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Activation of ECF sigma factor σ^M in *Bacillus subtilis* cells with altered membrane lipid composition

Bacillus subtilis membrane contains many phospholipid and glycolipid species, and they are considered to be involved in a variety of cellular functions. Upon reduction of the content of phosphatidylglycerol, which is essential for viability, an extracytoplasmic function (ECF) sigma factor σ^M is activated. UgtP catalyzes the synthesis of glycolipid, which is suggested to have a role in keeping the cells in regular length. Thus, we examined the activities of several ECF sigma factors in the *ugtP* mutant cells that lack glycolipids, and found a remarkable activation of σ^M . We are now constructing an IPTG-regulatable *ugtP* strain to examine the level of the glycolipid content which is required for the induction of σ^M .