Electronic Supplementary Information:

Catalytic and Biological Properties of Ag-Pt Bimetallic Nanoparticles: Composition-Dependent Activity and Cytotoxicity

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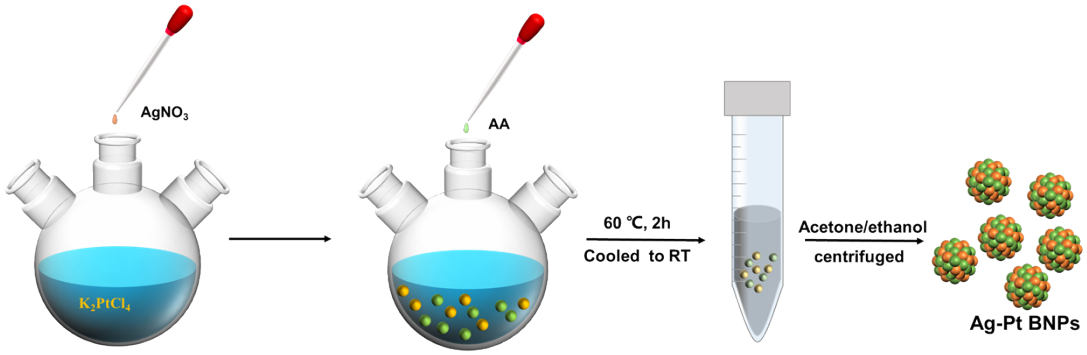


Fig. S1. Schematic depicting the preparation process of AP NPs through a chemical co-reduced method.

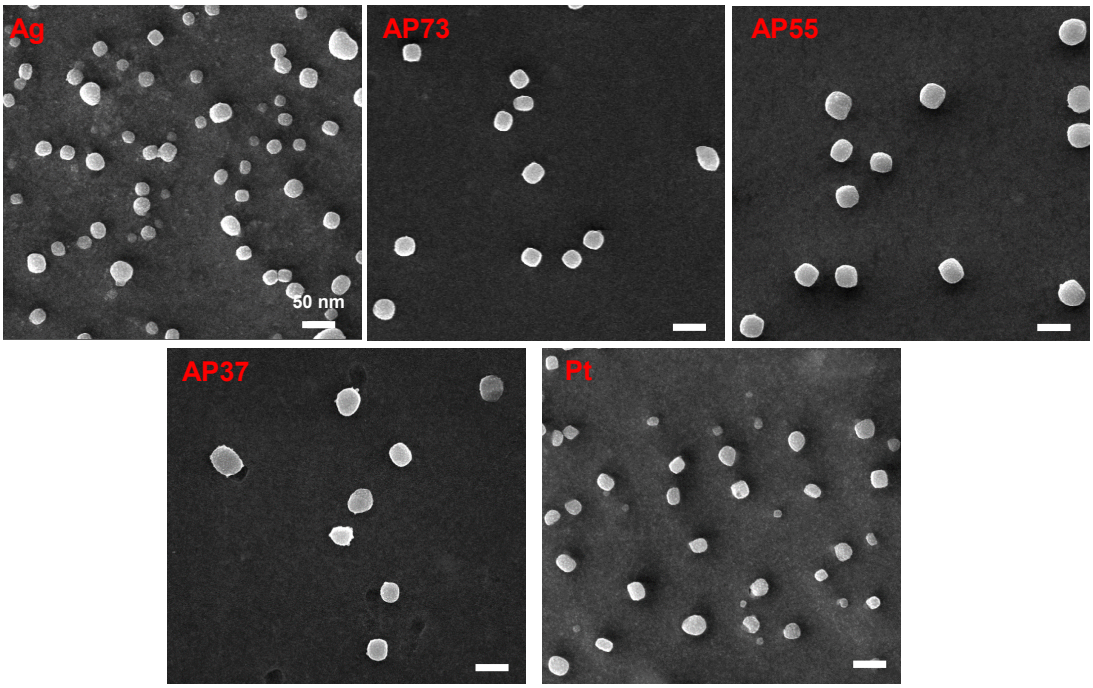
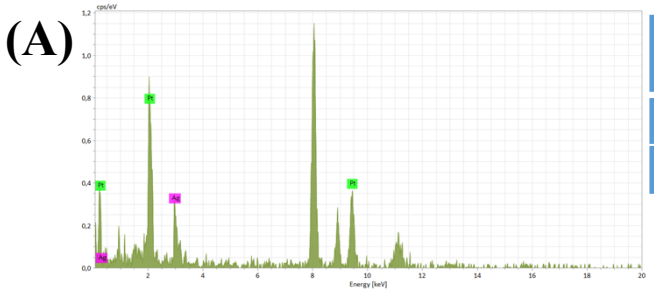
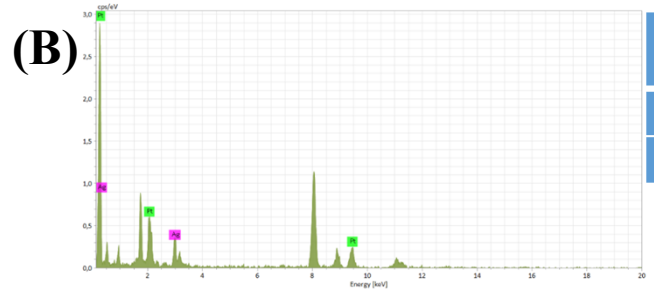


