OF *GANODERMA LUCIDUM* AND *GANODERMA ATRUM*

Bo Jie Chen¹, Cong Xia¹, Qiying Zhang¹, Xiongwen He¹, Huixiang Zhang^{1,2}, Jing Li¹, Xia Li^{1,2}, Hock Eng Khoo^{1,2} ✉

¹*Guangxi Key Laboratory of Electrochemical and Magneto-chemical Functional Materials, College of Chemistry and Bioengineering, Guilin University of Technology, 541006 Guilin, China*

²*South Asia Branch of National Engineering Research Center of Dairy Health for Maternal and Child Health, Guilin University of Technology, 541006 Guilin, China*

✉2020153@glut.edu.cn

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ABSTRACT

This study determined fatty acid compositions of two cultivated *Ganoderma*. The canopy and stalk lipids of the *Ganoderma* were analyzed for fatty acid composition, β -carotene content and antioxidant activities. The results showed that *Ganoderma* samples contained 51 fatty acids. Their lipid extraction yields ranged between 0.45% and 1.09%. The β -carotene content of the red *Ganoderma* canopy extract was higher than its stalk extract. The canopy extract also had the highest DPPH hydroxyl radical scavenging activity. The data of the overall heat map showed that over 30 fatty acids were positively and highly correlated to the lipid in the black *Ganoderma* stalk. The main types of fatty acids in these *Ganoderma* samples were palmitic, oleic, and linoleic acids. The concentration of linoleic acid in the red *Ganoderma* canopy was as high as 164.02 mg/g lipid. These results suggested that these *Ganoderma* lipids are lipid-based antioxidants and potential sources of dietary supplements.