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Supplementary Information

Designing biopolymer-coated Pickering emulsions to modulate in vitro gastric digestion: A static model study

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Table S1: Mean hydrodynamic diameter (D_h), polydispersity index (PdI) and ζ-potential values for WPN, WPN + DxS-40 and WPN+DxS-500 after formation at pH 3.0.

	WPN	**WPN + DxS-40**	**WPN + DxS-500**
D_h / nm	91.51 ± 0.55	-	-
PdI	0.236 ± 0.0	-	-
ζ – potential / mV	+30.2 ± 1.45	-21.6 ± 2.67	-37.4 ± 3.30

Table S2. Mean hydrodynamic diameter (D_h), polydispersity index (PdI) and ζ-potential values of control samples for WPN, WPN + DxS-40 and WPN + DxS-500 in an in vitro gastric model at pH 3.0 in presence of SGF without pepsin, respectively.

	WPN			**WPN + DxS-40**	**WPN + DxS-500**
Gastric digestion time / min	D_h / nm	PdI	ζ – potential / mV	ζ – potential / mV	ζ – potential / mV
0	93.58 ± 1.84	0.215 ± 0.03	19.13 ± 2.66	-11.51 ± 1.58	-19.26 ± 5.9
5	92.13 ± 3.35	0.333 ± 0.01	17.46 ± 2.20	-5.41 ± 2.67	-4.34 ± 0.52
30	110.16 ± 4.12	0.350 ± 0.11	17.73 ± 3.25	-1.71 ± 4.26	-9.38 ± 0.94
60	88.35 ± 2.66	0.271 ± 0.02	19.43 ± 1.43	-5.29 ± 1.48	-16.96 ± 1.05
90	89.88 ± 2.90	0.291 ± 0.00	18.2 ± 2.05	1.42 ± 0.56	-11.58 ± 1.24
120	90.22 ± 2.12	0.308 ± 0.01	17.03 ± 2.31	-4.20 ± 1.77	-14.33 ± 1.19
150	102.61 ± 7.09	0.334 ± 0.05	18.86 ± 0.70	0.67 ± 1.2	-8.89 ± 0.9

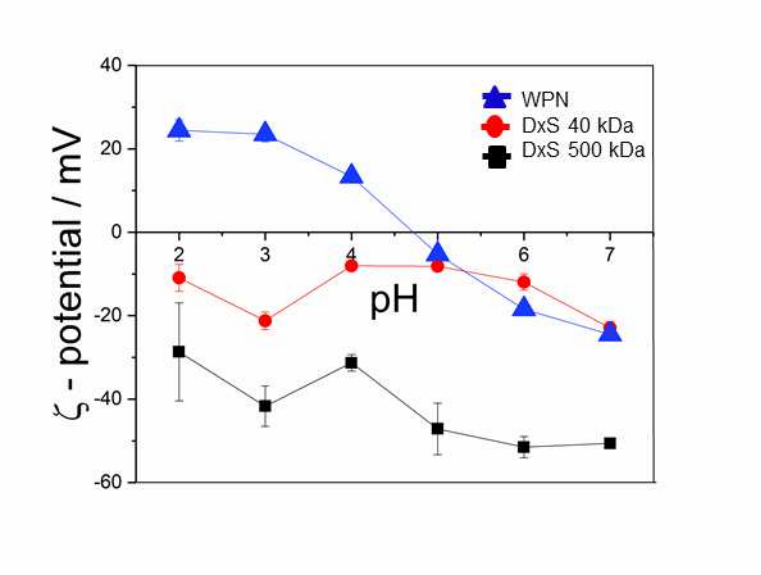

Figure S1. Mean ζ-potential values of aqueous dispersions of WPN, DxS-40 kDa and DxS-500 kDa as a function of pH, respectively.

