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An oral hydrogel carrier for delivering resveratrol into intestines-specific released with high encapsulation efficiency and loading capacity based on structure-selected alginate and pectin

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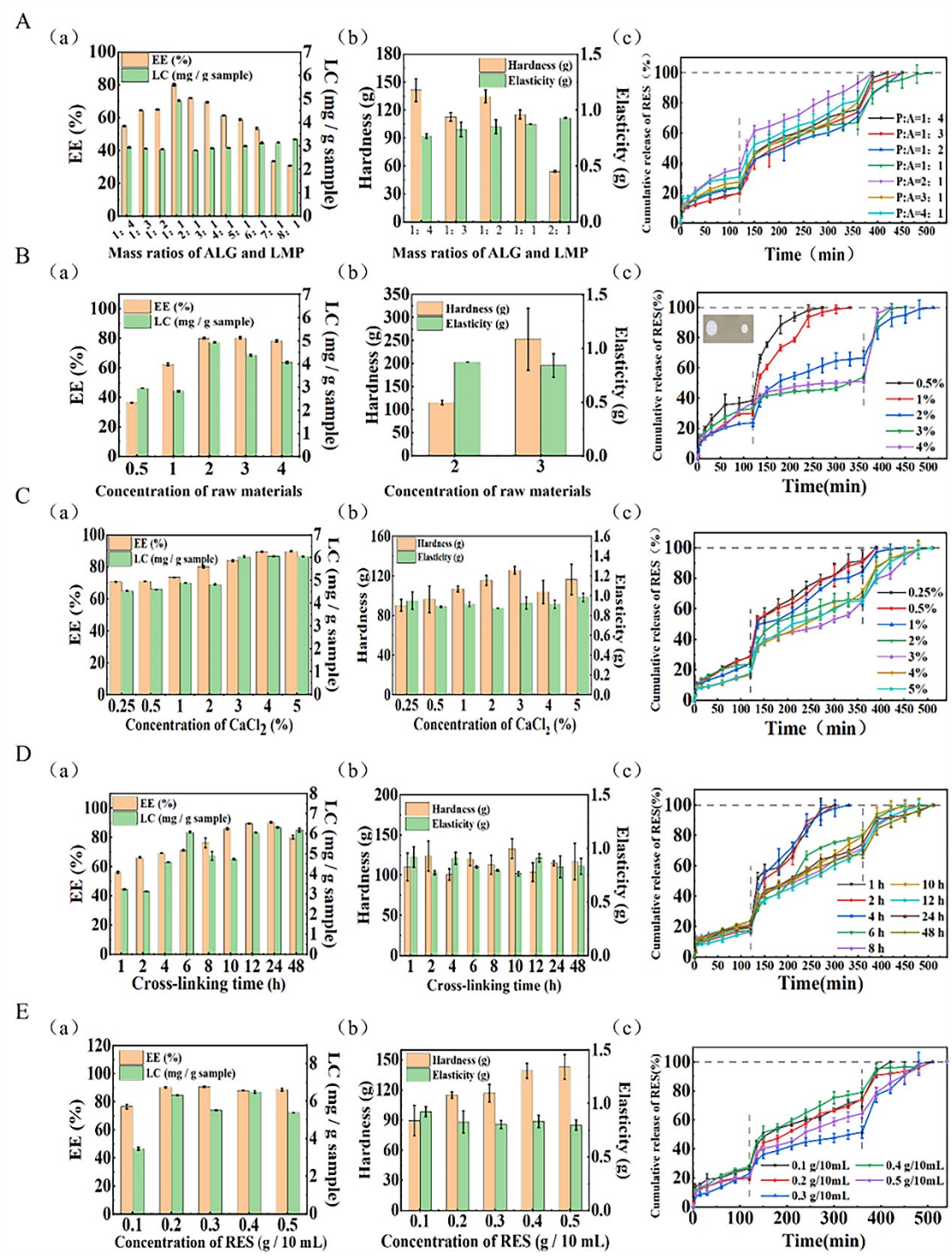

Fig. S1. Physical properties and drug release of beads. The EE%, LC, hardness and elasticity of beads made by different mass ratios of ALG and LMP (A), concentration of raw materials (B), concentration of crosslinker (C), cross-linking time (D) and concentration of RES (E), and in vitro release profile of RES.

