

Supplementary Materials: Gelatin-Alginate Complexes for EGF Encapsulation: Effects of H-Bonding and Electrostatic Interactions

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Table S1. pH dependence of the reaction between HWGA and SA at various polymer ratios.

HWGA-SA (1:1)							
pH	6.23 (0.01)	4.84 (0.02)	4.58 ^c (0)	4.42 ^φ (0.01)	4.30 (0.01)	4.21 (0.01)	4.14 (0)
Turbidity	0.05 (0)	0.13 (0.01)	1.62 (0.08)	1.90 (0)	1.97 (0)	1.97 (0)	1.91 (0)
Zeta potential	-52.73 (0.96)	-38.90 (1.14)	-39.37 (0.40)	-37.40 (0.70)	-36.63 (0.97)	-41.93 (1.07)	-39.47 (1.76)
Z-average (d.nm)	563.10 (86.03)	375.43 (55.00)	722.53 (25.79)	2315.33 (142.47)	1114.67 (235.71)	1158.87 (202.64)	1272.67 (51.25)
PDI	1 (0)	0.98 (0.038)	0.28 (0.078)	0.65 (0.198)	0.60 (0.095)	0.58 (0.204)	0.44 (0.13)
HWGA-SA (1:0.8)							
pH	6.10 (0.01)	4.83 (0.01)	4.57 ^c (0.01)	4.40 ^φ (0.01)	4.29 (0.01)	4.21 (0)	4.14 (0.01)
Turbidity	0.04 (0)	0.12 (0.02)	1.66 (0.04)	1.93 (0)	2.02 (0)	1.99 (0)	1.98
Zeta potential	-52.70 (0.85)	-39.30 (1.04)	-37.03 (0.84)	-36.63 (1.40)	-33.63 (0.81)	-39.13 (0.76)	-38.03 (2.50)
Z-average (d.nm)	551.77 (55.88)	328.03 (47.99)	641.07 (16.61)	1090.00 (132.35)	730.33 (41.44)	921.73 (46.00)	967.33 (48.19)
PDI	1 (0.002)	1 (0)	0.18 (0.057)	0.48 (0.118)	0.42 (0.121)	0.74 (0.245)	0.55 (0.112)
HWGA-SA (1:0.4)							
pH	5.97 (0.01)	4.82 ^c (0.01)	4.55 ^φ (0)	4.36 (0.01)	4.26 (0)	4.17 (0.01)	4.09 (0)
Turbidity	0.03 (0)	1.68 (0.03)	2.09 (0)	2.00 (0)	1.99 (0)	1.90 (0)	1.73 (0)
Zeta potential	-51.60 (3.31)	-26.80 (0.2)	-30.07 (0.80)	-27.30 (0.50)	-25.50 (0.79)	-24.33 (1.39)	-23.47 (0.21)
Z-average (d.nm)	521.50 (101.76)	726.60 (79.29)	2130.67 (859.60)	3650.00 (115.21)	7481.00 (5542.93)	1474.33 (279.06)	2373.33 (844.92)
PDI	0.85 (0.051)	0.47 (0.035)	1 (0)	1 (0)	0.73 (0.24)	0.63 (0.322)	0.84 (0.273)

^c: pH_c, onset pH for coacervation at each HWGA-SA ratio. ^φ: pH_φ, onset pH for precipitation at each HWGA-SA ratio. *Data are means and standard deviations (parenthesis) from triplicate measurements.

Table S2. pH dependence of the reaction between LWGA and SA at various polymer ratios.

LWGA-SA 1:1							
pH	6.00 (0)	4.82 (0.01)	4.55 ^c (0)	4.38 (0.01)	4.31 (0.06)	4.22 (0.01)	4.14 (0.01)
Turbidity	0.04 (0)	0.06 (0)	1.25 (0)	1.78 (0.01)	1.87 (0)	1.90 (0)	1.94 (0)
Zeta potential	-42.13 (1.08)	-35.70 (0.44)	-36.23 (0.67)	-37.30 (0.61)	-35.80 (2.26)	-36.63 (1.90)	-35.70 (1.31)
Z-average (d.nm)	334.17 (24.07)	527.27 (26.15)	864.17 (19.15)	807.87 (10.74)	639.17 (11.79)	955.00 (41.35)	914.13 (20.08)
PDI	0.95 (0.067)	0.77 (0.207)	0.37 (0.013)	0.31 (0.032)	0.21 (0.019)	0.39 (0.033)	0.30 (0.05)
LWGA-SA 1:0.8							
pH	6.06 (0.02)	4.82 (0.01)	4.53 ^c (0.01)	4.39 (0.01)	4.27 (0.01)	4.20 ^p (0.01)	4.12 (0.01)
Turbidity	0.04 (0)	0.07 (0)	1.43 (0)	1.82 (0)	1.86 (0)	1.88 (0)	1.97 (0)
Zeta potential	-41.30 (0.56)	-36.80 (1.15)	-36.40 (0.90)	-34.23 (0.65)	-35.90 (0.78)	-25.53 (0.81)	-22.87 (0.68)
Z-average (d.nm)	497.80 (101.31)	693.13 (17.63)	673.27 (1.55)	601.33 (3.87)	659.93 (5.70)	1112.23 (196.67)	5348.67 (2912.65)
PDI	0.75 (0.065)	0.68 (0.05)	0.30 (0.036)	0.25 (0.015)	0.21 (0.033)	0.49 (0.065)	0.40 (0.048)
LWGA-SA 1:0.4							
pH	6.00 (0.01)	4.78 ^c (0.01)	4.52 (0.01)	4.34 (0)	4.25 ^p (0.01)	4.14 (0)	4.07 (0)
Turbidity	0.03 (0)	1.32 (0)	1.91 (0)	2.01 (0)	1.97 (0)	1.88 (0)	1.69 (0)
Zeta potential	-34.97 (0.38)	-25.00 (0.26)	-24.37 (0.61)	-22.30 (0.56)	-22.27 (0.71)	-21.57 (1.51)	-16.47 (1.12)
Z-average (d.nm)	699.27 (62.57)	923.60 (25.91)	364.40 (10.89)	1191.00 (70.79)	2688.67 (476.82)	2422.67 (894.91)	1810.67 (123.87)
PDI	0.94 (0.098)	0.50 (0.021)	0.14 (0.016)	0.33 (0.025)	0.94 (0.098)	0.59 (0.267)	0.49 (0.116)

^c: pH_c, onset pH for coacervation at each LWGA-SA ratio. ^p: pH_p, onset pH for precipitation at each LWGA-SA ratio. *Data are means and standard deviations (parenthesis) from triplicate measurements.