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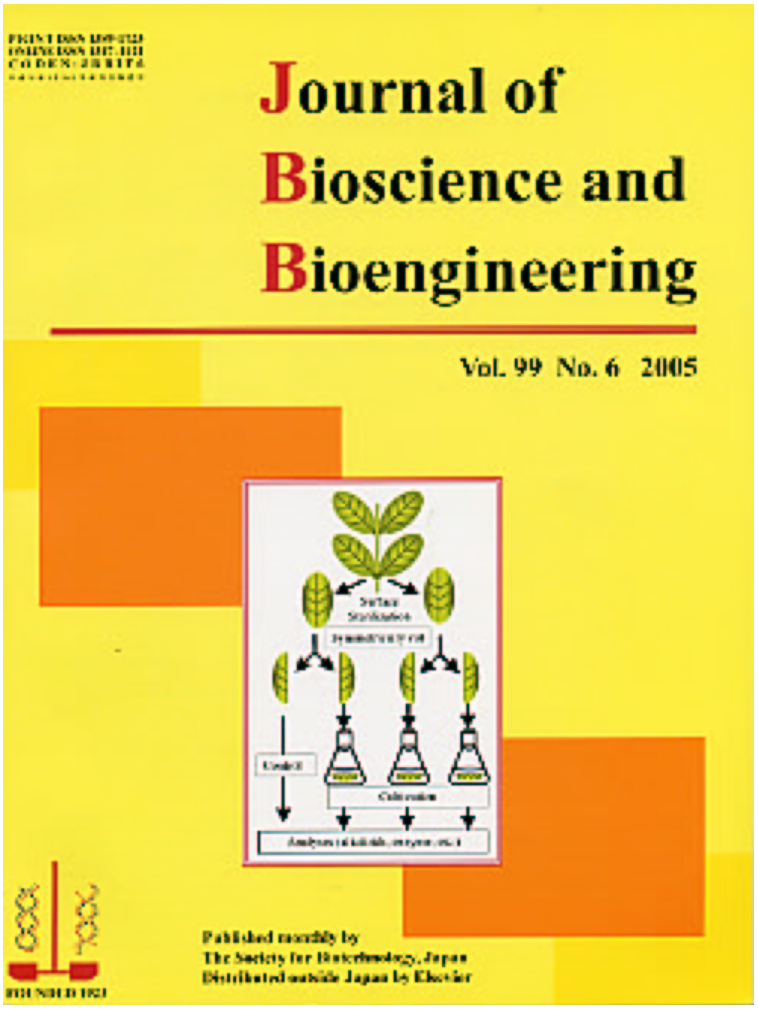

A novel production method for useful chemicals involving direct culture of plant leaves.

Current production systems for plant secondary metabolites involving dedifferentiated cells (callus) have some disadvantages for industrial scale application. The instability of metabolite productivity by cells is one of the most important factors. As illustrated on the cover, a novel method for the production of secondary metabolites involving direct culture of intact plant leaves, but not dedifferentiated cells (callus), was developed. Terpenoid indole alkaloids such as ajmalicine and serpentine were shown to be efficiently produced when intact leaves of *Catharanthus roseus* were cultured in the phytohormone-free liquid medium, this being the first step in the development of a novel and promising production system for plant secondary metabolites.

Rlated article: Iwase, A., Aoyagi, H., Ohme-Takagi, M., and Tanaka, H.,"**Development of a novel system for producing ajmalicine and serpentine using direct culture of leaves in *Catharanthus roseus* intact plant**", J. Biosci. Bioeng., vol. 99, 208-215 (2005), **dx.doi.org/10.1263/jbb.99.208**.

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