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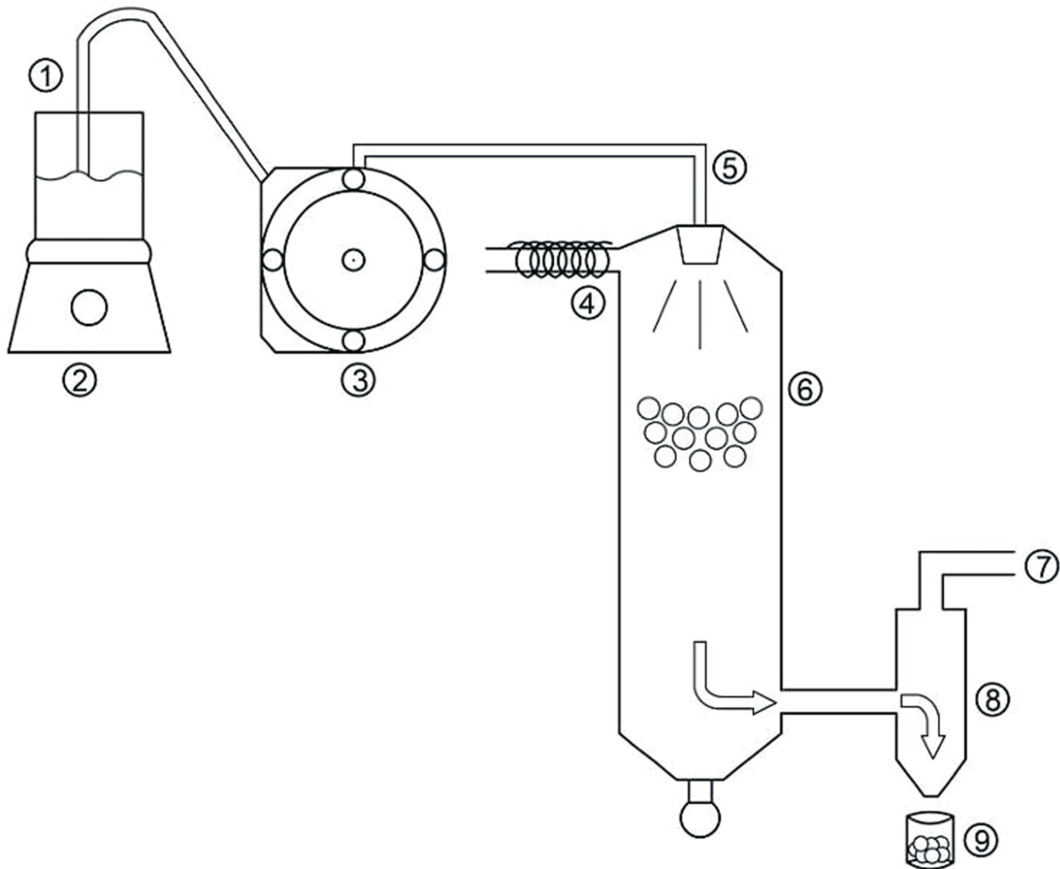


Fig. S1. Representative scheme of the spray-drying microencapsulation process, where: 1=feeder, 2=magnetic stirrer, 3=peristaltic pump, 4=hot air/gas inlet, 5=atomizer nozzle, 6=drying chamber, 7=gas extractor, 8=cyclone, and 9=particle collector

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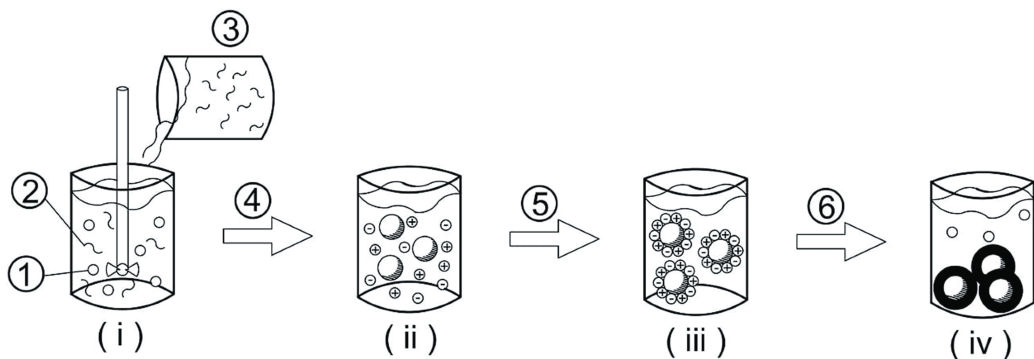


