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Proteomic analysis of anti-photoaging activity of the acetylated and amidated peptide GMCCSR

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In previous study, a hexapeptide with sequence of GMCCSR was identified from trypsin-digested whole protein of *Spirulina platensis*, and further study demonstrated that this peptide possessed antioxidant and anti-aging activities *in vitro*. In this study, the acetylated and amidated modification were employed to improve skin permeability of the peptide. The *in vivo* experiments showed that the acetylated and amidated peptide GMCCSR exerted good anti-photoaging effects on skin of mice by increasing the collagen production and activities of antioxidant enzymes SOD, GSH-Px and CAT. Subsequently, proteomic analysis using iTRAQ-based mass spectrometry technology was used to explore potential mechanisms. The results indicated that the acetylated and amidated peptide differentially influenced the expression of 60 proteins. Among them, 33 proteins were up-regulated and 27 proteins were down-regulated. Based on bioinformatics analysis, the metabolic pathways and network related to skin photoaging were identified.

Biography

Xuewu Zhang completed his PhD at Zhongshan University in 1993. Subsequently, he worked as a Post-doctor at Hong Kong University, University of British Columbia, University of Manitoba and University of California at Los Angeles. Then, he became a Research Assistant Professor at Hong Kong University in 2003. At last, he joined South China University of Technology as a Professor in 2005. His research interests focuses on Food Science, Omics Technologies and Nanotechnology. He has published more than 80 papers in reputed journals and served as Editorial Board Member of several journal

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