Supplementary Information

Controlled Synthesis of Up-Conversion $NaYF_4$:Yb,Tm Nanoparticles for Drug Release Under Near IR-Light Therapy

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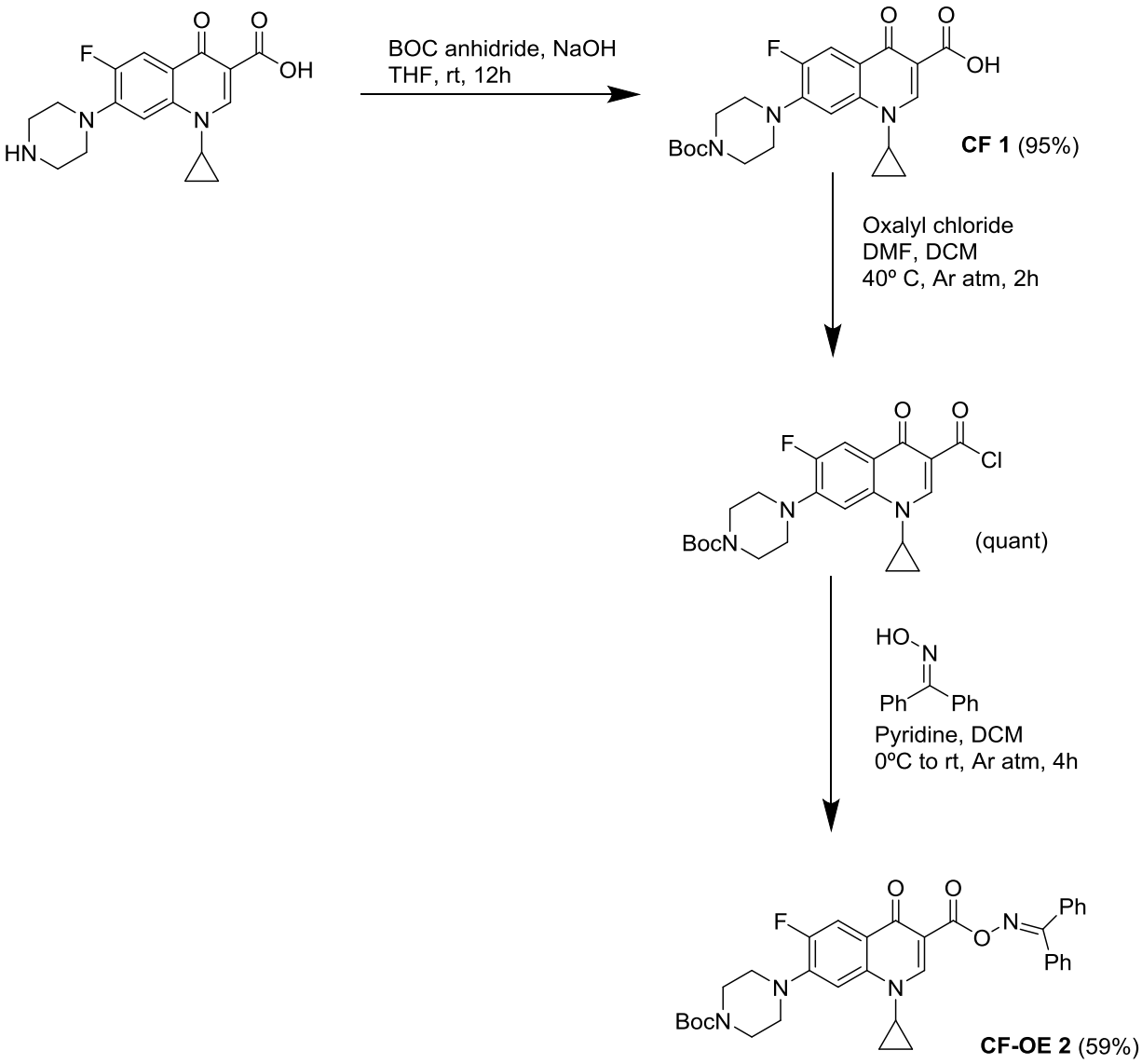

Scheme S1. Synthetic route for the dyads ciprofloxacin **CF 1** and its corresponding oxime-ester derivative **CF-OE 2**.

