

ABSTRACT

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Title of Thesis: Synthesis of substituted aminoadamantyl compounds

This work deals with the topic of photodynamic therapy using phthalocyanines as photosensitizers. The theoretical part summarizes the basic knowledge and findings about photodynamic therapy, its principle, application and used photosensitizers. Phthalocyanines (Pcs), their structure and possible variations, their synthesis and aggregation are also described. The last part is dedicated to cucurbiturils, which form strong host-guest complexes with small molecules, in our case with aminodamantanes. These complexes may increase the monomerization and solubility of phthalocyanines in water.

In the experimental part of the work, attention was focused on the synthesis of 1-aminoadamantane substituted by thiol group on two-carbon linker. However, synthesis of this compound was not successful and despite number of alternative approaches we were not able to prepare it. The reactions ran better in case of extension of the linker to three carbons and 3-((adamant-1-yl)amino)propan-1-thiol was successfully synthesized by alkylation of 1-aminoadamantane by protected 3-bromopropan-1-thiol. The final substances were always purified by conventional methods and their identity was confirmed by hydrogen and carbon NMR spectra.