A green biomineralization strategy for efficient encapsulation and long-term preservation of extracellular vesicles

Supplementary File

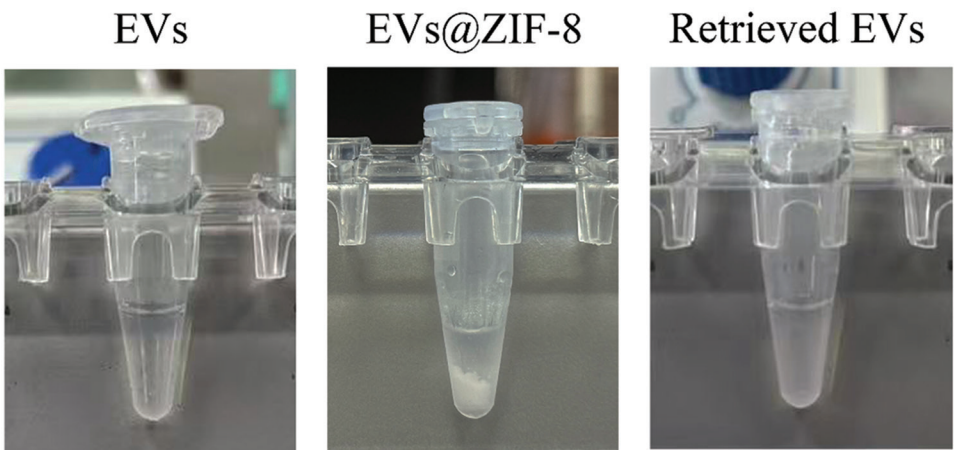
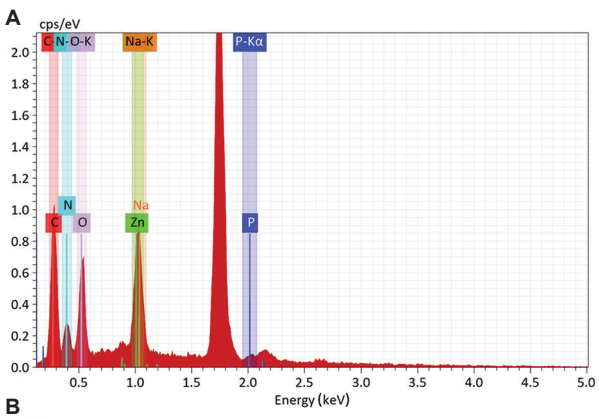


Figure S1. Images of EVs, EVs wrapped with ZIF-8 (EVs@ZIF-8), and retrieved EVs after release
Abbreviations: EV: Extracellular vesicles; ZIF-8: Zeolitic imidazolate framework-8.

A



B

Map

Element	At. No.	Line s.	Mass norm. (%)	Atom (%)
C	6	K-Serie	29.12	43.31
Zn	30	L-Serie	25.22	6.89
O	8	K-Serie	23.15	25.84
N	7	K-Serie	13.56	17.30
Na	11	K-Serie	7.50	5.83
P	15	K-Serie	1.45	0.84
			100.00	**100.00**

Figure S2. Energy-dispersive X-ray spectroscopy analysis. (A) Energy spectrum and (B) elemental composition.
Abbreviations: At: Atomic; C: Carbon; N: Nitrogen; Na: Sodium; P: Phosphorus; Zn: Zinc.

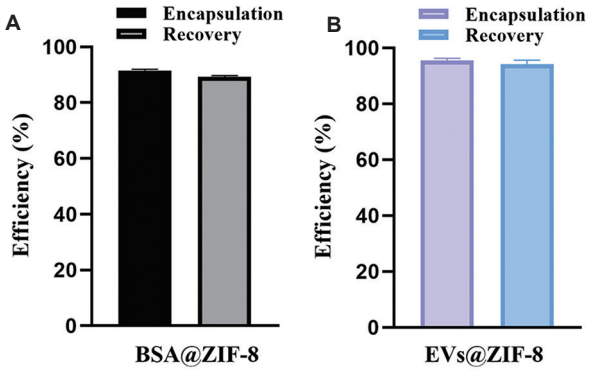


Figure S3. The encapsulation and recovery efficiencies of (A) BSA@ZIF-8 and (B) EVs@ZIF-8
Abbreviations: BSA: Bovine serum albumin; EV: Extracellular vesicles; ZIF-8: Zeolitic imidazolate framework-8.

