Electronic Supplementary Material (ESI) for Soft Matter.

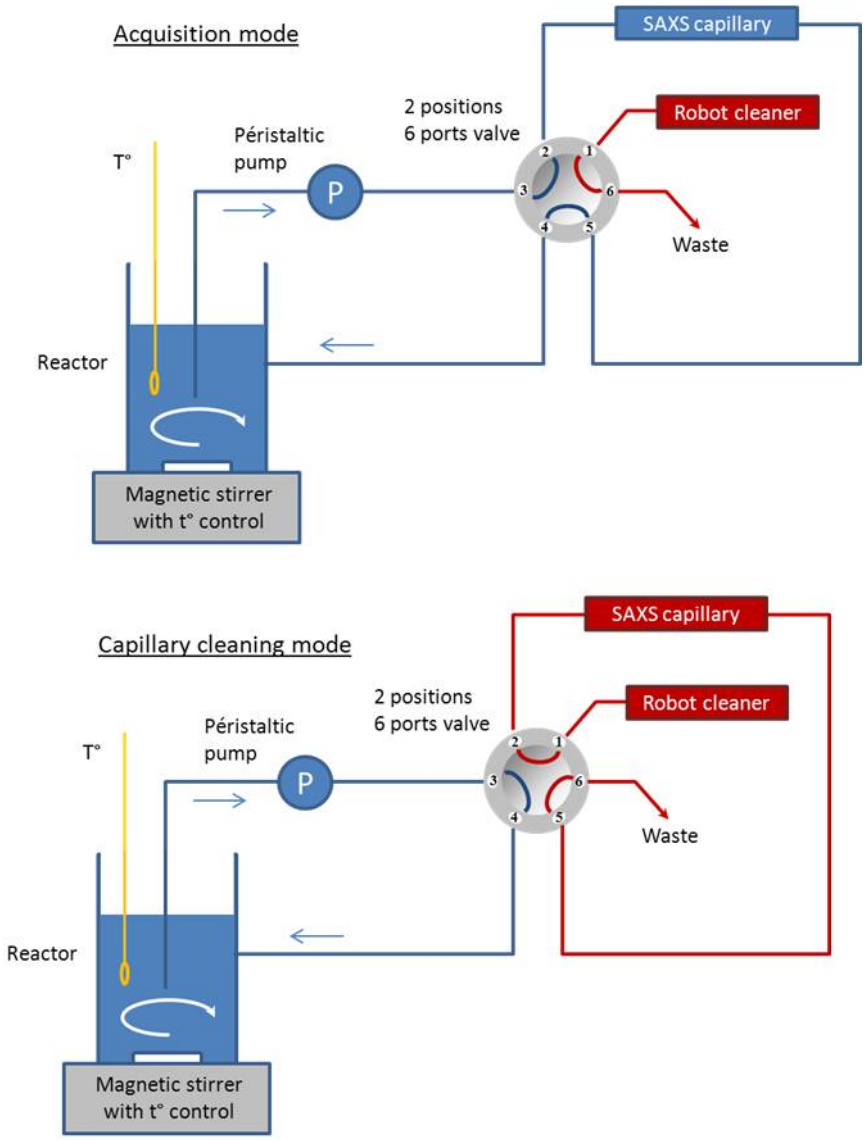

Figure S1: Schematic of the *in vitro* digestion setup coupled to the SAXS capillary.

