

**DRUG LOADING AND RELEASE DISSOLUTION TESTS USING AS CARRIERS,
FUNCTIONALIZED MESOPOROUS SILICA**

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Abstract

Functionalised mesoporous silica particles were synthesized by sol-gel method, starting from mixed silica precursors, tetraethoxysilane and mercaptopropyltriethoxysilane. Subsequently, they were evaluated as carriers for a drug loading, the clotrimazole, and they demonstrated enhanced drug loading capacity. The loaded carriers were also tested for their release behaviour in different buffered solutions with different pH values, by using a dissolution instrument. The cumulative percent of drug release in hydrochloric acid solution 0.1 N, was 45.07 % after 6 hours of release. The best results concerning the drug release in different buffered solutions were obtained when the same buffer was used for the drug entrapment as well for the drug release, compared with the carriers loaded with drug in ethanol. The percent of drug release in acidic buffered solution of pH= 2 was constantly in the 51-91 % range of release and of pH= 4.5 was constantly in the 11-20 % range of release. The percent of drug release has been evaluated during more then 3 hours.

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References

[1] L. Almásy, A.-M. Putz, Q. Tian, G.P. Kopitsa, T.V. Khamova, R. Barabás, M. Rigó, A. Bóta, A. Wacha, M. Mirica, B. Tăranu, C. Savii, J. Serb. Chem. Soc. 84(9), (2019) 1027-1039.