Electronic Supplementary Material (ESI) for Soft Matter.

Supporting Information

Interactions between stabilized droplets of different phases in the same continuous phase of an aqueous three-phase systems

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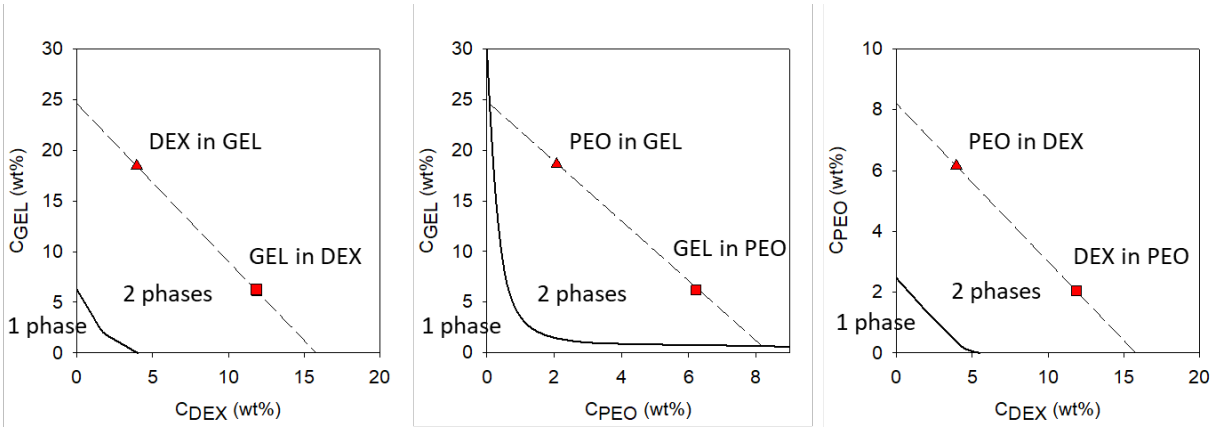

Figure S1. Phase diagram of the GEL-DEX (left), GEL-POE (center) and DEX-PEO (right) used for this study. The solid line represents the binodal. The triangles and squares show the compositions of the emulsions used in this study situated on the tie lines indicated by the dashed lines.

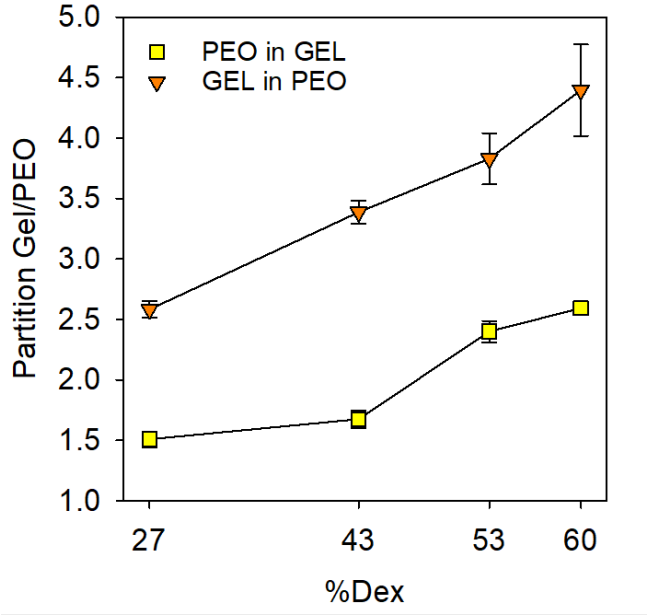

Figure S2. Partition of MG in P/G and G/P emulsions as a function of the weight fraction of DEX in the MG at pH7 at 20°C. Averages over at least 10 droplets and standard deviations are shown.