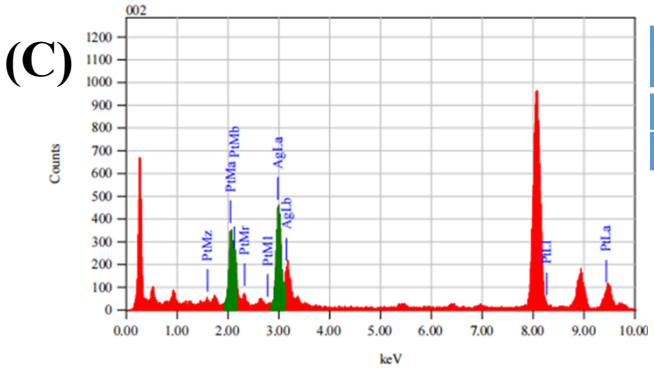
Fig. S2. Characterization of Ag, AP, and Pt NPs by SEM.



Element	At. No.	Mass Norm [%]	Atom [%]
Ag	47	16.74	26.66
Pt	78	83.26	73.34



Element	At. No.	Mass Norm [%]	Atom [%]
Ag	47	34.93	49.26
Pt	78	65.07	50.74



Element	At. No.	Mass Norm [%]	Atom [%]
Ag	47	64.8	76.9
Pt	78	35.2	23.1

Fig. S3. The EDS analysis and relative atomic proportion. (A) AP37, (B) AP55, and (C) AP73.

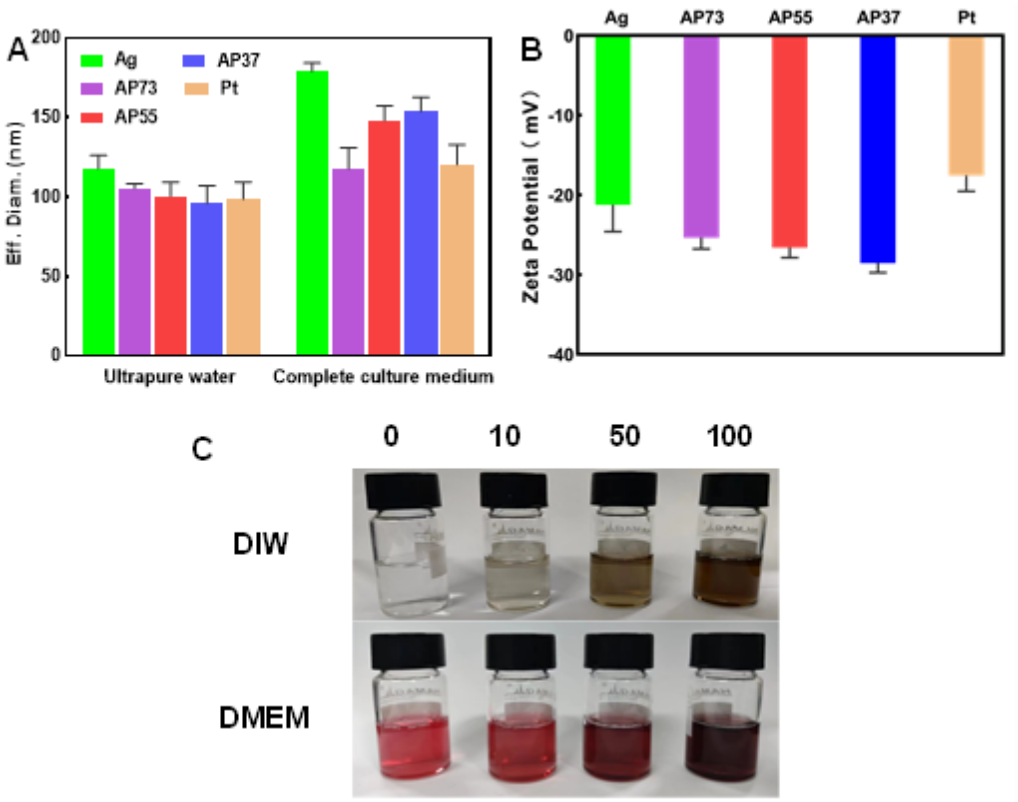


Fig. S4. The distribution of AP NPs in different medium. (A) Effective particle size in water and culture medium. (B) The zeta potential in culture medium containing 10% FBS. (C) The dispersibility and stability of AP55 NPs at different concentrations in water and DMEM.

