

Electronic Supporting Information

Switchable Nanozyme Activity of Porphyrins Intercalated in Layered Gadolinium Hydroxide

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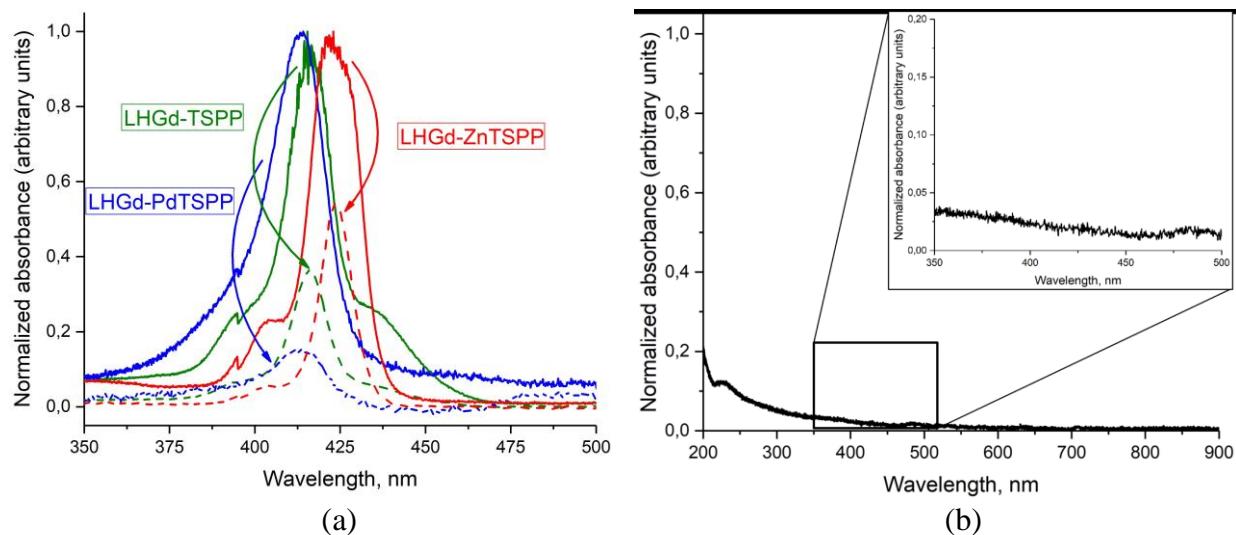


Figure S1. UV-Visible absorption spectra of (a) aqueous solutions of TSPP, ZnTSPP and PdTSPP before (solid lines) and after (dashed lines) coprecipitation syntheses; (b) LHGd-Cl sol (five-fold higher concentration than that of LHGd-MTSPP).

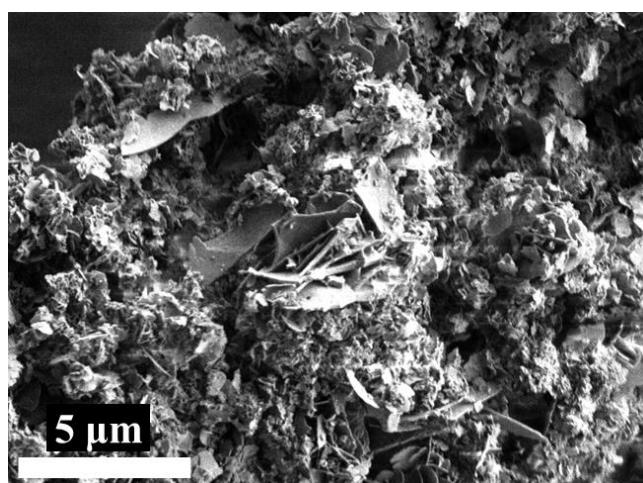


Figure S2. SEM image of LHGd-PdTSPP sample obtained by coprecipitation at 110°C.

