

Factors affecting on growth of transformed plant tissue (I) - Plant growth regulators and organic materials

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Abstract

Hairy roots are induced by the genetic transformation of plant cells by the pathogenic soil bacterium, *Agrobacterium rhizogenes*, which has plasmid as a vector seems to be feasible for the improvement of plant properties and for the production of transgenic plants. Transformed hairy roots are characterized by a high growth rate, high secondary metabolites production ability, and inherent genetic stability reflected in stable growth and production. Also, hairy roots cultures follow a definite growth patterns, the metabolite production may not be related hairy roots growth. In plant tissue cultures, growth and metabolites production are influenced by nutritional factors such as plant growth regulator and some organic materials. In order to obtain a high growth rate of plant tissue cultures, the culture conditions should be maintained at the optimum level.

In this study, we investigate factors affecting plant tissue growth and metabolite production such as plant growth regulators and organic materials. *Panax ginseng* hairy roots have faster elongation and more branches than normal cultured root. The responses of hairy roots to treatment with three different auxins, indole-3-butyric acid, naphthalene acetic acid and 2,4-dichlorophenoxyacetic acid were different. And the morphological changes of hairy roots were shown to treatment with cytokines, kinetin and 6-benzylaminopurine.

References

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