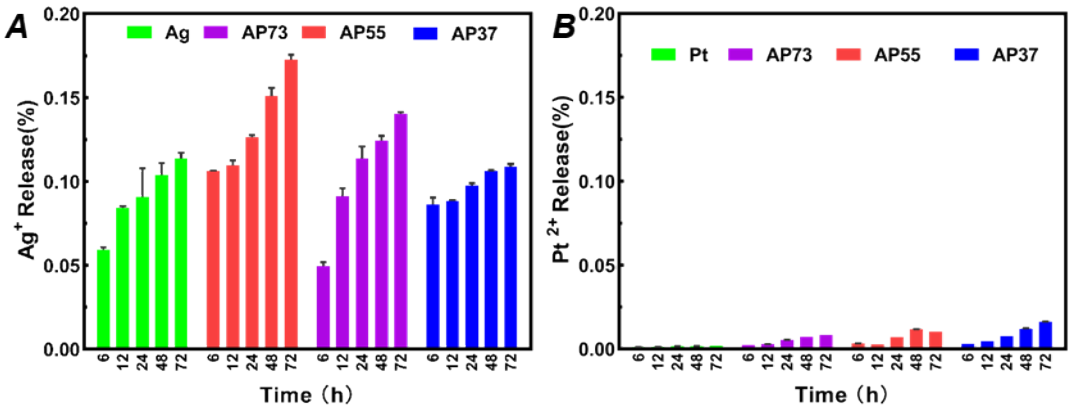


Fig. S5. Time-dependent Ag and Pt ion release from Ag, Pt, and AP NPs. The initial concentrations of Ag, Pt, and AP NPs were 5.0 mg/L.

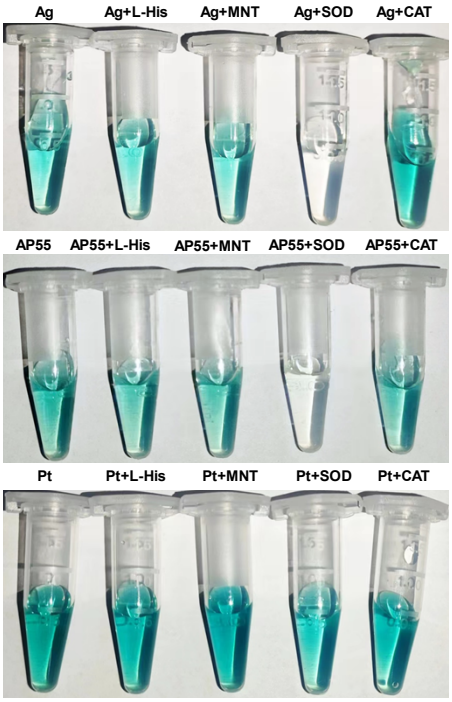


Fig. S6. Images of TMB oxidation after mixing ROS chemical specific scavengers of Ag, AP55, and Pt NPs.

Table S1. ICP-MS elemental molar ratio of AP NPs

Sample	Ag molar ratio (%)	Pt molar ratio (%)
Ag NP	**100**	**0**
AP73	**68.86±0.39**	**32.14±0.52**
AP55	**51.15±0.44**	**48.85±0.27**
AP37	**28.57±0.36**	**71.43±0.48**
Pt NP	**0**	**100**

Table S2. Apparent Kinetic Parameters of Ag, AP37, AP55, AP73, and Pt NPs as Oxidase Mimics for TMB Oxidation[a]

Sample	$[E]_{total}$ (nM)	K_m (μM)	V_{max} ($\mu M \cdot min^{-1}$)	K_{cat} (min^{-1})
Ag NP	**0.083**	**52.85**	**0.13**	**1.57×10^3**
AP73	**0.083**	**23.47**	**0.18**	**2.17×10^3**
AP55	**0.083**	**13.25**	**0.19**	**2.29×10^3**
AP37	**0.083**	**20.51**	**0.15**	**1.81×10^3**
Pt NP	**0.083**	**31.27**	**0.14**	**1.69×10^3**

[a] $[E]_{total}$ is the molar concentration of the NRs. K_m is the Michaelis constant and V_{max} is the maximal reaction velocity. K_{cat} is the catalytic constant, where $K_{cat} = V_{max} / [E]_{total}$.