

Supplementary Materials: Catalase Like-Activity of Metal NP–Enzyme Biohybrids

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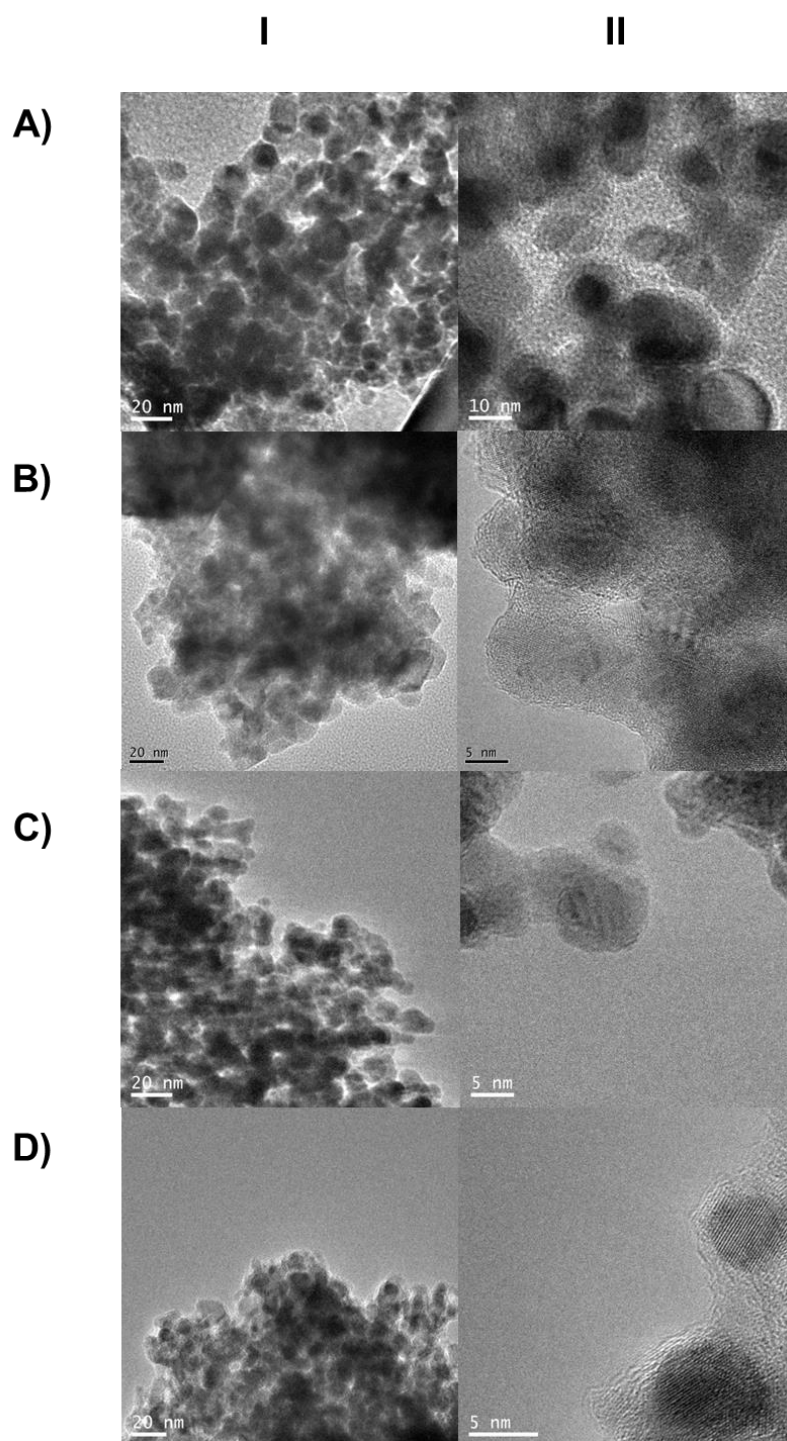


Figure S1. I. TEM images; II. HR-TEM images. **A)** CuNPs@CALB-P*; **B)** CuNPs@CALB-P-NL; **C)** CuNPs@CALB-B*; **D)** CuNPs@CALB-B.

