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Production of biomass and secondary metabolites from plant cell and organ culture using bioreactor system in medicinal plants

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Plants have been an important source of pharmacologically active substances for thousands of years. It is estimated that approximately one quarter of all prescribed drugs contain plant extracts or active ingredients obtained from modeled on plant substances. Recently, increased emphasis is on the research of bioactive products from plants with potential pharmacological activity. Plant cell and tissue culture technology has been considered as a powerful tool for the biomass and bioactive compound production from those medicinal plants. In the past decade, tremendous progress has been made in this area and its importance has rapidly increased because of increased need for medicinal plant substances as sources of medicine and health food ingredients. Bioreactor culture system was applied for biomass and secondary metabolite production in medicinal plants. This system has been also refined to enhance the efficiency in terms of productivity and for cost reduction. For an efficient large-scale bioreactor culture, a perpetual explant source that is stable and fast growing is important. Majority of studies have been conducted on the cell and root cultures for biomass and secondary metabolite production for commercial purposes. Herein I would like to present an updated and comprehensive overview of *in vitro* biomass production system in various medicinal plants. Future perspectives of biomass and bioactive compound production have been also discussed.

Biography

So-Young Park has completed her PhD from Chungbuk National University during 1999-2002 in Korea and Postdoctoral studies from University of British Columbia, Canada. She is the Associate Professor of Department of Horticultural Science in Chungbuk National University. She has published more than 80 papers in reputed journals and has been serving as an Editorial Board Member of Journals such as *Journal of Plant Biotechnology*.

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