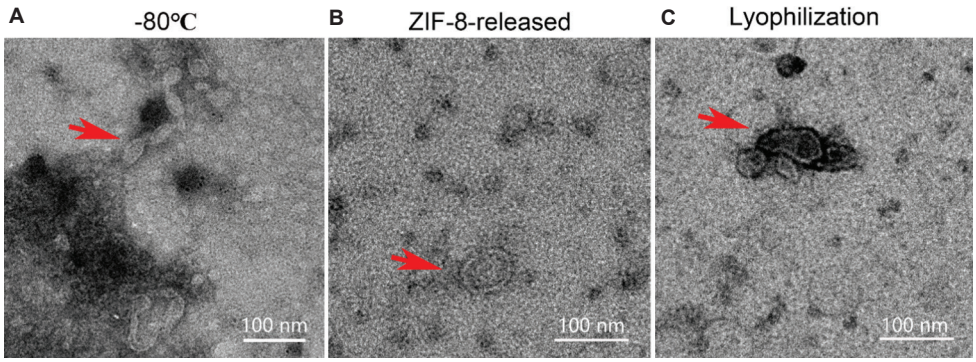


Figure S4. Transmission electron microscopy analysis of EV morphology. (A) –80°C, (B) ZIF-8, and (C) lyophilization storage conditions. Scale bar: 100 nm; magnification: ×100,000.
Abbreviations: EV: Extracellular vesicles; ZIF-8: Zeolitic imidazolate framework-8.