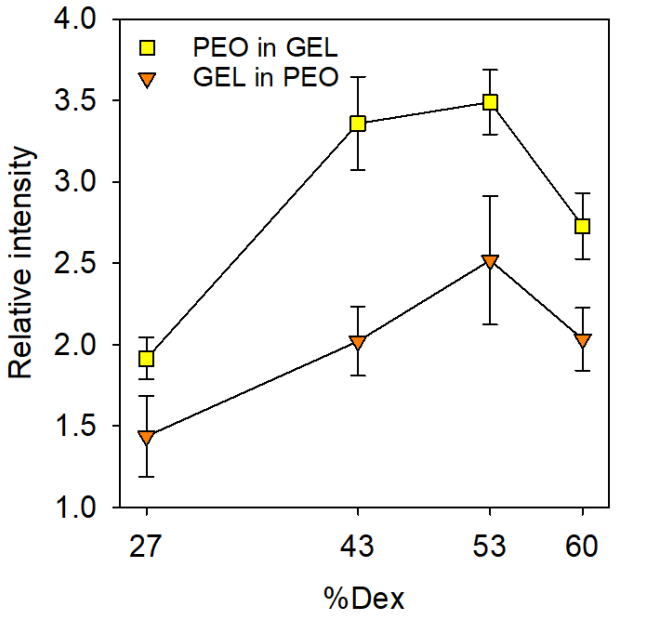

Figure S3. Excess fluorescence intensity at the interface of droplets compared to that in GEL phase as a function of fraction of DEX (at 20°C). Averages over at least 10 droplets and standard deviations are shown.

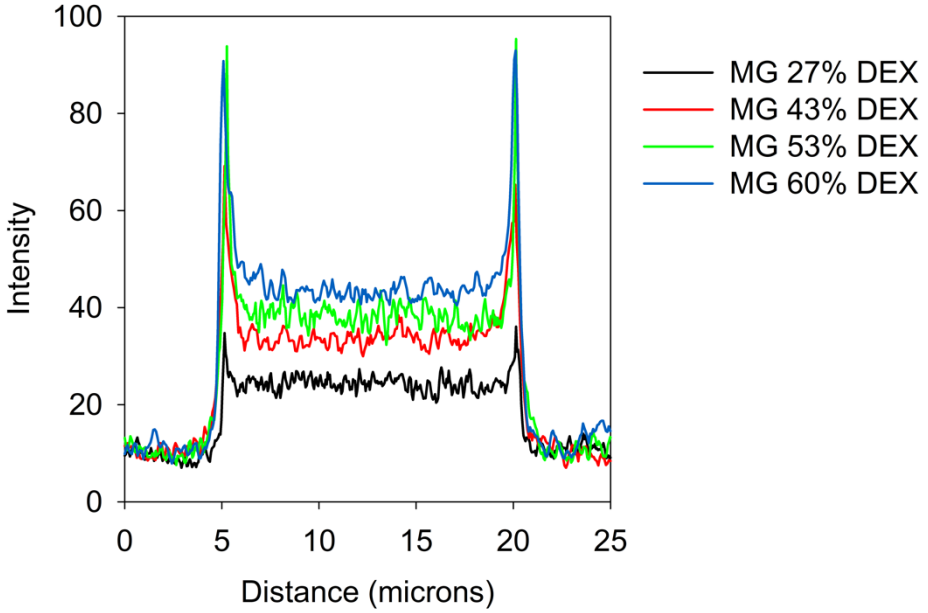

Figure S4. Fluorescence intensity profiles of different neutral MG throughout the droplets in G/P emulsion

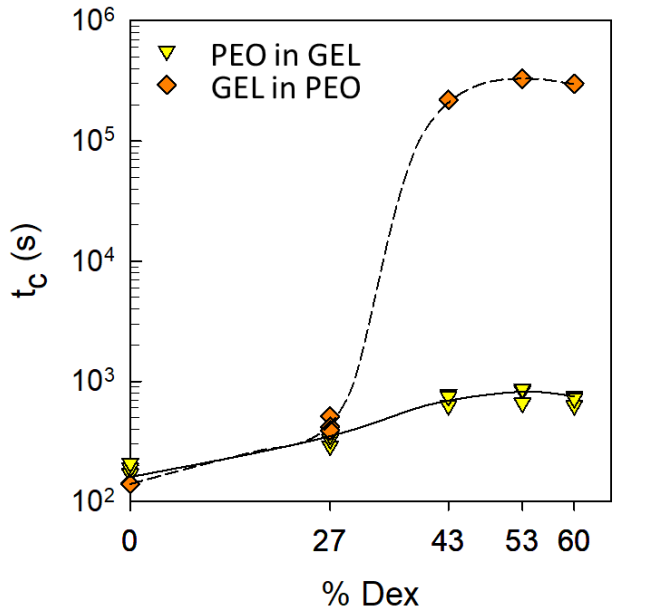

Figure S5. Characteristic destabilization times of P/G and G/P emulsions at pH7 with neutral MG as a function of the DEX weight fraction in the MG.