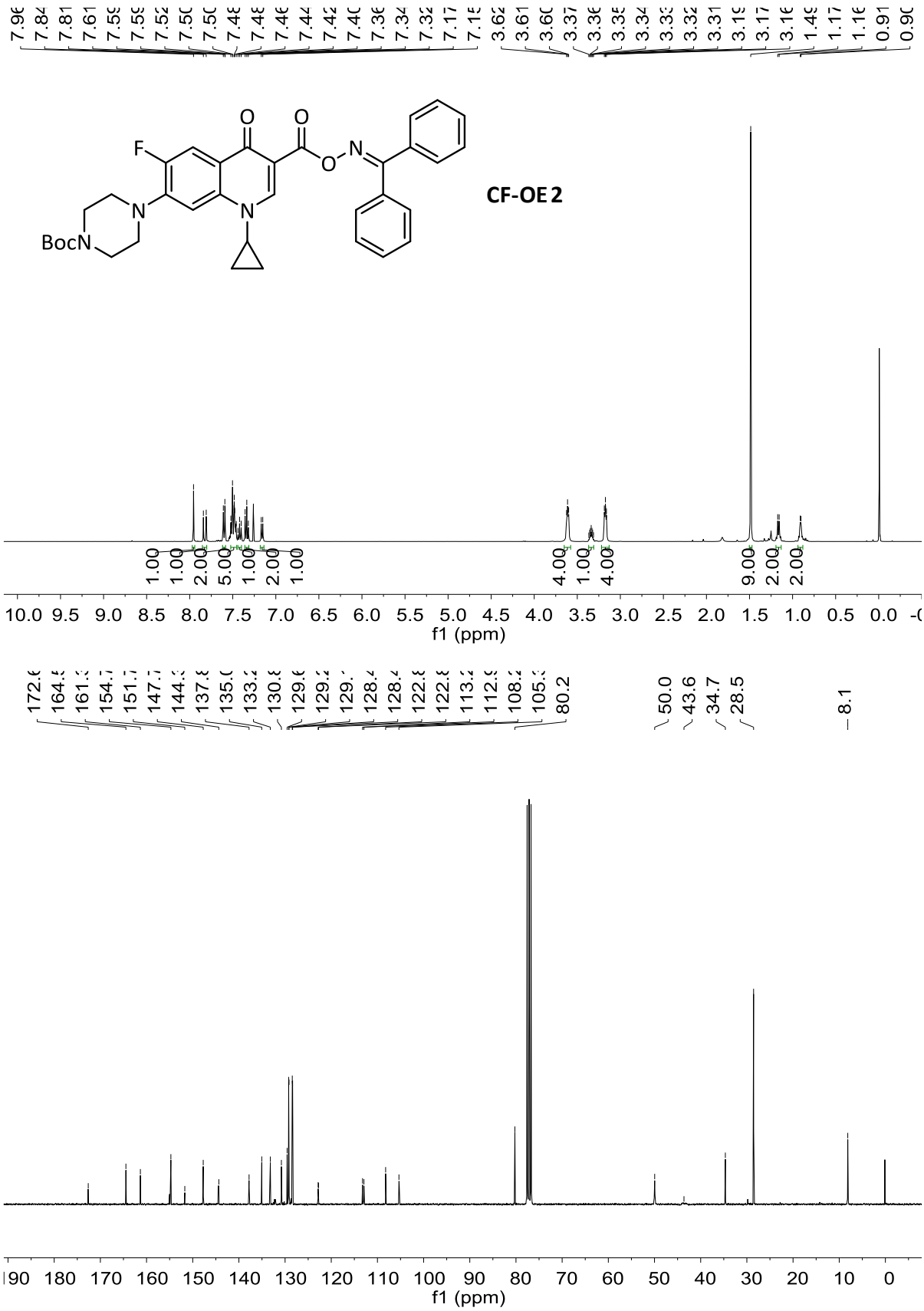

Figure S1. ^{1}H (up) and ^{13}C (down) NMR of **CF-OE 2**

