

## Synthesis, metal binding and spectral properties of novel bis-1,3-diketone calix[4]arenes

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## Electronic Supplementary Information

### Content

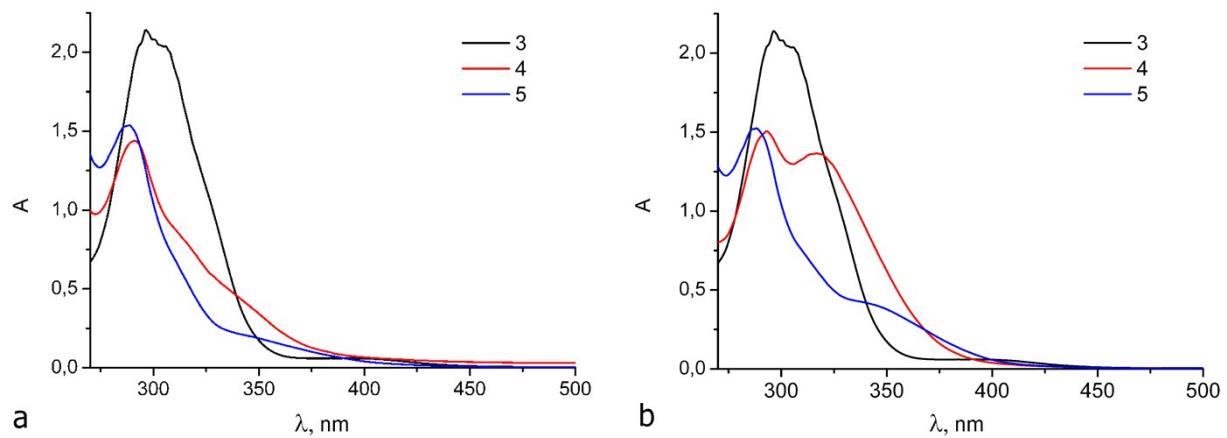
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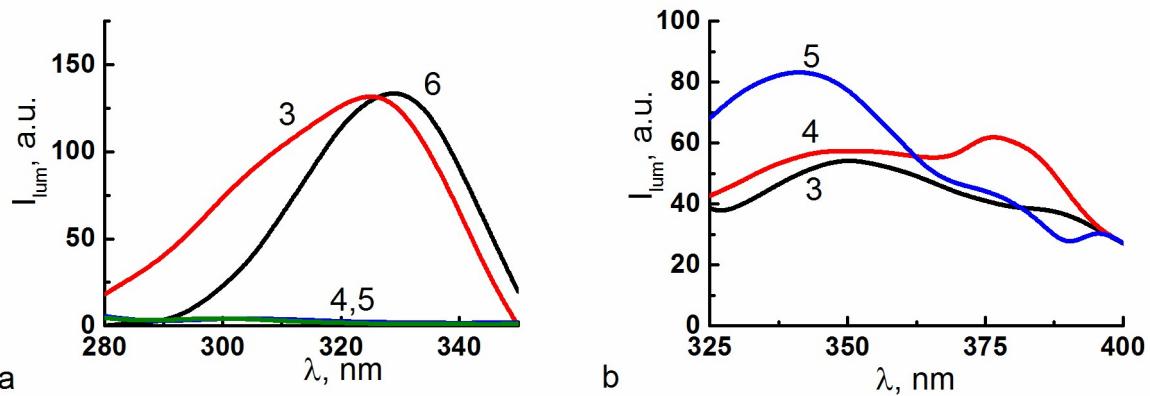
† Electronic supplementary information (ESI) available. For ESI  
see DOI: XXXXXXXXXXXXXXX