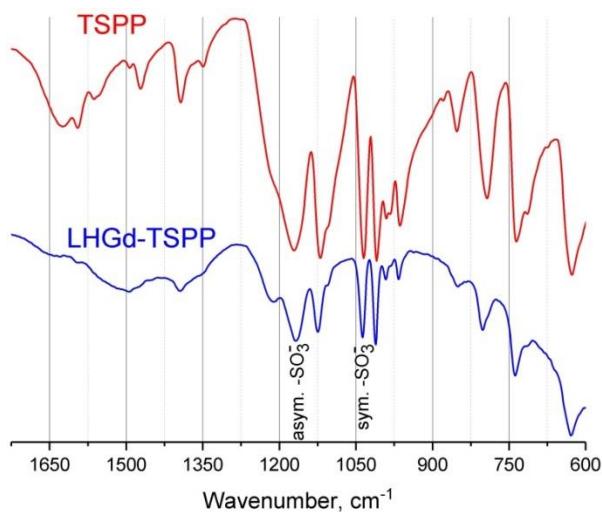


Figure S3. FT-IR spectra of **TSPP** and **LHGd-TSPP**.

Table S1. Comparison of CHNS elemental analysis data and calculated element content in the **LHGd-TSPP** sample.

Formula	Element content, wt. %			
	N	C	H	S
found	1.60	15.86	2.48	3.35
calculated: [Gd ₂ (OH) ₅] ₄ C ₄₄ H ₂₆ N ₄ (SO ₃) ₄ ·8H ₂ O	2.10	19.77	2.32	4.79
calculated: [Gd ₂ (OH) ₅] ₄ [C ₄₄ H ₂₆ N ₄ (SO ₃) ₄] _{3/4} Cl·8H ₂ O	1.70	16.01	2.24	3.88