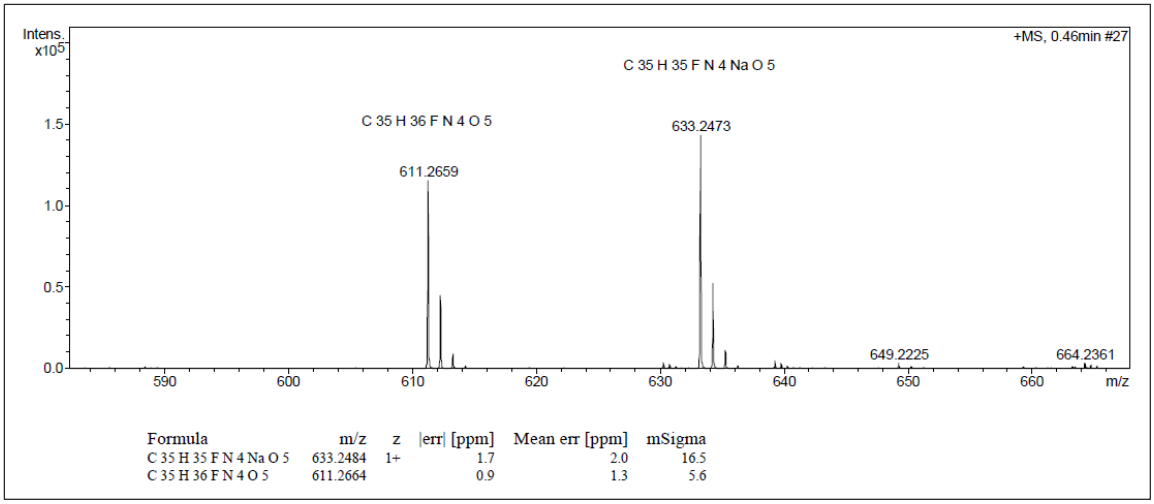

Figure S2. Mass spectrometer **c**haracterization data of **CF-OE 2**.

