Supporting Information

Amorphous magnesium phosphate flower-like hierarchical nanostructures: microwave-assisted rapid synthesis using fructose 1,6-bisphosphate trisodium salt as an organic phosphorus source and application in protein adsorption

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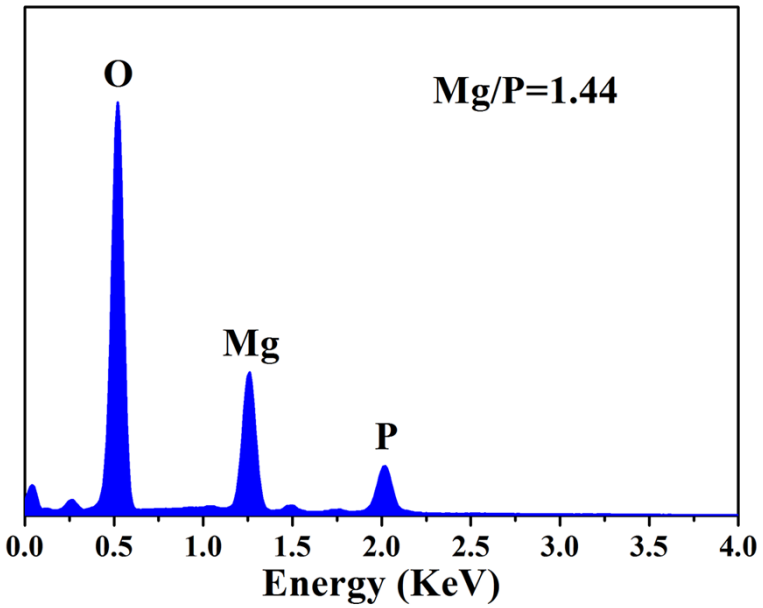

Figure S1. Energy dispersive spectrum of the AMPFHs (sample 3) synthesized using FBP as an organic phosphorus source by the microwave hydrothermal method. The molar ratio of Mg/P is 1.44 which is closed to the stoichiometric of magnesium phosphate (Mg/P=1.5).

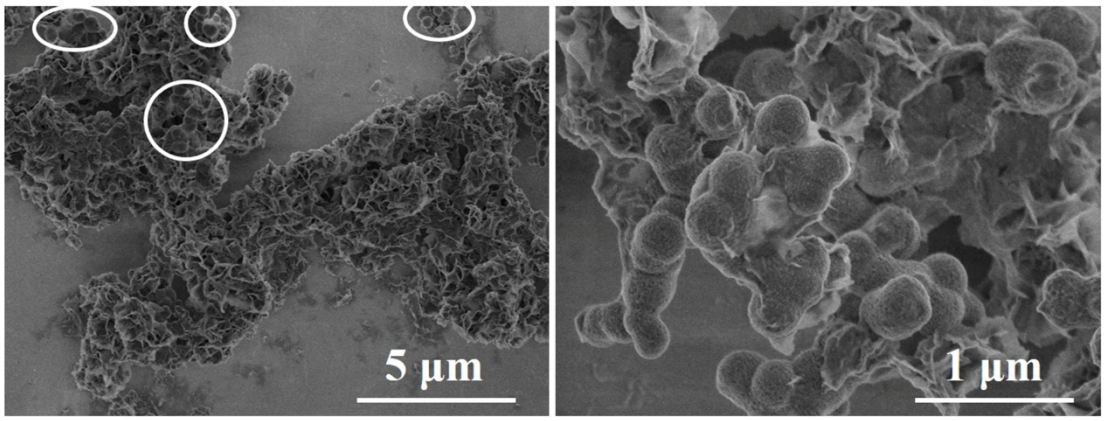

Figure S2. SEM micrographs of sample 1 synthesized using FBP as an organic phosphorus source by the microwave hydrothermal method at 100 ^{o}C for 10 min. The sample consists of amorphous magnesium phosphate flower-like hierarchical nanostructures (AMPFHNs) as the main product and amorphous magnesium phosphate microspheres as a minor product.

