Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

Enzyme-free and label-free signal amplification for monitoring nuclease activity and inhibition by hybridization chain reaction

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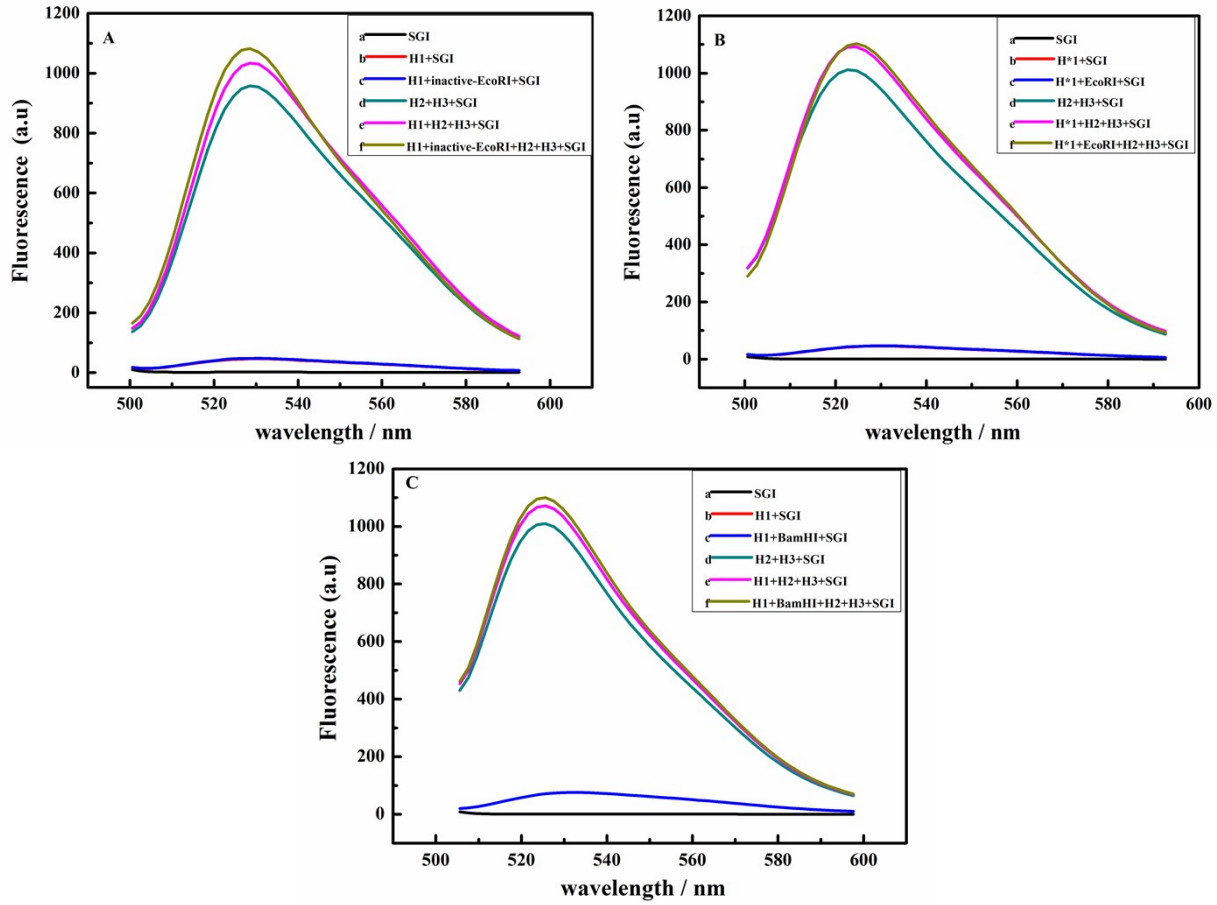

Fig. S1. Fluorescence spectra of SGI at different conditions. (A): (a) SGI, (b) H1+SGI, (c) H1+inactive EcoRI +SGI, (d) H2+H3+SGI,(e) H1+H2+H3+SGI, (f) H1+ inactive EcoRI +H2+H3+SGI. (B): (a) SGI, (b) H*1+SGI, (c) H*1+ EcoRI +SGI, (d) H2+H3+SGI, (e) H1*+H2+H3+SGI, (f) H*1+ EcoRI +H2+H3+SGI. (C): (a) SGI, (b) H1+SGI, (c) H1+ BamHI +SGI, (d) H2+H3+SGI, (e)H1+H2+H3+SGI, (f) H1+ BamHI +H2+H3+SGI. The concentration of H1, H2 and H3 is 100 nM, 500 nM and 500 nM, respectively.

