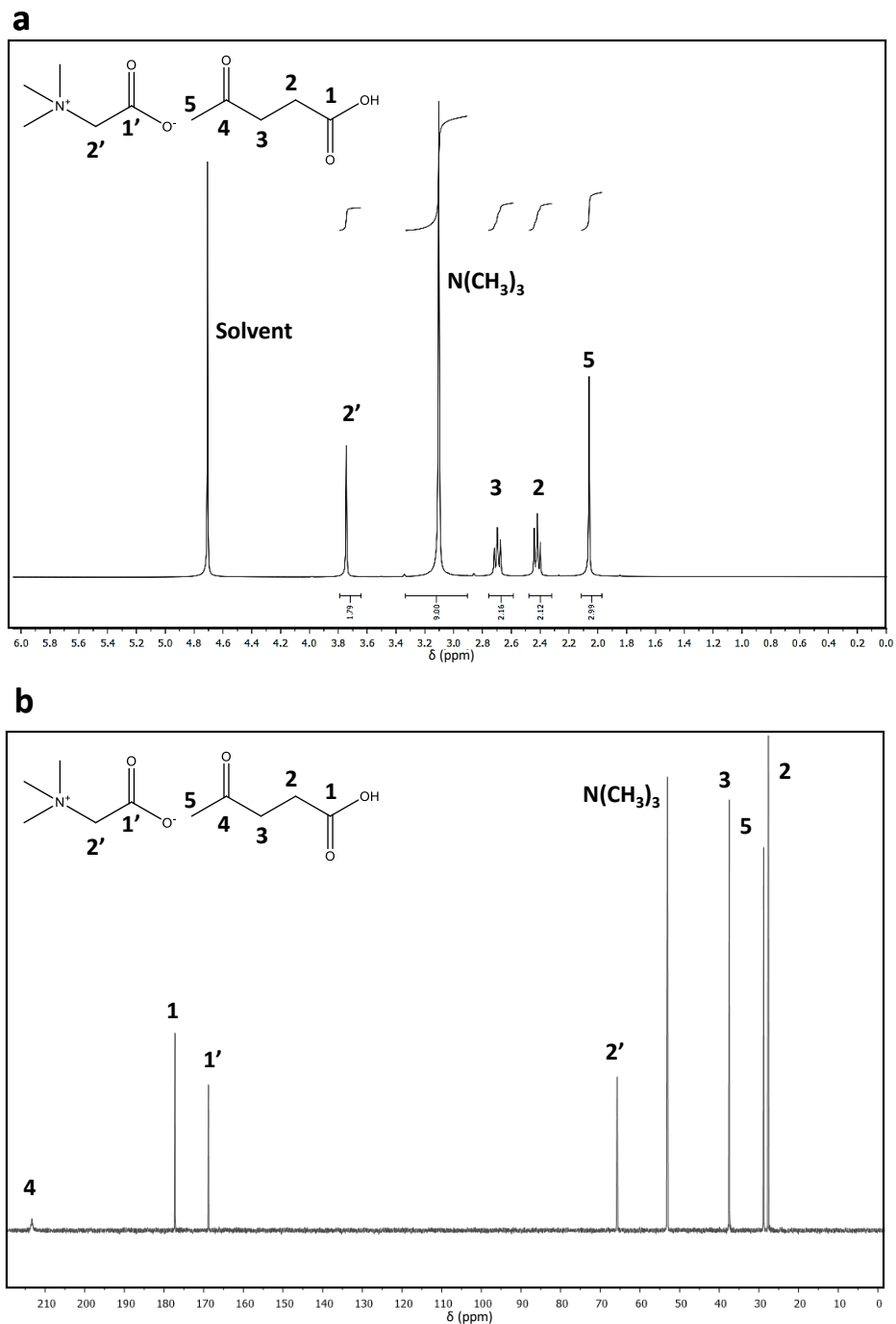
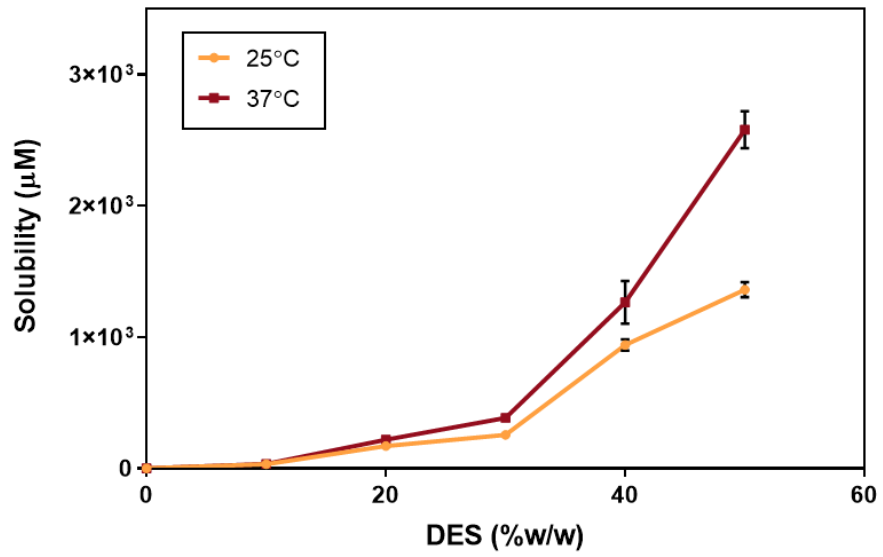


