Supporting Information

Enhanced skin penetration of curcumin by nanoemulsion-embedded oligopeptide hydrogel for psoriasis topical therapy

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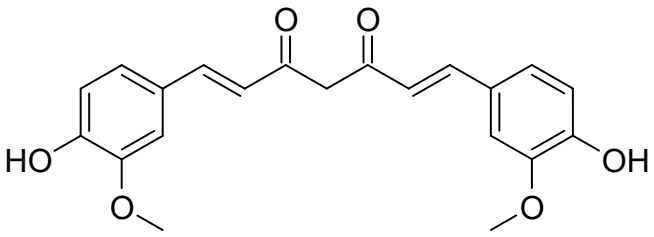
Supplementary information



Molecular structure of curcumin

Supplementary Tables:

Tab. S1. Primer sequences used in quantitative real-time PCR

Primer		Base Sequence	Primer length(bp)
GAPDH	F	GGGCTCTCTGCTCCTCCCTGT	21
	R	CGGCCAAATCCGTTCACACCG	21
TNF-α	F	GCCCACGTCGTAGCAAACCAC	21
	R	GCAGGGGCTCTTGACGGCAG	20
IL-6	F	CCTCTCTGCAAGAGACTTCCAT	22
	R	AGTCTCCTCTCCGGACTTGT	20
IL-23	F	TCCTCCAGCCAGAGGATCACCC	22
	R	AGAGTTGCTGTCCGTG GG C	20

Supplementary Figures:

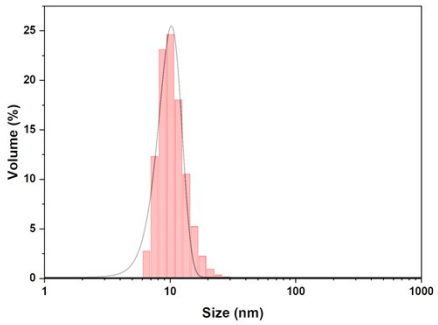


Fig. S1. Particle sizes of Cur-NEs

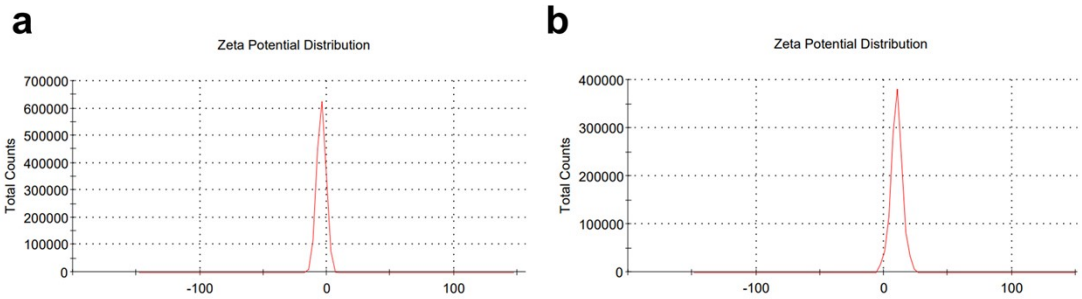


Fig. S2. Zeta potential of Cur-NEs (a) and Cur-CNEs (b).

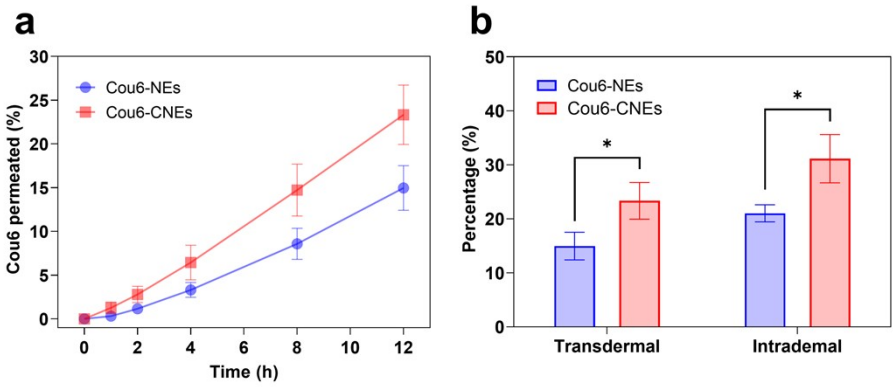


Fig. S3. (a) Comparison of cumulative amounts of Cou6-NEs and Cou6-CNEs in the skin over time (b) Comparison of transdermal permeation and intradermal retention amounts of Cou6-NEs and Cou6-CNEs at 12 h. *$p < 0.05$.

