

1D INOUE, Hiromi<sup>1</sup>, SUZUKI, Daisuke<sup>1</sup>, ASAI, Kei<sup>1</sup>  
-6 (<sup>1</sup>The Grad. Sch. Sci. & Eng., Univ. of Saitama)

Analysis of Regulatory mechanism of *Bacillus subtilis* ECF  $\sigma$  factor  $\sigma^M$

The free-living soil bacteria, *Bacillus subtilis*, are exposed to various environmental stresses. Therefore they possess several mechanisms enabling them to survive against such stresses.

The extracytoplasmic function (ECF)  $\sigma$  factor,  $\sigma^M$ , is a transcriptional regulator constitutes subunit of RNA polymerase holoenzyme. The  $\sigma^M$  is essential for growth in high salt stress conditions in *B. subtilis*. It is demonstrated that  $\sigma^M$  activity is negatively regulated by two anti- $\sigma$  factor, YhdL and YhdK, and raises in response to several extracytoplasmic stresses. However, the molecular mechanism which regulates  $\sigma^M$  activity is not uncovered yet. In this study, in order to find the factor regulating  $\sigma^M$  activity we observed anti- $\sigma$  protein in conditions where  $\sigma^M$  was activated.