

P125

Production of Enantiopure Styrene Oxide Using Multicassette
Gene Expression in *Pichia pastoris*

Hee Sook Kim, Ji Sook Shin and Eun Yeol Lee*

Dept. of Food Science & Biotechnology, Kyungsoong University, Busan 608-736, Korea

Recombinant *Pichia pastoris* containing the epoxide hydrolase gene of *Rhodotorula glutinis* were developed for preparing enantiopure epoxides. The epoxide hydrolase gene was cloned by RT-PCR, integrated into chromosome of host cells (single copy and double copy integrations) using pPICZ vector. The kinetic characteristics and optimum conditions of the recombinant cells were investigated as a biocatalyst for enantioselective hydrolysis of racemic substrates. In this study, double copy recombinant *P. pastoris* is a better biocatalyst for the production of enantiopure styrene oxide. [This work was supported by 2006 Regional Innovation System (RIS) and 2006 Research Foundation of Kyungsoong University, Republic of Korea.]

P126

Antioxidative Activity of Organosulfur Compounds Derived from Garlic

Beung-Ho Ryu and Seung-Taek Yang

Department of Food Science and Biotechnology, Kyungsoong University, Busan 608-736, Korea

Garlic (*Allium sativum* L.) has been universally as a flavoring ingredient, functional food, and traditional medicine. Historically, garlic have been utilized in for folk medicine for the treatment of such varied physical disorders as wounds, chest colds, and heart disease.

The properties of garlic have been often attributed to sulfur-containing volatile compounds such as allicin and its derivatives, which have been examined as potential anticarcinogens, antimutagens, and antimicrobial and antioxidant activity. The aim of this study is to investigate the antioxidant activity of compound derived garlic on low density lipoprotein(LDL) oxidation mediated metal ion and cell lines. Diallyl tetrasulfide prolonged the lag time proceeding the onset of conjugated diene formation. The physiological relevance of the antioxidative activity was validated at the cellular levels where diallyl tetrasulfides inhibited mouse macrophage. and endothelial cell mediated LDL oxidation. As compared to several antioxidants, diallyl tetrasulfides showed similar ability than naturally occurring antioxidants, α -tocopherol, and ascorbic acid.

Key world: Garlic, antioxidant, LDL, diallyl tetrasulfide