

## **Fabrication of polyesters nanoparticles with green solvents and reagents**

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Nanoparticles are an efficient mean to deliver drugs or bioactive molecules in a living organism. In this work, biodegradable and biocompatible poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) (PHBH) was used to produce nanoparticles by a one-pot method without the use of toxic organic solvents and the addition of surfactants. PHBH was first aminolyzed with choline taurinate, a safe biocompatible ionic liquid, in an ethyl acetate/ethanol mixture. The reaction leads to the formation of oligomers which, thanks to the terminal sulfonate group, by adding water acted as a surfactant capable of stabilizing an oil-in-water emulsion. The nanoparticles were loaded with hydrophobic usnic acid, used as model drug, and its release in water was studied. The overall nanoparticle preparation and drug loading procedure is simple and relies on the use of green non-toxic solvents and reagents and can be easily exploited for other formulations.