Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information:

Nanomicrosphere sustained-release urokinase systems with antioxidant properties for deep vein thrombosis therapy

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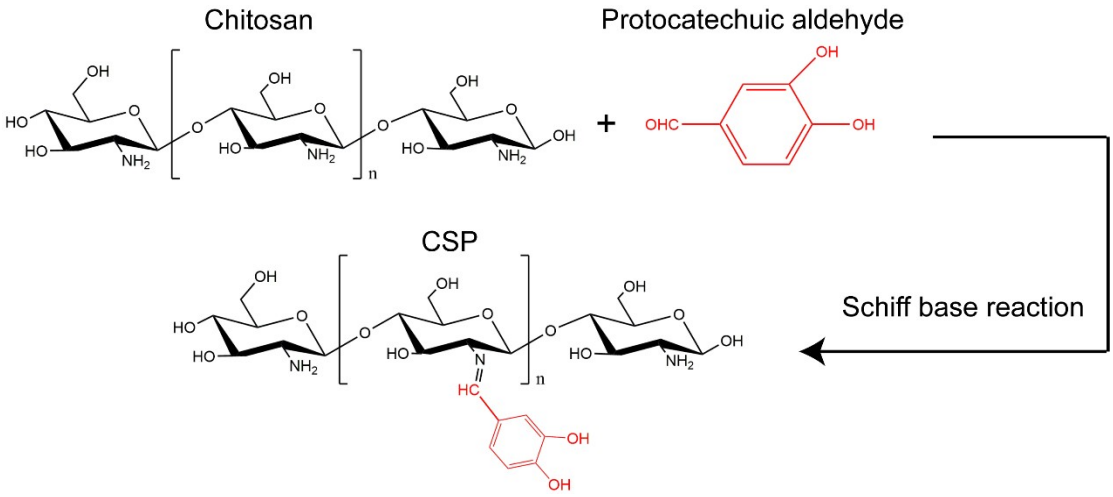

Fig. S1. The synthesis process of CSP microsphere.

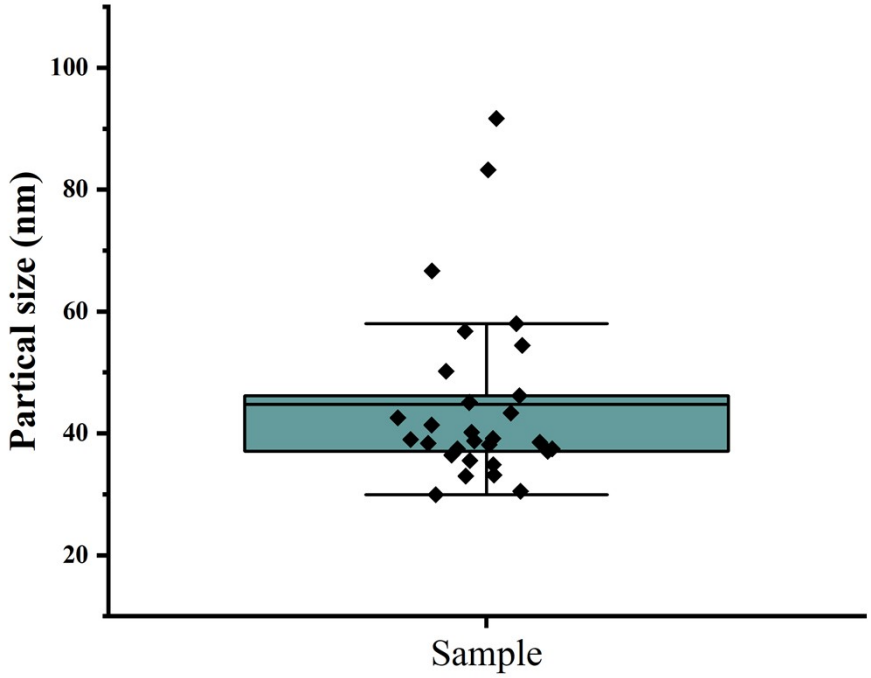

Fig. S2. The particle size of CPT microsphere.

