

## ABSTRACT

Cell suspension cultures of *Solanum mammosum* L. (SM) have been known can transform *p-aminobenzoic acid* into its monoglucoside, *p-amino benzoic acid-7-O-β-D-glucopyranosil ester*.

In continued studies on biotransformation *p-aminobenzoic acid*, we have tested the influence of external factors (carbon source, such as sucrose, glucose, lactose; phytohormone; light condition,  $\text{Ca}^{2+}$  and  $\text{Co}^{2+}$  concentration) to the ability of cell suspension cultures of *Solanum mammosum* L., to transform *p-aminobenzoic acid* 750.0 ppm into *p-amino benzoic acid-7-O-β-D-glucopyranosil ester*.

In this works, cell suspension cultures of *Solanum mammosum* L. were cultivated on various treatment media. After 6 days, cells were harvested, then extracted with methanol by ultrasonic and mechanic vibration, thereafter their concentration were determined.

*p-amino benzoic acid-7-O-β-D-glucopyranosil ester* was compared to *p-amino benzoic acid-7-O-β-D-glucopyranosil ester* standard, for their Rf values and absorbance-reflectance spectrum profiles, then it was determined quantitatively with Thin Layer Chromatography Scanner.

Sucrose 1 % is one of the external factors which can give the best result in *p-aminobenzoic acid* biotransformation (ca. two fold than the result in control).

Biotransformation *p-aminobenzoic acid* in medium containing sucrose 1 % and ion  $\text{Cu}^{2+}$  0.500 ppm can result *p-amino benzoic acid-7-O-β-D-glucopyranosil ester* higher than the amount in control, but that result is relatively smaller than the amount in individual biotransformation *p-aminobenzoic acid* with sucrose 1 % or  $\text{Cu}^{2+}$  0.500 ppm.

*P-amino benzoic acid-7-O-β-D-glucopyranosil ester* production could be enhanced remarkably if *p-aminobenzoic acid* 25 mg each flask was added in cell suspension cultures of *Solanum mammosum* L on 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup>. This method could yield *p-amino benzoic acid-7-O-β-D-glucopyranosil ester* 207.02 mg g<sup>-1</sup> dry weight or 20.70 % dry weight in cells and 720.66 mg litre<sup>-1</sup> in media.

The amount of *p*-amino benzoic acid-7-O- $\beta$ -D-glucopyranosil ester yielded by this method is the highest value ever reported for biotransformation *p*-aminobenzoic acid in *Solanum mammosum* L. or *Solanum laciniatum* Ait.

Key words: *Solanum mammosum*, cell suspension cultures, biotransformation, *p*-amino benzoic acid, *p*-amino benzoic acid-7-O- $\beta$ -D-glucopyranosil ester