

### **133d Production of Mycophenolic Acid by Immobilized Cells of *Penicillium Brevi-Compactum* in a Rotating Fibrous Bed Bioreactor**

*zhinan Xu and Shang-Tian Yang*

Mycophenolic acid is the secondary metabolite of *Penicillium brevi-compactum* with diverse biological properties and clinic application as an immunosuppressive agent. An isolate of *P. brevi-compactum* ATCC16024 was used to optimize the complex medium which was formulated with raw materials. The response surface methodology was employed to derive an optimal medium towards production of mycophenolic acid. Four levels with a four factorial design were adopted. The optimized medium was tested to improve the productivity of mycophenolic acid in a 5 liter B. Braun fermentor. A rotating fibrous-bed bioreactor (RFB) was further developed for fermentation to produce mycophenolic acid from glucose by *P. brevi-compactum*. Mycelia of *P. brevi-compactum* immobilized in the RFB can efficiently improve the performance of the bioreactor. The immobilized-cells fermentation in RFB gave a virtually cell-free fermentation broth and provided many advantages over conventional fermentation processes, especially those with free suspended fungal cells. The high mycophenolic acid concentration (0.75g/l) was achieved after the investigation of several fermentation conditions.