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Full Length Research Paper

Esterase isoenzymes are linked to embryogenic structures induction in cotton cell suspension cultures

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Abstract

Esterase activity and isoenzymes pattern of two cultivars of cotton (*Gossypium hirsutum* L.), Coker 312 an embryogenic cultivar and ISA 205N a non embryogenic cultivar, were studied and compared during cell suspension cultures. The use of polyacrylamide gel electrophoresis allowed the identification of isoenzymes that number increased with the successive stages of cell culture of the two cultivars. At the stage of embryogenic structures induction which occurs only in Coker 312 cell suspension, we noted the presence of two isoenzymes (y and z) identified as aryl esterase, while one isoenzyme (x) identified as choline esterase was exclusively found in the cell suspensions of the non embryogenic cultivar ISA 205N. Esterase activity increased in cells of Coker 312 whereas it's remained constant in ISA 205N. These results suggested a great implication of esterase enzyme in the induction of embryogenic structures during cotton cell suspension cultures.

Key words: *Gossypium hirsutum L.*, cultivar, cell suspensions, embryogenic structures, Esterase; isoenzyme.