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Supplementary Information

Non-covalent complex of quantum dots and chlorin e₆: efficient energy transfer and remarkable stability in living cells revealed by FLIM

Jurga Valanciunaite, Andrey S. Klymchenko, Artiom Skripka, Ludovic Richert, Simona Steponkiene, Giedre Streckyte, Yves Mely and Ricardas Rotomskis

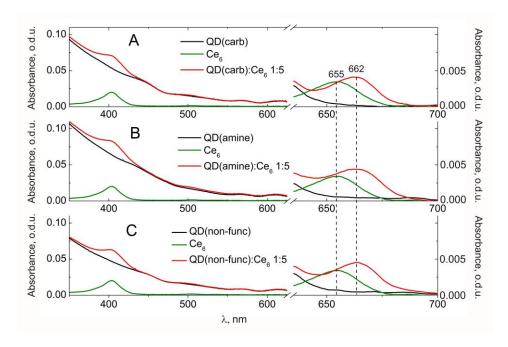


Figure S1. Absorption spectra of 0.02 μ M carboxyl (A), amine (B) and non-functionalized (C) QD, 0.1 μ M Ce₆ and corresponding mixed QD-Ce₆ (0.02 μ M QD : 0.1 μ M Ce₆) solutions (buffer pH 7).

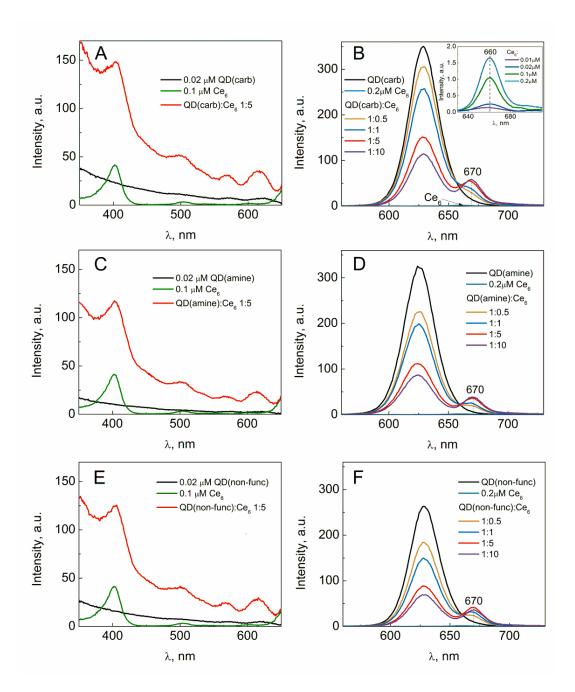


Figure S2. Fluorescence excitation spectra of free 0.02 μM carboxyl (A), amine (C) and non-functionalized (E) QDs, 0.1 μM Ce₆ and corresponding mixed QD-Ce₆ (0.02 μM QD : 0.1 μM Ce₆) solutions at λ_{em} =670 nm. B, D, F - Fluorescence spectra of respective QD, Ce₆ and QD-Ce₆ solutions at varying QD:Ce₆ molar ratio from 1:0.1 to 1:10 at λ_{ex} =465 nm. The inset in Figure B shows the fluorescence of Ce₆ solution at corresponding concentrations at λ_{ex} =465 nm.

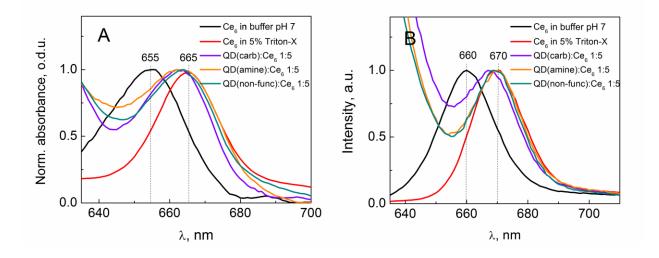


Figure S3. Normalized absorption (A) and fluorescence (B) spectra of 0.1 μ M Ce₆ in buffer, 5% Triton-X 100 and in the presence of 0.02 μ M QD with different terminal groups (QD:Ce₆ 1:5). The excitation at 400 nm was used for Ce₆ in buffer and Triton-X and at 465 nm for QD-Ce₆ solutions.

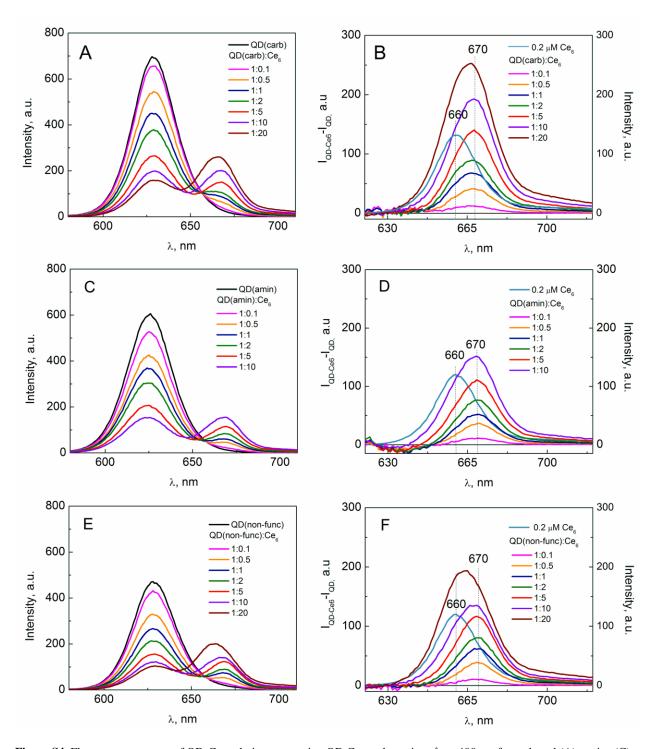


Figure S4. Fluorescence spectra of QD-Ce₆ solutions at varying QD:Ce₆ molar ratio at λ_{ex} =400 nm for carboxyl (A), amine (C) and non-functionalized (E) QD. B, D and F – corresponding fluorescence spectra of Ce₆ after subtraction of contributing QD spectrum. For comparison, the fluorescence spectrum of free 0.2µM Ce₆ solution at λ_{ex} =400 nm is also shown.

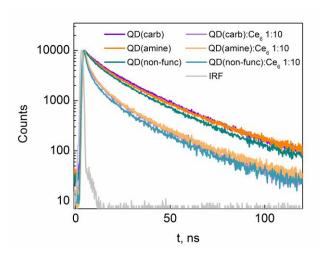


Figure S5. Fluorescence decay of 0.02 μM QDs and QD-Ce₆ solutions at 1:10 QD:Ce₆ molar ratio registered at λ_{em} =620 nm, λ_{ex} =405 nm.

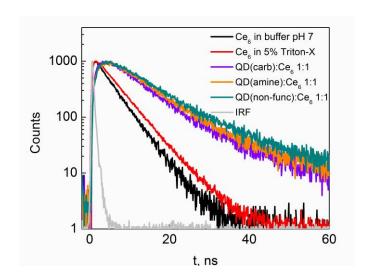


Figure S6. Fluorescence decay of 0.02 μ M Ce₆ in buffer, 5% Triton-X 100 and in QD-Ce₆ solutions (QD:Ce₆ molar ratio 1:1) registered at λ_{em} =670 nm with λ_{ex} =470 nm.