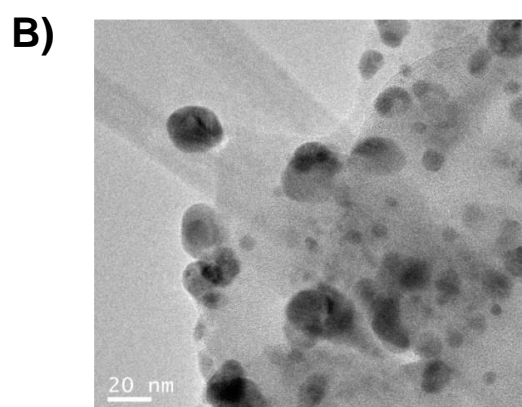
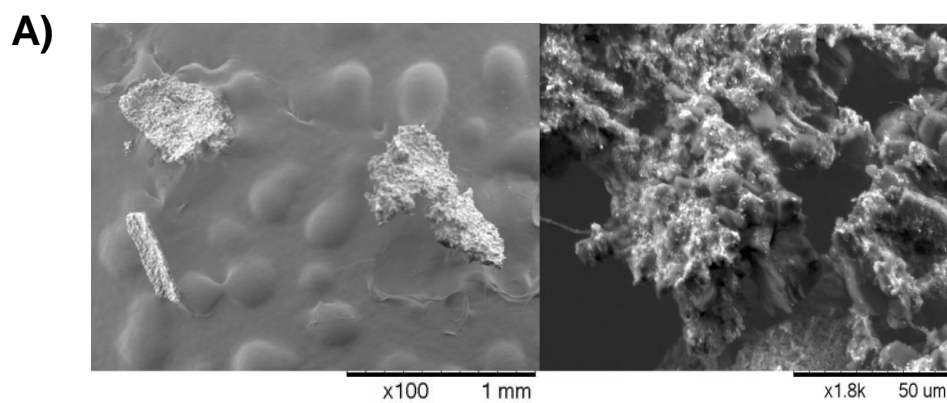


Figure S2. Characterization of AgNPs@CATb: **A)** SEM images; **B)** TEM image.

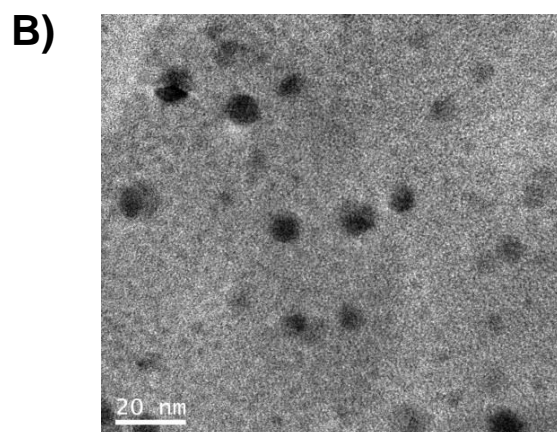
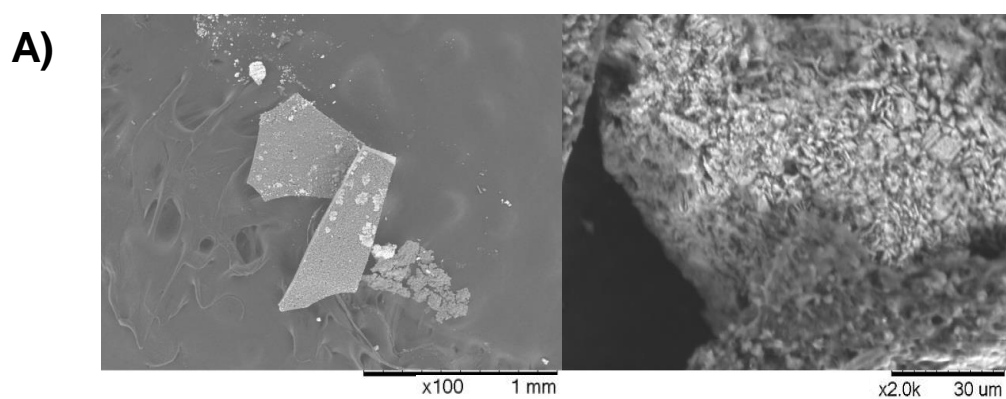


Figure S3. Characterization of PdNPs@CATb: **A)** SEM images; **B)** TEM image.