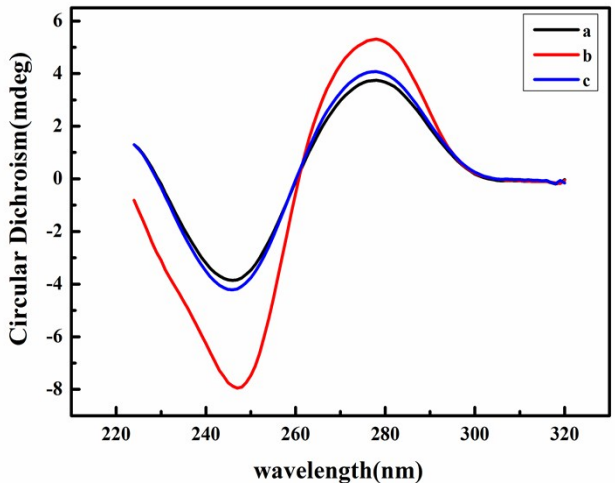

Fig. S2. CD spectra of H1/H2/H3 mixture in different condition: (a) H1/H2/H3, (b) H1/H2/H3+EcoRI, (c) H1/H2/H3+inactive-EcoRI.

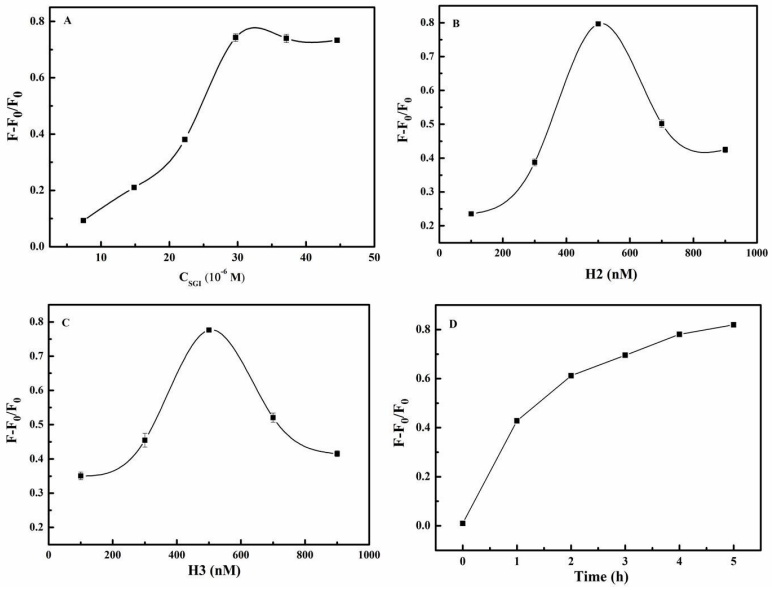

Fig. S3 Effect of factors on the amplification efficiency. (A) Effect of SYBR Green I the concentration on the fluorescence intensity. (B) Dependence of H2 concentration on the fluorescence enhancement. The concentration of H1and H3 is 100 nM and 500 nM, respectively. (C) Dependence of H3 concertration on the fluorescence enhancement.The concentration of H1and H2 is 100 nM and 500 nM, respectively. (D) Dependence of fluorescence enhancement on the reacting time.

