Intercalation of metformin in montmorillonite by E.P. Rebitski et al.

Supplementary Information

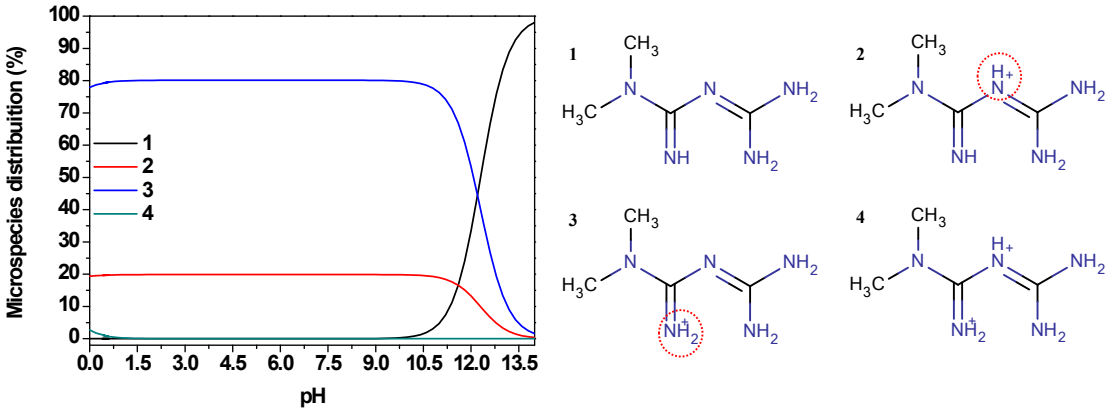

Fig. S1. Graphic (left) showing the percentage of the various protonated species of the metformin molecule, whose structures are represented on the right, stable at different pH values (obtained by simulated calculations with the MarvinSketch program 6.1.5 software).

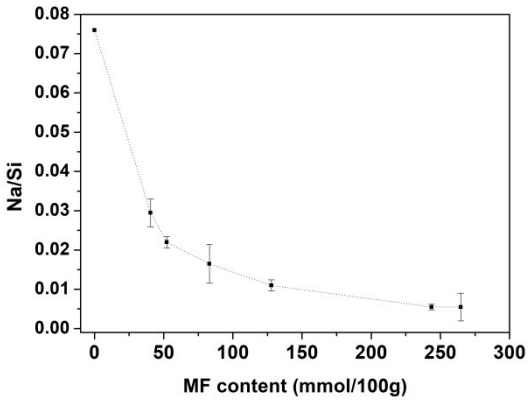

Fig S2. Evolution of the Na/Si ratio in samples with different amount of adsorbed MF on Na-montmorillonite (samples from the adsorption isotherm study). Values are deduced from EDX measurements, obtained sodium to silicon ratios in atomic % and represented as a function of MF content in mmol per 100 g of the composite.

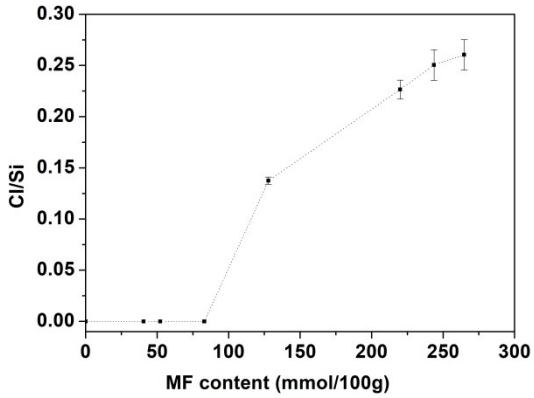

Fig. S3. Content in chloride in samples with different amount of adsorbed MF on Na-montmorillonite (samples from the adsorption isotherm study, i.e., without washing). Values are deduced from EDX measurements, obtained chloride to silicon ratios in atomic% and represented the function of MF content in mmol per 100 g of the composite.

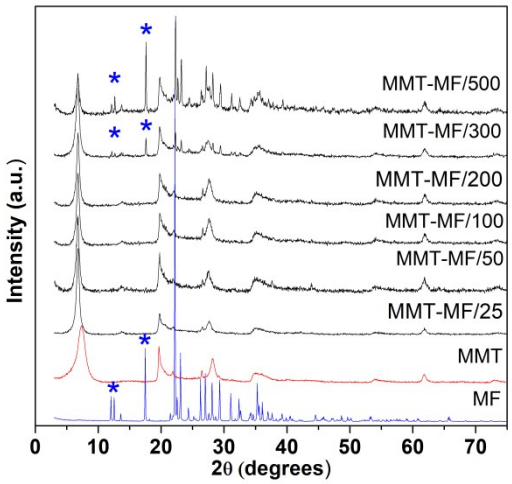

Fig. S4. X-ray diffraction patterns of metformin (MF), Na-montmorillonite (MMT) and various MMT-MF hybrids obtained after adsorption of MF at different equilibrium concentrations without further washing (the actual MF content in each sample is indicated in Table 1).