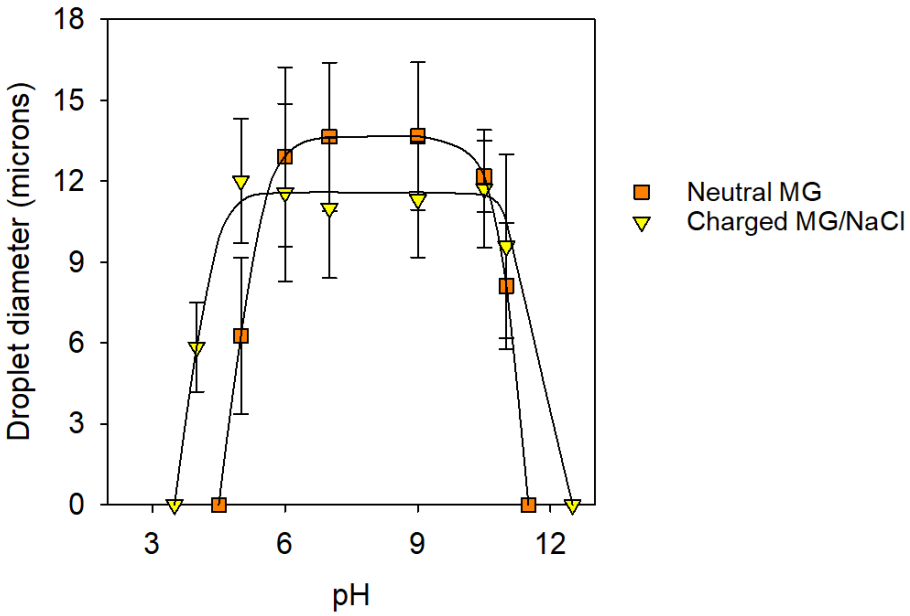

Figure S6. Droplet size of GP emulsions stabilised by neutral MG (53%DEX) and charged MG/NaCl as a function of pH.

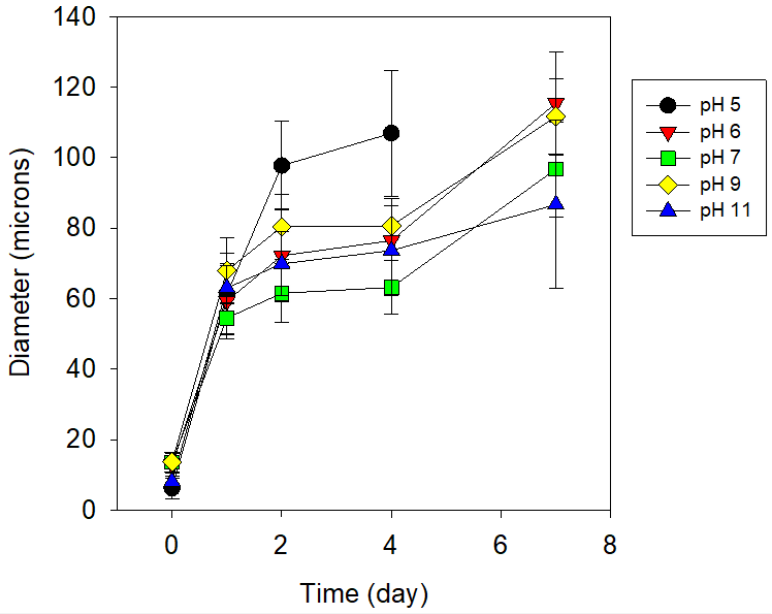

Figure S7. Evolution of droplet size in GP emulsions stabilised by neutral MG (53% DEX) at different pH as a function of time.