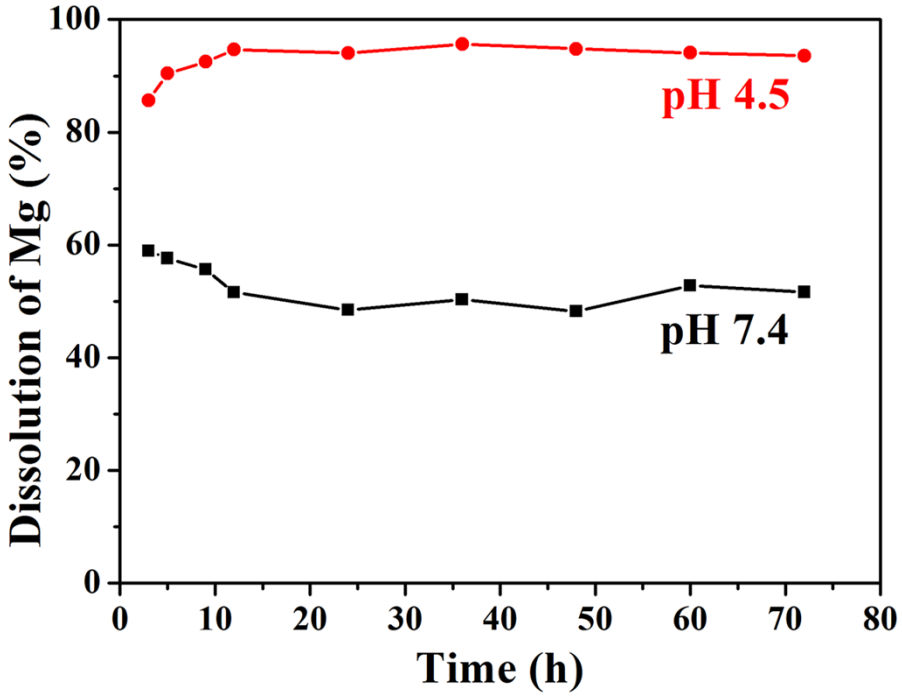

Figure S3. The dissolution percentages of Mg element after the soaking of the AMPFHNs (sample 3) in PBS solutions with different pH values. The AMPFHNs have a pH-dependent dissolution behavior.

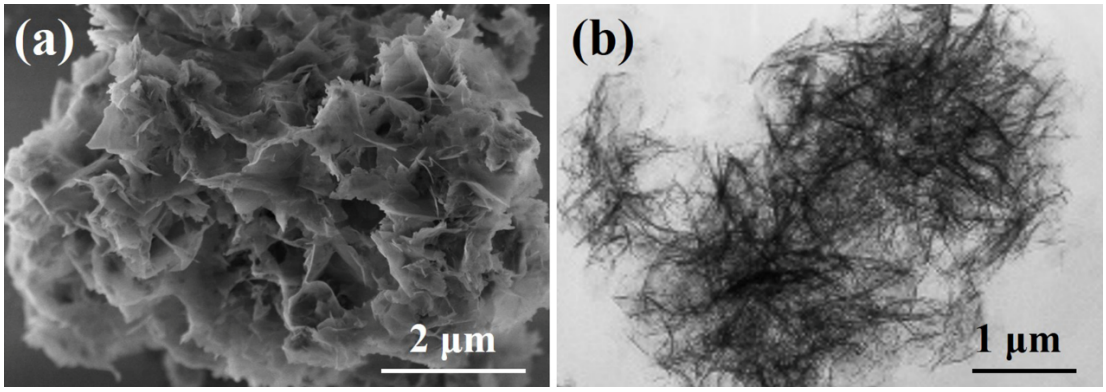

Figure S4. SEM micrograph (a) and TEM micrograph (b) of the AMPFHNs (sample 3) after soaking in PBS solution (pH 7.4) for 3 days. The structure and morphology of AMPFHNs have no obvious change after soaking in PBS solution (pH 7.4) for 3 days.

Water Contact
Angle θ=38º

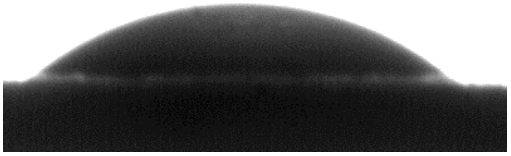

Figure S5. Water contact angle image of the disk of the AMPFHNs (sample 3). The water contact angle of the disk of the AMPFHNs is about 38º.

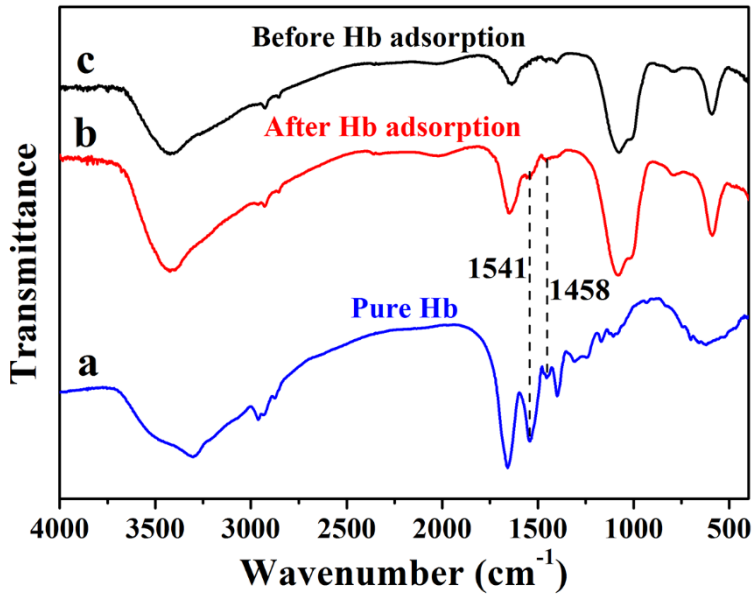

Figure S6. FTIR spectra of the pure Hb (a), and the AMPFHNs (sample 3) after (b) and before (c) Hb protein adsorption. The absorption peaks at about 1541 and 1458 cm^{-1} originate from Hb molecules, indicating that Hb molecules are adsorbed on the surface of the AMPFHNs.