

## Alkaloid production in *Catharanthus roseus* cell cultures elicited with cyclodextrins and methyljasmonate

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### Abstract (up to 200 words)

*Catharanthus roseus* produces numerous alkaloids with high pharmaceutical importance. Because these dimeric alkaloids are produced at very low levels in plants, *Catharanthus roseus* cell cultures have been studied for many years as a potential way to produce these compounds as well as the monomers vindoline, catharanthine and ajmalicine. However, despite the extensive studies on the standardization of cell growth and the selection of high yielding cell lines, the alkaloid production from suspension cultures is relatively low. Among different strategies to increase alkaloid production, elicitation could be one efficient strategy to provoke important increases in product yield. Morales *et al.* (1998) demonstrated that elicitation of grapevine cell cultures with cyclodextrins (CDs) induced the production of resveratrol, the stilbene unit characteristic from Vitaceae family. The effect of CDs on resveratrol production allowed the development of an innovative procedure where high levels of this metabolite were accumulated and were easily recovered directly from the culture media without cell biomass destruction (Bru & Pedreño, 2003). In the present research work, we tried to extrapolate this innovative technology focusing on alkaloid production improvement by elicitation of *Catharanthus roseus* cell cultures with a combination of both MeJA and CDs.

### References

Morales M, Bru R, García-Carmona F, Ros Barceló A, Pedreño MA. 1998. *Plant Cell, Tissue and Organ Culture* 53: 179-187.

Bru R, Pedreño MA 2003. Method for the production of resveratrol in cell cultures. PCT patent WO 03/062406.