

Supplementary Material

Luminescent Alendronic Acid-Conjugated Micellar Nanostructures for Potential Application in the Bone-Targeted Delivery of Cholecalciferol

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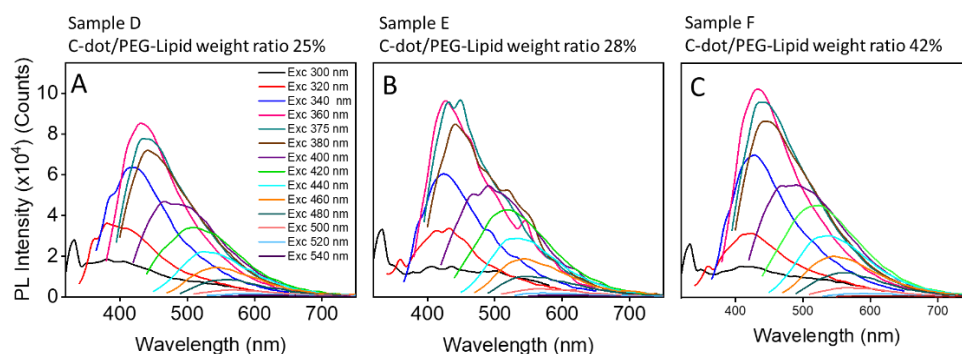


Figure S1. PL emission spectra recorded at the excitation wavelength from 300 to 540 nm of micellar nanostructures prepared at different starting C-dot/PEG-phospholipid weight ratio percentage: A) 25%, B) 28% and C) 42% that correspond to the samples D, E and F of the table in the Figure 2A of the manuscript. PL emission spectra of the samples recorded in PBS buffer (1:3 dilution).

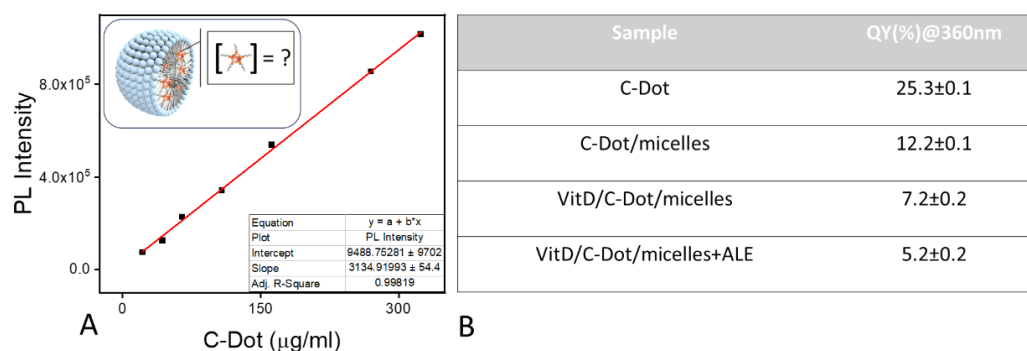


Figure S2. A) Calibration curve of C-dots by PL spectroscopy (λ_{ex} 360 nm) obtained starting from the concentration of C-dots from 21 to 324 µg/mL, added to a solution containing the phospholipids at the fixed concentration of 7.5 mg/mL; B) Absolute QY (%) of C-dots in CHCl₃ dispersion and C-dots/micelles, VitD/C-dots/micelles and VitD/C-dots/micelles-ALE nanoformulations redispersed in CHCl₃ as a function of the excitation wavelength (360 nm).

