

Electronic Supplementary Information

A highly selective and light-up red emissive fluorescent probe for imaging of penicillin G amidase in *Bacillus cereus*

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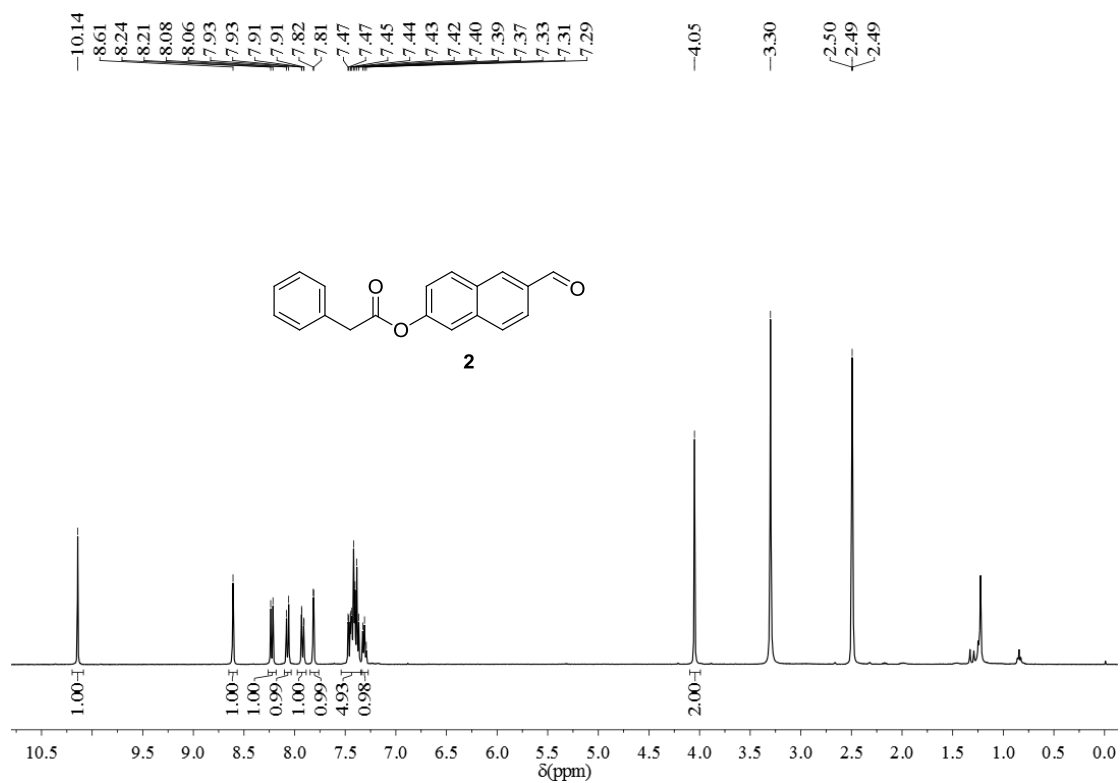


Fig. S1. $^1\text{H NMR}$ of 6-formylnaphthalen-2-yl acetate (compound **2**) in d_6 -DMSO.

