

Electronic supplementary materials

The Programmable Catalytic Core of 8-17 DNAzymes

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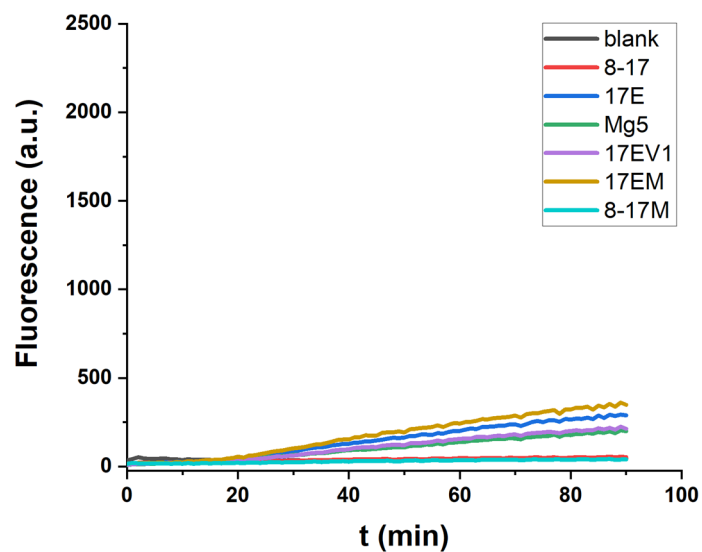
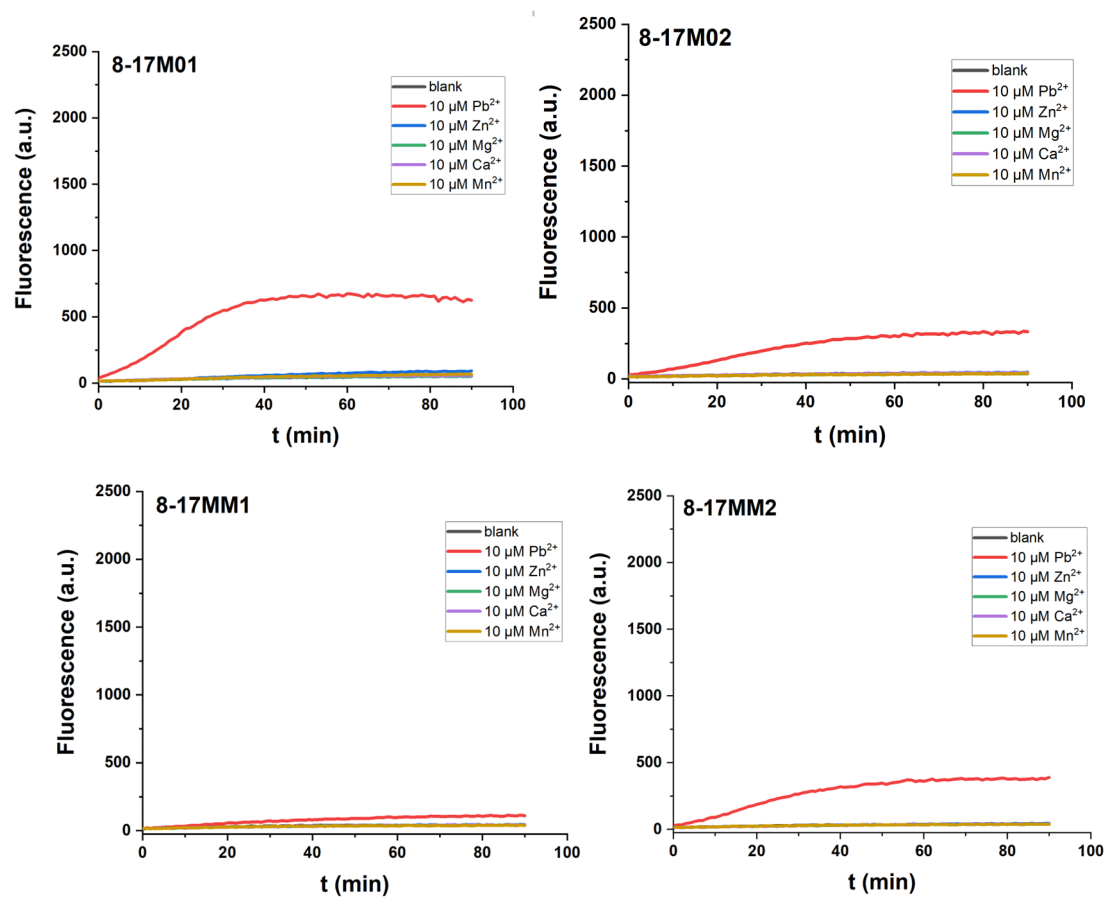


Figure S1 The catalytic reactions of 8-17 DNAzymes in the cell-mimicking buffer. The buffer containing 100 mM NaCl, 50 mM KCl, and 1 mM MgCl_2 in 50 mM Tris-HCl (pH 7.40) was used, under the single-turnover conditions ($0.5 \mu\text{M}$ DNAzyme versus $0.05 \mu\text{M}$ substrate).