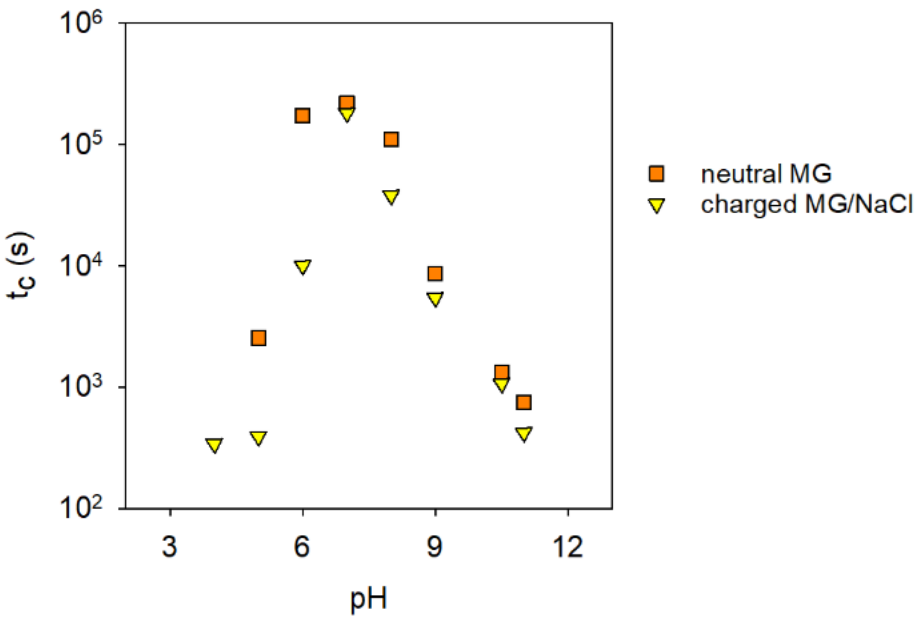

Figure S8. Characteristic destabilization times of G/P emulsions with neutral MG in water or charged MG in 100mM NaCl as a function of the pH.

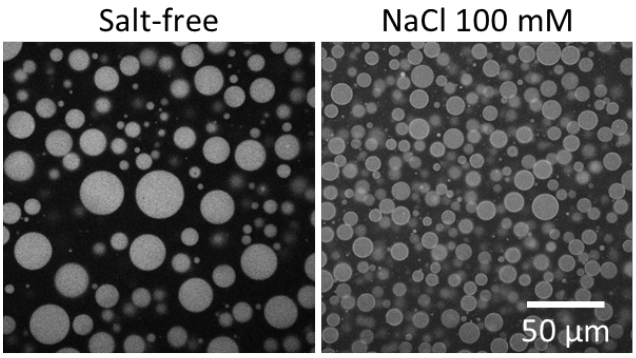

Figure S9. CLSM images of emulsions of G/P emulsions at pH7 stabilized by charged MG in water and NaCl.

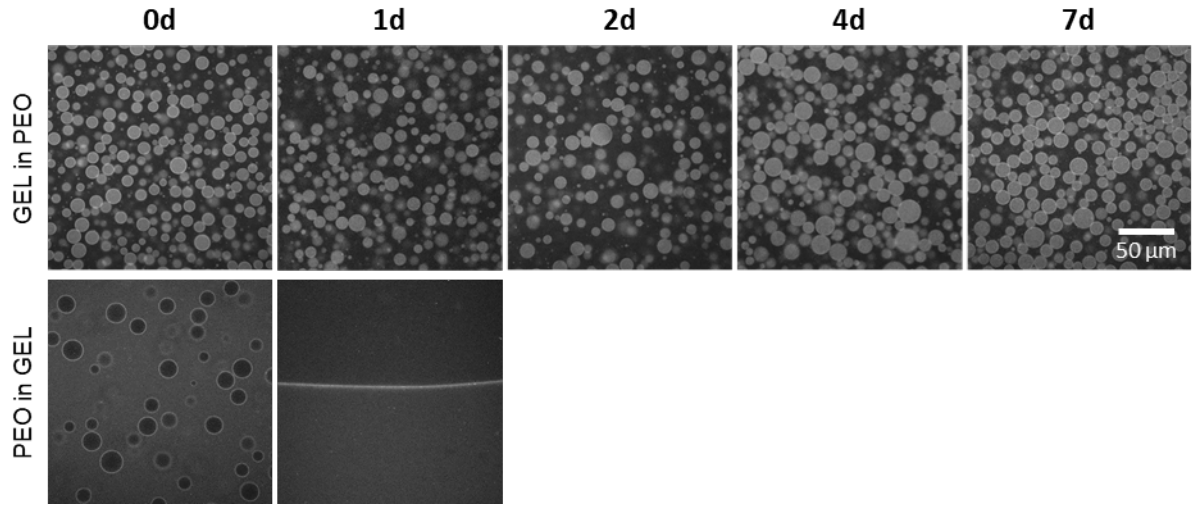

Figure S10. CLSM images of G/P and P/G emulsions at pH7 stabilized by charged MG in NaCl 100 mM as a function of time.