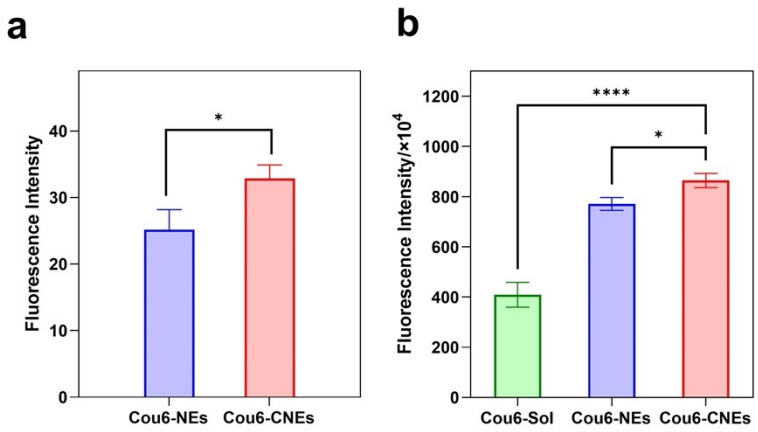


Fig. S4. Fluorescence intensity of Cou6 in HaCaT cells treated with various formulations measured by ImageJ (a) or flow cytometry (b). *p < 0.05, ****p < 0.0001.

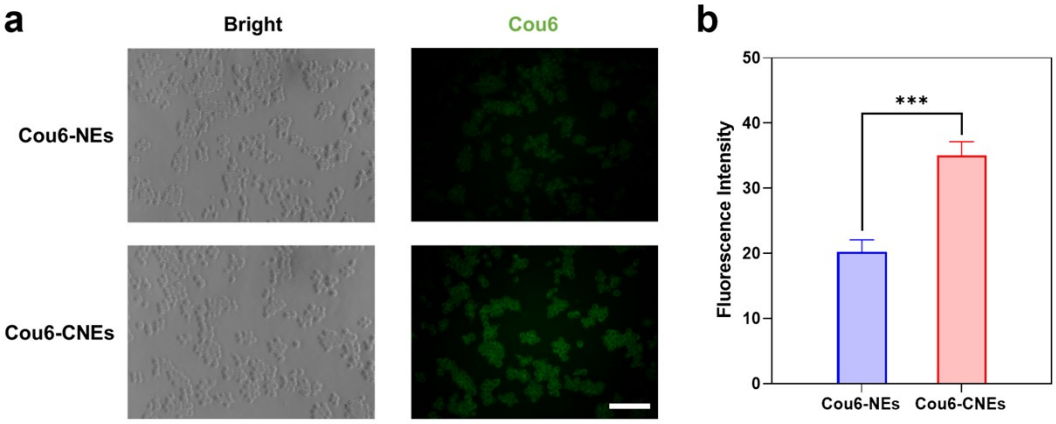


Fig. S5. (a) Intracellular uptake of Cou6-loaded nanoemulsions by RAW264.7 cells after coculture for 2 h. Scale bar: 100 μm. (b) Fluorescence intensity of Cou6 in RAW264.7 cells treated with various formulations measured by ImageJ software.

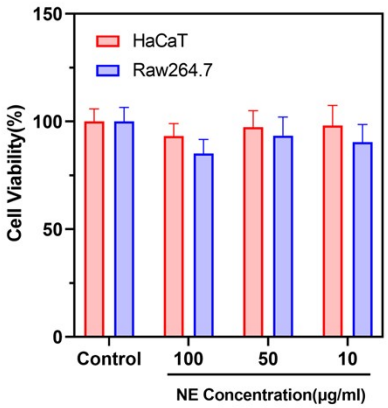


Fig. S6. Safety experiment of blank nanoemulsions on HaCaT and RAW246.7 cells.

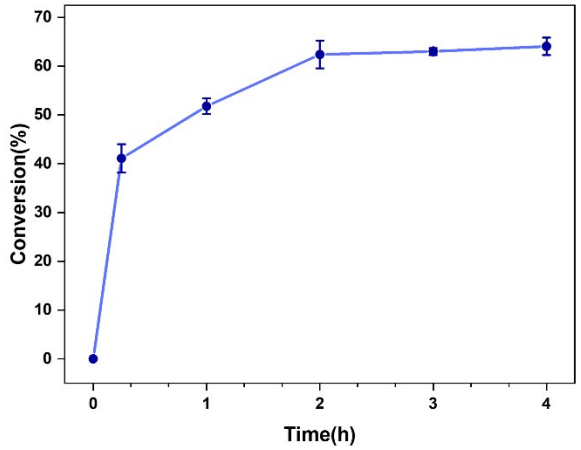


Fig. S7. Average conversion percentage of precursors (Fmoc-F, F-F) to the post-enzymatic products (Fmoc-FFF) over time.

