

## **Biomimetic and biofunctional polymersomes: from nanomedicine to protocells**

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We report here an overview on the self-assembly in water of amphiphilic block copolymers developed in our laboratory into different nanomedicines, mainly focusing on polymer vesicles, also referred as polymersomes, and their applications in nanomedicine, biomaterials and artificial cells.

We pay special attention to polysaccharide, polypeptide and protein-based block copolymer vesicles. We developed over the last years synthetic strategies for the design of glycosylated polypeptides and polysaccharide-polypeptide biohybrids with controlled placement of sugar functionality. We were especially interested in designing amphi