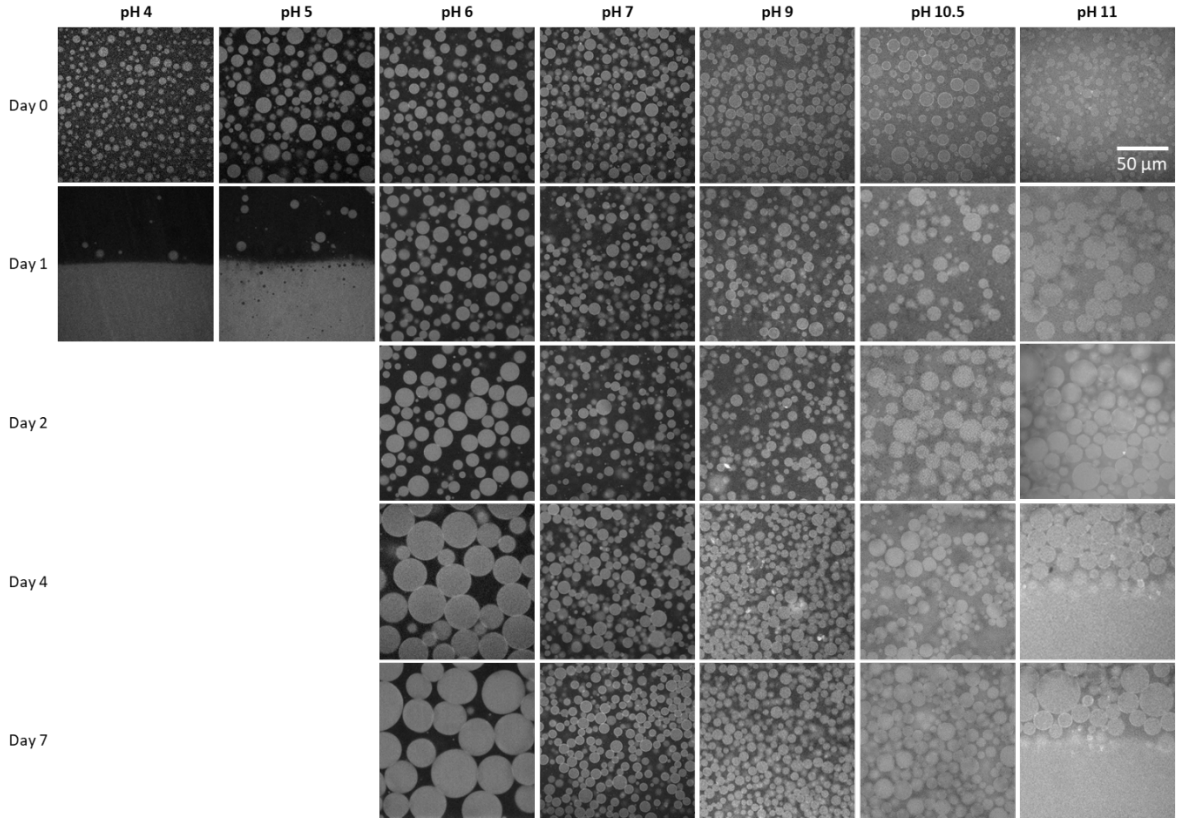

Figure S11. CLSM images of G/P emulsions at different pH stabilized by charged MG as a function of time as indicated in the figure.

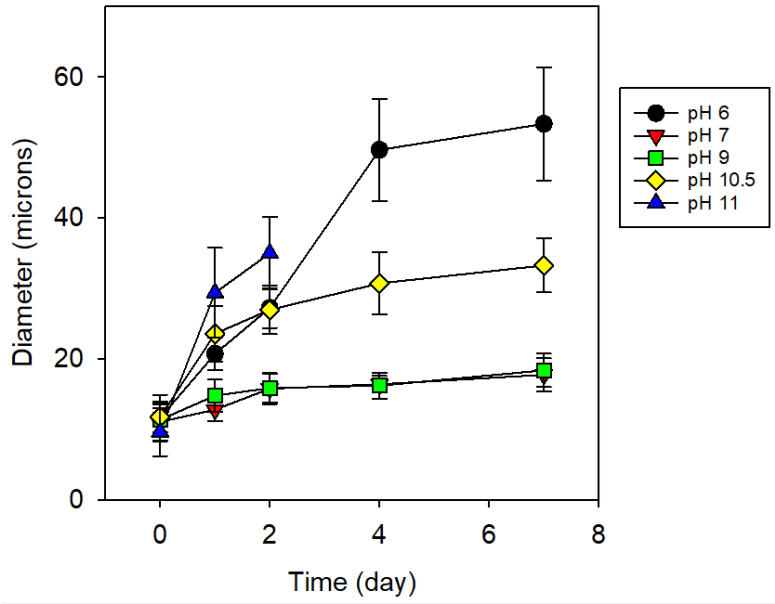

Figure S12. Evolution of droplet size in GP emulsions stabilised by charged MG/NaCl at different pH as a function of time.