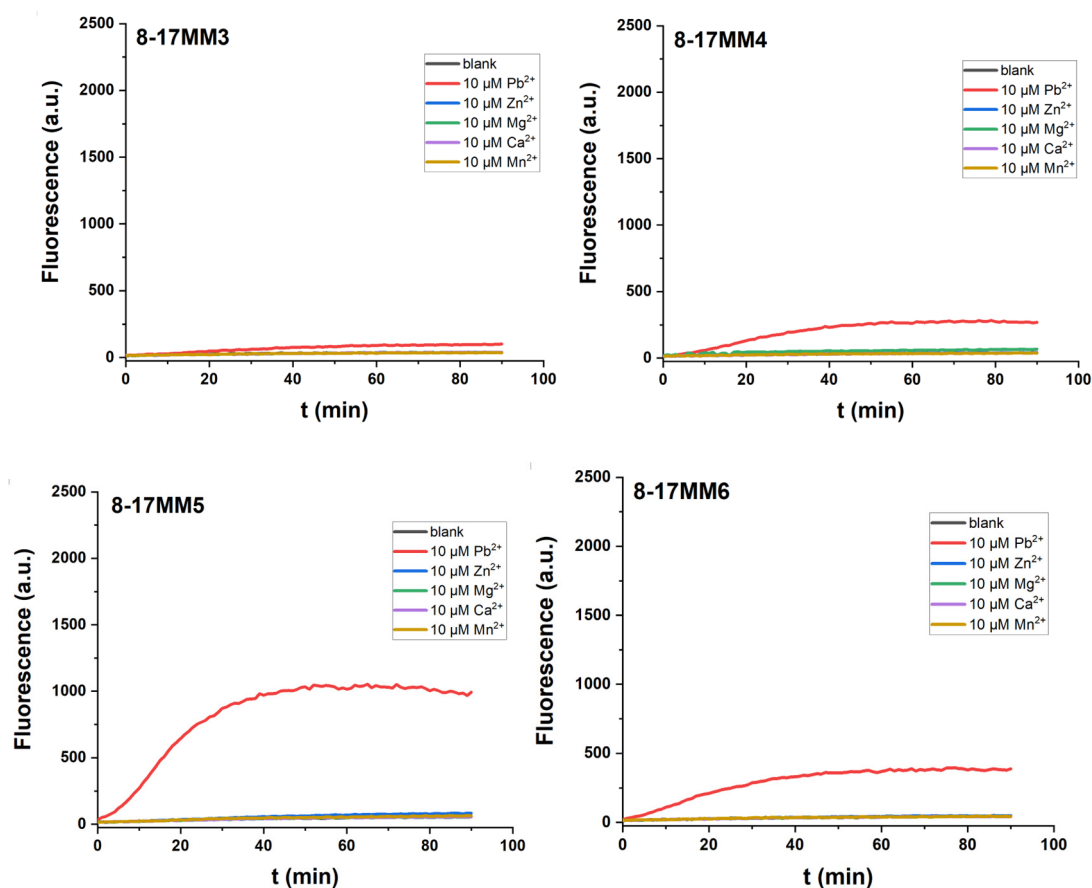
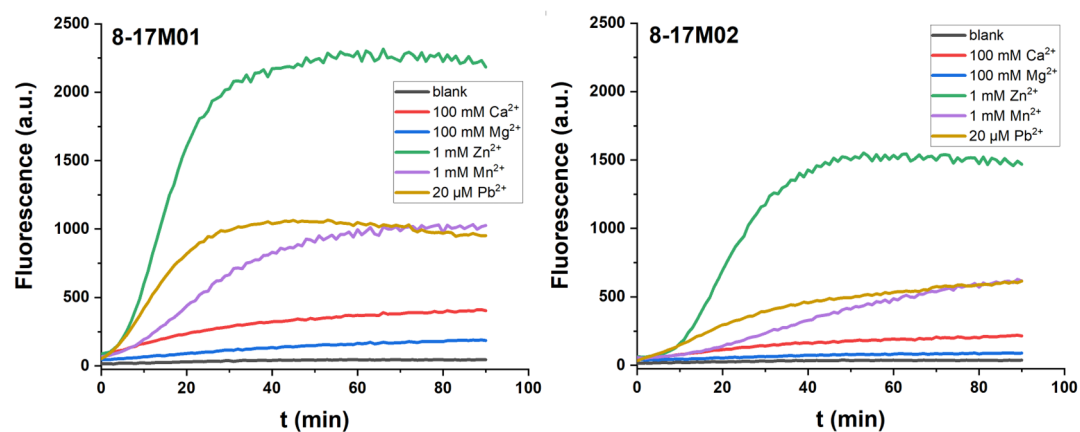


Figure S2 DNAzymes with extra $W^{12.0}$ evaluated under single-turnover conditions in the presence of 10 μM metal ions. The reaction between 0.5 μM DNAzyme and 0.05 μM substrate was conducted in the buffer (50 mM HEPES, pH 7.27), in the presence of 10 μM Ca^{2+} , Mg^{2+} , Zn^{2+} , Pb^{2+} , Mn^{2+} , respectively.



