

Supplementary material

Article

pH-Responsive Sodium Alginate/CMCS/CMCNa Composite Hydrogel Beads for Sustained Delivery of 5-Fluorouracil- β -Cyclodextrin Inclusion Complexes

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Table S1. Content of each component during the preparation of β -CD@5-Fu/CMCS/CMCNa/SA hydrogel beads.

Samples	3% β - CD@5-Fu (wt%)	0.8946%5- Fu (wt%)	CMCS(wt%)	CMCNa (wt%)	SA (wt%)
1	20 g	0 g	10 g	10 g	10 g
2	15 g	0 g	11.66 g	11.66 g	11.66 g
3	10 g	0 g	13.34 g	13.34 g	13.34 g
4	0 g	20 g	10 g	10 g	10 g
5	0 g	15 g	11.66 g	11.66 g	11.66 g
6	0 g	10 g	13.34 g	13.34 g	13.34 g
7	0g	0g	16.66g	16.66g	16.66g
8	0g	0g	0g	0g	50g

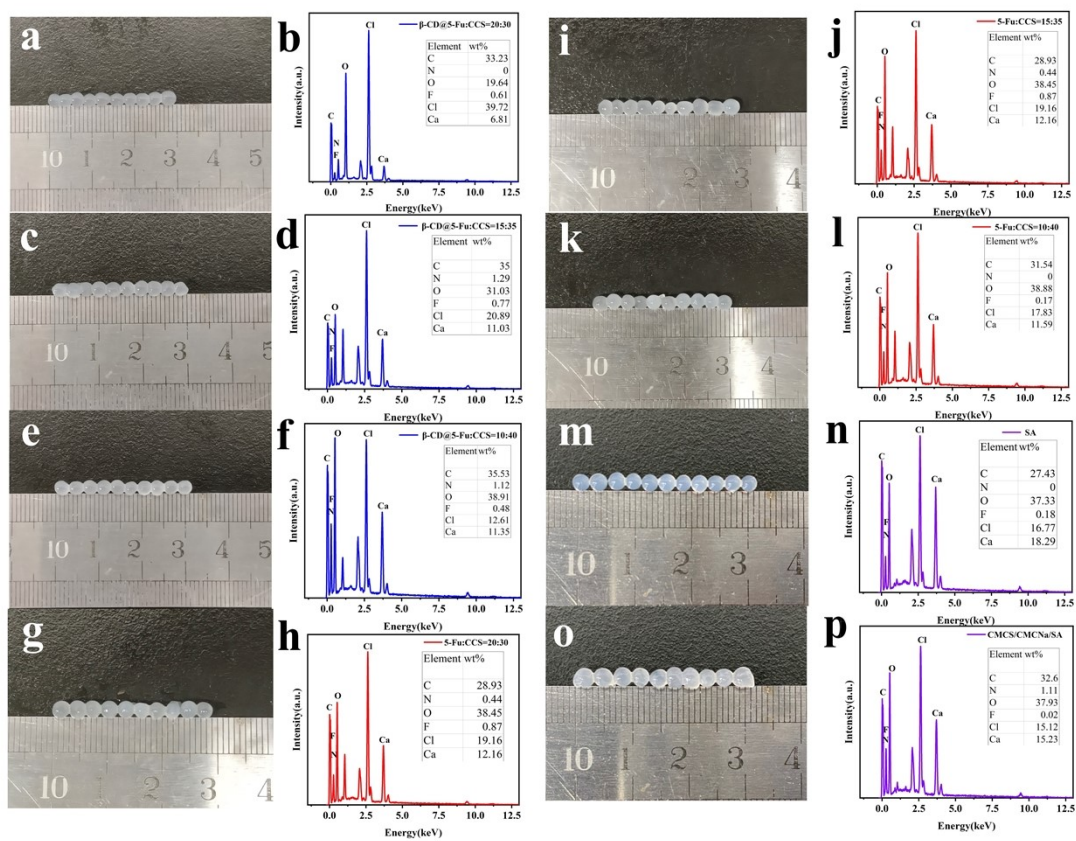


Figure S1. SEM images and elemental mapping of hydrogel beads: (a-f) β -CD@5-Fu-loaded (ratios 20:30, 15:35, 10:40); (g-l) 5-Fu-loaded (same ratios); (m-p) Controls: SA and CMCS/CMCNa/SA beads.

