

Generation of mucinated cellulosic microfibers by mucin and microcrystalline cellulose hybridization; potentials for nanomedicine

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Abstract

In this study generation of mucinated cellulosic microfibers was achieved by mixing of mucin (Mc) dispersion with solubilized microcrystalline cellulose (MCC) and recovered with acetone at controlled temperature conditions. Some physicochemical, functional and thermal properties of the new polymer moiety of mucin-cellulose (Mc-MCC) were determined using SEM, DSC, FTIR, etc. The generated polymer has high equilibrium swelling ratio and swelling time, and moisture sorption. This system when electrospun as nanofibers may have potential application in nanomedicine for drug delivery, scaffolds for tissue engineering, or provide support for bone repair.

Keywords: Mucin, cellulose, mucin-cellulose microfiber

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