

behaved differently in this bioassay since it induced only swelling but no formation of lateral roots. 4, 5-, 4, 6- and 6, 7-Cl₂-IAAs also induced lateral root formation, but their activity was much weaker than that of 5, 6-Cl₂-IAA. 5, 6-Cl₂-IAA also exhibited the strongest activity with regard to the inhibition of the hypocotyl growth of intact seedlings of Chinese cabbage, as shown in figure 4. Its activity was about 100-fold stronger than that of IAA and comparable to that of 2, 4-D.

We examined the susceptibility of 5, 6-Cl₂-IAA to peroxidase. Peroxidase is considered to be the major enzyme for the decomposition of endogenous auxin in plants¹⁴, and we have previously shown that the potent activity of 4-Cl-IAA may be partly ascribed to its resistance to peroxidase decomposition³. The decomposition rate of 5, 6-Cl₂-IAA and other dichloro-IAAs with horseradish peroxidase was measured by Meudt's procedure¹⁵. When the auxins at 1.0×10^{-4} M were treated with 1.3×10^{-10} M peroxidase, all of the dichloro-IAAs tested survived an 11-h incubation, in contrast to IAA which was rapidly degraded within 2 h. When the auxins at 1.0×10^{-4} M were treated with 4.0×10^{-8} M peroxidase, six isomers of dichloro-IAAs and 4-Cl-IAA decomposed, as shown in figure 5. 5, 6-Cl₂- and 4-Cl-IAAs with strong auxin activity decomposed more rapidly than other dichloro-IAAs with weaker activity. These data indicate that the position and number of chlorine atoms on the indole nucleus is more important for differences in auxin activity than the resistance to peroxidase decomposition.

5, 6-Cl₂-IAA has thus been shown in three kinds of bioassay to be the most active auxin among all of the known natural and synthetic auxins so far examined. It contains an indole nucleus just like endogenous auxin. Because of its increased resistance to peroxidase degradation, as compared to IAA, 5, 6-Cl₂-IAA might be useful in long term experiments with plant tissue culture or with intact plants. In particular, it may

be promising for the regeneration of plants from cultured cells that have been difficult to regenerate with the hitherto known auxins such as NAA or 2, 4-D and phenoxyacetic acid derivatives.

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- 17 The bioassay has been routinely conducted in our laboratory in order to examine the long term activity of auxins on the growing intact plants. An extent of the hypocotyl inhibition is in proportion to the amount of 2, 4-D and 4-Cl-IAA in a concentration range of 10^{-6} to 10^{-4} M.

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Announcements

Italy

Vth International Symposium on Bioluminescence and Chemiluminescence

Florence, 25–29 September 1988

The Symposium in Florence will cover the fundamental aspects and the most recent applications, of Bioluminescence and Chemiluminescence in clinical sciences, biotechnology, genetics, microbiology, phagocytosis, immunoassay, environmental monitoring. The Symposium will consist of Invited Lectures, Short Communications, Poster Sessions and Workshops. Further information is available from: Prof. Mario Pazzagli, Endocrinology Unit, University of Florence, Viale Morgagni, 85, I-50134 Florence, Italy.

USA

11th International convocation on Immunology: Immunology and Immunopathology of the Alimentary Canal

Buffalo, New York, 12–16 June 1988

The Ernest Witebsky Center for Immunology will present this symposium in its regular biennial series at the Hyatt Regency Buffalo Hotel. Closed plenary sessions will focus on the topics: Basic immunologic considerations; Immunologically responsive tissue cells; Immunopathologic conditions (dental caries; periodontal disease; inflammatory bowel disease; celiac disease; gastrointestinal infections and infestations); Immune response in oral and gastrointestinal neoplasms; Nutritional effects on the immune response; and Development of vaccines. Open poster sessions for free contributions on the theme will be offered.

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