Supporting Information

Lateral Flow Immunosensor For Ferritin

Based On Dual Signal-amplified Strategy By Rhodium Nanoparticles

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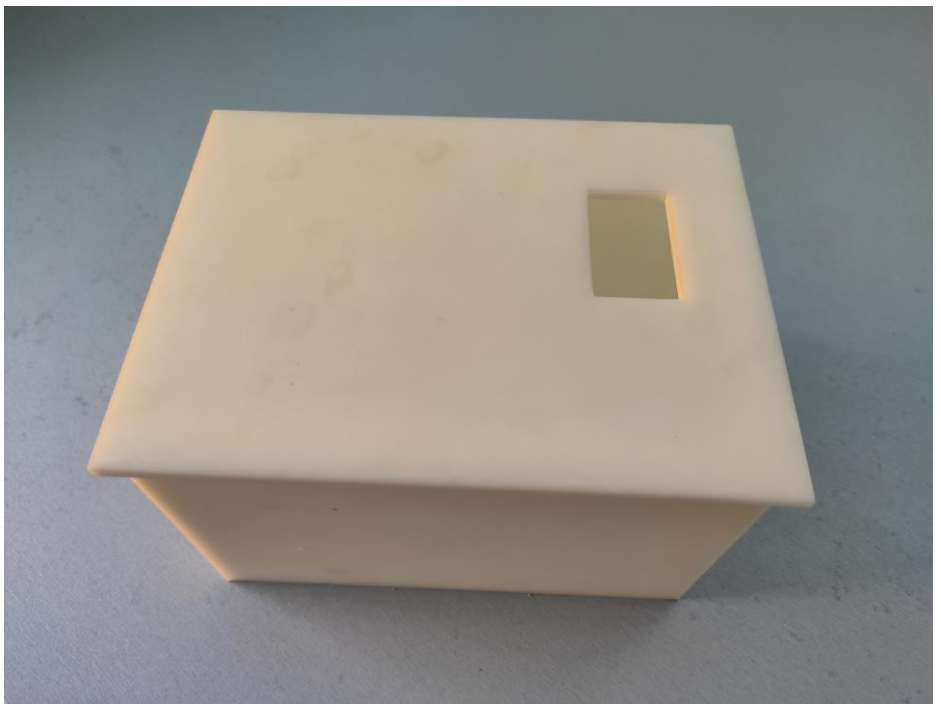

Figure S1. Photograph of 3D-printed bracket.

