

CRYSTAL AND MOLECULAR STRUCTURE OF CYTOKININS

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Cytokinins together with auxins and gibberelins, make a group of specific plant hormones. The naturally occurring cytokinins are the derivatives of adenine (e.g. N⁶-benzylaminepurine). Similar biological activity have been found to show certain derivatives of urea (e.g. N,N'-diphenylurea) and pyrimidine (e.g. 4-benzylaminepyridine). The mechanism of the activity of these compounds, the site of binding to the receptor and the structure of the receptor itself have not been resolved yet. One of the possible approaches to these problems is based on a detailed analysis of the structure and physico-chemical properties of cytokinins to identify the common features that may be of importance for biological processes. For this purpose a detailed analysis of the crystalline structure of these substances has been undertaken.

The paper presents results of the crystal structure analysis of different crystals of adenine and urea and their chemical derivatives. The results are expected to permit determination of the tautomeric forms and their conformational variation in order to establish the role of these features for the biological activity of the compounds studied.