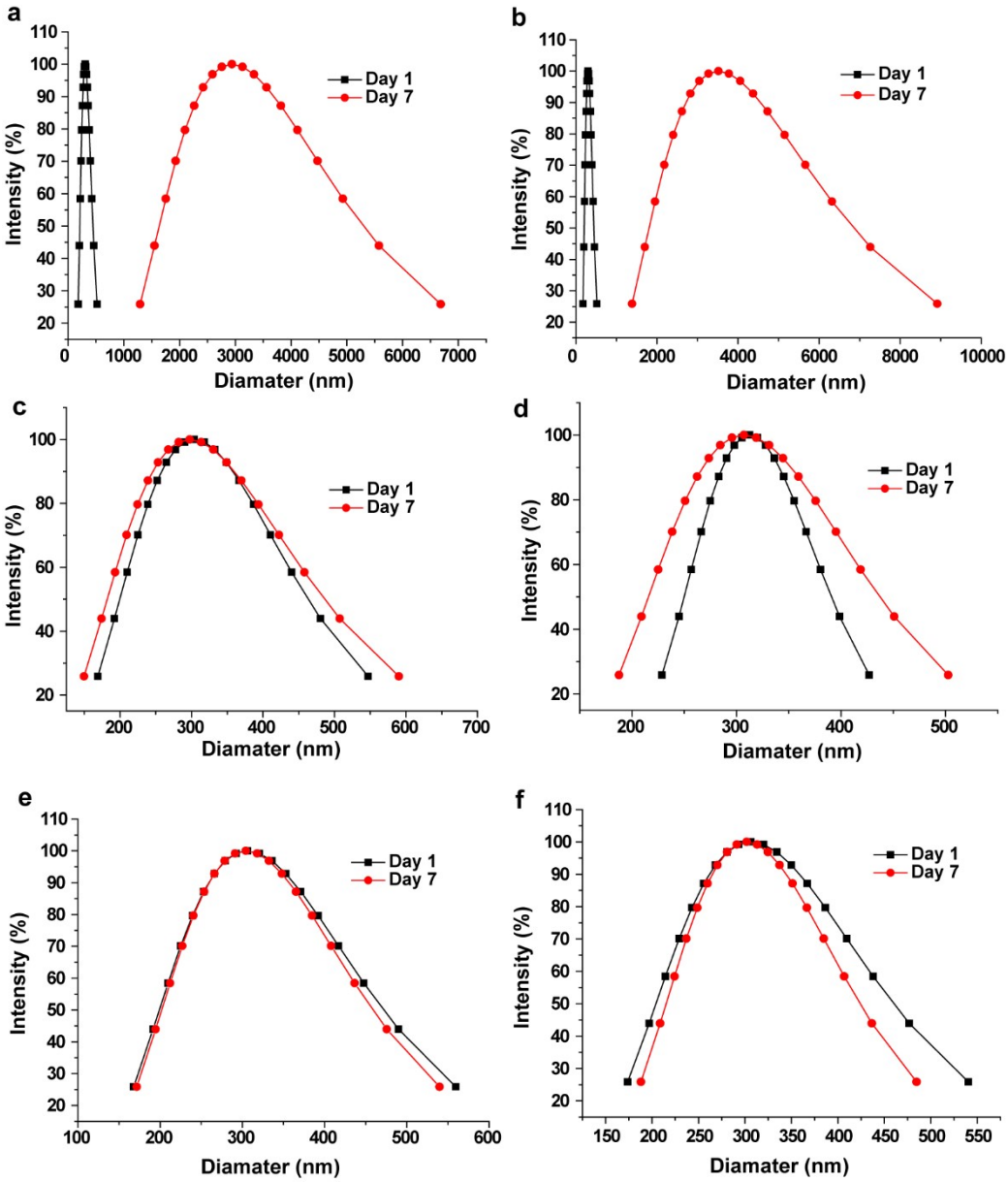

Fig. S3. a, b) DLS of CPT microspheres in SBF and PBS; c, d) DLS of CTB microspheres in SBF and PBS; e, f) DLS of CTU microspheres in SBF and PBS.

Table. S1 DLS data for CPT microspheres, CTB microspheres and CTU microspheres in SBF and PBS.

DMEM	Day 1	Day 7
CPT	299.2 ± 9.7 nm	2941.5 ± 571.4 nm
CTB	308.4 ± 4.3 nm	301.7 ± 4.9 nm
CTU	304.8 ± 2.8 nm	303.2 ± 1.2 nm

SBF	Day 1	Day 7
CPT	305.2 ± 27.2 nm	2942.2 ± 571.9 nm
CTB	311.8 ± 11.0 nm	321.7 ± 48.4 nm
CTU	321.4 ± 15.0 nm	329.9 ± 29.3 nm

PBS	Day 1	Day 7
CPT	281.9 ± 22.4 nm	2875.5 ± 554.9 nm
CTB	298.4 ± 14.3 nm	331.7 ± 22.0 nm
CTU	314.8 ± 10.3 nm	339.9 ± 33.3 nm

Table. S2 Zeta potentials for CPT microspheres, CTB microspheres and CTU microspheres.

	Zeta potentials (mV)
CPT	10.9 ± 1.3
CTB	-3.9 ± 1.4
CTU	12.1 ± 1.5

Table. S3 The UK loading efficiency of CTU microspheres with different UK concentrations.

Concentration (μg/mL)	The UK loading efficiency (%)
2.5	97.9 ± 0.2
5	97.7 ± 0.5
10	96.0 ± 5.0
15	77.4 ± 4.7
20	66.1 ± 4.4

Table. S4 The UK loading percentage of CTU microspheres with different UK concentrations.

Concentration (μg/mL)	The UK loading percentage (%)
2.5	0.24
5	0.49
10	0.95 ± 0.05
15	1.15 ± 0.07
20	1.3 ± 0.08

Table. S5 The cumulative release of UK for CTU microspheres.

Time (min)	Cumulative release (%)
5	14.7 ± 1.9
10	27.8 ± 2.1
20	36.6 ± 1.2
40	47.3 ± 2.9
60	54.1 ± 6.7
120	60.9 ± 4.9
180	64.2 ± 2.3
240	66.6 ± 1.5
300	68.4 ± 1.3
360	71.2 ± 0.4
720	77.8 ± 2.0
1440	81.1 ± 2.5
2160	83.6 ± 3.7
2880	85.6 ± 2.4

Table. S6 Free radical scavenging ratio of CTU microspheres.

Concentration (mg/mL)	DPPH·	PTIO·	·OH
5	22.4 ± 0.8%	19.0 ± 0.8%	5.2 ± 0.4%
10	41.1 ± 1.5%	39.3 ± 2.1%	23.7 ± 2.0%
15	58.9 ± 1.6%	57.9 ± 2.0%	43.1 ± 2.4%
20	61.9 ± 1.5%	58.7 ± 2.5%	65.0 ± 2.6%