

## Supplementary materials

### Effect of the stability of 1,3-bis(diphenylphosphoryl)-2-oxapropane complexes on the separation of lanthanide ions and their detection

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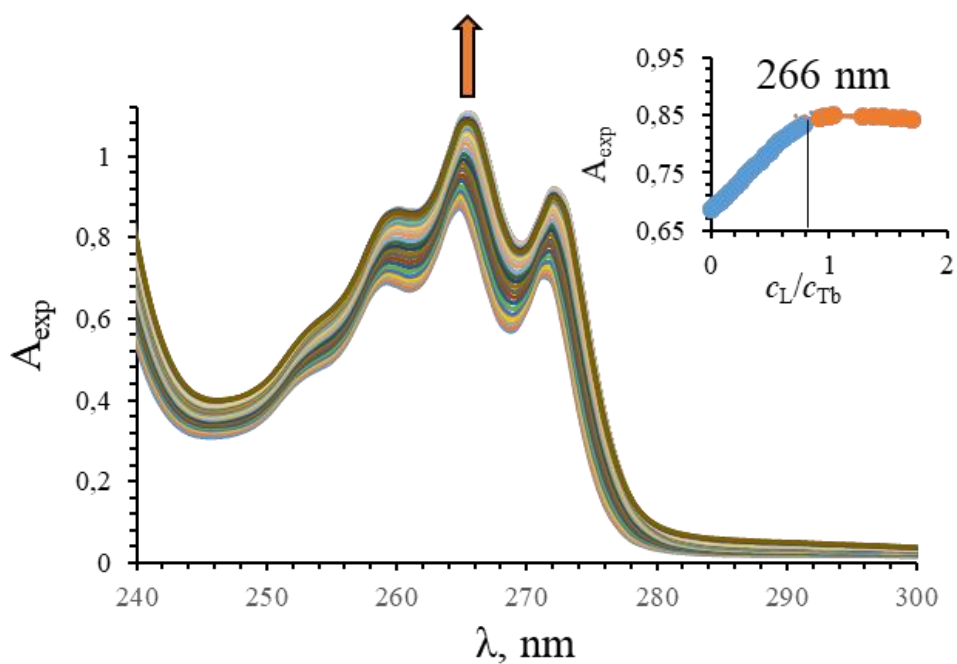
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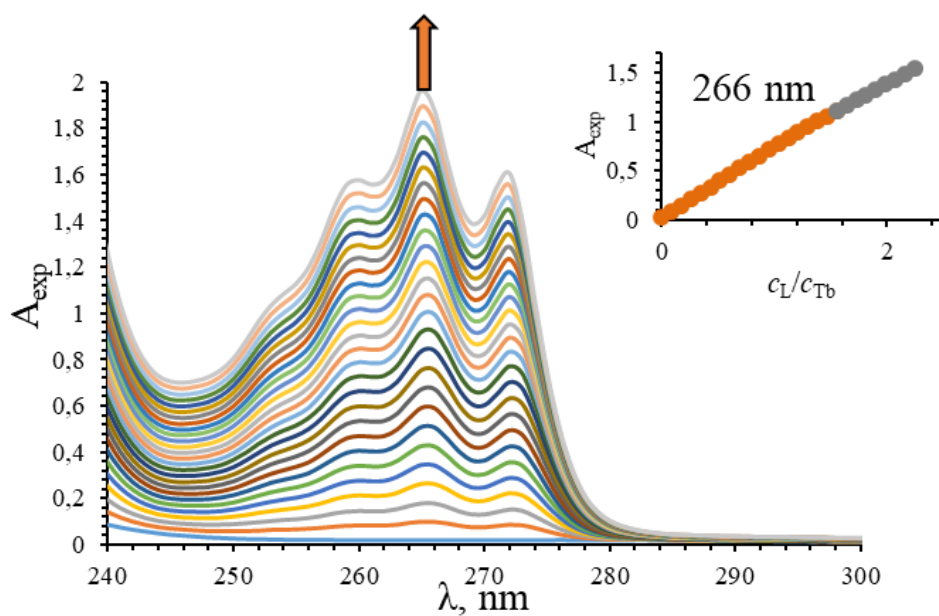
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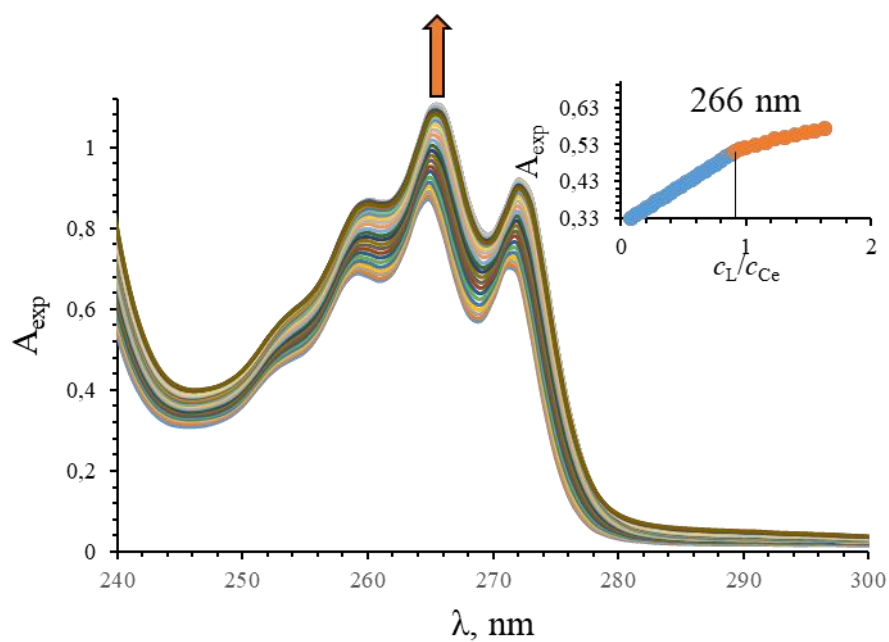
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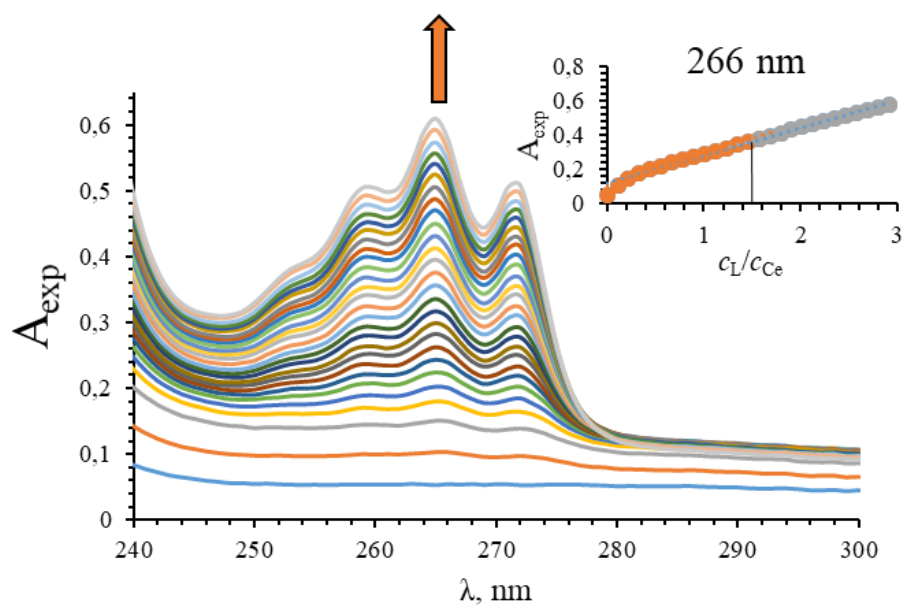
**Fig. S1** Electronic absorption spectra upon titration of L with terbium nitrate,  $c_L = 2.96 \cdot 10^{-4}$  mol/L (acetonitrile solutions)



**Fig. S2** Electronic absorption spectra upon titration of terbium nitrate with L,  $c_{Tb} = 2.5 \cdot 10^{-4}$  mol/L (acetonitrile solutions)



**Fig. S3** Electronic absorption spectra upon titration of L with cerium nitrate,  $c_L = 1.59 \cdot 10^{-4}$  mol/L (acetonitrile solutions)



**Fig. S4** Electronic absorption spectra upon titration of cerium nitrate with L,  $c_{Ce} = 6.30 \cdot 10^{-5}$  mol/L (acetonitrile solutions)