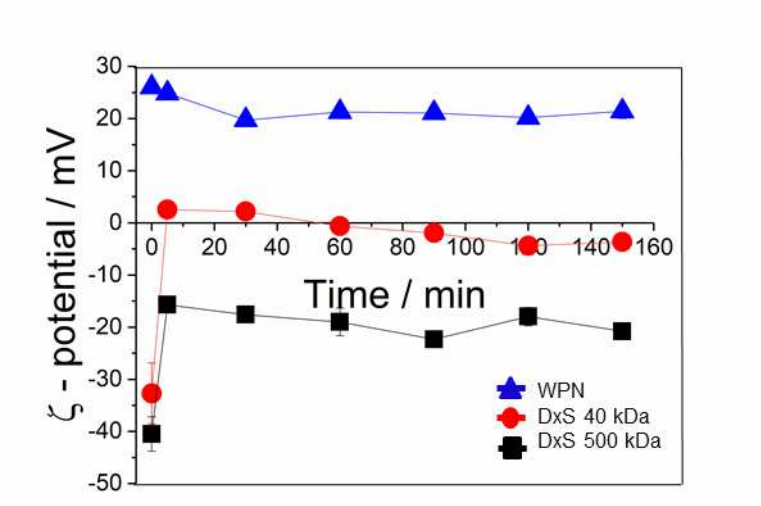

Figure S2. Change in mean ζ-potential values of 1 wt% WPN without or with the addition of 0.2 wt% DxS-40 kDa or 0.2 wt% DxS-500 kDa in an in vitro gastric model at pH 3.0 in presence of SGF containing pepsin, respectively.

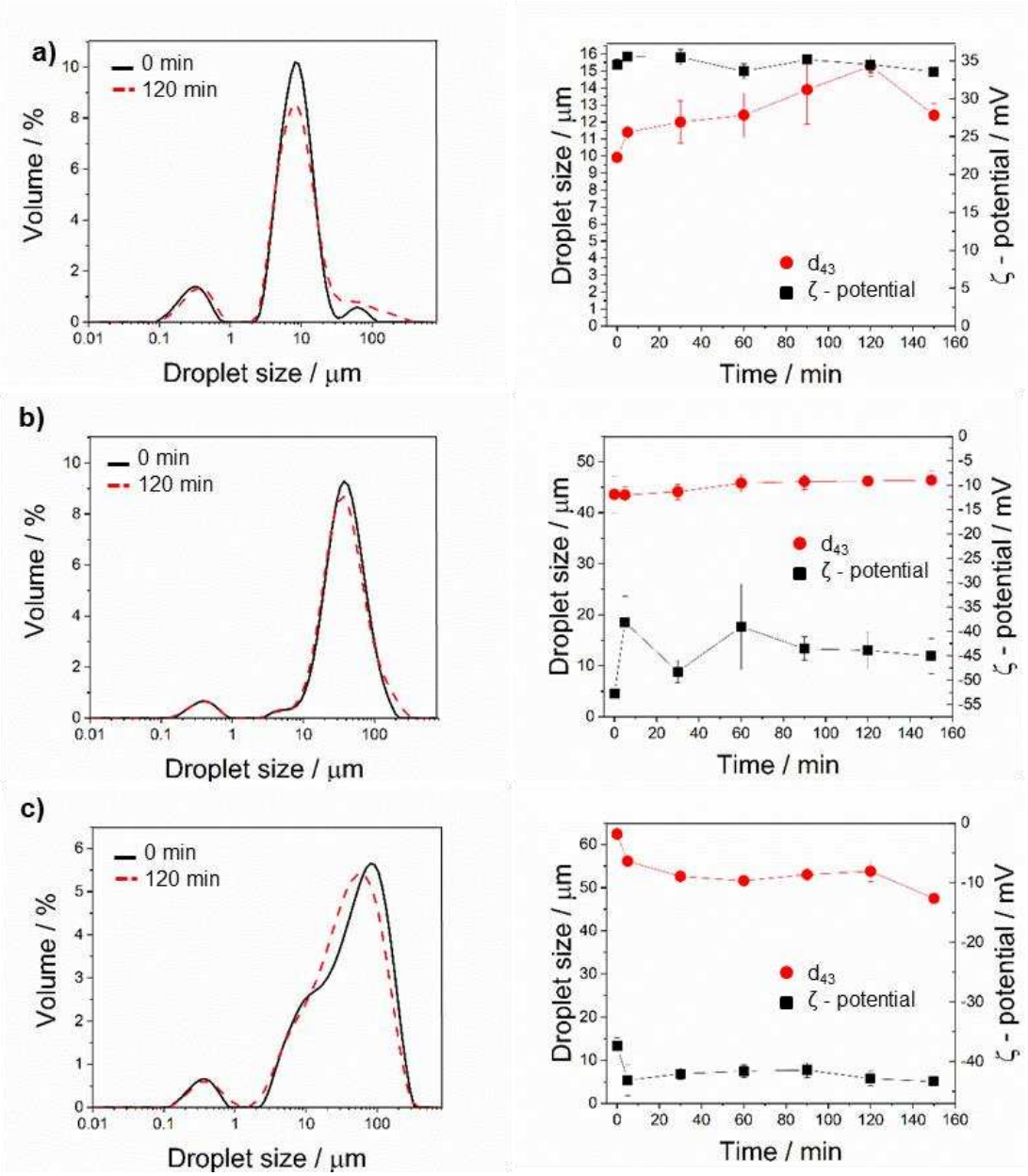

Figure S3. Droplet size distribution, mean d_{43} values and ζ-potential values of control samples for a) E_{WPN} b) DxS-E_{WPN}-40 and c) DxS-E_{WPN}-500 after in vitro gastric digestion in presence of SGF buffer without pepsin, respectively.