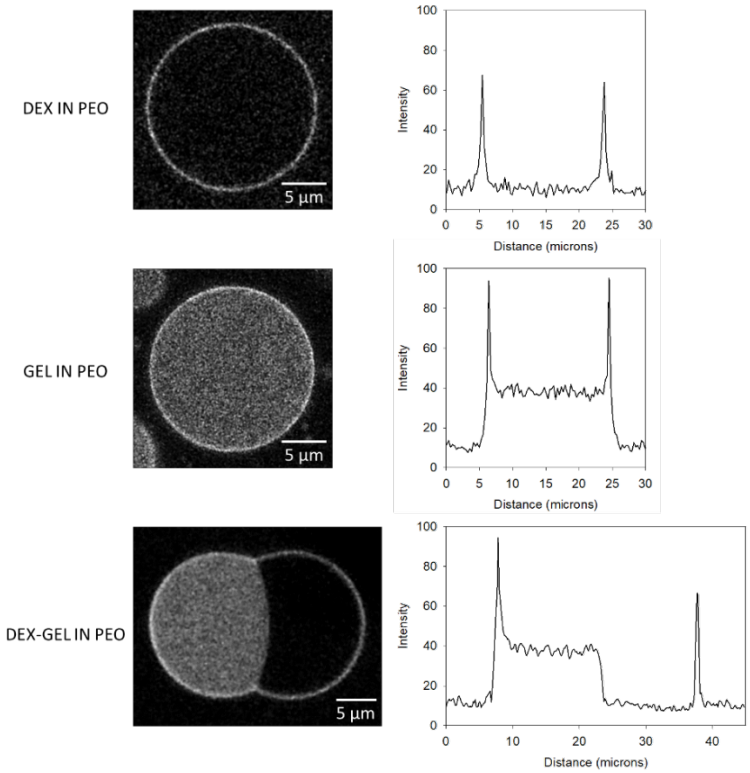

Figure S13. Fluorescence intensity profiles of neutral MG (53%DEX) throughout DEX and GEL droplets before and after coalescence.

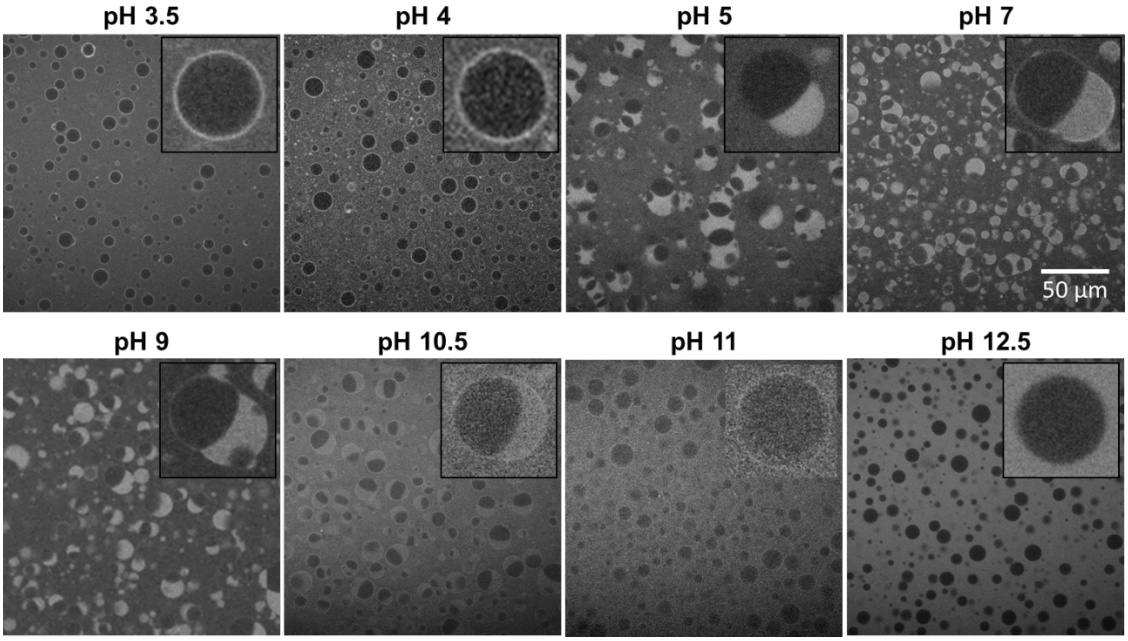

Figure S14. CLSM images of emulsions of DEX, POE, GEL at pH7 stabilized by charged MG in salt at different pH.

