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Oxygen-Mediated Regulation of Biofilm Development is Controlled by the Alternative Sigma Factor σ^B in *Staphylococcus epidermidis*

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Abstract:

Using a modified rotating-disk reactor to sparge oxygen to *Staphylococcus epidermidis* cultures, we found that oxygen negatively regulates biofilm development by influencing the activity of σ^B. Under anaerobic conditions, increased σ^B activity activates *icaADBC*, which encodes enzymes responsible for polysaccharide intercellular adhesin synthesis, by repressing transcription of the negative regulator *icaR*.