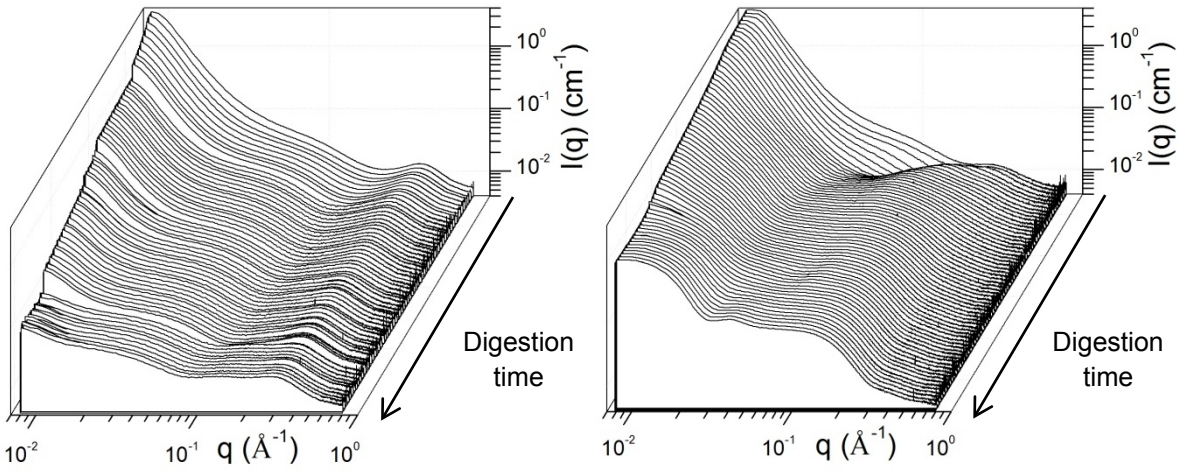

Figure S2: Full data for the spatiotemporal SAXS profiles (background is not subtracted) of TC-BLG (left) and TO-BLG (right) emulsions during *in vitro* intestinal digestion. The first digestion profile was obtained 100 s after the digestive fluid injection, then the normal time step was 20 s (see fig. 2 for exceptions).

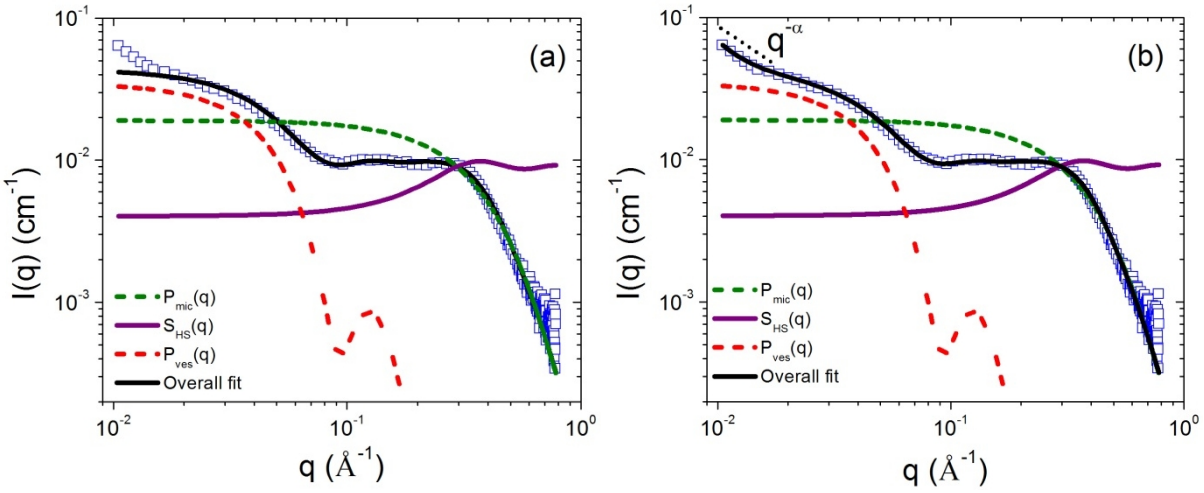

Figure S3: Background subtracted SAXS intensity profiles for TC emulsion stabilized by BLG after 2440 s of the digestion experiment (blue square). The green dotted line indicates the form factor of spherical micelles (P_{mic}) with a radius R_{mic} of 13 Å. The hard sphere structure factor arising from the micelles, $S_{HS}(q)$, is indicated by the purple line. The red dotted line corresponds to the form factor of vesicles (P_{ves}) of inner radius R_{ves} of 69 Å and 16 Å shell thickness (dR_{ves}). The maximum at q ≈ 0.13 Å^{-1} in the experimental data is well-represented by the primary oscillation of the form factor of vesicles. The black line corresponds to the best fit obtained on the basis of equation 9 (a) or equation 10 (b).