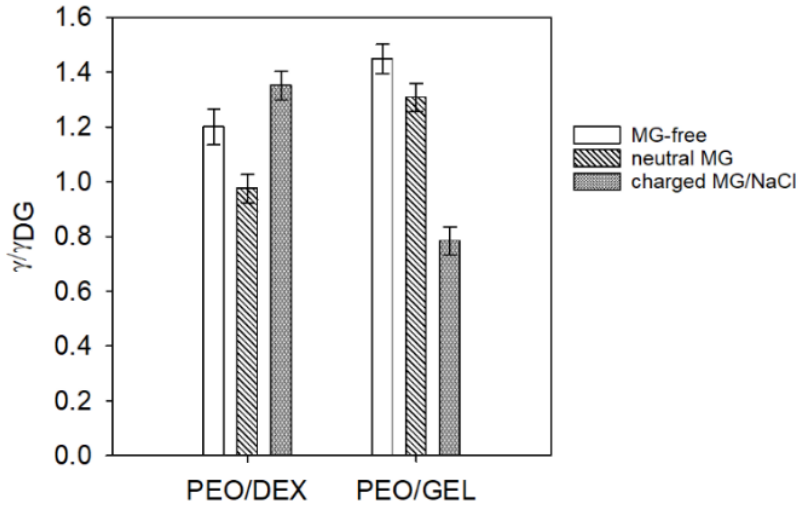

Figure S15. Interfacial tension of the bare PEO/DEX and PEO/GEL interfaces and the interfaces covered with neutral MG or charged MG in the presence of 0.1 M NaCl.

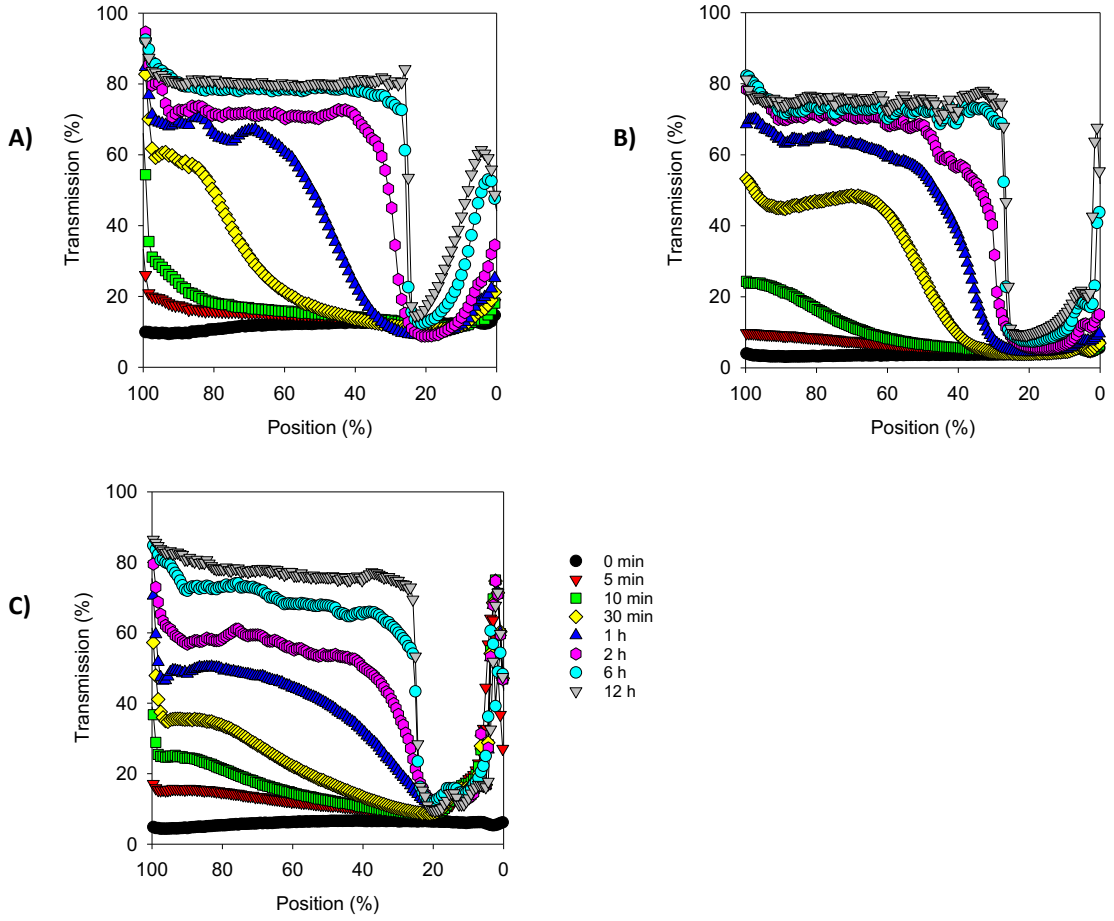

Figure S16. Transmission profiles of D/P (A), G/P (B), DG/P (C) at pH 7 during centrifugation in the presence of neutral MG.

