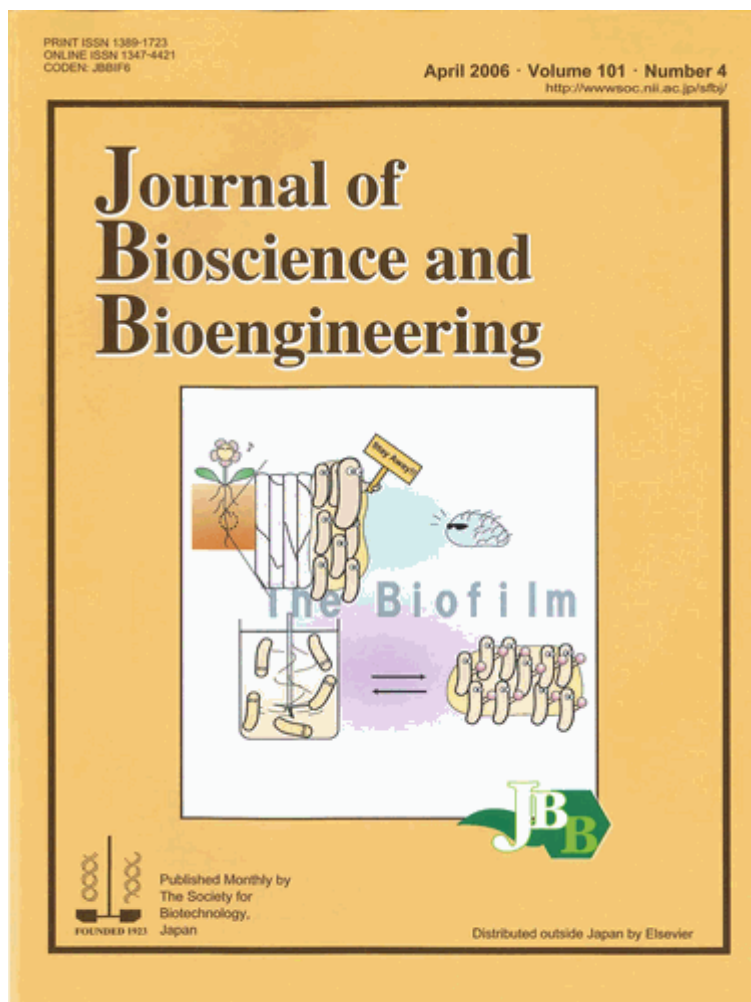


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Beneficial biofilms have opened the way for the development of new biotechnology.

Biofilms are densely packed multicellular communities of microorganisms attached to a surface or interface. Bacteria can initiate biofilm formation in response to specific environmental conditions. Understanding the mechanism of biofilm formation is important for exploring effective strategies to control harmful biofilm formation, such as the one by pathogenic bacteria, and to promote beneficial biofilm formation. Regarding the latter case, the author indicates, by presenting scientific caricatures, that biofilms can function as a biocontrol agent to protect plants against infection by pathogenic bacteria (upper part), as a bioreactor for the production of various metabolites never attained by the cells under planktonic growth conditions (lower part), as an inhibitor of mild steel corrosion, and so on, thus suggesting the exploitation of beneficial bacterial biofilms may lead to a new biotechnology.

Related article: Morikawa, M., "Beneficial biofilm formation by industrial bacteria *Bacillus subtilis* and related species", *J. Biosci. Bioeng.*, vol.101, 1-8 (2006).

Illustration by Tojo, T.

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