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**Study of the Metabolism of Indolic Compounds in Higher Plants**

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The biogenesis of indoleacetic acid (IAA) in etiolated pea shoots (*Pisum sativum* L. cvs. Lincoln and Telefon) was investigated. The plant material was infiltrated with IAA precursors, which were dissolved in phosphate buffer, pH 4.5, and incubated 5 hr at 22 °C. The indolic compounds formed were extracted with methanol, purified on Silica gel or Sephadex columns, and identified by means of thin-layer chromatography, derivative preparation, and spectroscopic methods. It was found that IAA is formed from tryptophan (Trp) via indoleacetaldehyde (IAC), which is also reduced to tryptophol (TOH). In addition to these known metabolites, a compound not yet described in the literature was observed which was identified as TOH glucoside (TO-Glc): 1-0-(indole-3-ethyl)- $\beta$ -D-glucopyranose. This structure was confirmed by chemical synthesis. Since the conversion of IAC to TOH and TO-Glc is reversible, TOH and TO-Glc represent a metabolical pool which may be expected to control, via its influence on IAC concentration, the rate of IAA biosynthesis. To gain an insight into the physiological significance of this pool, the auxin activity of TO-Glc and TOH in the pea-stem section test was utilized. Growth kinetics indicates that TO-Glc and TOH are inactive unless converted to IAA. Comparison of physiologically equivalent TO-Glc, TOH and IAA concentrations and the endogenous levels of these compounds in pea seedlings showed that the TO-Glc — TOH pool represents a buffer mechanism preventing IAA accumulation in the presence of enhanced concentrations of its precursor Trp. However, the TO-Glc and TOH quantities formed in those cases are not sufficient to sustain physiological IAA levels, when its normal biosynthesis from Trp is blocked.

Examiners: Dr. S. Iskrić, Prof. M. Vardjan, and Prof. Z. Devidé.

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1. Metabolism of Indolic Compounds in Higher Plants

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Biogenesis of indoleacetic acid  
TOH glucoside

**OBAVIJESTI**

**ANNOUNCEMENTS**

*Euchem Conference on Structure, Synthesis and Biosynthesis of Mono- and Sesquiterpenoids* will be held at Villa Monastero, Varenna (Lake Como), Italy from 25 to 31 August 1977.

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*The Second International Symposium on Relations between Heterogeneous and Homogeneous Catalytic Phenomena* will be held on October 31 and November 1, 2 1977 at Lyon, France.

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