

Supporting Information to the Dalton Trans paper:

## Efficient Near-UV Photosensitization of the Tb(III) Green Luminescence by use of 2-hydroxyisophthalate Ligands

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### Experimental

The starting materials  $\text{Ln}(\text{CF}_3\text{SO}_3)_3 \cdot 6(\text{H}_2\text{O})$  were purchased from Aldrich Chemical Ltd, and used without further purifications. The ligand  $\text{H}_3\text{L}$  was synthesized according to the reported procedure. (C. J. Fahrni and A. Pfaltz, *Helv. Chim. Acta.*, 1998, 491) and recrystallised from MeOH/water.

### Synthesis of $[\text{Ln}_2(\text{H}_2\text{L})_6(\text{H}_2\text{O})_4] \cdot 4\text{H}_2\text{O}$ (La 1, Tb 2)

All complexes were prepared by the same method, as follows: powdered 5-*tert*-butyl-2-hydroxyisophthalic acid  $\text{H}_3\text{L}$  (80 mg, 0.336 mmol) was suspended in a solution of  $\text{Ln}(\text{CF}_3\text{SO}_3)_3 \cdot 6(\text{H}_2\text{O})_n$  ( $\text{Ln} = \text{La, Tb}$ ; 0.112 mmol) in distilled water (60 mL) at 110°C, in a pressure tube (length 50 cm, diameter 5 cm) for 12 hrs, during which time a crystalline precipitate formed. The reaction mixture was cooled down to RT and the crystalline material was collected by filtration, washed with water, acetone and methanol, and dried under vacuo to afford the desired product in *ca.* 80% yield. In both cases, the crystals obtained were suitable for X-ray crystallography studies.

Anal. Calcd for  $\text{C}_{72}\text{H}_{94}\text{O}_{38}\text{La}_2$  (1845.30), **1**: C, 46.86; H, 5.13. Found: C, 46.89; H, 4.89. Calcd for  $\text{C}_{72}\text{H}_{94}\text{O}_{38}\text{Tb}_2$  (1885.34), **2**: C, 45.87; H, 5.03. Found: C, 46.24; H, 5.13.

**Figure SI-1** Luminescence decay curve for the Tb compounds **2**, measured in solid state at room temperature ( $\lambda_{\text{exc}} = 355\text{nm}$ ;  $\lambda_{\text{em}} = 545\text{ nm}$ ). The red solid line represents the best fit with a mono-exponential curve.