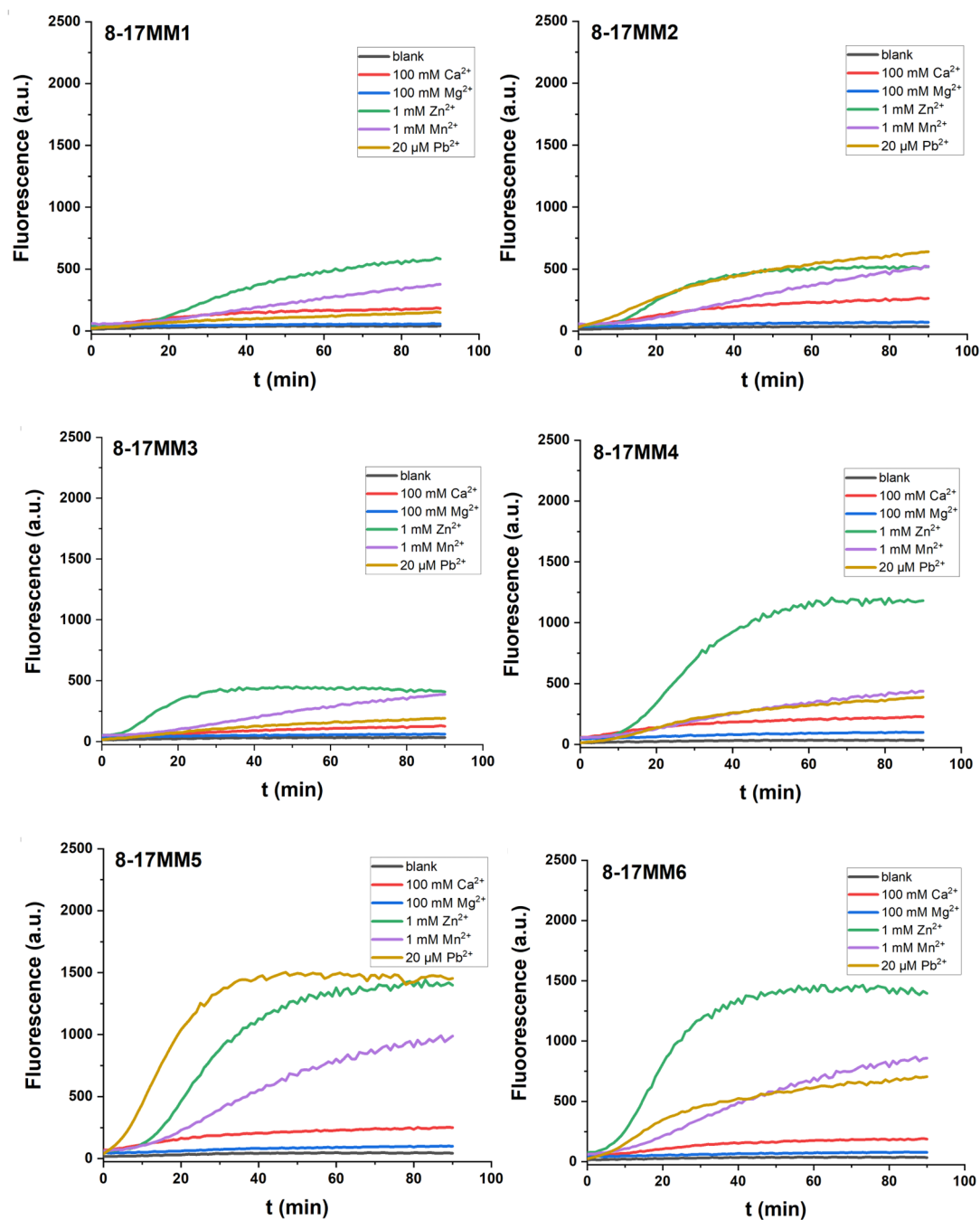


Figure S3 The catalytic reactions of DNAzymes with extra $W^{12.0}$ in the presence of higher concentrations of metal ions. Single-turnover conditions were used: 0.5 μM DNAzyme and 0.05 μM substrate in the buffer (50 mM HEPES, pH 7.27) containing 100 mM Na^+ , in the presence of Ca^{2+} (1 mM), Mg^{2+} (1 mM), Mn^{2+} (1 mM), Zn^{2+} (250 μM), Pb^{2+} (20 μM), respectively.