Metabolism of *myo*-Inositol and growth in various sugars of suspension-cultured tobacco cells

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Abstract

Tobacco (*Nicotiana tabacum* L.) cells were cultured in a liquid medium which contained sucrose as a source of carbon and energy. Various cell-wall constituents and wall precursors (L-arabinose, D-xylose, D-galactose, D-mannose, D-glucuronate, *myo*-inositol) were added to cells growing in this medium to by-pass possible rate-limiting steps in the relevant metabolic pathways. None of these compounds stimulated growth as measured by increase in fresh weight; *myo*-inositol did cause a slight increase and L-arabinose a decrease in dry weight accumulation compared to controls grown on sucrose only. Although *myo*-inositol was not needed for rapid growth, tracer level amounts of [2-^{3}H]*myo*-inositol were rapidly absorbed and metabolized. Label was incorporated into the uronide and pentose residues of cell walls and exocellular polysaccharide.

Keywords: Cell wall - *myo*-Inositol - *Nicotiana* - Polysaccharides (cell wall) - Tissue culture

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