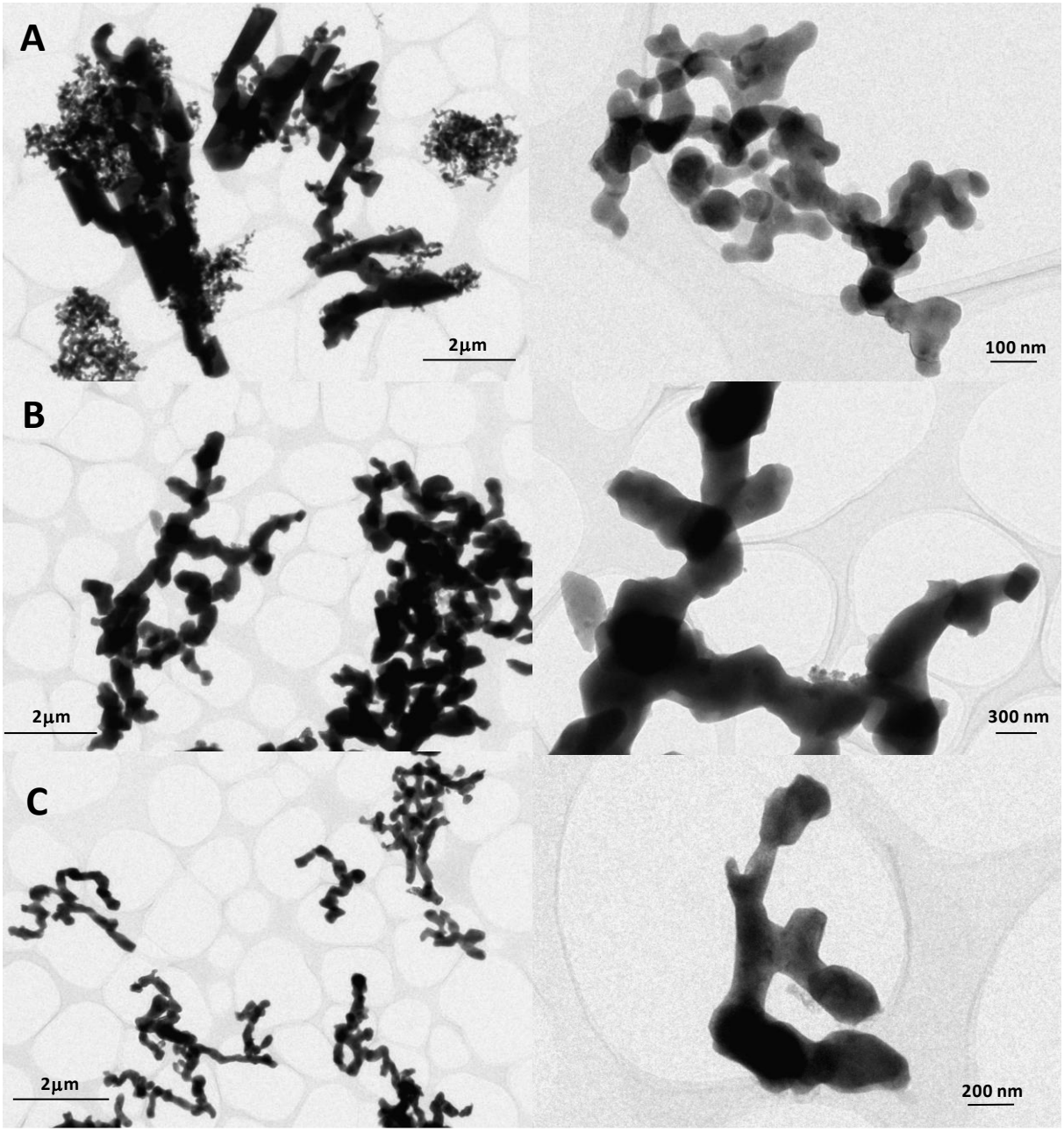

Figure S3. TEM images of A) UC1; B) UC2 and; C) UC3

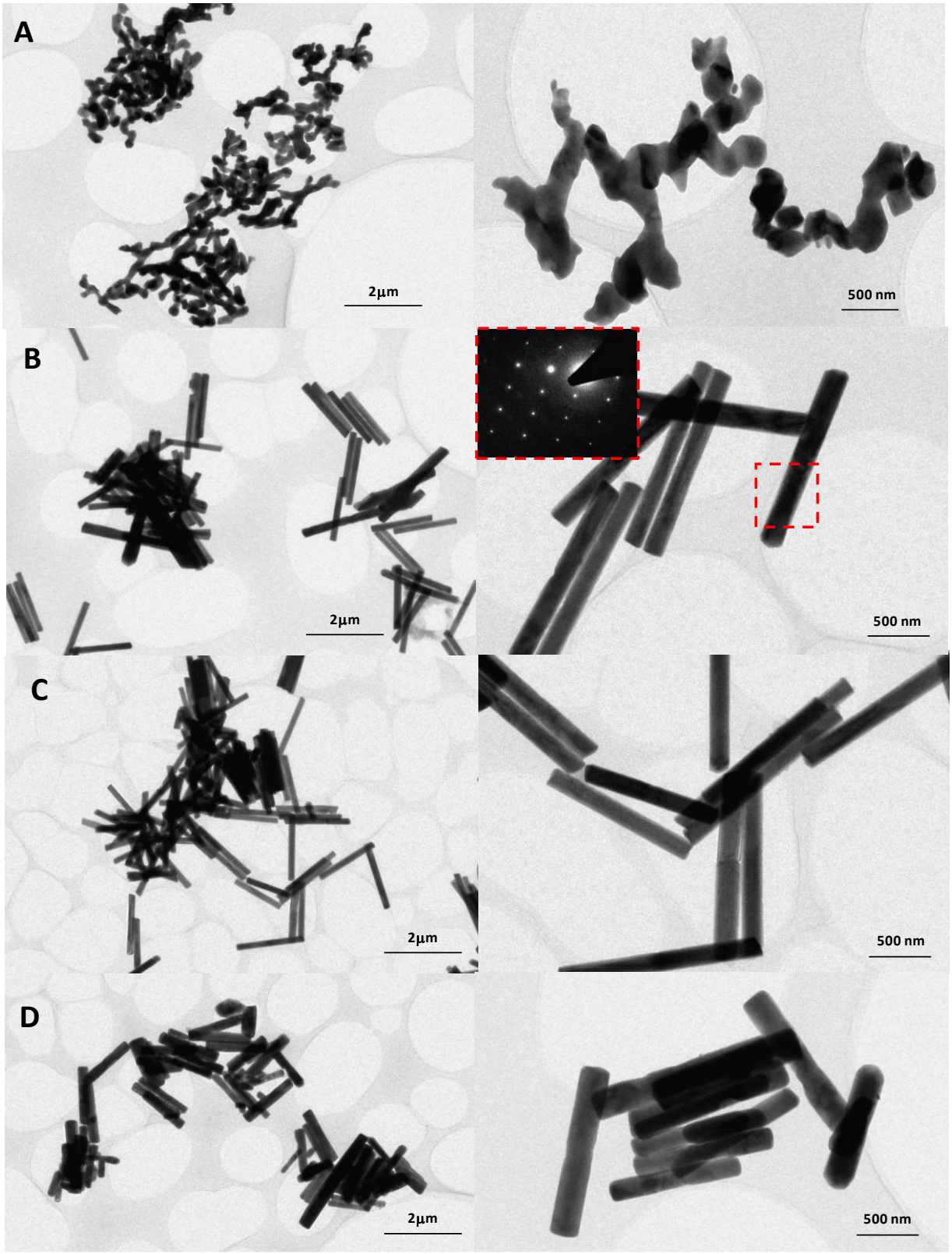

Figure S4. TEM images of A) UC4; B) UC5, C) UC6 and; D) UC7. Inset in figure S2C correspond