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MUSHROOM PRODUCTION AND UTILIZATION IN KOREA

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There are about 15,000 mushroom species in the world. Roughly 1,100 mushroom species have been recorded in Korea, however, only 350 of them are known to be edible mushrooms, 50, medicinal, and the rests are unidentified or poisonous. Until now, *Agaricus*, *Pleurotus*, *Lentinus*, *Flammulina*, *Agrocybe*, *Lyophyllum*, and *Pleurotus eryngii* are commercially grown as edible mushrooms, and *Ganoderma*, *Poria cocos*, *Agaricus blazei*, and *Cordyceps* are cultivated as medicinal mushrooms in Korea. *Lentinus edodes* was commercially grown for the first time in Korea from the early 1900s followed by *Agaricus*, *Pleurotus*, and *Flammulina*. Production of *Pleurotus* was 83,600 tons, it was occupied 70% of total mushroom production of 142,000 tons from about 20,000 mushroom farms in 1997. *Tricholoma matsutake* and *Lentinus edodes* are among the major export items, amounting 32 million US dollars. *Tricholoma matsutake* and some of *Lentinus edodes* are exported as fresh ones while some of *Lentinus edodes* and *Ganoderma* as dried ones, and some of *Lentinus edodes* and *Pleurotus* are sold as snack. Presently, several mushrooms such as dried *Lentinus edodes*, *Ganoderma* and *Auricularia*, and salted *Agaricus bisporus*, amounting 17,000 tons were imported from other countries. The majority of the commercially grown mushrooms are consumed as table use and some of them are utilized as tonic foods and pharmaceutical ingredient.

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NEW *p*-TERPHENYL COMPOUNDS WITH LIPID PEROXIDATION INHIBITORY ACTIVITY FROM THE MUSHROOM *PAXILLUS* SPP.

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Peroxidative disintegration of cells and organellar membranes by free radicals has been implicated in various pathological process and especially involved in the pathogenesis of diseases such as myocardial and cerebral ischemia, atherosclerosis, diabetes, rheumatoid arthritis, and cancer-initiation and aging process. Thus free radical scavengers have the potential as protective agents against these diseases. In our investigation for biologically active novel constituents, especially free radical scavengers, from basidiomycetes, we have isolated eight *p*-terphenyl compounds, designated as paxillins and curtisians, from methanolic extract of the fruiting bodies of *Paxillus curtisii* and *P. panuoides*. Paxillins A-D from *P. panuoides* and curtisians A-D from *P. curtisii* were isolated through solvent partition, silica gel and Sephadex LH-20 column chromatographies, and HPLC. Their structures were assigned as new *p*-terphenyl compounds by spectroscopic analyses including UV, IR, MS, and NMR. The major component paxillin A and curtisians A and B showed lipid peroxidation inhibitory activities with IC₅₀ values of 0.39, 0.40, and 0.45 µg/ml, respectively. These compounds exhibited about the same activity of vitamin E or probucol that were used as positive control.