**Microbial glycolipid biosurfactants: from self-assembly in water to hydrogels and solid foams**

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Soft materials (hydrogels, coacervates…) are largely applied in many fields, from thickeners, to drug encapsulation, wound healing, etc... In the field of wound healing, for instance, soft self-assembled materials are not intrusive and unpleasant, as often found when polymeric scaffolds1 are used. In this sense, molecular self-assembly is an interesting alternative, provided the biocompatibility of the selected compounds. Microbial glycolipid biosurfactants, obtained from the fermentation of renewable resources, are a new class of compounds, the interest of which is their biodegradability and low cytotoxicity. However, their self-assembly properties are still poorly known2,3 and their applications in the field of soft matter practically not existing.

This contribution discusses the latest advances in terms of self-assembly properties of selected microbial glycolipids biosurfactants, which can form self-assembled fibers and bilayers. These complex, often out-of-equilibrium, phases can be used to form fibrillar and lamellar hydrogels,4 complex coacervates,5 and even porous 3D soft scaffolds.6



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