to electron diffraction of red squared area.

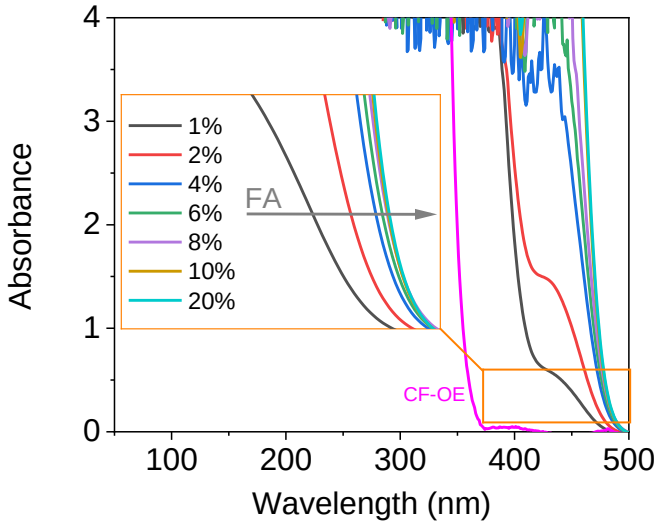

Figure S5. Absorption spectra of CF-OE (pink, 0.5 mM) in the presence of increasing amounts of formic acid (% v/v). Inset: zoom image.

