

**Thermostable iron oxide nanoparticle synthesis within recombinant
ferritins from the hyperthermophile *Pyrococcus yayanosii* CH1**

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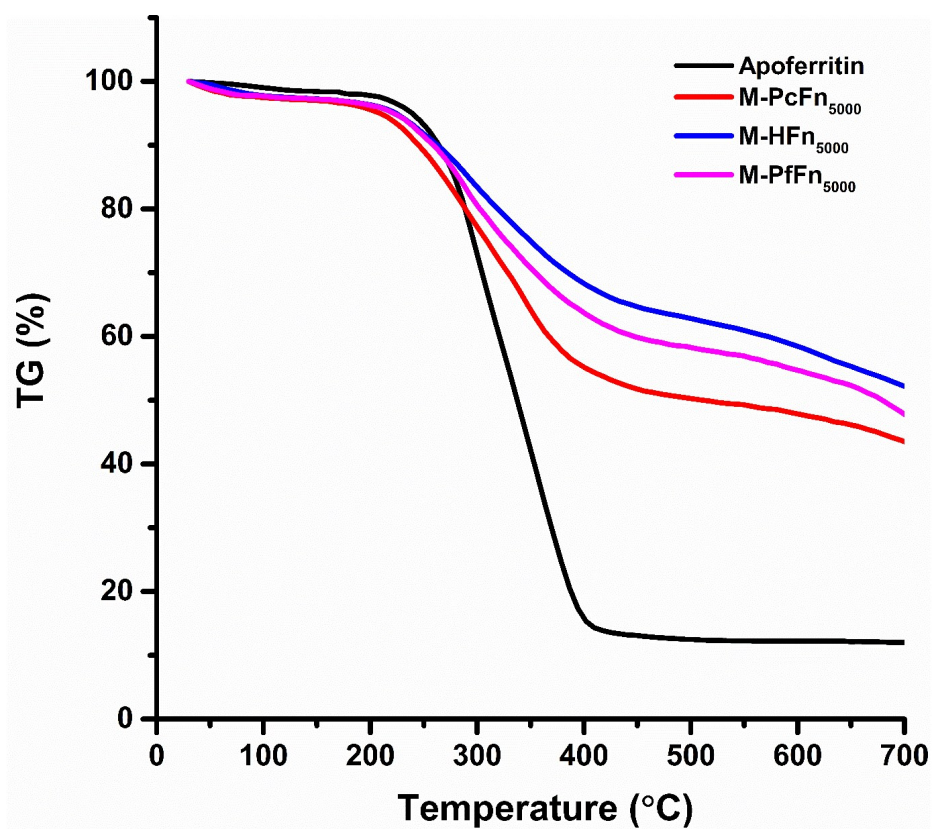


Figure S1. Thermogravimetry characterization of M-HFn₅₀₀₀, M-PfFn₅₀₀₀, and M-PcFn₅₀₀₀ nanoparticles.

