

Extraction of Polysaccharides from a Mushroom, *Hericium erinaceum*, by Microwave Irradiation

Yuuichi Ookushi, Masahiro Sakamoto and Jun-ichi Azuma
Division of Environmental Science and Technology,
Graduate School of Agriculture, Kyoto University
Kitasirakawa-oiwakecho, Sakyo-ku, Kyoto 606-8502, Japan
Tel: 075(753)6465, E-mail: ookushi@kais.kyoto-u.ac.jp

Summary

The aim of our research is to develop efficient and harmless methods to reuse the non-utilized biomass and the residues remaining after industrial utilization of biomass for promotion of the recycling utilization of biomass resources. In this presentation, we are intended to develop a useful method to extract polysaccharides from the fruiting body of a mushroom, *Hericium erinaceum*. For this extraction, we tried to apply a heat-treatment by microwave irradiation in the presence of water as one of efficient and eco-friendly technologies. Comparison of the results obtained by extraction using microwave irradiation in the presence of water with those obtained by extraction using conventional external heating indicated that extractability of the former extraction for 5min at 140°C was almost equivalent to that of the latter extraction for 6h at 100°C. This suggests that the duration of time necessary to extract polysaccharides from the fruiting body of *H. erinaceum* could be reduced significantly by applying microwave irradiation in the presence of water. Based on the results, it was also found that there were two types of β -glucans, one which is easy to solubilize in water and the other which is difficult to solubilize in water. Further, we are investigating the behavior of the latter type β -glucan during microwave irradiation in the presence of water.

OOKUSHI, Yuuichi

OOKUSHI Yuuichi is a doctoral course student belonging to Division of Environmental Science and Technology, Graduate School of Agriculture, Kyoto University. Research: Development of useful methods for recycling utilization of biomass resources by using microwave irradiation. Publication: "Optimization of microwave-assisted extraction of polysaccharides from the fruiting body of mushrooms" *Journal of Applied Glycoscience (in press)*.