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Mesoporous Nanocomposites for Sustained Release Applications

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Abstract : Our present work is related to the synthesis, characterization and applications of new nanocomposite materials based on silica mesoporous nanocompozites systems. The nanocomposite support was obtained by using a specific step–by–step multilayer structure buildup synthetic route, characterized by XRD (X-Ray Difraction), TEM (Transmission Electron Microscopy), FT-IR (Fourier Transform-Infra Red Spectrometry), BET (Brunauer–Emmett–Teller method) and loaded with Salvia officinalis plant extract obtained by a hydro-alcoholic extraction route. The sustained release of the target compounds was studied by a modified LC method, proving low release profiles, as expected for the high specific surface area support. The obtained results were further correlated with the in vitro / in vivo behavior of the nanocomposite material and recommending the silica mesoporous nanocomposites as good candidates for biomedical applications. Acknowledgements: This study has been funded by the Research Project PN-III-P2-2.1-PTE-2016-0160, 49-PTE / 2016 (PROZECHIMED) and Project Number PN-III-P4-ID-PCE-2016-0884 / 2017.

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