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**Article:**

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## Supplementary material

***Stability, interfacial structure and gastrointestinal digestion of  $\beta$ -carotene loaded***

***Pickering emulsions co-stabilized by particle, biopolymer and surfactant***

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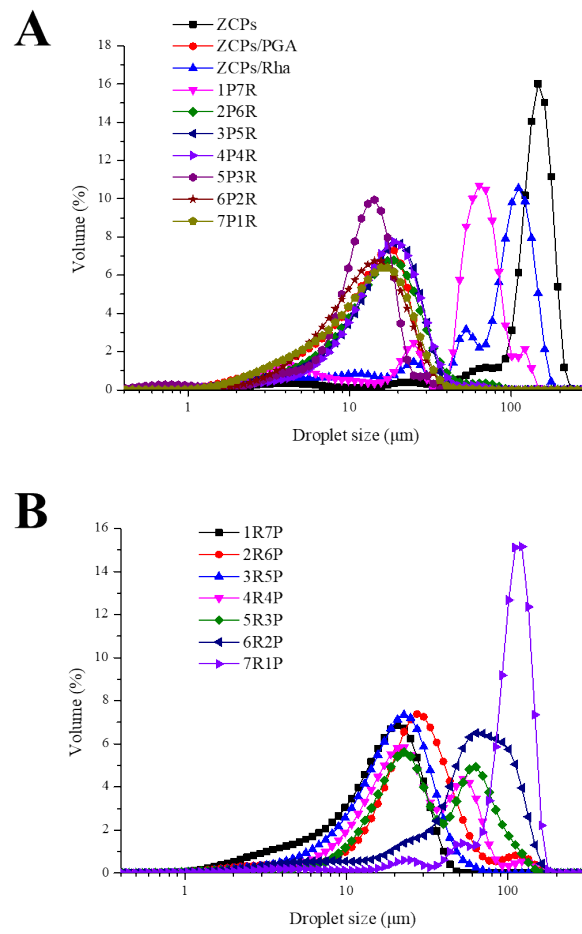


Fig. S1 Size distribution of Pickering emulsions stabilized with PGA as a second layer and Rha as a third layer (A); size distribution of Pickering emulsions stabilized with Rha as a second layer and PGA as a third layer (B).



Fig. S2 Visual appearance of Pickering emulsions (From left to right: ZCPs, ZCPs/PGA, ZCPs/Rha, 1P7R-7P1R, 1R7P-7R1P).

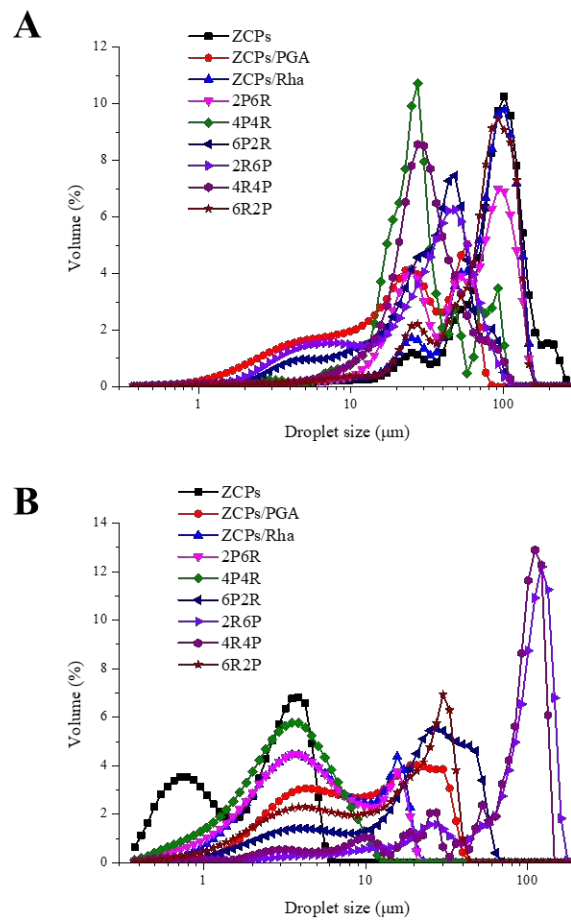


Fig. S3 Size distribution of different Pickering emulsions after gastric digestion (A); size distribution of different Pickering emulsions after small intestinal digestion (B).