

Supplementary Materials: Nanoencapsulation as a General Solution for Lyophilization of Labile Substrates

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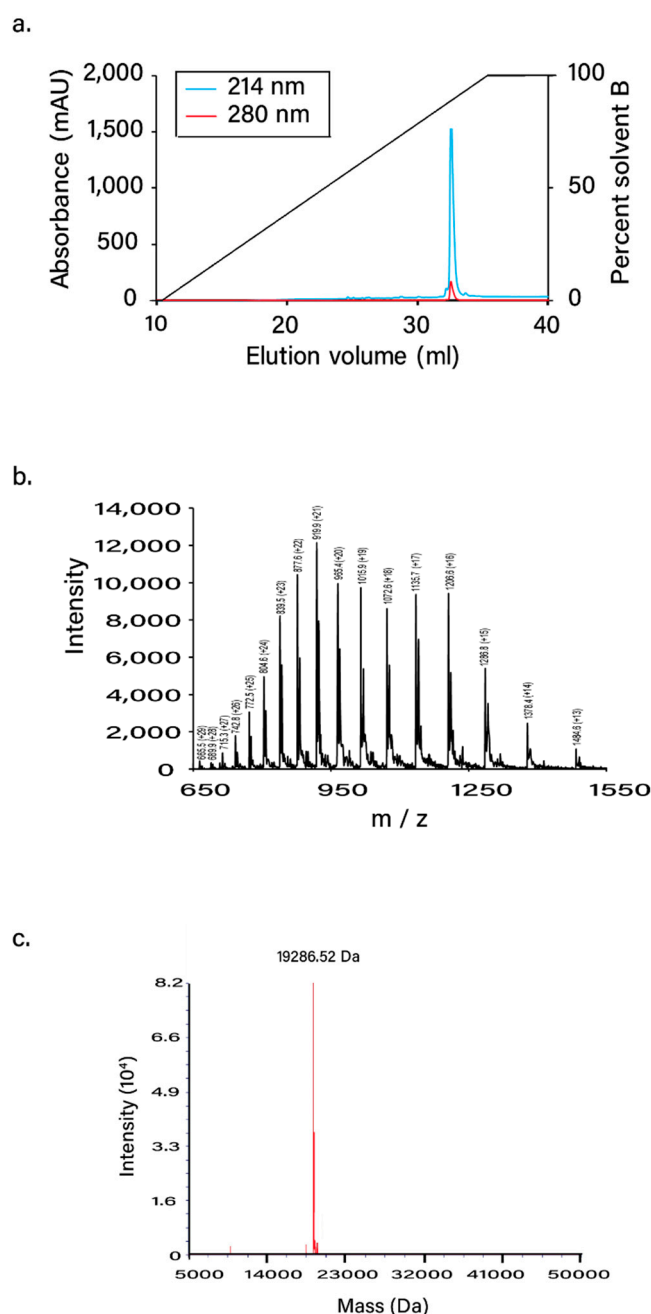


Figure S1. Re-purification of tES. **(a)** RP-HPLC chromatography of SEC purified tES on a linear gradient of 0–100% solvent B. The elution was monitored at 215 and 280 nm. **(b)** The ESI-MS of tES showing multiple peaks of mass/charge (m/z) ratio ranging from +13 to +29 charges. **(c)** The mass of tES was determined to be 19286.52 Da.

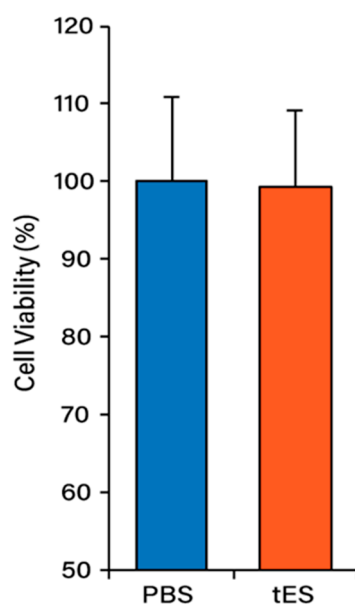


Figure S2. Effect of tES on cell viability.

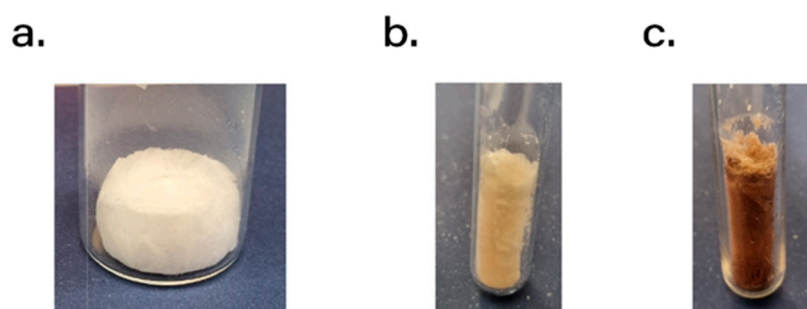


Figure S3. Cake appearance of freeze-dried proteins. (a) tES, (b) tES - HRP, (c) HRP.

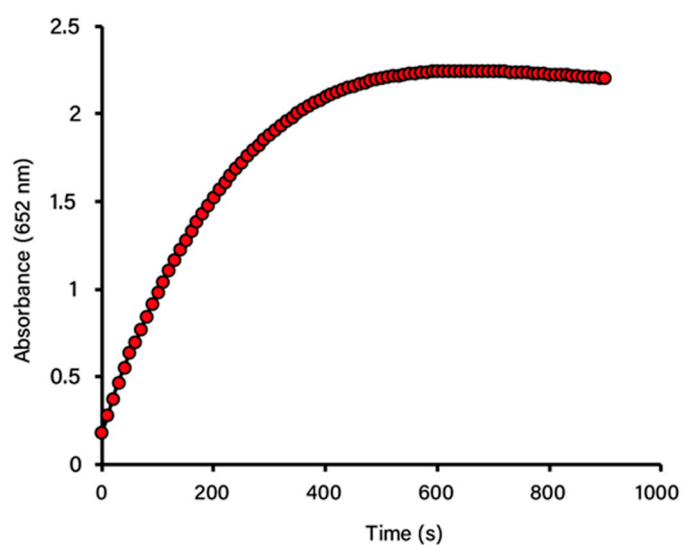


Figure S4. Time-dependent activity of freeze-dried tES-HRP assayed at 652 nm.

Table S1. Average reads and standard deviations for HRP activity from three independent experiments.

	Reads Average	STDEV	Reads Average	STDEV	Reads Average	STDEV
	One Week					
	RT		4 °C		-20 °C	
Lyophilized HRP	0.54	0.17	0.65	0.08	0.75	0.08
Lyophilized tES-HRP	3.92	0.27	5.53	0.18	5.22	0.13
	One Month					
	RT		4 °C		-20 °C	
Lyophilized HRP	0.33	0.02	0.16	0.02	0.68	0.02
Lyophilized tES-HRP	3.71	0.01	3.74	0.01	3.79	0.01
	One Day			Pre-Lyophilized		
Lyophilized HRP	3.61	0.04		HRP	5.55	0.33
Lyophilized tES-HRP	5.23	0.11		tES	5.72	0.15