

## Development and mechanism research of multi functional peptide product

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Many peptides, in addition to nutritional supplements, were found to have various bioactivities, such as anti-oxidation, anti-cancer activity, etc. In our previous study, it was attained a multifunctional hendeca-peptide with a molecular mass of 1309 Da from algae protein hydrolysate. In order to enhance the physiological effectiveness of the peptide used as medicine and health food in the future, we modified the original skeleton of algae peptides for various bioactivities detection, and utilized the technology of amino acids synthesis and bioinformatics knowledge to explore the relationship of amino acids diversity. The results showed the synthetic tripeptide (PRF) was much more protective capacity than that of full length peptide in quenching hydroxyl radicals. Besides, we further detected the antioxidative study on oxidation-induced DNA damage to elucidate the prospective antioxidative role of peptide in humans. The result showed that the super coil (SC) form in DNA was completely converted to the open circular (OC) form due to the hydroxyl radical damage, and the tripeptide had the protective capacity against hydroxyl radicals. On the other hands, the superoxide dismutase (SOD) is one of the defense mechanisms in the living cell for cytoprotection against this reactive oxygen. In this study, the synthetic hexapeptide(YGPNRP) were much more effective than that of full length peptide in quenching superoxide radicals, and they were close to the value of natural antioxidant Trolox. The hexapeptide also have quite angiotensin-converting enzyme inhibitor activity. These results suggested the peptides might have the potential to serve as food additives with health claims in the future.

### Biography

I-Chuan Sheih has completed her PhD in 2009 and Postdoctoral studies for two and a half years in National Chung Hsing University. She is a Project Director of Ministry of Science and Technology, MOST, Project No. MOST 104-2221-E-233-005 and the Chair of Department of Food and Beverage Management. She has published many SCI papers in reputed journals. She has been a researcher for six years in Food Industry Research Development Institute and a RD for four years in the Resource Microbiology Institute.

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