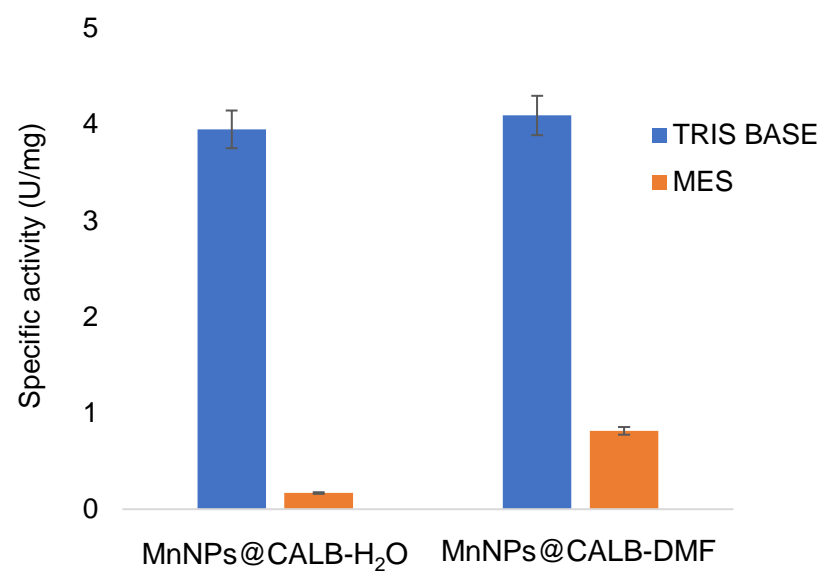


Figure S4. Catalase-like activity of MnNPs@CALB hybrids in 5mM of TRIS BASE pH 9 (Blue) and 5mM of MES pH 5 (Orange).

Table S1. Synthesis and characterization of MeNPs@Enzyme hybrids.

<i>MeNPs hybrid</i>	<i>Amount of enzyme (mg/mL)</i>	<i>Salt metal</i>	<i>Method</i>	<i>Amount of Me (w/w %) ^a</i>	<i>Average NPs size (nm) ^b</i>
CuNPs@CALB-P	0.6	CuSO ₄ ·5H ₂ O	Buffer Phosphate pH7 – NaBH ₄	60	10
CuNPs@CALB-P-NL	0.6	CuSO ₄ ·5H ₂ O	Buffer Phosphate pH7 – NaBH ₄	45.3	10
CuNPs@CALB-B	0.6	CuSO ₄ ·5H ₂ O	Buffer Bicarbonate pH10 – NaBH ₄	93	6
CuNPs@CALB-P*	0.3	CuSO ₄ ·5H ₂ O	Buffer Phosphate pH7 – NaBH ₄	81	15
CuNPs@CALB-B*	0.3	CuSO ₄ ·5H ₂ O	Buffer Bicarbonate pH10 – NaBH ₄	84	9
MnNPs@CALB-P	0.3	MnSO ₄	Buffer Phosphate pH7– NaBH ₄	30	Nd
MnNPs@CALB-P-NR	0.3	MnSO ₄	Buffer Phosphate pH7	30	Nd
MnNPs@CALB-H₂O	0.4	KMnO ₄	Distilled water	25	Nd
MnNPs@CALB-DMF	0.4	KMnO ₄	DMF:Water 80:20	25	Nd
PdNPs@CATb	1.5	Na ₂ PdCl ₄	Distilled water	27	12
AgNPs@CATb	1.5	AgNO ₃	Distilled water	34	9

^a The measurement was performed of the solid material. 1 mg of the solid powder was treated with 5 mL of HCl (37% v/v) for digestion. Then, it was added with 5 mL of water, centrifuged and the clear solution analyzed by Me content. ^b Nd: not determined.