



Protein-polymer bioconjugates: Giant soaps acting as nanoreactors

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Due to their widespread utility in medical applications, biotechnology, and nanotechnology, protein-polymer conjugates are in the forefront of chemical research¹. During the last decades they have been conventionally prepared by conjugation of functionalized polymers to biomolecules through covalent and/or bioaffinity bindings¹. These often involve multiple synthetic steps of chemical modification and purification which significantly limit their applicability. We envisioned though that *Giant Amphiphiles*², a subclass of such bioconjugates exhibiting interesting aggregation properties, would be ideal for our studies aiming at the creation of multifunctional nanoassemblies.

The design and successful application of two novel synthetic strategies eliminating the intrinsic problems of their synthesis and quantitatively leading to families of such bioconjugates will be presented³. During the study of these chimeric conjugates we observed interesting aggregation patterns and, more importantly, were able to *in-situ* create multifunctional nanocontainers. Their characteristics and first applications will be discussed.

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2. (a) K. Velonia; A.E. Rowan; R.J.M. Nolte. *J. Am. Chem. Soc.* **2002**, *124*, 4224. (b) J.M. Hannink; J.J.L.M. Cornelissen; J.A. Farrera; P. Foubert; F.C. De Schryver; N.A.J.M. Sommerdijk; R.J.M. Nolte. *Angew. Chem. Int. Ed.* **2001**, *40*, 4732.
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