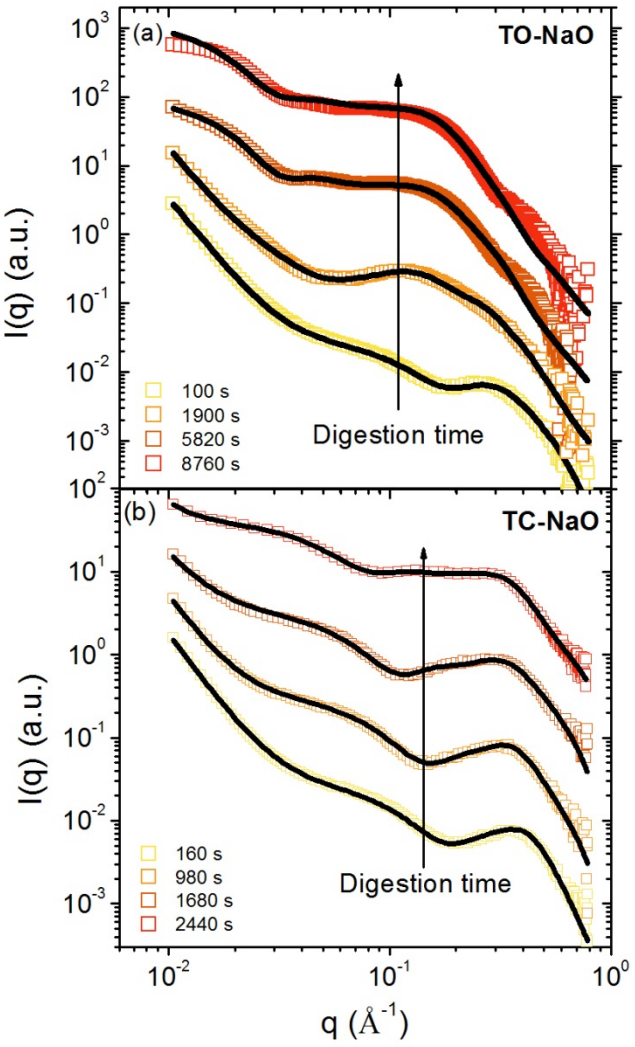

Figure S4: Background subtracted SAXS intensity profiles at selected times during the digestion of the NaO emulsions. Successive curves are multiplied by a factor of 10 for clarity. The continuous black line represents the best fit by combining a spherical form factor, a vesicle form factor, a hard sphere repulsion structure factor and a power law.

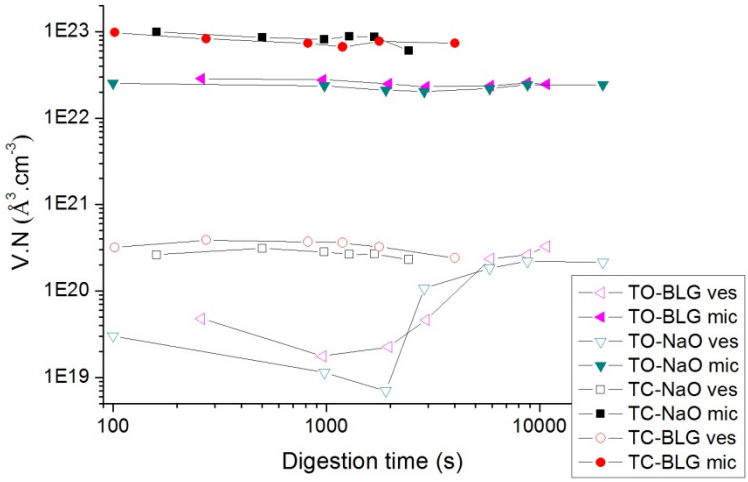

Figure S5: Evolution of the total volume of micelles and vesicles per unit dispersion volume during digestion for all systems (parameters obtained from equation 10 fitting).