

**Table S1** Study on in vitro stability of the modified OC and digestion of the emulsions stabilized by modified OC

GIT phase	Digestive fluids [composition; pH]	<i>In vitro</i> digestion	
		OC-G and OC-T	emulsions stabilized by the cellulosic materials or BSA
Oral	<b>simulated saliva fluid (SSF)</b> [KCl (15.1 mM), KH <sub>2</sub> PO <sub>4</sub> (3.7 mM), NaHCO <sub>3</sub> (13.6 mM), MgCl <sub>2</sub> (0.15 mM), and (NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub> (0.06 mM); pH 7.0]	-	emulsion (5 mL) + SSF (4 mL) + $\alpha$ -amylase (750 units/mL) ↓ add CaCl <sub>2</sub> (0.1 M, 75 mL) and make up to 10 mL with DI water ↓ 37°C, 2 min “bolus”
Gastric	<b>simulated gastric fluid (SGF)</b> [KCl (6.9 mM), KH <sub>2</sub> PO <sub>4</sub> (0.9 mM), NaHCO <sub>3</sub> (25 mM), NaCl (47.2 mM), MgCl <sub>2</sub> (H <sub>2</sub> O) <sub>6</sub> (0.1 mM), (NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub> (0.5 mM); pH 2.5]	modified OC + SGF (1:1, <i>wt/v</i> ) + pepsins (25,000 units/mL) ↓ periodically take out a small aliquot of digestive fluids ← 37 °C, 2 h	bolus + SGF (7.5 mL) + CaCl <sub>2</sub> (0.1 M, 15 mL) + pepsin (25,000 units/mL) ↓ adjust to pH 3.0 using HCl (1 M) and make up to 20 mL with DI water ↓ 37 °C, 120 min “chyme”
Intestine	<b>stimulated intestinal fluid (SIF)</b> [KCl (6.8 mM), KH <sub>2</sub> PO <sub>4</sub> (0.8 mM), NaHCO <sub>3</sub> (85 mM), NaCl (38.4 mM), and MgCl <sub>2</sub> (H <sub>2</sub> O) <sub>6</sub> (0.33 mM); pH 7.0]	add SIF (1:1, <i>wt/v</i> ) +lipase (5,600 units/mL) + bile salts (160 mM, 2.5 mL) ↓ adjust to pH 7.0 using NaOH (1 M L <sup>-1</sup> ) ↓ periodically take out a small aliquot of digestive fluids ← 37 °C, 4	chyme + SIF (6 mL) + pancreatic lipase (5,600 units/mL) ↓ add bile salt solution (160 mM, 2.5 mL) and CaCl <sub>2</sub> (0.1 M, 120 mL) ↓ adjust to pH 7.0 using NaOH (1 M) and make up to 40 mL using DI water ↓ 37 °C, 120 min terminate the reaction by placing the mixture in an ice bath
<b>Determination</b>		TPC DPPH radical scavenging ability	FFA content