

2. Abstract

Charles University in Prague

Faculty of Pharmacy in Hradec Králové

Department of biophysics and physical chemistry

Candidate: Jakub Filípek

Consultant: Ing. Vladimír Kubíček, CSc.

Title of diploma thesis: Study of fluorescence spectra of benzimidazoles

In this diploma thesis fluorescence spectra of selected benzimidazoles are studied in solutions. The solutions were prepared using two organic compounds (acetonitrile and methanol) either alone or in combination with water or phosphate buffer (pH = 7.00) or borate buffer (pH = 9.95).

These solvents are commonly used in HPLC mobile phase. Thirteen benzimidazoles were studied all together. First the absorption spectra were measured and the obtained the absorption maxima were used as the excitation wavelengths for the emission spectra measurements. With regard of the previous results a particular attention was paid to oxfendazole and fenbendazole. In their solutions Raman (Stokes) shifts were found in order to determine whether these benzimidazoles can give fluorescence in the studied environments and to find the relevant spectral maxima.

The obtained results are a guide for the detection conditions during HPLC analysis of benzimidazoles with fluorescence detection. They could also become a basis for a library of absorption and fluorescence spectra of the studied compounds.