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Transcriptional Regulation of Human Cu/Zn *Superoxide Dismutase* Gene by C/EBP Family

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In the previous study, it was found that transcription factors of C/EBP family are associated with the expression of human Cu/Zn *superoxide dismutase(SOD)* gene. Most of the C/EBP family members display regulated and tissue specific patterns of expression and exhibit differential effects on the target gene. To study the role of each factor on the transcription of Cu/Zn *SOD* and the possibility that Cu/Zn *SOD* can be regulated according to the expression profiles of C/EBP family members, several representatives of C/EBP family, C/EBPα, NF-IL6 and LIP were examined. Transcription activators, C/EBPα and NF-IL6, stimulated the expression of Cu/Zn *SOD* to a similar extent, albeit NF-IL6 was a slightly stronger activator than C/EBPα. LIP strongly repressed the activation by C/EBPα and NF-IL6. These results represent transcription activators of C/EBP family perform similar functions on the transcription of Cu/Zn *SOD.*

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Replication control mechanisms of staphylococcal R-plasmid pSBK203

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A *rep* gene product of staphylococcal R-plasmid pSBK203 is known to initiate replication by recognizing *ori* region. Production of the ssDNA plasmid molecule is followed through "rolling circle replication" procedure. The copy number of plasmid is controlled by the extent of the expression level of Rep protein. The leader region of Rep mRNAs have secondary structure and these region seemed to bind complementary with the secondary structure of *cop* gene product, RNAII which is transcribed from the same region of the antisense DNA strand. We isolated some copy mutants of staphylococcal R-plasmid pSBK203, some are high and others are low copy mutants. These mutant strains were analyzed for the cause of the change, whether they are due to a expression level of antisense RNA or in stability of secondary structure of leader region on Rep mRNA. And several site directed mutants are constructed. To some of them changes in the stability of secondary structure of leader region of *rep* mRNA are introduced and to the others changes in promoter region(-10 and/or -35) of *cop* gene are introduced. Relation between plasmid copy number and the amount of mRNA of *rep* and/or *cop* was analyzed using northern blotting.