Fig. S2. Formation of the complex coacervation involving four steps: (i) preparing an aqueous solution of two or more polymers and mixing the hydrophobic phase with the aqueous solution of a polymer, often a protein solution, and homogenizing the resulting mixture in order to produce a stable emulsion, where: 1=oil dispersed in the emulsion, 2=first solubilized polymer, 3=second solubilized polymer, (ii) pH change, where each polymer assumes its respective effective charges, where: 4=pH adjustment, (iii) change in temperature to a certain value necessary to induce coacervation and phase separation, where: 5=refrigeration, and (iv) polymer hardening using high temperature, desolvation agent or crosslinker: 6=precipitation of coacervates

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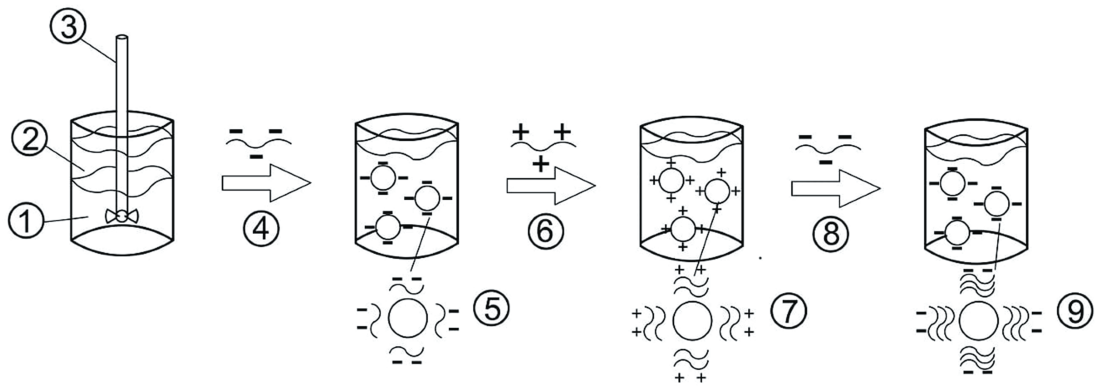


Fig. S3. Production steps for the electrostatic layer-by-layer deposition, where: 1=water, 2=oil, 3=agitation, 4=emulsifier, 5=primary emulsion, 6=polymer I, 7=secondary emulsion, 8=polymer II, and 9=tertiary emulsion

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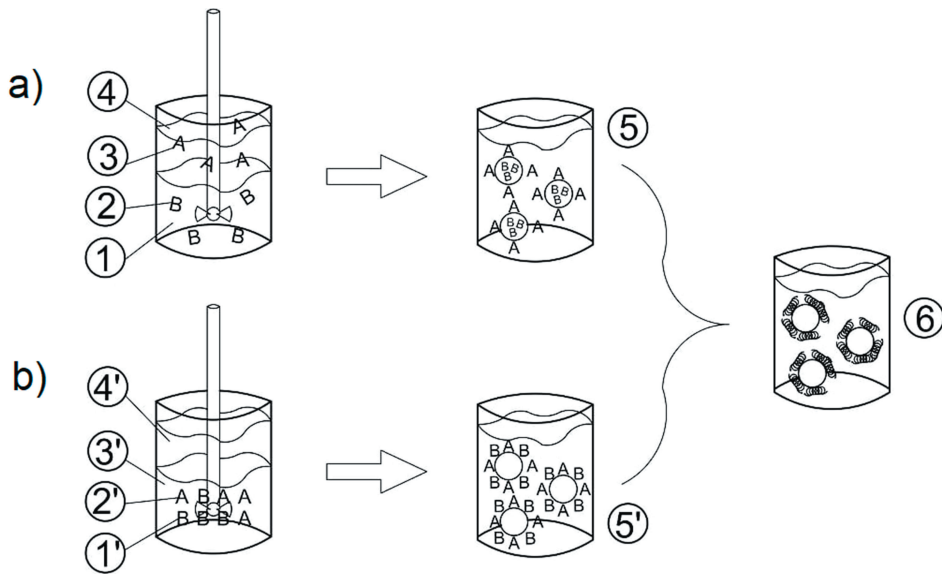


Fig. S4. Microencapsulation by polymerization: a) interfacial, where: 1=aqueous solution (hydrophilic phase), 2=monomer B, 3=monomer A, 4=oil (lipophilic phase), 5=diffusion of monomers to the interface, and 6=polymerization reaction and matrix formation, and b) *in situ*, where 1'=monomer B, 2'=monomer A, 3'=aqueous solution (hydrophilic phase), 4'=oil (lipophilic phase), 5'=dissolving the monomers in the continuous phase, and 6=polymerization reaction and matrix formation