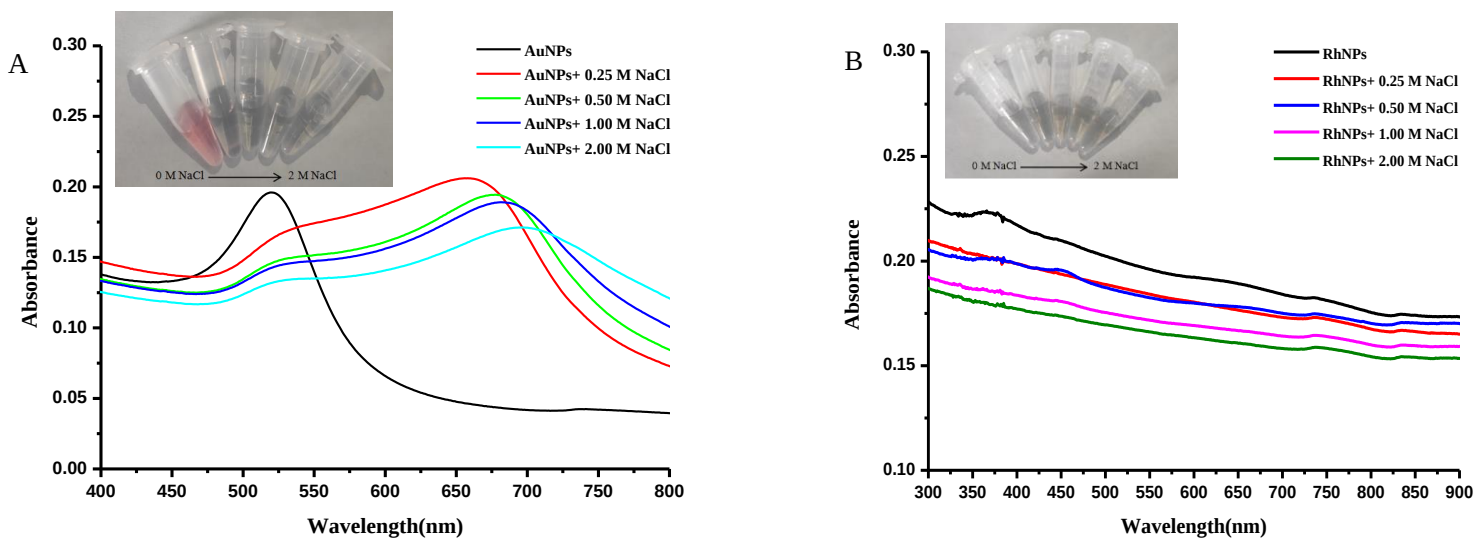

Figure S2. Stability studies of AuNPs(A) vs. RhNPs(B) against NaCl presence in the medium.

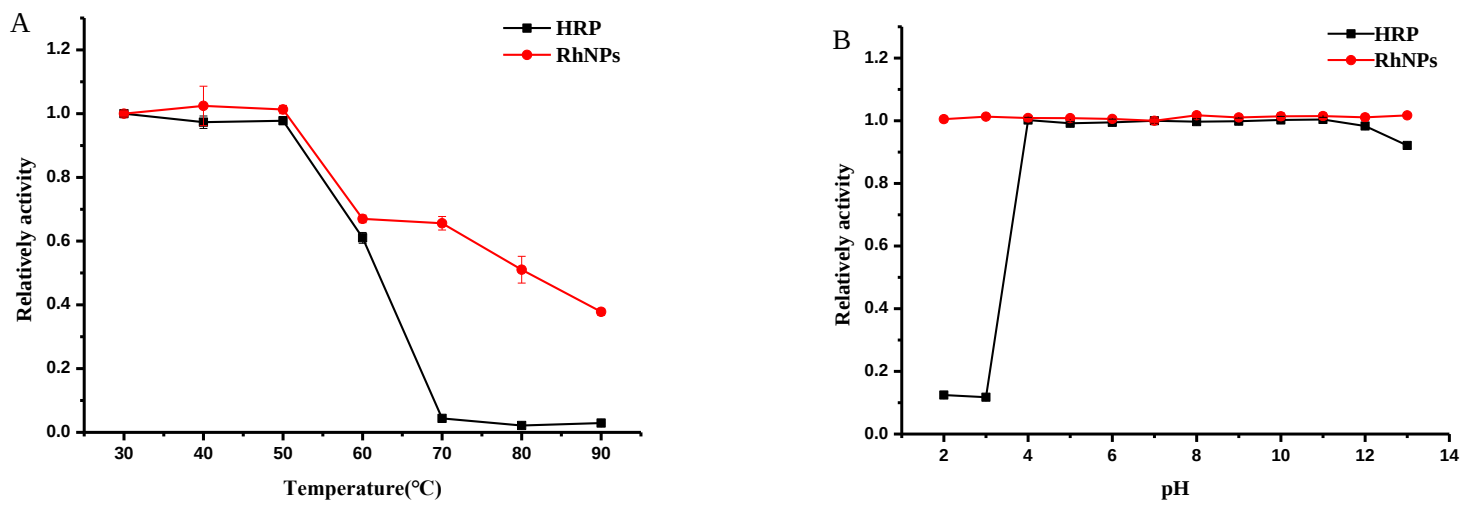

Figure S3. Stability studies of HRP vs. RhNPs under different temperature (A) and pH (B).