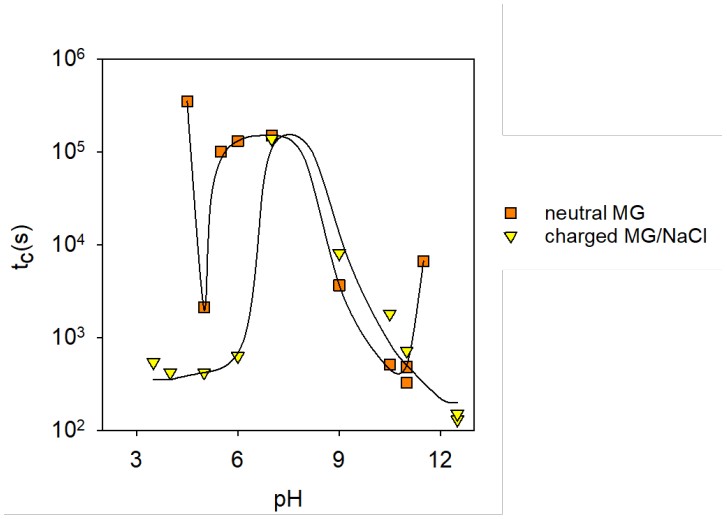

Figure S17. Characteristics times of the triphasic emulsions stabilized by neutral MG and charged MG in NaCl as a function of pH.

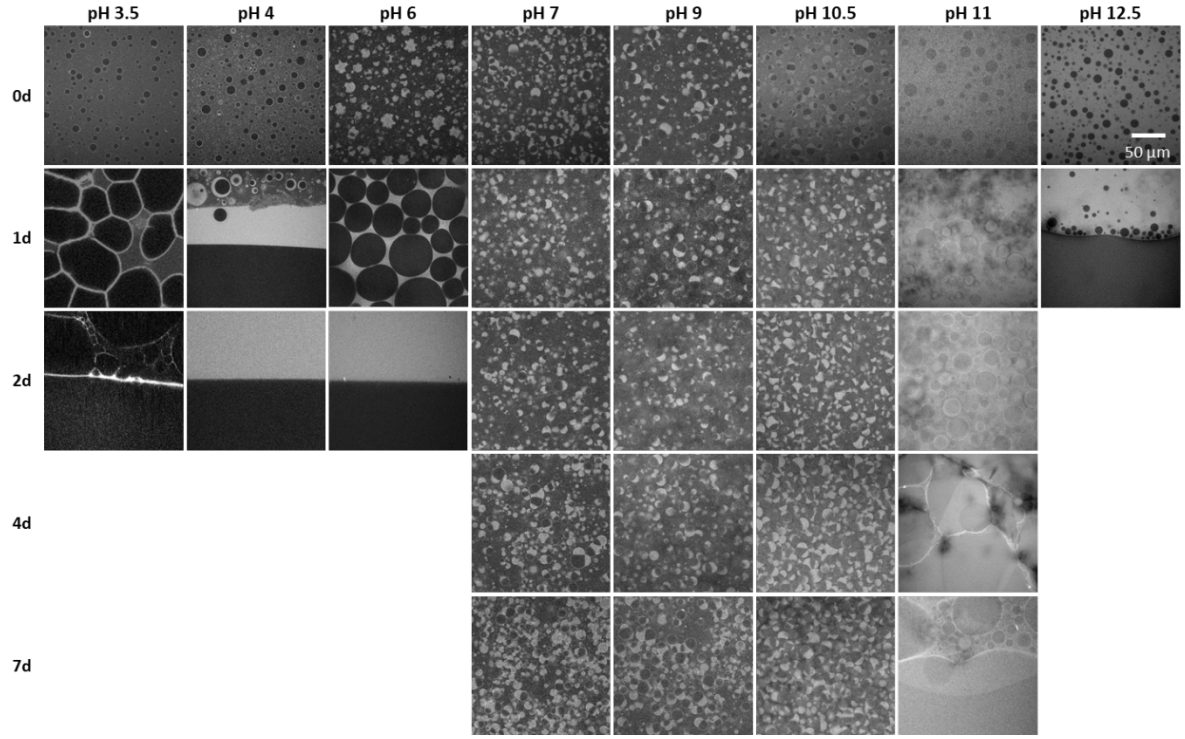

Figure S18. CLSM images of DG/P emulsions with charged MG at different pH and ageing time as indicate in the figure.