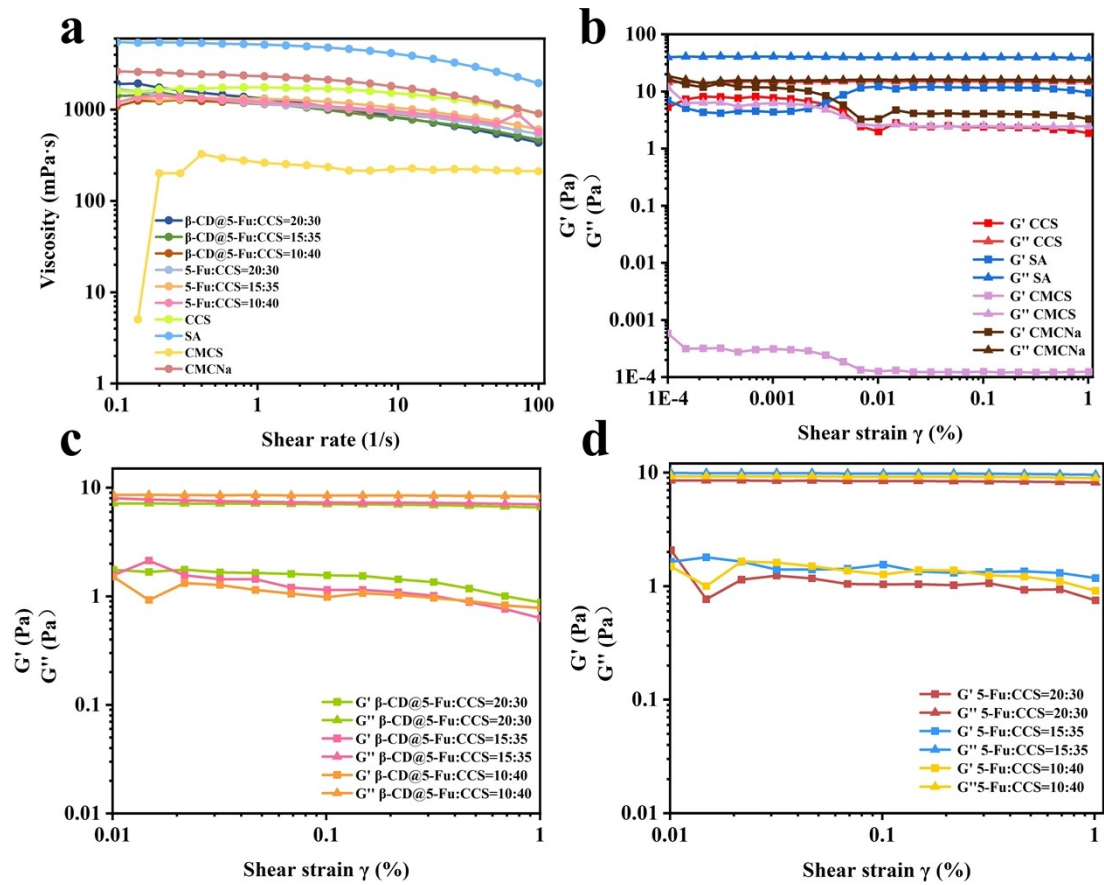


Figure S2. Rheological characterization of multi-component systems: Shear-dependent viscosity and strain-responsive moduli. (a) Viscosity profile; (b-d) Storage modulus (G') and loss modulus (G'') evolution.

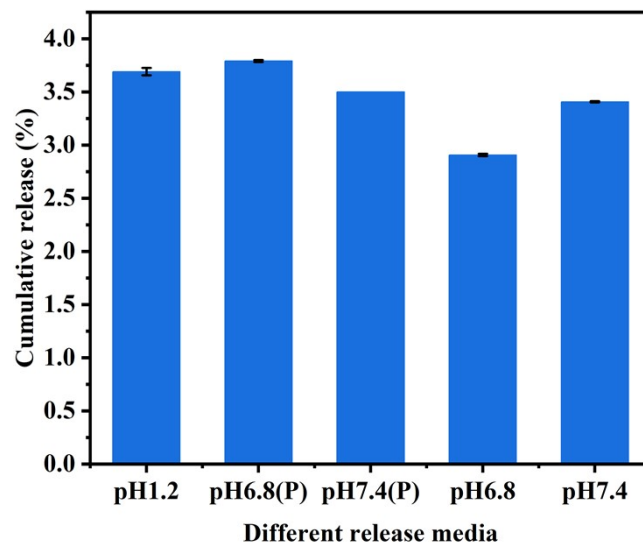


Figure S3. In vitro cumulative release (%) of β -CD@5-Fu/CMCS/CMCNa/SA hydrogel beads under various pH conditions (pH 1.2; pH 6.8 with and without phosphate; pH 7.4 with and without phosphate) at 37 °C over 24 h.