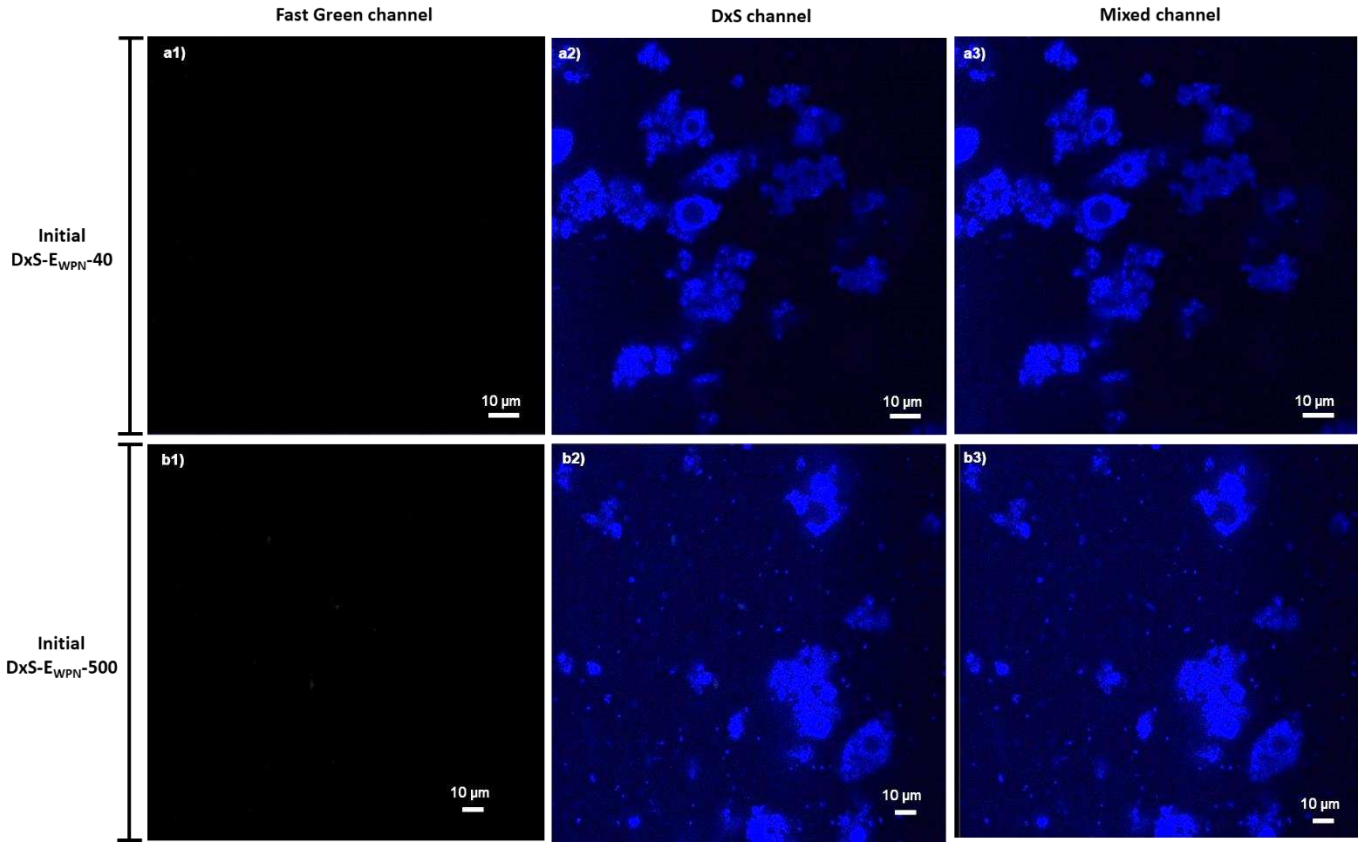

Figure S4. Confocal micrographs of initial FITC-DxS-E$_{WPN}$-40 and FITC-DxS-E$_{WPN}$-500 samples. Simultaneous recording of the emission of Fast Green and FITC-DxS dyes without the addition of Fast Green in the samples. Blue colour represents the FITC-labelled DxS.