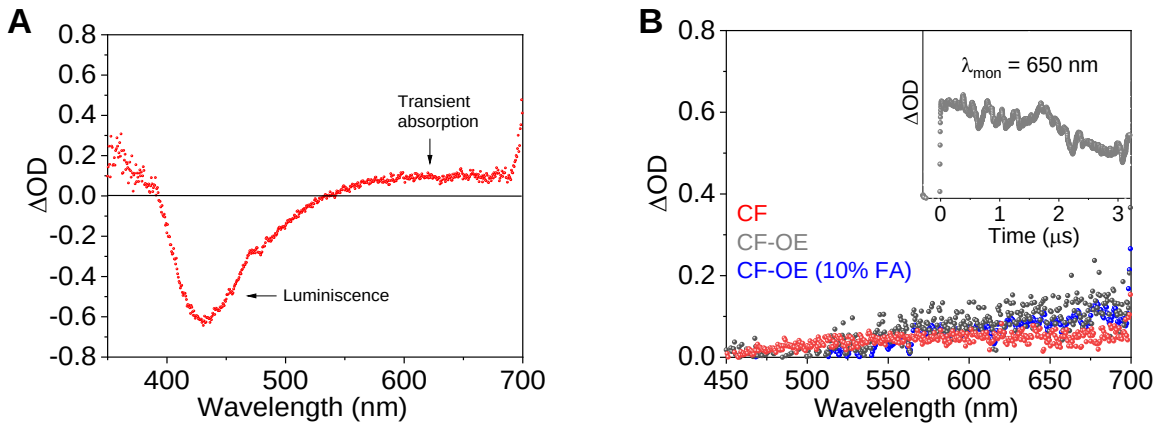

Figure S6. A) Transient absorption spectrum (TAS, λ_{exc} = 355 nm) for CF in deaerated dichloromethane solution immediately after the laser pulse and B) upon 100 ns for CF (red), CF-OE (black) or CF-OE un acidic media (blue) in deaerated dichloromethane solutions. Inset: decay trace monitored at 650 nm for CF-OE as model.

