nanomaterials

MDPI

Supplementary Material

Peptide-Mediated Immobilization on Magnetoferritin for Enzyme Recycling

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Table S1. DNA primers used for the construction of the HE and KG protein.

HE forward 5′-3′	**Group 1:** GAAAAAGAAATCGCGGCCCTAGAGAAGGAAATCGCGGCTCT GGAAAAACTCGAGCACCACCACCAC **Group 2:** CTCGAGCACCACCACCAC
HE reverse 5′-3′	**Group 1:** TAAGGCCGCGATCTCAGAACCACCGCCACCACTACCGCCGCC CCCGCTTTCGTTATCAGAGTCACCC **Group 2:** TTTTTCCAGAGCCGCG
KG forward 5′-3′	GGCGGTGGAGGCTCCGGGGGTGGCGGTTCAGGTGGTGGTGGC TCCATGGAAAAACTGCGCTTTCC
KG reverse 5′-3′	TTCTTTCAGTGCCGCAATTTTCTCTTTAAGCGCCGCAATTTTTTC CTTGAGTGCTGCGATTTTGTGGTGGTGGTGATGATGCA

Note: Primers of Group 1 were used to construct ferritin with C-terminal E-coil sequence in vector pET-20b. Primers of Group 2 were used to remove the His-tag in vector pET-20b.

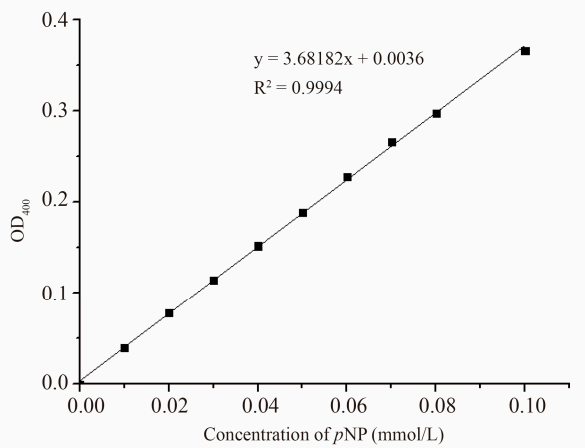

Figure S1. Standard curve of *p*-nitrophenyl.

