

## The study of the toxicity of some of the benzimidazole derivatives

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### Abstract

The toxicity of benzimidazole, 2-methylbenzimidazole, 2-benzylbenzimidazole and 1,2-dibenzylbenzimidazole (**I-IV**) in aqueous solutions for *Paramecium caudatum* and *Allium cepa* and *Allium cepa* mutagenicity are studied. Calculated physico-chemical parameters of the studied compounds indicate that the toxicity and mutagenicity of **I-IV** correlated with their lipophilicity and molecular volume. It is likely that increasing the lipophilicity of **I** to **IV** leads to a corresponding increase in the degree of mutagenicity, as more molecules **I-IV** can bind to DNA by intercalation mechanism. Toxicity and mutagenicity **I-IV** for *Paramecium caudatum* and *Allium cepa* are dose-dependent. Calculated physico-chemical parameters of the studied compounds indicate that the toxicity and mutagenicity correlated with their lipophilicity and molecular volume.