

## Role of Metabolic Engineering in the Synthesis of Plant Secondary Metabolites

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### ABSTRACT

Now a days, secondary metabolites of plants became an essential sources of food additives, pharmaceuticals, cosmetics, flavors and other industrial products. Plant cell and tissue culture techniques are environmental friendly and alternatives to produce secondary metabolites when natural supply becomes minimum. In recent time, metabolic engineering has become a new promising tool for the improved production in a plant or plant cell culture. In this paper, the advantages of using plant cell culture techniques to produce secondary metabolites are presented and also the different biotechnical and metabolic engineering tools available to improve their production. Jasmonic acid synthesis is taken as an example. The paper also focuses on various methods to improve the yield of secondary metabolites and scale-up production of the selected secondary metabolite.

**Keywords:** Cell suspension cultures, metabolic engineering, jasmonic acid, anticancer compounds.

