

Influence of AgNO₃ Treatment on the Flavonolignan Production in Cell Suspension Culture of *Silybum marianum* (L.) Gaertn

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Abstract : The abiotic elicitation is one of the methods for increasing the secondary metabolites production in plant tissue cultures and it seems to be more effective than traditional strategies. This study verified the use of silver nitrate as elicitor to enhance flavonolignans and flavonoid taxifolin production in suspension culture of *Silybum marianum* (L.) Gaertn. Silver nitrate in various concentrations ($5.887 \cdot 10^{-3}$ mol/L, $5.887 \cdot 10^{-4}$ mol/L, $5.887 \cdot 10^{-5}$ mol/L) was used as elicitor. The content of secondary metabolites in cell suspension cultures was determined by high performance liquid chromatography. The samples were taken after 6, 12, 24, 48, 72 and 168 hours of treatment. The highest content of taxifolin production (2.2 mg.g⁻¹) in cell suspension culture of *Silybum marianum* (L.) Gaertn. was detected after silver nitrate ($5.887 \cdot 10^{-4}$ mol/L) treatment and 72 h application. Flavonolignans such as silybinA, silybin B, silydianin, silychristin, isosilybin A, isosilybin B were not produced by cell suspension culture of *S. marianum* after elicitor treatment. Our results show that the secondary metabolites could be released from *S. marianum* cells into the nutrient medium by changed permeability of cell wall.

Keywords : *Silybum marianum* (L.) Gaertn., elicitation, silver nitrate, taxifolin

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