SYNTHESIS OF ZINC (II) ARYLOXY AZAPHTHALOCYANINES

Petr Vujtech

Department of Pharmaceutical Chemistry and Drug Control, Faculty of Pharmacy in Hradec Kralove, Charles University in Prague

The aim of my diploma thesis was synthesis of azaphthalocyanine (AzaPc) derivate which should be free of aggregation. The aggregation is unfavorable property of AzaPc that reduces the singlet oxygen quantum yield. There are several methods to increase the ratio monomer/aggregates. The most effective strategy involves the use of bulky substituents attached to the AzaPc`s periphery. That is why, 2,3,9,10,16,17,23,24-octa(2,6-di-iso-propyphenoxy)-1,4,8,11,15,18,22,25-octaazaphthalocyaninato zinc(II) was prepared. Alkoxides cannot be used for cycloteramerization of aryloxy derivatives due to the well-described transetherification problems. Cyclizations in dichlorobenzene and quinoline with zinc(II) acetate were unsuccessful. Some AzaPc products appeared in reactions performed with zinc(II)acetate in pyridine or dimethylformamide, but the yields were small and the products were not perfectly pure. The best way to synthesis of aryloxy derivatives of AzaPc is reaction with $Zn(quinoline)_2Cl_2$ in a melt. Temperature of the mixture should be around 260 °C. Lower temperature causes the mixture does not react totally while the product can decompose with higher temperatures used.