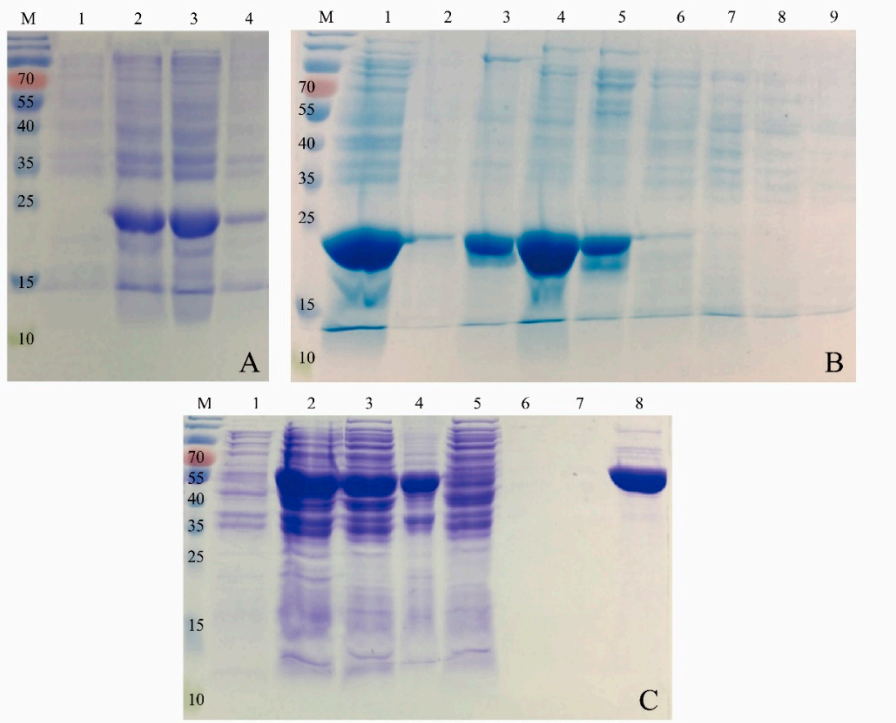

Figure S2. SDS-PAGE analyses. (A). SDS-PAGE of HE. Lane M: protein marker. Lane 1: before induction. Lane 2: after induction. Lane 3: soluble fraction. 4: insoluble fraction; (B). SDS-PAGE of ammonium sulfate precipitation of HE. Lane M: protein marker. Lane 1: soluble fraction. Lane 2: 20% ammonium sulfate. Lane 3: 30% ammonium sulfate.4: 40% ammonium sulfate. Lane 5: 50% ammonium sulfate. Lane 6: 60% ammonium sulfate. Lane 7: 70% ammonium sulfate. Lane 8: 80% ammonium sulfate. Lane 9: 90% ammonium sulfate; (C). SDS-PAGE of KG. Lane M: protein marker. Lane 1: before induction. Lane 2: after induction. Lane 3: soluble fraction. Lane 4: insoluble fraction. Lane 5: supernatant after Ni-NTA binding. Lane 6: flow-through (lysis buffer). Lane 7: flow-through (wash buffer). Lane 8: Elution.

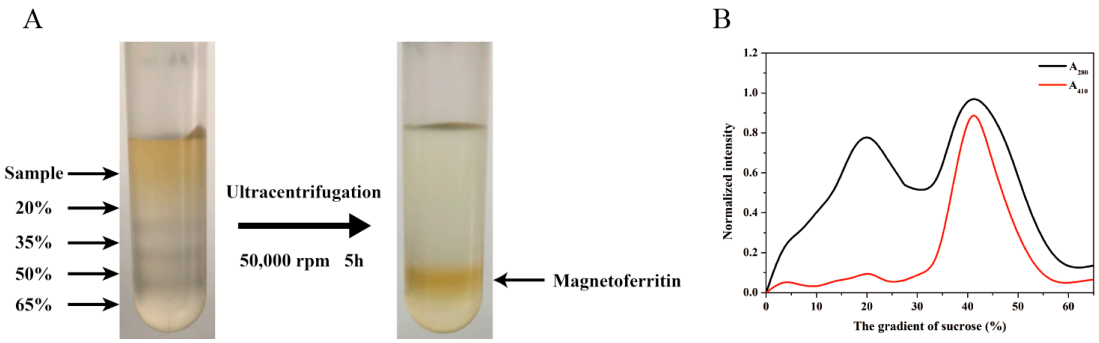

Figure S3. (A) Magnetoferritin purified by SDG. (B) UV absorbance of the sample after sucrose density gradient ultracentrifugation separation.

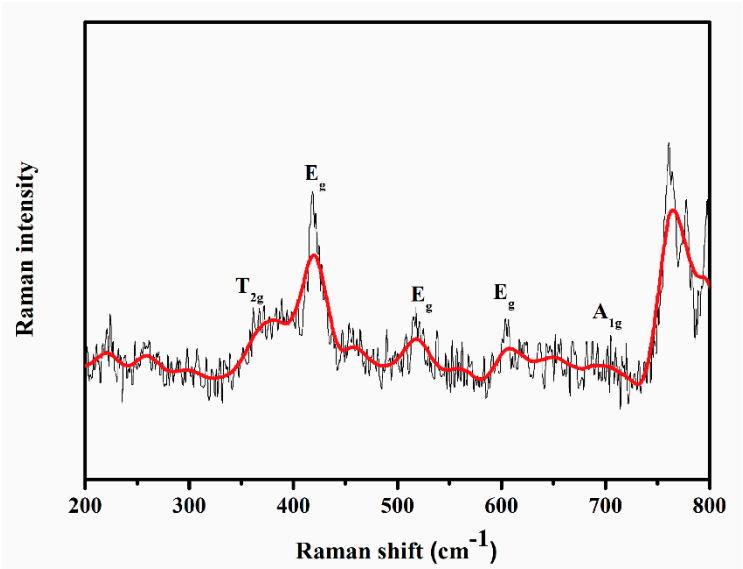

Figure S4. Raman spectroscopy of magnetoferritin of HE. There were Raman shifts of 365 (T_{2g}), 414 (E_g), 511 (E_g), 615 (E_g), 700 (A_{1g}). The Raman shifts of α-Fe_2O_3 are 229 (A_{1g}), 249 (E_g), 295 (E_g), 302 (E_g), 414 (E_g), 500 (A_{1g}), 615 (E_g), 660 (LOE_u), the Raman shifts of γ-Fe_2O_3 are 365 (T_{2g}), 511 (E_g), 700 (A_{1g}), and the Raman shifts of Fe_3O_4 are 310 (T_{2g}), 554 (T_{2g}), 672 (A_{1g}).