

**F329 Cloning and transcriptional analysis of *cadC* of *Salmonella typhimurium*.**

이 호 정\* · 방 일 수 · 방 성 호<sup>1</sup> · 박 용 근  
고려대학교 생명공학원 · <sup>1</sup> 한서대학교 생물학과

The *cad* operon encodes lysine decarboxylase(CadA) and lysine-cadaverine antiporters(CadB). These two genes are induced under conditions of low pH, anaerobiosis, excess lysine, and low CO<sub>2</sub>. Regulation of any of these parameters depends on the presence of *cadC* gene, encoding the regulator of the operon. It is located upstream of *cad* operon in *E. coli*. The aim of this study is cloning of *Salmonella typhimurium cadC*, and characterization by sequencing analysis. To better understand the overall mechanism by which CadC functions, the *cadC* transcription as a function of pH, lysine, O<sub>2</sub>, and CO<sub>2</sub> were examined. And, transcription level of *cadC* were examined in *rpoS*, *hns* mutants. These data confirm the central role of *Salmonella typhimurium cadC* in regulation of *cad* operon.

**F330 Secondary Structure of *rep* mRNA also Controls Rep Protein Expression on Staphylococcal R-plasmid pSBK203 : Mutational Analysis**

Yeun Young Lee\*, Young Sun Kim and Woo Hyeon Byeon  
Division of Biological Science, Kangwon National University

Expression of replication rate-limiting initiator protein(Rep) in plasmid pSBK203 is controlled by the antisense RNA(*cop* mRNA). Previous studies identified that mutations within *cop* promoter(-10, -35 region) lead decrease in its copy number. To determine whether interaction between *rep* mRNA and antisense RNA are critical for its regulatory role, point mutations are introduced in target sequence and deletion mutations in target loop. These changes resulted in decrease of copy number. Most mutations in #11 stem loop which is located just upstream of SD of *rep* caused increased copy number mutation. We have supposed that Anti SD-SD stem loop that resembled a typical rho-independent transcriptional terminator can be formed in the presence or absence of the antisense RNA and expression of Rep will be prevented from premature termination of transcription. This hypothesis was supported by the fact that point mutation in poly U stretch following the anti SD-SD stem loop caused a increase in copy number. Not only point mutations in anti SD-SD stem loop irrespective of stabilization or destabilization but also deletion of anti SD sequences caused a decrease in copy number.