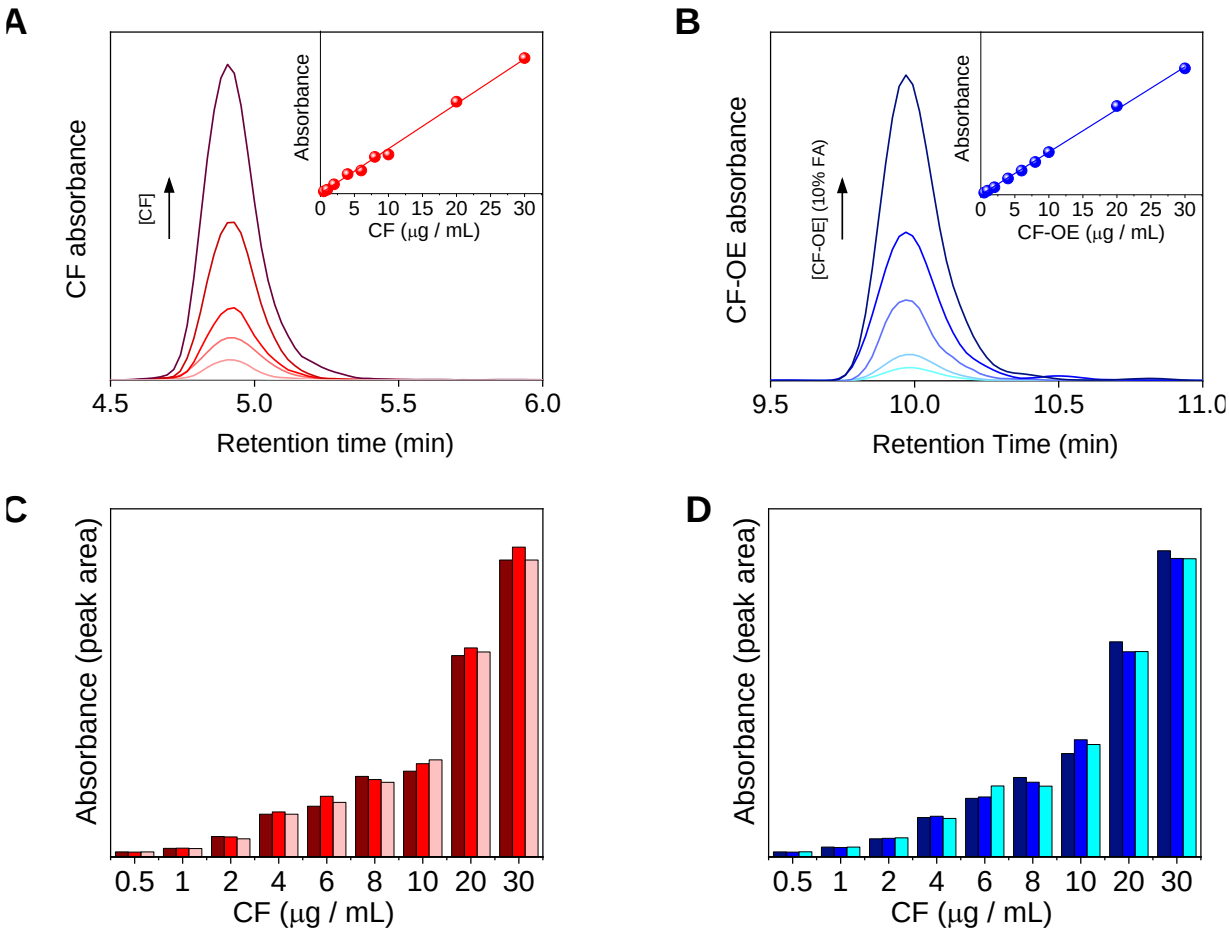

Figure S7. A and B) HPLC chromatograms for CF (A) and CF-OE (B) upon increasing concentration in aerated 70:50 H_2O : CH_3CN, containing 0.1% of FA. Inset: corresponding linear calibration curve. C and D) Calibration curve for CF (C) and CF-OE (D). The measurements were performed by triplicated for each compound.

