

Flavonoid Accumulation in Cell Suspension Cultures of *Glycyrrhiza inflata* Batal under Optimizing Conditions

Ying Yang*, Feng He, Longjiang Yu*, Jiaxing Ji, and Yezhen Wang

College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan 430074, China. Fax: +86-27-87 79 22 65. E-mail: Yulj@hust.edu.cn

* Authors for correspondence and reprint requests

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Cell growth and flavonoid production in cell suspension cultures of *Glycyrrhiza inflata* Batal were investigated under various initial inoculum densities, and sucrose and nitrogen concentrations to develop an optimization method for an improved flavonoid production. Both biomass accumulation and flavonoid production exhibited an “S” curve in one culture cycle, with the greatest value obtained on day 21, which showed that cell growth and flavonoid biosynthesis went along isochronously. Moreover, according to the biomass and flavonoid production, the appreciate inoculum density, and the sucrose and nitrogen concentrations were 50 g FW L⁻¹, 50 g L⁻¹ and 120 mmol L⁻¹, respectively. In addition, cell growth and flavonoid production showed a peak of 16.4 g DW L⁻¹ and 95.7 mg L⁻¹ on day 21 under the optimizing conditions, respectively. The flavonoid productivity of the cells which were cultured for 3 years is higher than that of the 3-year-old plant, which suggested that flavonoid production by cell cultures of *G. inflata* is a potentially profitable method. Therefore, this work is considered to be helpful for efficient large-scale bioprocessing of cell cultures in bioreactors.

Key words: Flavonoid Production, *Glycyrrhiza inflata* Batal, Optimizing Conditions