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Purification and Characterizaion of Superoxide Dismutases from *S. coelicolor*

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S. coelicolor (Müller) contains two distinct superoxide dismutase (SOD) activities detected on native PAGE. The level of each SOD changed differently depending on growth media, and scarcely responded to paraquat, a superoxide-generating agent. These SODs have been purified from *S. coelicolor*.

One SOD (SOD1) was a tetramer of 13.5 kD subunits. It was found to be a novel SOD containing 0.75 atom of Ni per subunit as determined by atomic absorption spectroscopy. The other SOD (SOD2) was composed of 27.5 kD subunits. It was found to contain 0.4 to 0.5 atom of Fe and about 0.3 atom of Zn per subunit. Electron spin resonance spectroscopy also revealed the existence of Ni and Fe as cofactors of SOD1 and SOD2, respectively.

The N-termial amino acid sequences of both SODs were determined. SOD2 showed high similarity to MnSOD and FeSOD from *E. coli*. SOD1 was less similar to known SODs but still contained sveral conserved amino acids.

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Production and Characterization of Cathepsin B Inhibitor Produced from *Streptomyces aburabiensis* S175

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The aim of the present study was to develope strains of actinomycetes producing low molecular weight cathepsin B inhibitor. An economical and effective screening method was developed for the screening of cathepsin B inhibitor. Among 700 isolates isolated from soil samples, a strain of *Streptomyces aburabiensis* S175 was selected. Optimum culture condition for the production of cathepsin B inhibitor was determined. Glucose and soytone were selected as good carbon and nitrogen sources, respectively. The production of inhibitor was related with mycelial growth. The inhibitor in culture filtrate was purified by adsorption on activated charcoal, butanol extraction, silica gel chromatography, ion exchange using Dowex-1 (Cl^- form) and Amberite IRC-50 (H^+ form), and preparative TLC. The physico-chemical characteristics were studied and the chemical structure of the inhibitor is being determined from UV spectroscopic analysis, IR spectroscopic analysis, Mass spectroscopic analysis, ^{1}H-NMR, and ^{13}C-NMR studies.