

**Hutchinson, M.J.,** T. Senaratna, S.V. Sahi and P. K. Saxena. **2000.** Light Mediates Endogenous Plant Growth Substances in Thidiazuron-induced Somatic Embryogenesis in Geranium Hypocotyl Cultures. *J. Plant Biochemistry & Biotechnology* 9: 1-6.

**ABSTRACT:**

Thidiazuron-induced somatic embryogenesis in geranium (*Pelargonium x hortorum* Bailey) was readily achieved under both light and darkness. The hypocotyl explants treated with TDZ formed well differentiated embryos when incubated under conditions of continuous light, complete darkness or 16-h photoperiod. However, embryogenesis was significantly impaired by light at both 16-h and continuous light exposure. Maintaining the cultures in the dark increased the frequency of the somatic embryos formed with a corresponding moderate elevation of the endogenous plant growth substances measured. In the complete absence of TDZ, all of the hypocotyl explants cultured in the dark remained thin but formed etiolated roots. The number of explants that formed roots decreased with increasing light exposure time; in addition the roots formed were shorter in length. The levels of endogenous adenine, adenosine, DHZ, Zeatin, isopenenyladenine (2iP), tryptamine, 1AA and ABA remained elevated for the first 2 days of culture in explants maintained on MSO and under continuous light, while they decreased on day 3 of culture. We provide evidence that the interaction between TDZ and light treatments modulated the endogenous plant growth substances, which in turn affected the embryogenic process in-geranium hypocotyls explants.