Where, 0~2 min: simulated oral digestion, 2~120 min: simulated gastric digestion, 120-360 min: simulated small intestine digestion, and 360~480 min: simulated colonic digestion.

Note: Each digestion stage is separated by a vertical dotted line.

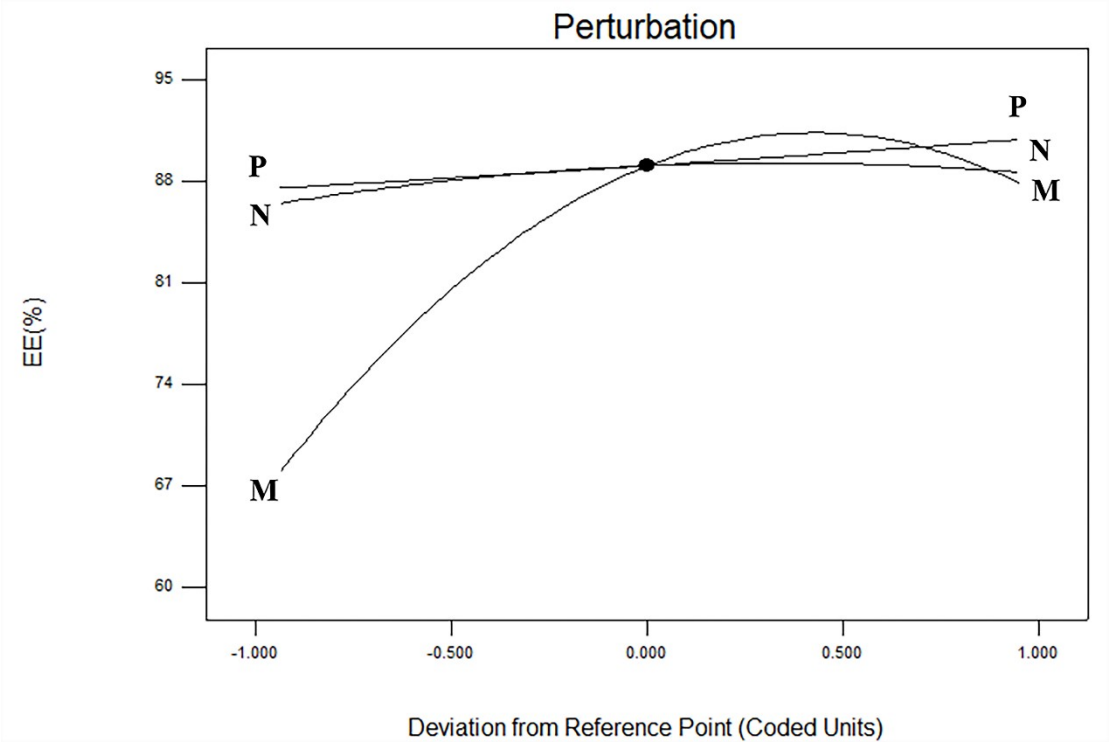

Fig. S2. Perturbation plot for interaction among influence factors on EE%. Type of factor coding: Actual. Actual factors include: the concentration of raw materials (factor M), crosslinking agent $CaCl_2$ (factor N), and RES (factor P).

Table S1 Box-Behnken factor level and process design

Factors	level		
	-1	0	1
M	1%	2%	3%
N	3%	4%	5%
P	0.2 g / 10 mL	0.3 g / 10 mL	0.4 g / 10 mL

Where M, N, and P are the concentration of raw materials, crosslinking agent $CaCl_2$, and RES, respectively.

Table S2 Experimental plan for optimization of EE% using CCD.

group	Concentration of raw materials (%)	Concentration of $CaCl_2$ (%)	Concentration of RES （g / 10 mL）	EE (%)
1	2	5	0.2	89.82
2	1	4	0.4	67.22
3	3	3	0.3	84.79
4	1	3	0.3	65.00
5	2	4	0.3	91.37
6	2	4	0.3	87.73
7	3	4	0.4	91.81
8	2	4	0.3	86.53
9	1	5	0.3	64.21
10	2	5	0.4	90.04
11	3	5	0.3	85.21
12	2	3	0.2	83.95
13	2	3	0.4	86.33
14	1	4	0.2	63.67
15	2	4	0.3	89.99
16	2	4	0.3	89.95
17	3	4	0.2	83.93