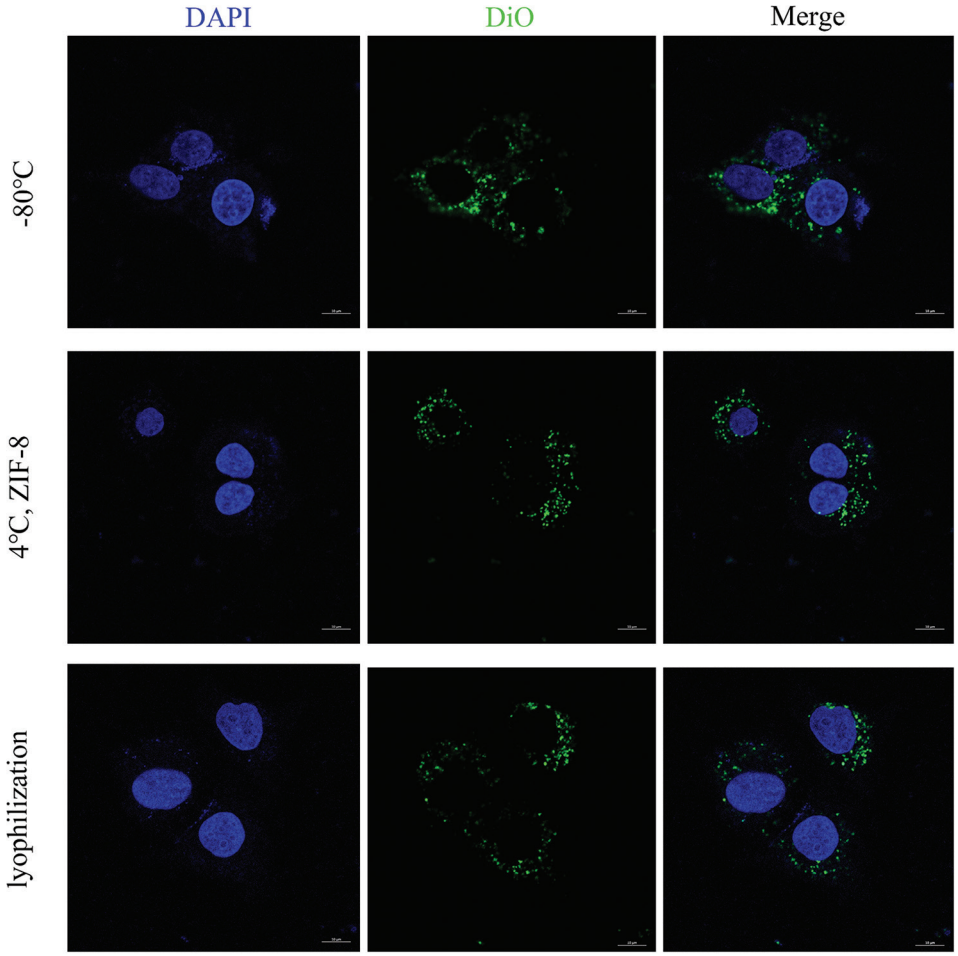


Figure S5. Forty-eight hours of cellular uptake of EVs under different conditions after one-month storage. Scale bar: 10 μm; magnification: ×630. Abbreviations: DAPI: 4',6-diamidino-2-phenylindole; EV: Extracellular vesicles; ZIF-8: Zeolitic imidazolate framework-8.

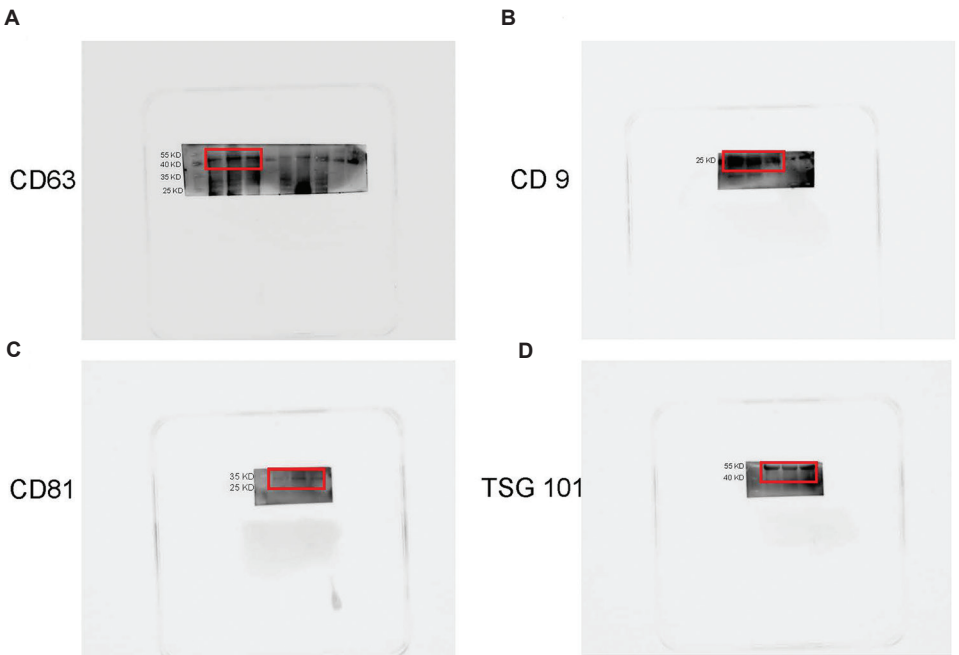


Figure S6. Original images for Western blotting for CD63, CD9, CD81, and TSG101 in Figure 1G. A: Western blotting for CD63 (40-55 kDa), B: Western blotting for CD9 (25 kDa), C: Western blotting for CD81 (28 kDa), and D: Western blotting for TSG101 (47 kDa).