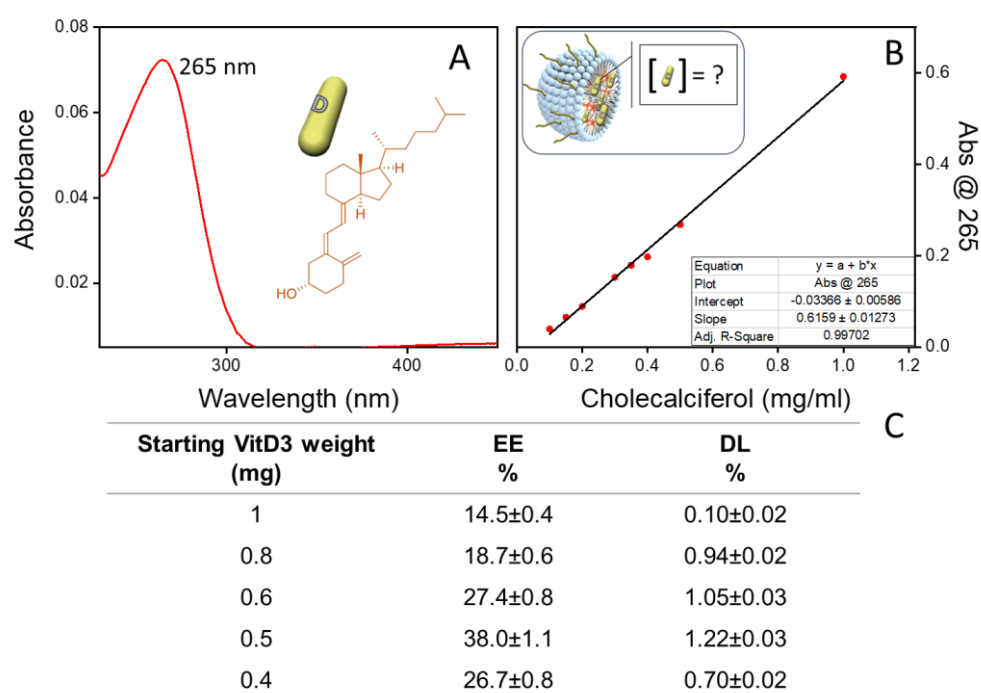


Figure S3. A) UV-Vis absorption spectrum of the VitD3 in methanol; B) Calibration curve of VitD3 plotted by preparing standard methanol solutions containing VitD3 in the concentration range of 0.1 and 1 mg/mL, obtained by recording the maximum absorbance value of each solution at 265 nm; C. EE% and DL% values of different nanoformulations obtained starting from different initial amounts of VitD3.

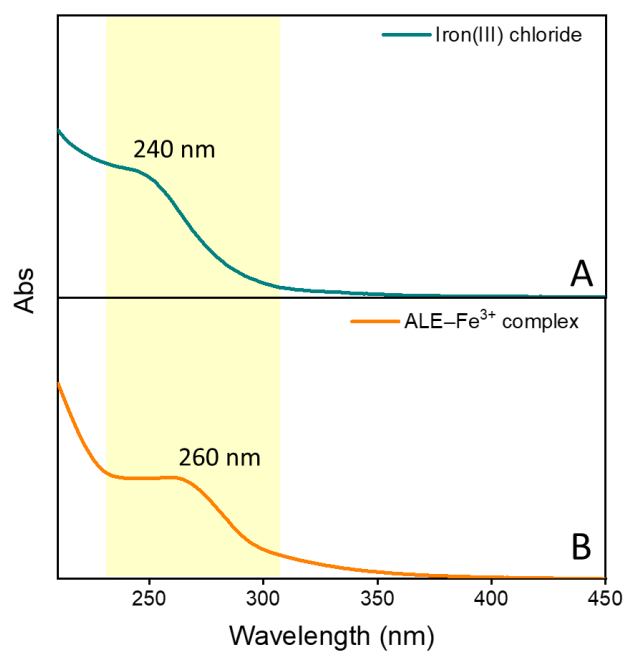


Figure S4. UV-Vis absorption spectrum of A) Fe³⁺ and B) synthesized ALE-Fe³⁺ complex.