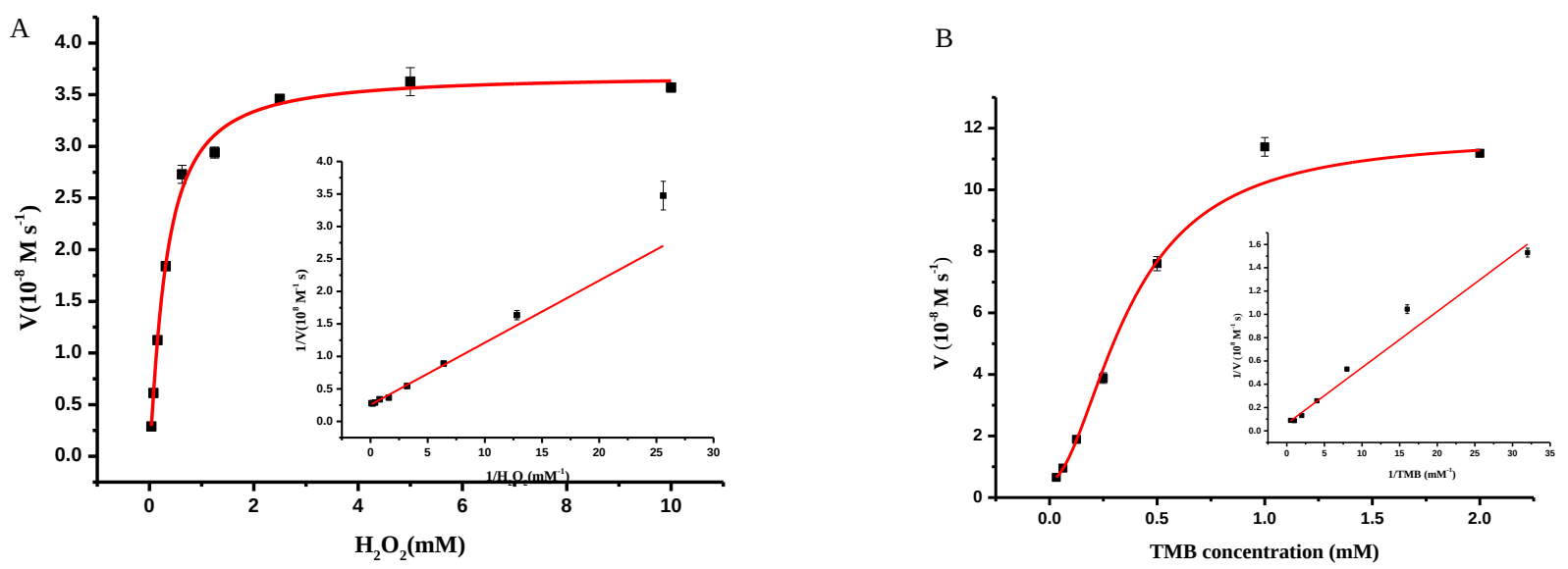

Figure S4. Steady-state kinetic analysis of RhNPs using Michaelis-Menten model and Lineweaver-Burk (inserted) plots by employing H2O2 (A) and TMB (B).

Table S1. Comparison of Michaelis-Menten (Km) and maximum reaction rates (Vmax) of the oxidation reaction catalyzed by HRP and nanozyme.

Catalyst	Substrate	Km(mM)	Vmax(10^{-8} M s^{-1})	Reference
HRP	TMB	0.434	10	1
	H_2O_2	3.7	8.71	
Fe3O4 NPs	TMB	0.098	3.44	1
	H_2O_2	154	7.98	
WS_2	TMB	15.158	65.23	2
	H_2O_2	0.805	22	
VS_2	TMB	0.28	41.6	3
	H_2O_2	3.49	55.7	
NiS	TMB	0.241	5.09	4
	H_2O_2	0.347	8.71	
Co_3O_4NPs	TMB	0.063	1.88	5
	H_2O_2	-	-	
PtNPs	TMB	0.127	2	6
	H_2O_2	1.14	3.1	
PdNPs	TMB	0.195	300	7
	H_2O_2	23	490	
RhNPs	TMB	0.78	16.26	This work
	H_2O_2	0.37	3.92	

Table S2. The comparison of different methods for detecting ferritin.

Methods	Linear range (ng/mL)	LOD (ng/mL)	References
ICP-MS combine with antibody	50-1200	0.48	[8]
Radioimmunoassay	0-250	2	[9]
GO/SPGE electrochemical immunosensor	1-1000	0.19	[10]
Au@CD colorimetrically immunoassay	1 -120	20	[11]
Au@CD fluorometrically immunoassay	1 -120	64	[11]
Gold nanorod electrochemical immunosensor	5-5000	1.58	[12]
Liquid immunoturbidimetric assay	4-1450	4	[13]
Photonic crystal biosensor	26-2000	26	[14]
RhNPs-lateral flow immunoassay without enhancement	0.1-10	0.4	This work
RhNPs-lateral flow immunoassay with enhancement	0.01-5	0.3	This work

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