SYNTHESIS OF NEW IRON(II) BIS-α-DIOXIMATE OF CHUGAEV'S TYPE AND OF ITS MACROCYCLIC DERIVATIVE AS THE REACTIVE PRECURSOR OF POLYAROMATIC CLATHROCHELATES

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Iron(II) clathrochelates are promising type of macrocyclic complexes. In recent years they are proposed as prospective agents in medicinal chemistry and biochemistry: clathrochelates can inhibit the transcription of T7 RNA polymerase, possess anti-amyloidogenic activity and suggest as ICD-reporters for globular proteins. Clathrochelates of two types have been earlier used for these purposes: the triribbed-functionalized cage complexes with equivalent chelate fragments and their non-equivalent monoribbed-functionalized bis-α-benzyldioximate analogs. Now, we obtained, for the first time, the phenanthrene-based non- and macrocyclic iron(II) bis-α-dioximates. Such a minor modification of the macrocyclic framework could lead to significant biological activity changes of further clathrochelate complexes.
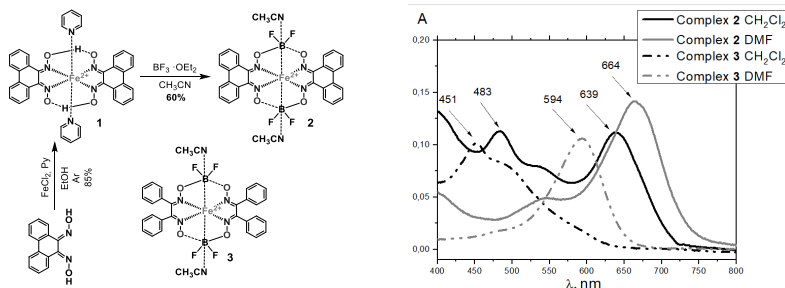

Fig. 1. Synthetic pathway to the macrocyclic complex **2** and its UV-vis spectra

Complex **2** was obtained in a moderate total yield (in Fig.1); it was characterized using HR APPI (pos) mass spectra (_m/z_ calculated for $C_{32}H_{22}B_2F_4FeN_6O_4$: 708.12; found: 709.1258 [M + H$^+$]$^+$). The UV-Vis spectra of compounds **2** and **3** in DMF and dichloromethane are affected by the nature of a solvent used (Fig. 1).