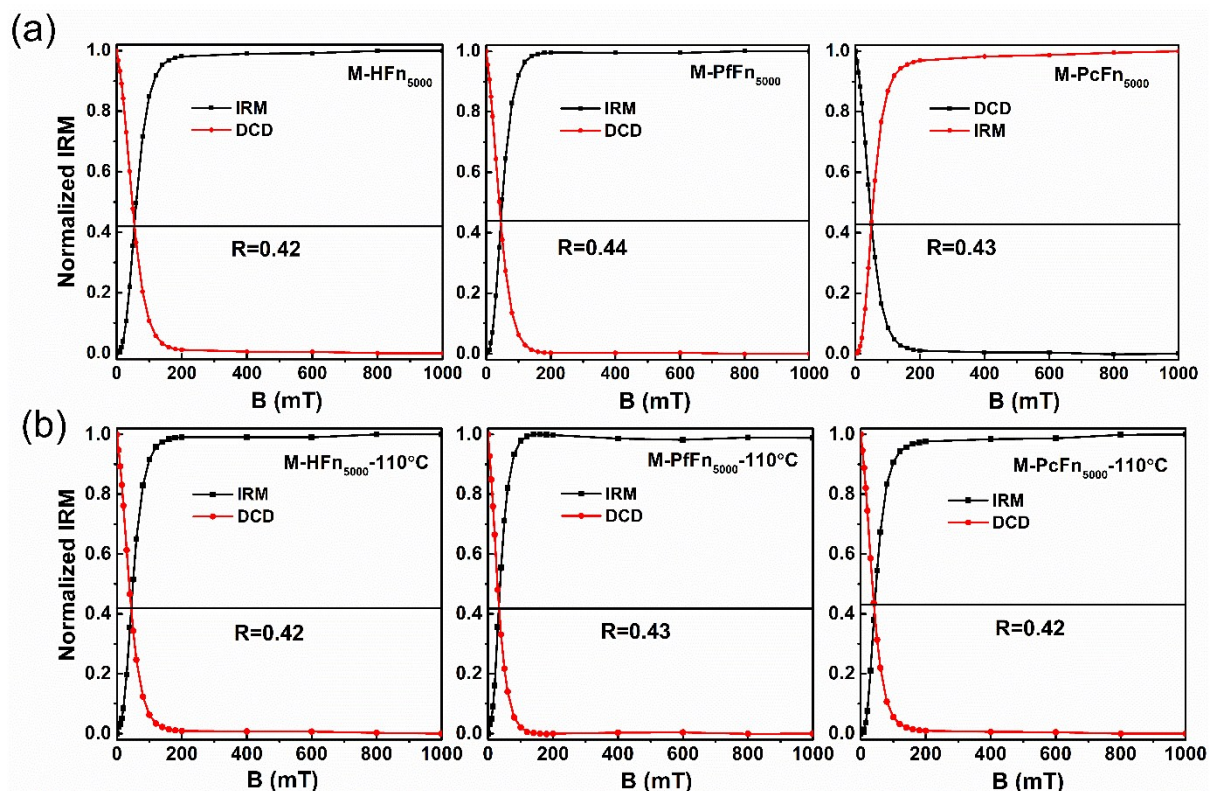


Figure S2. Remanence data of magnetoferritins measured at 5 K. Normalized isothermal remanent magnetization (IRM) acquisition and direct current demagnetization (DCD) of M-HFn₅₀₀₀, M-PfFn₅₀₀₀, and M-PcFn₅₀₀₀ particles before (a) and after (b) heating at 110 °C.

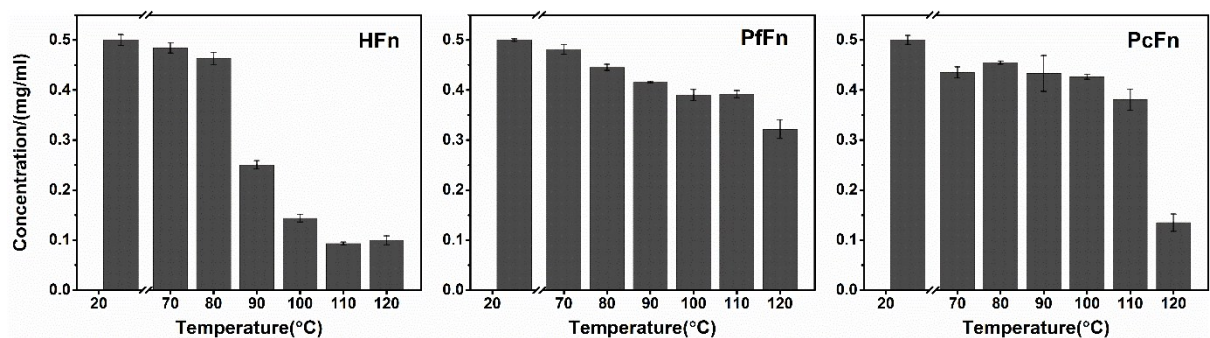


Figure S3. Protein concentrations of HFn, PfFn, and PcFn after heating by temperature gradient (control group of 25 °C, 70 °C, 80 °C, 90 °C, 100 °C, 110 °C, 120 °C)

