E337 Purification And Characterization of an Fe-Superoxide Dismutase from *Streptomyces subrutilus* P5.

Nam-woo So*, Jae-heon Kim
*Dept. of Microbiology, Dan-kook University

An Fe-superoxide dismutase was purified by lead-precipitation and Sephadex G-200 gel filtration from the culture filtrate of *Streptomyces subrutilus* P5. The purity was examined by a single protein band stained by coomassie blue. Final activity of the enzyme was 1.930 units mg^{-1} and the molecular weight was 28 KD determined by SDS polyacrylamide gel electrophoresis and 55 KD determined by constructing a plot of Kr against molecular weight from different native gel concentration. The enzyme was resistant to KCN and inhibited by H_2O_2. The same characteristic g values for Fe-superoxide dismutase of *Streptomyces griseus* were observed by EPR spectroscopy. The enzyme showed a relatively high heat stability at 37 ℃ and the optimum pH was 8.5.

E338 Anaerobic Acid Tolerance Response in Virulent *Salmonella typhimurium*

Young Chan Kim, Sun Lee, Sung Young Lim, Kyeong Ryang Park, Yong Keun Park[1] and In Soo Lee*
Department of Microbiology, Han Nam University
Graduate School of Biotechnology, Korea University[1]

The acid tolerance response(ATR) in log phase is an adaptive acid protection system induced at external low pH values below pH5.8 in virulent *Salmonella typhimurium*. Using the P22 Mud*J*(Km, *lacZ*) operon fusion technique and a lethal selection procedure combining low pH(pH 4.5), benzoic acid(10mM, pH4.5), and sodium acetate(10mM, pH4.5), we isolated LF318 *atr*A1::MudJ and LF354 *atr*A6::MudJ, which were acid sensitive in aerobic condition. Also, we isolated anaerobic acid tolerant mutants, LF487 *aat*A::MudJ and LF488 *aat*B::MudJ. These mutants were showed acid-sensitive phenotype in anaerobic ATR test. Recently, anaerobic acid sensitive(*aas*) mutants were isolated from acetate screening. LF474 *aas*A::MudJ, LF475 *aas*B::MudJ, LF476 *aas*C::MudJ, and LF477 *aas*D::MudJ were showed acid-resistant phenotype in anaerobic condition(5% CO_2, 5% H_2, 90% N_2). Therefore isolated genes that showed anaerobic acid tolerance and sensitivity were suggested important genes for anaerobic ATR system. Also we found acid adapted protection system in anaerobic condition.