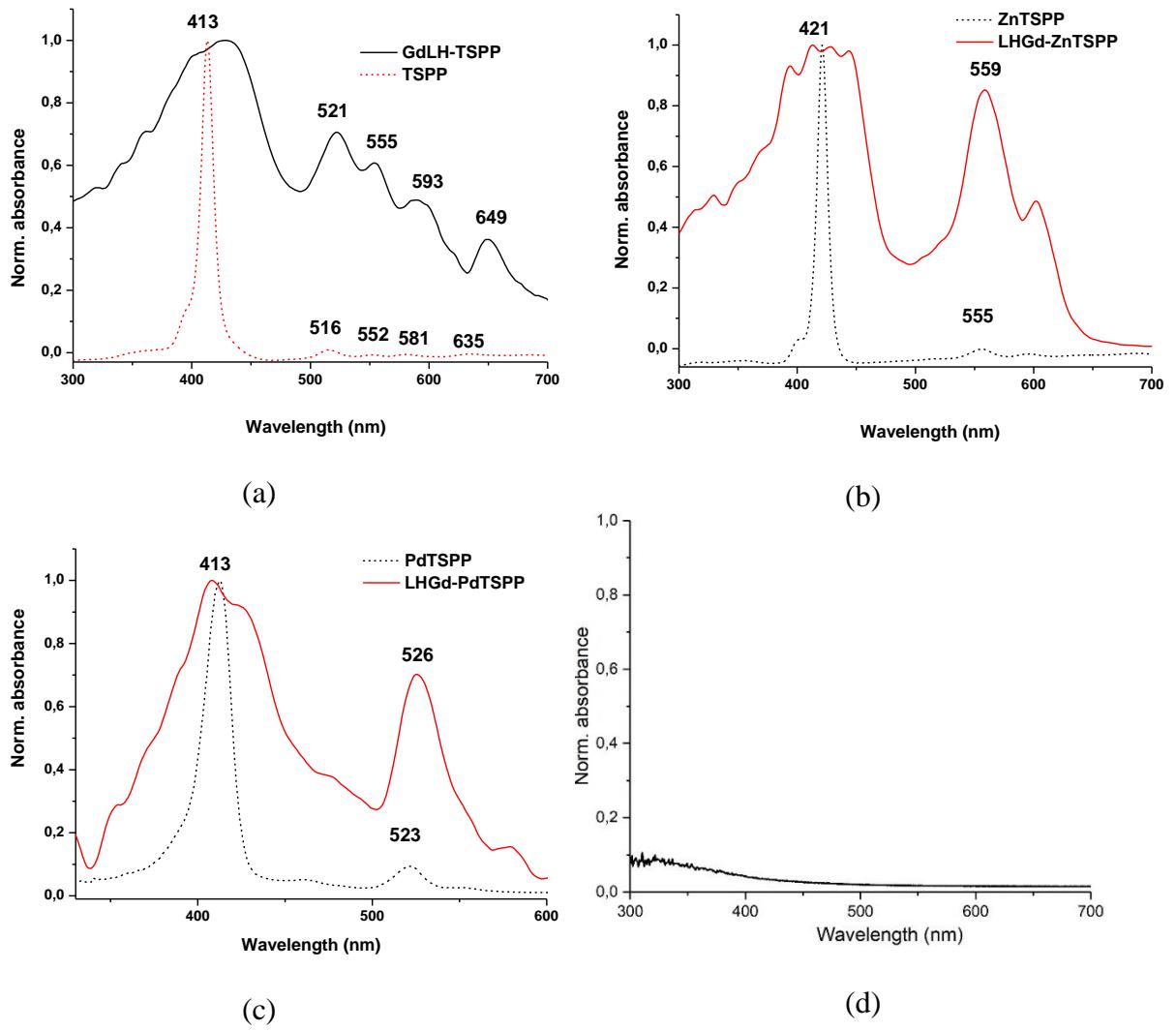


Figure S4. Normalised diffuse reflectance spectra of **LHGd-TSPP** (a), **LHGd-ZnTSPP** (b), **LHGd-PdTSPP** (c) and **LHGd-Cl** (d) solid samples compared to the absorption spectra of the corresponding porphyrins (dashed line) in aqueous solutions.