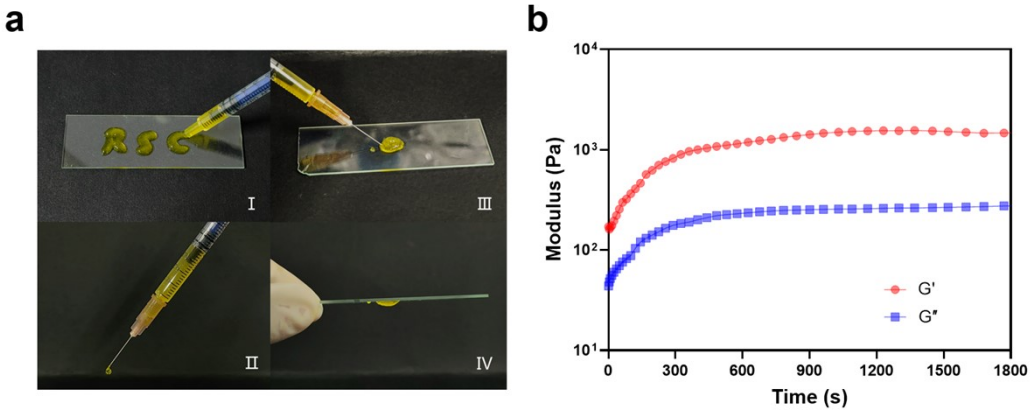


Fig. S8. (a) Representative images of Cur-CNEs/Gel after extrusion or injection. (b) Rheological measurement in dynamic time sweep mode for Cur-CNEs/Gel (G': storage modulus, G": loss modulus).

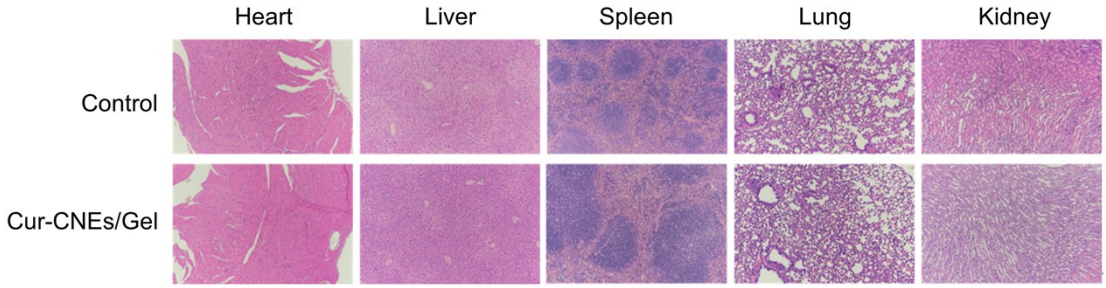


Fig. S9. Images of the H&E-stained normal tissue sections on Day 15 after treatment.

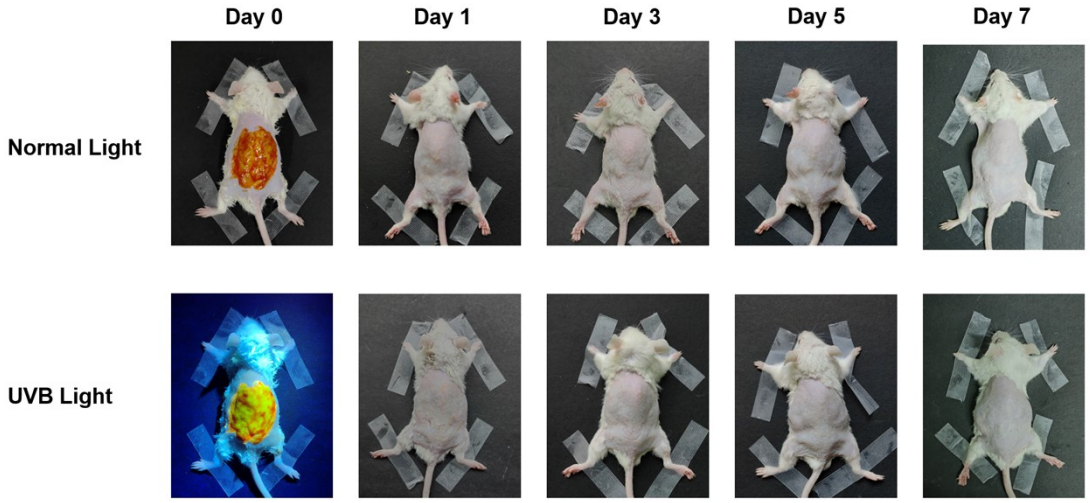


Fig. S10. Skin pictures of mice during 7 days of treatments.