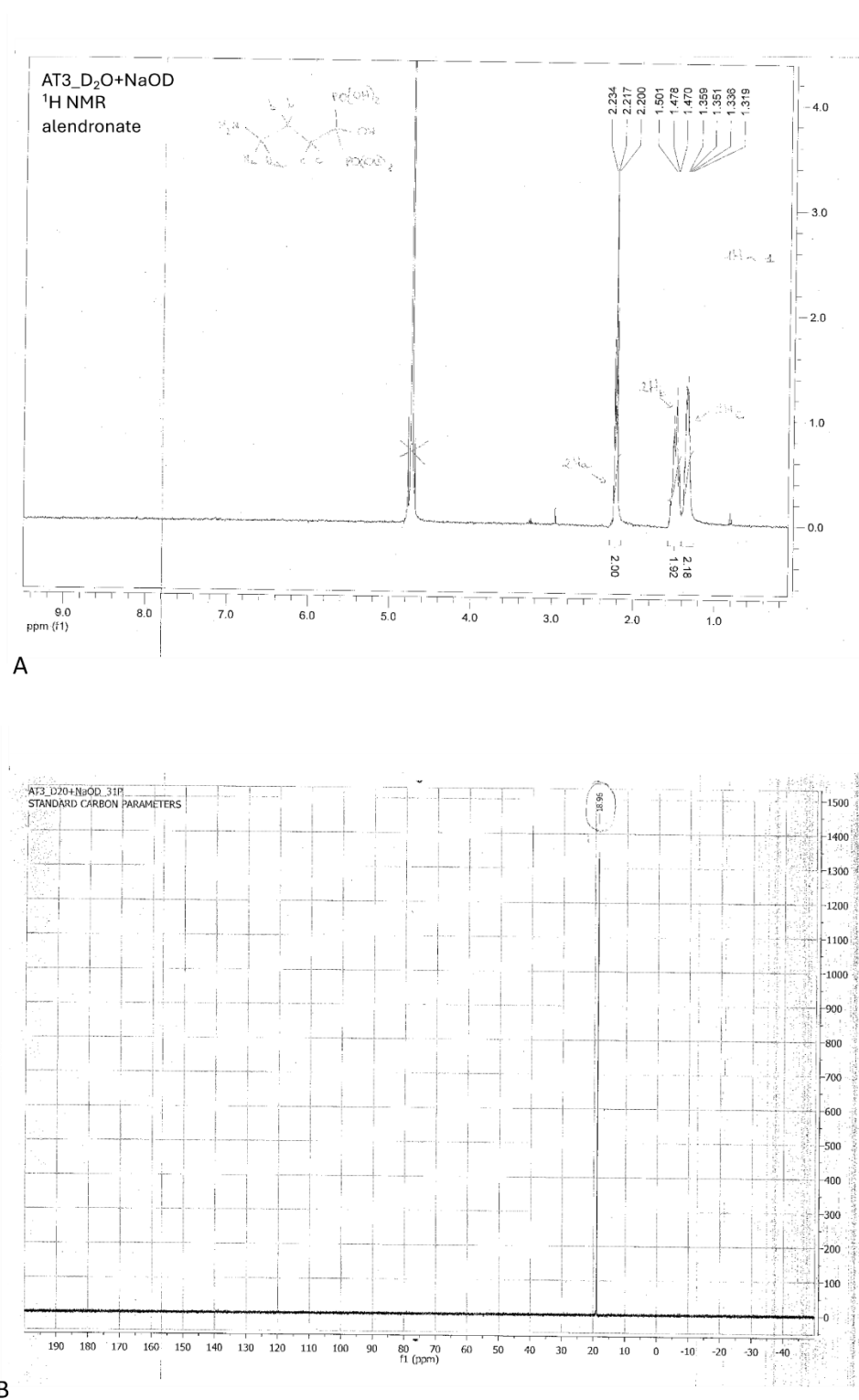


Figure S5. ¹H and ³¹P NMR spectra of the target alendronate: A) Alendronate ¹H NMR spectrum recorded in D₂O-NaOD; B) Alendronate ³¹P NMR spectrum recorded in D₂O-NaOD.