Appendix A. Supplementary data

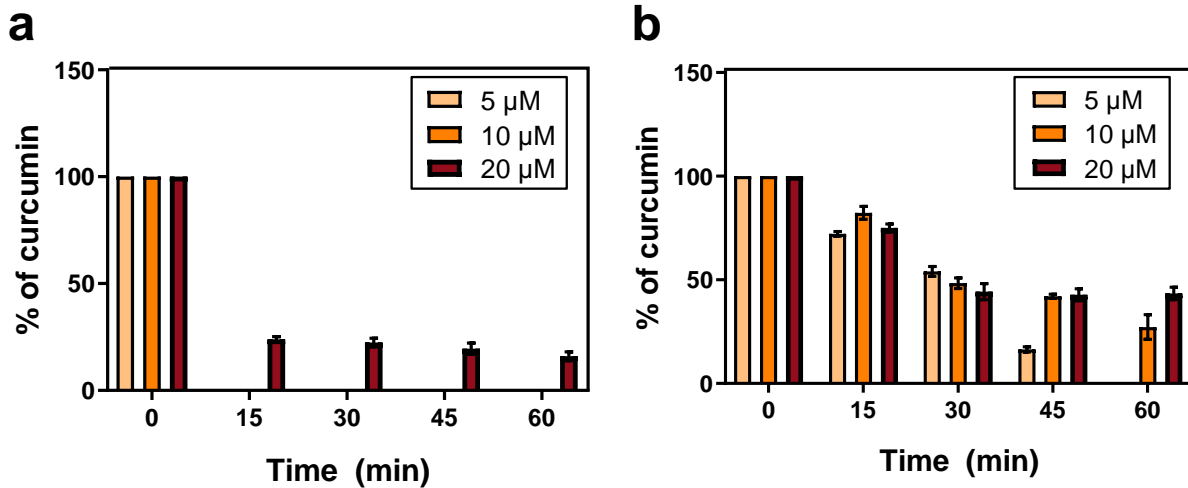
A.1. Supplementary figures



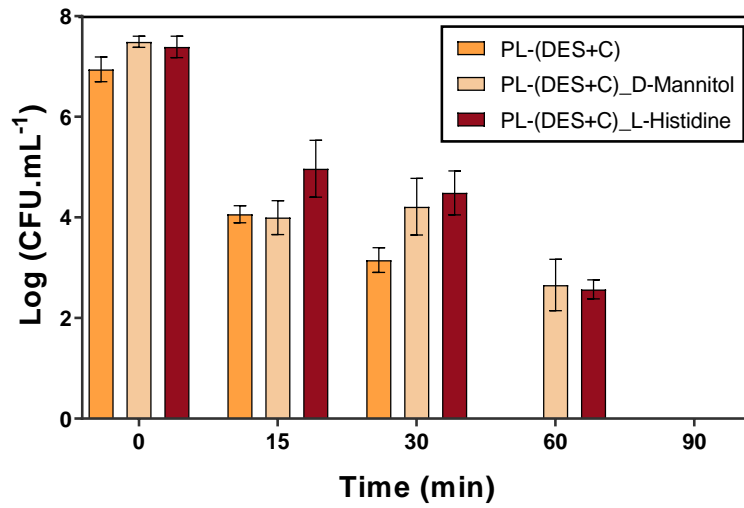
Betaine:levulinic acid: ^1H NMR (300.13 MHz, D_2O): δ 2.06 (3H, s, H-5); 2.42 (2H, t, H-2); 2.70 (2H, t, H-3); 3.10 (9H, s, $\text{N}(\text{CH}_3)_3$); 3.74 (2H, s, H-2') ppm. ^{13}C NMR (75.47 MHz, D_2O): δ 27.84 (C-2); 29.82 (C-5); 37.87 (C-3); 53.25 ($\text{N}(\text{CH}_3)_3$); 65.93 (C-2'); 168.84 (C-1'); 177.12 (C-1); 213.34 (C-4) ppm.



Supplementary Fig. 2. Solubility behavior of curcumin in aqueous solutions of Bet:Lev at room (25 °C) and body (37 °C) temperatures. Results are expressed as the mean \pm standard deviation (SD) of independent experiments and independent measurements for each sample.



Supplementary Fig. 3. Photostability of curcumin in (a) acetone aqueous solutions and (b) DES aqueous solutions at 50% (w/w), exposed to $50 \text{ mW}\cdot\text{cm}^{-2}$ irradiation at room temperature under stirring. Values are expressed as the mean \pm SD of independent experiments and independent measurements for each sample.



Supplementary Fig. 4- Inhibitory effect of D-mannitol and L-histidine in the photoinactivation efficacy of *S. aureus* ATCC 6538 irradiated with LED ($50 \text{ mW}\cdot\text{cm}^{-2}$) over 90 min, using curcumin at $20\mu\text{M}$. Results are expressed as the mean \pm SD of three independent experiments and independent measurements for each sample.