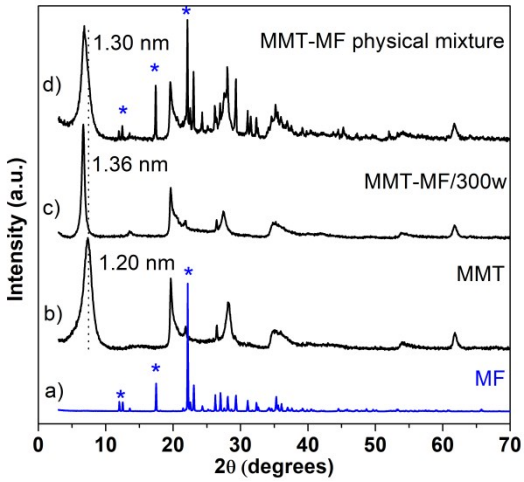

Fig. S5. X-ray diffraction patterns of MF (a), MMT (b), MMT-MF/300w hybrid (c) and the physical mixture MMT-MF with a content in MF similar to MMT-MF/300w sample (d).

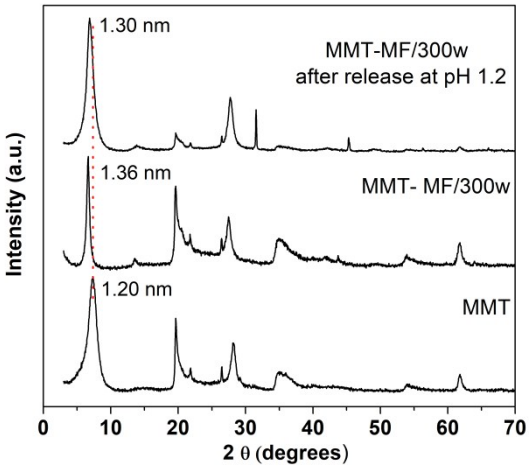

Fig. S6. X-ray diffraction patterns of neat MMT and of MMT-MF/300w sample before and after its use in drug release experiments carried out at pH 1.2.

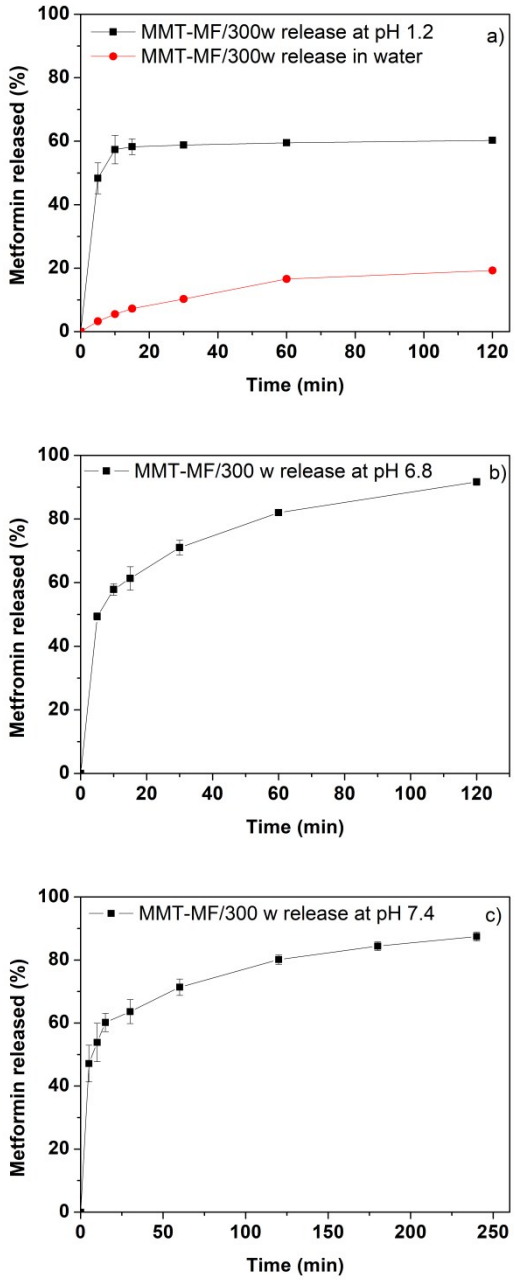

Fig. S7. Percentage of MF released from the MMT-MF/300w intercalation compound: (a) in pure water and at pH 1.2; (b) at pH 6.8, and (c) at pH 7.4.