## 1. UV-Vis absorption spectra of Ln-L



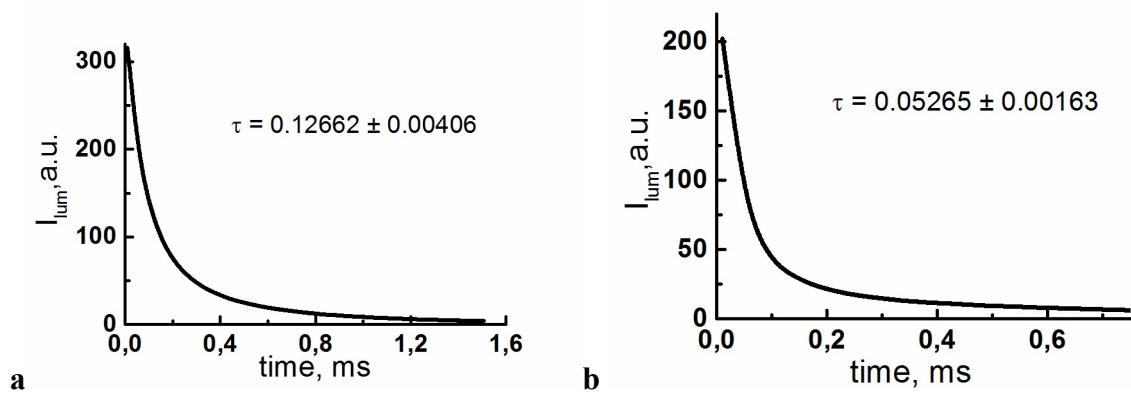
**Figure S1.** UV-Vis absorption spectra of ligands **3**, **4** and **5** ( $C_L=0.1$  mM) in DMF in alkalized DMF ( $C_{TEA}=0.8$  mM) after 1 (a) and 4 (b) day storage of solution.

## 2. Excitation spectra of Tb-L and Eu-L complexes



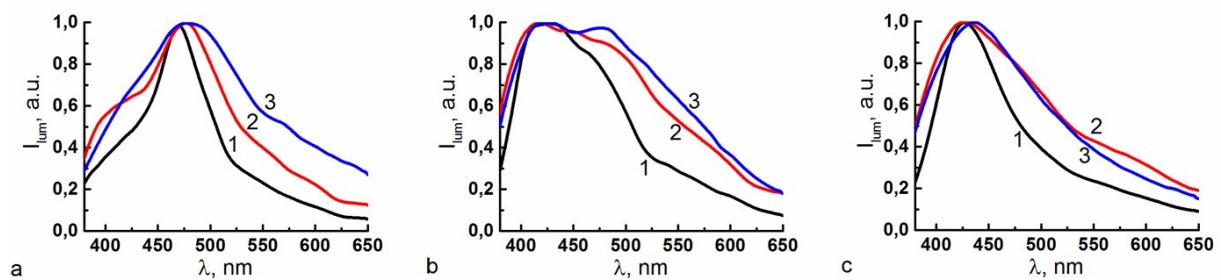
**Figure S2.** Excitation spectra of alkalized DMF solutions of ligands **3-6** with  $Tb^{3+}$  (a) and  $Eu^{3+}$  (b).  $C_L = C_{Ln3+} = 0.1$  mM,  $C_{TEA} = 0.4$  mM.  $\lambda_{em} = 545$  nm (a) and 612 nm (b).

### 3. Luminescence decay curves of Tb-L complexes



**Figure S3.** Luminescence decay curves of alkalinized DMF solutions of  $\text{Tb}^{3+}$  with **3** (a) ( $\lambda_{\text{ex}} = 320$  nm,  $\lambda_{\text{em}} = 545$  nm.  $R^2=0.992$ ) and **6** (b) ( $\lambda_{\text{ex}} = 325$  nm,  $\lambda_{\text{em}} = 545$  nm.  $R^2=0.989$ ).  $C_L = C_{\text{Tb(III)}} = 0.1$  mM,  $C_{\text{TEA}} = 0.4$  mM.

### 4. Luminescence spectra of Gd-L complexes



**Figure S4.** Luminescence spectra of alkalinized DMF solutions of ligands **3** (a), **4** (b), **5** (c) with  $\text{Gd}^{3+}$  at different delay times: 1 (1), 10 (2) and 20 (3)  $\mu\text{s}$ .  $C_L = C_{\text{Ln}^{3+}} = 0.1$  mM,  $C_{\text{TEA}} = 0.4$  mM.