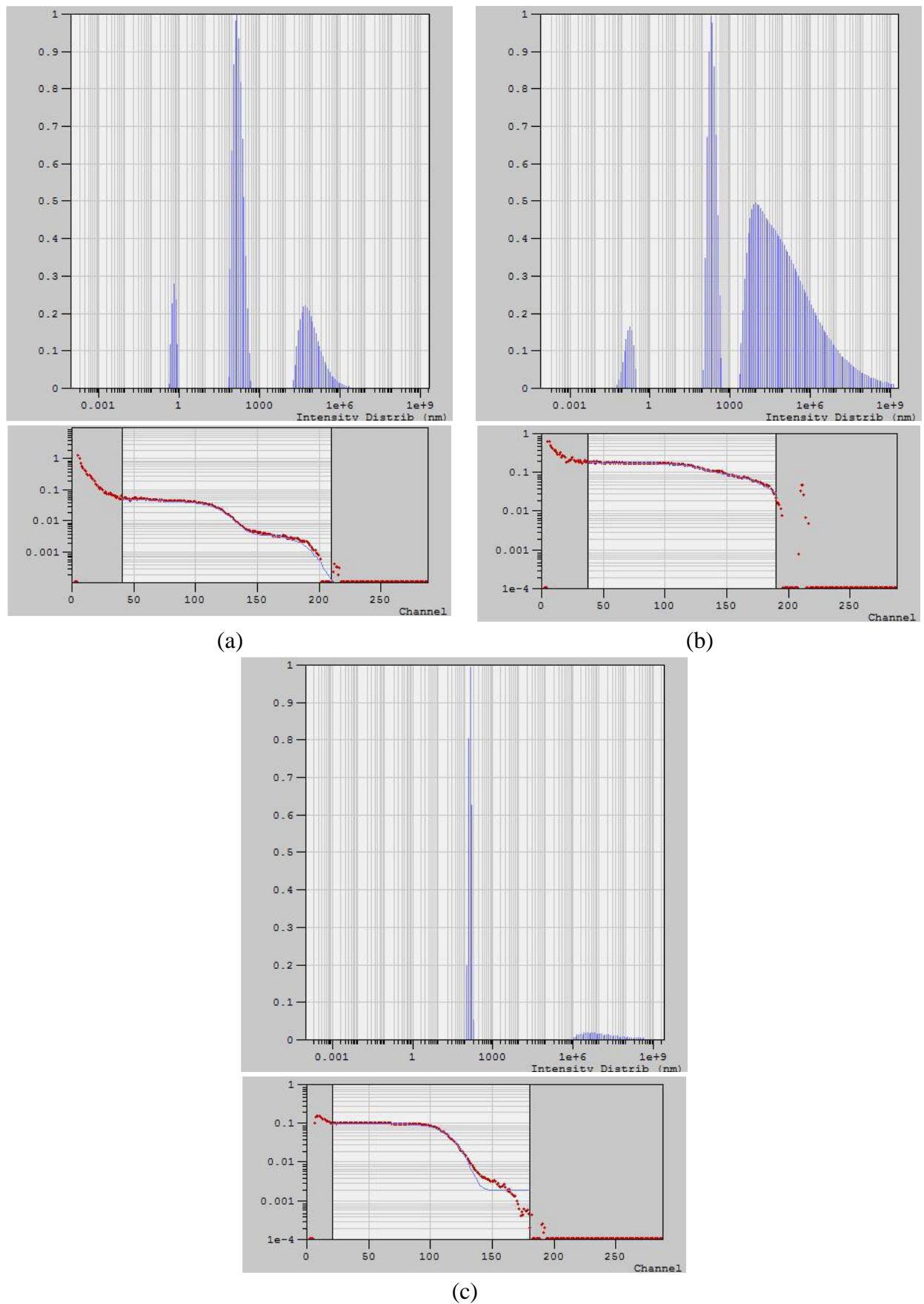


Figure S5. Dynamic light scattering results for the sols of **LHGd-TSPP** (a), **LHGd-ZnTSPP** (b), and **LHGd-PdTSP** (c): particle size distributions and correlation functions.

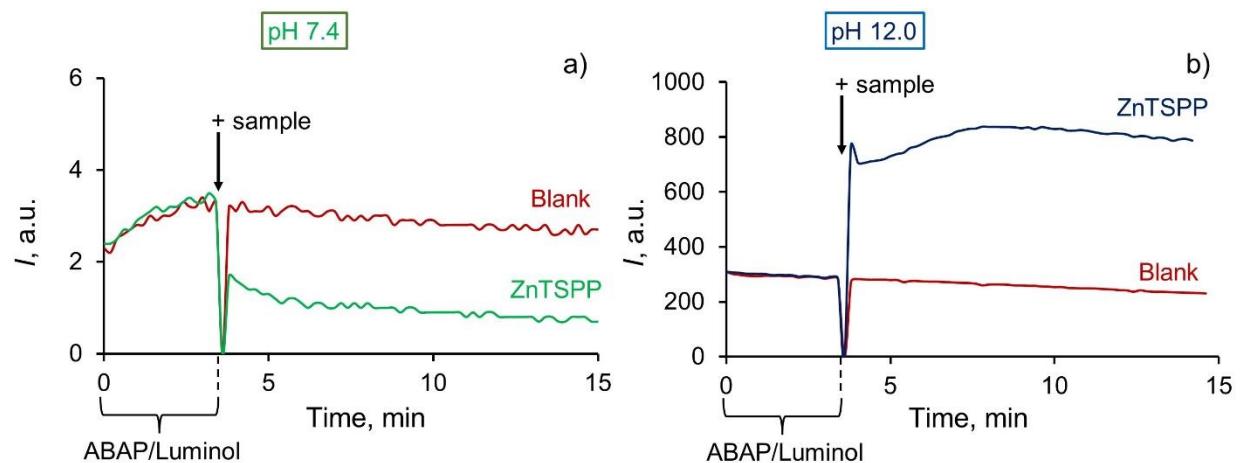


Figure S6. Chemiluminescence curves of ZnTSPP (4 μ M) in the ABAP / luminol system in a phosphate buffer solution at (a) pH 7.4, (b) pH 12.0.