

Synthesis of 5-(methyl-5'indolyl-3')-indolyl-3-acetic acid

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Abstract

In this article a method for preparing a substituted auxin has been considered. Auxins by their nature are growth stimulants for plants, and biologically active substances. In the literature there are publications on the synthesis of similar compounds. The most widely used is heteroauxin, also known as indolyl-3-acetic acid. The compound 5-(methyl-5'indolyl-3')-indolyl-3-acetic acid obtained during the work is its substituted product. The substance synthesized by us has not been previously described, and nothing is known about its biological activity. But on the basis of structural similarity with auxins it is quite possible to assume that the resulting compound will show a similar effect on plant organisms. Perhaps this compound will find application as a growth stimulant for plants and it will be used for agricultural purposes.

The aim of the work was synthesis of the compound and confirmation of its structure by physical-chemical methods, such as: NMR spectroscopy, elemental analysis, and chromatography. For performing the synthesis the well-known synthetic methods are used, for example, the Fischer indole synthesis method, ester hydrolysis and decarboxylation reactions. The monitoring of chemical reactions at each stage of the process was carried out by thin-layer chromatography. After the isolation of the substance, it was examined using the methods previously described. In the literature there are data on the study of structures of similar substances by physical and chemical methods. As a result of this, we concluded that the proposed structures correspond to the compounds obtained.

In the course of further research proposed to study the biological activity of the resulting compounds on plant organisms.

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