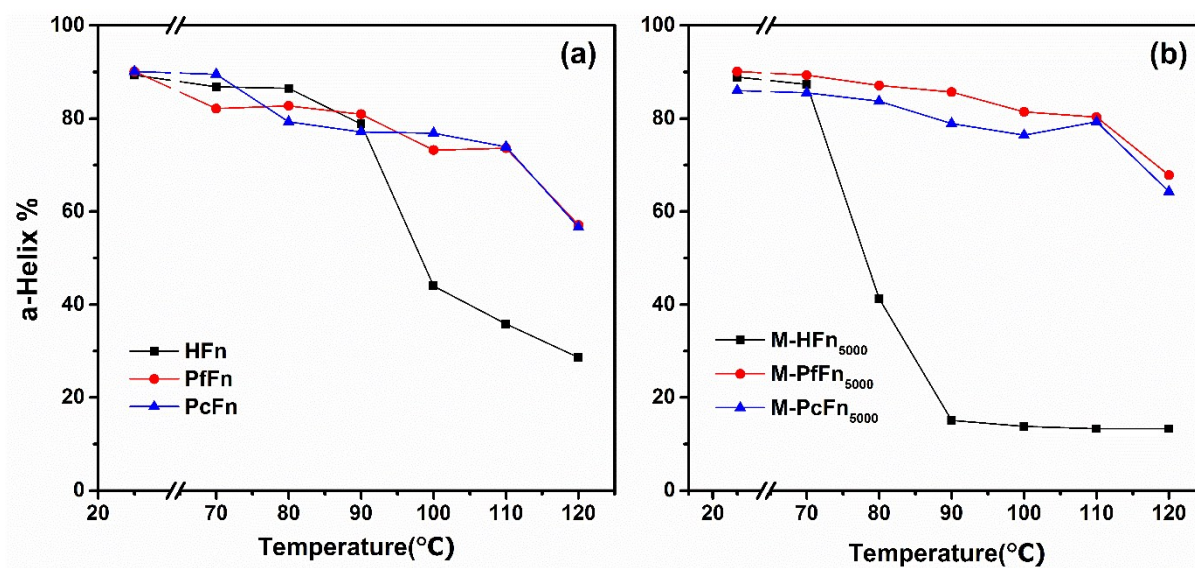


Figure S4. α -Helix content of (a) ferritins (HFen, PfFn, and PcFn) and (b) magnetoferritins (M-HFn₅₀₀₀, M-PfFn₅₀₀₀, and M-PcFn₅₀₀₀) heated at different temperatures.

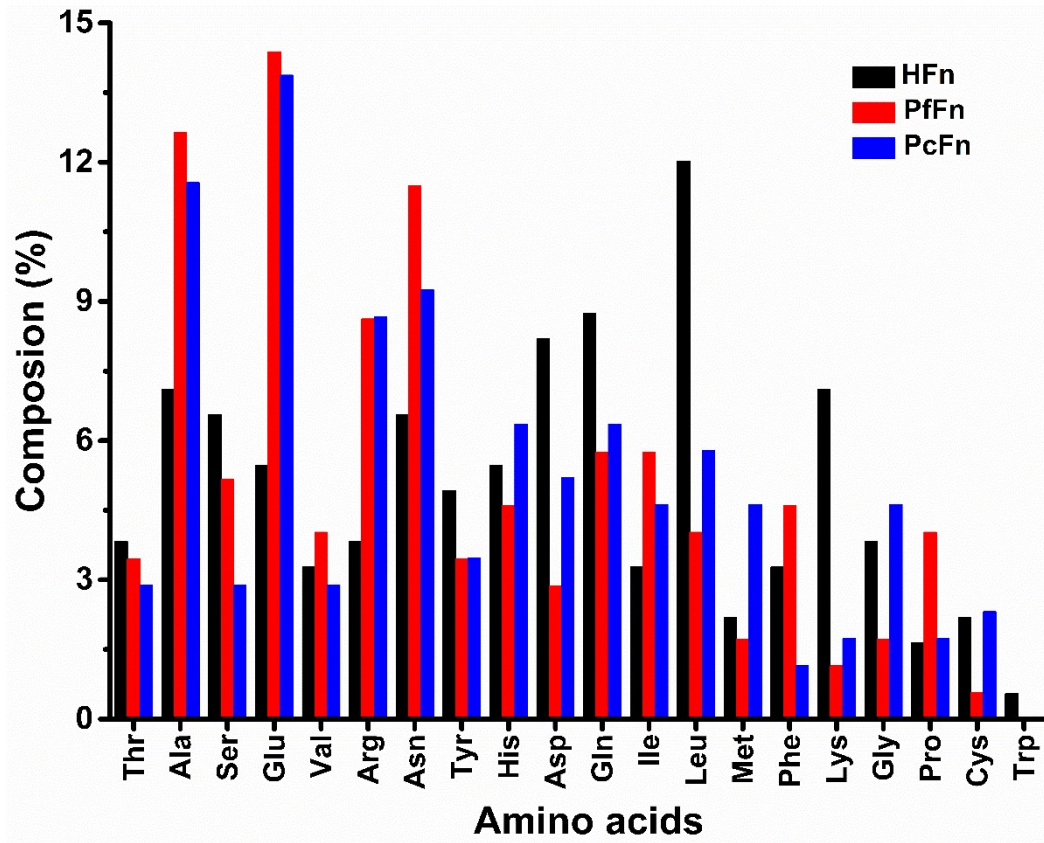


Figure S5. The distribution of mean amino acid composition. Black bars represent HFn, red bars represent PfFn, and blue bars represent PcFn.