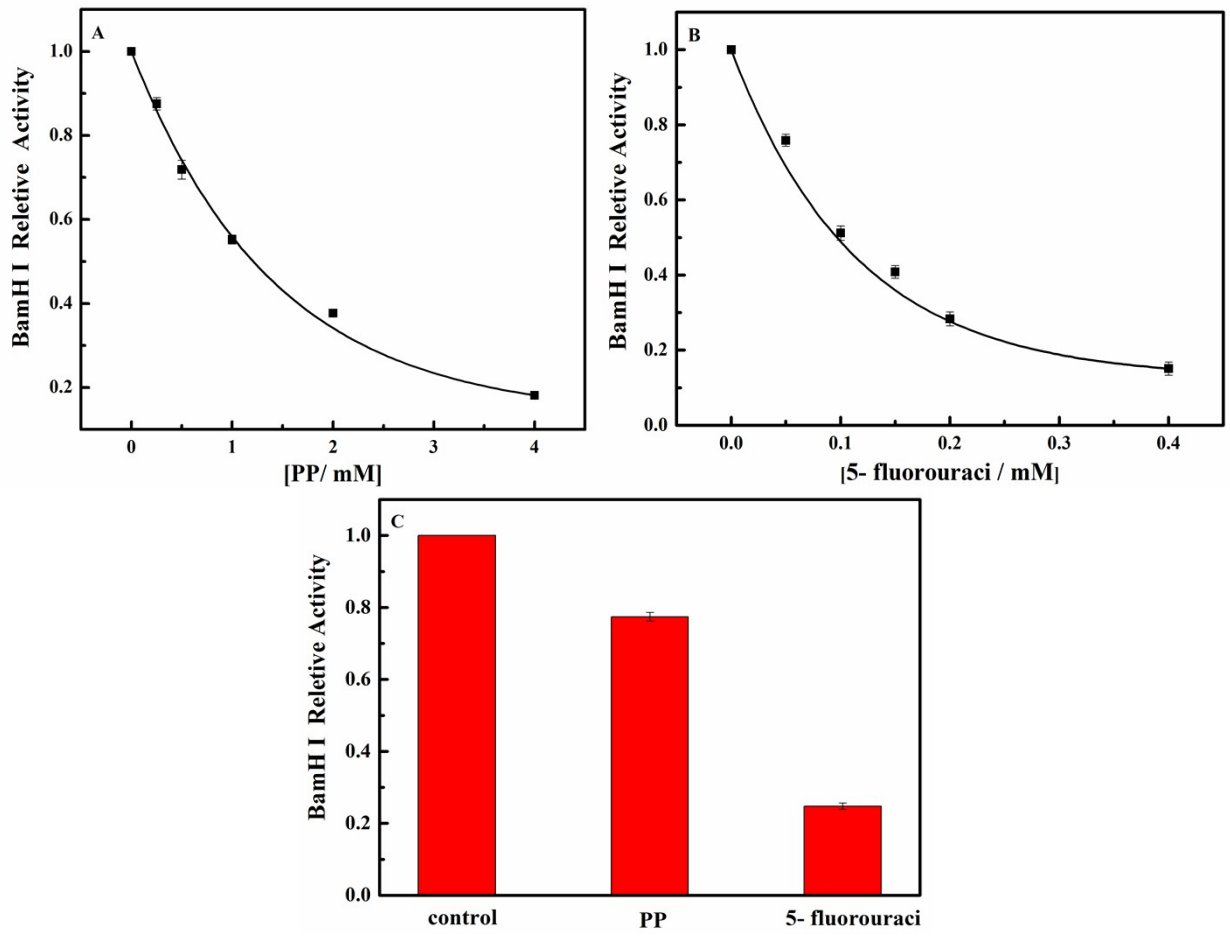

Fig. S4 Inhibition of BamHI activity by different inhibitors. (A) Influence of PP on the activity of BamH I. The concentration of PP is 0, 0.25, 0.5, 1, 2, and 4 mM, respectively. (B) Influence of 5- fluorouracil on the activity of BamH I. The concentration of 5- fluorouracil is 0, 0.05, 0.1, 0.15, 0.2 and 0.4 mM, respectively. (C) Bar chart of relative activity of BamH I in the absence and presence of 0.25 mM endonuclease inhibitors. The concentration of BamH I is 0.5 U μL^{-1}.