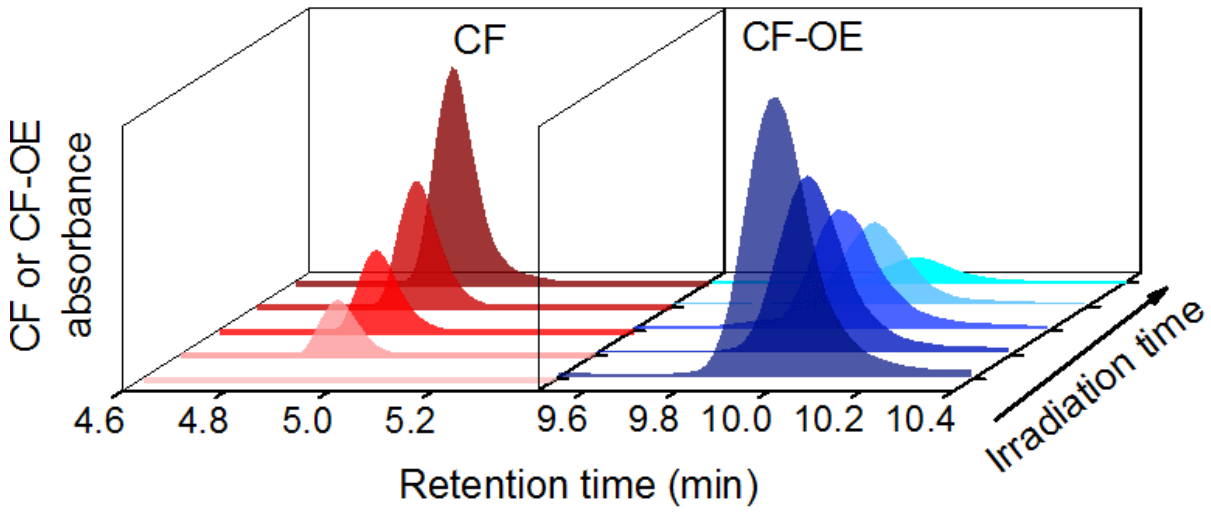

Figure S8. HPLC chromatograms of the evolution formation of free CF (red) and disappearance of CF-OE compound (blue) upon increasing irradiation times (λ_{exc} = 980 nm), at 0.5 M of CF-OE in deaerated methylene chloride (10 % FA v/v). The mobile phase used in HPLC analysis was 70:50 H_2O : CH_3CN, containing 0.1% of FA.

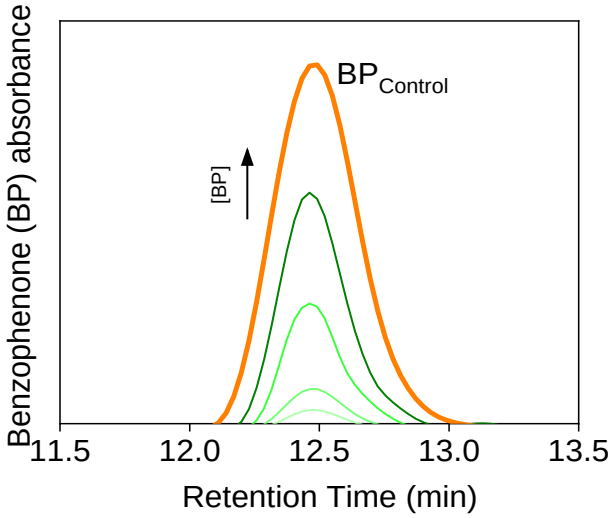

Figure S9. HPLC chromatograms of the formation of the benzophenone (BP) as a second product upon increasing irradiation times (λ_{exc} = 980 nm), at 0.5 mM of CF-OE in deaerated methylene chloride (10 % FA v/v). The mobile phase used in HPLC analysis was 70:50 H_2O : CH_3CN, containing 0.1% of FA. The orange trace corresponds to the commercial BP reference.

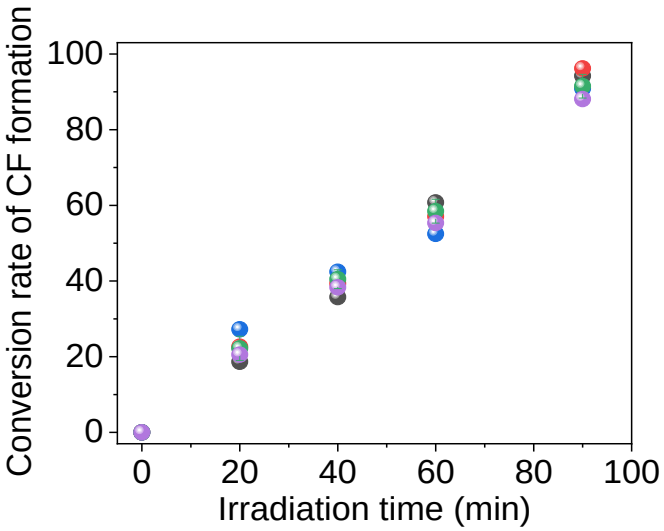

Figure S10. Reusability of UC3 by monitoring the conversion rate of the formation of CF upon increasing irradiation times (λ_{exc} = 980 nm) during five consecutive cycles. Cycle 1 to 5: black, red, blue, green and purple, respectively.