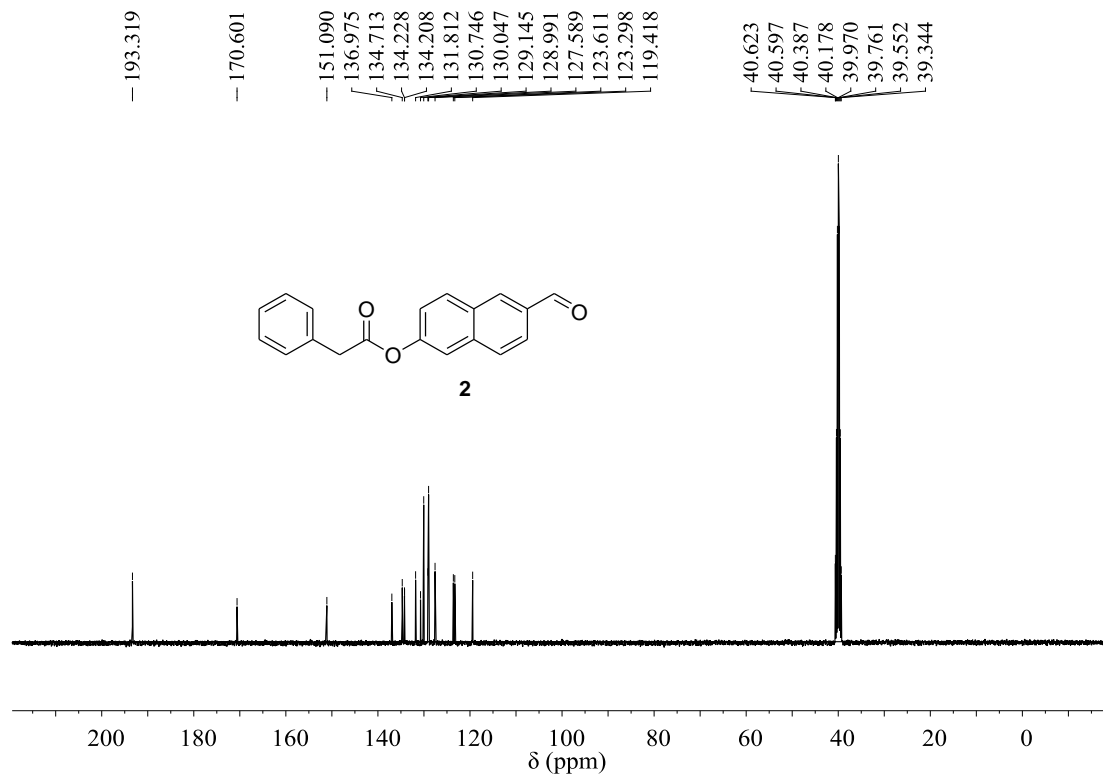


Fig. S2. $^{13}\text{C NMR}$ of 6-formylnaphthalen-2-yl acetate (compound **2**) in d_6 -DMSO.

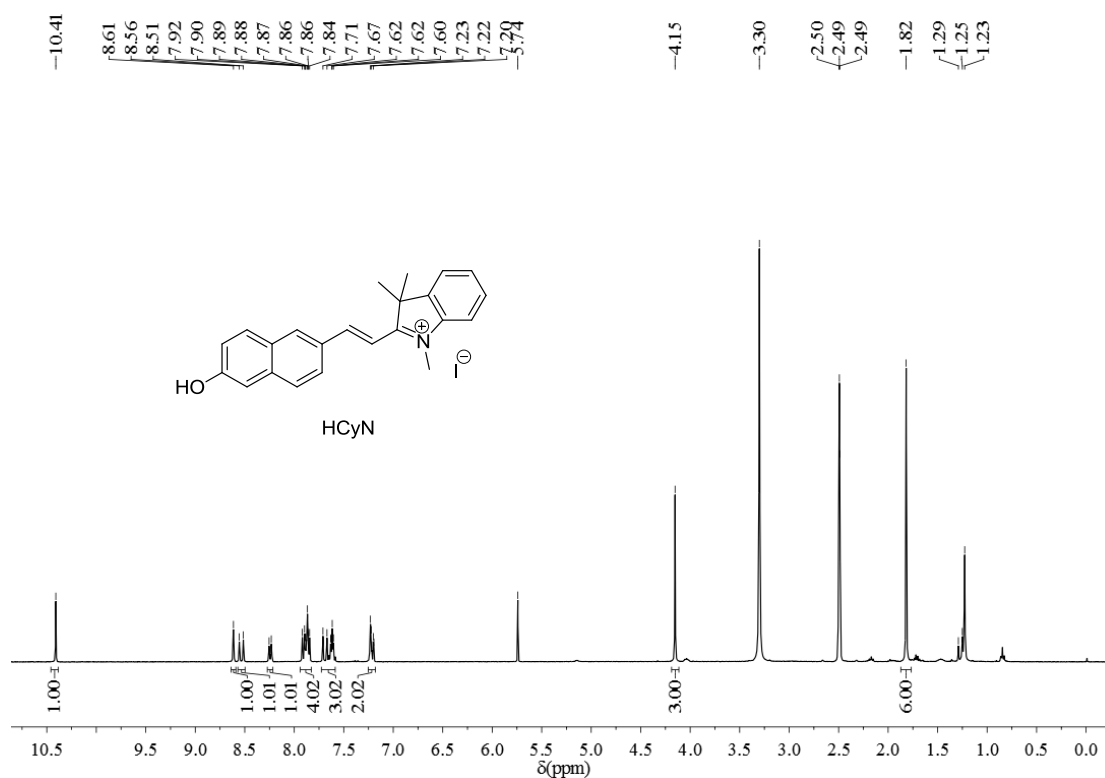


Fig. S3. ¹H NMR of HCyN in *d*₆-DMSO.

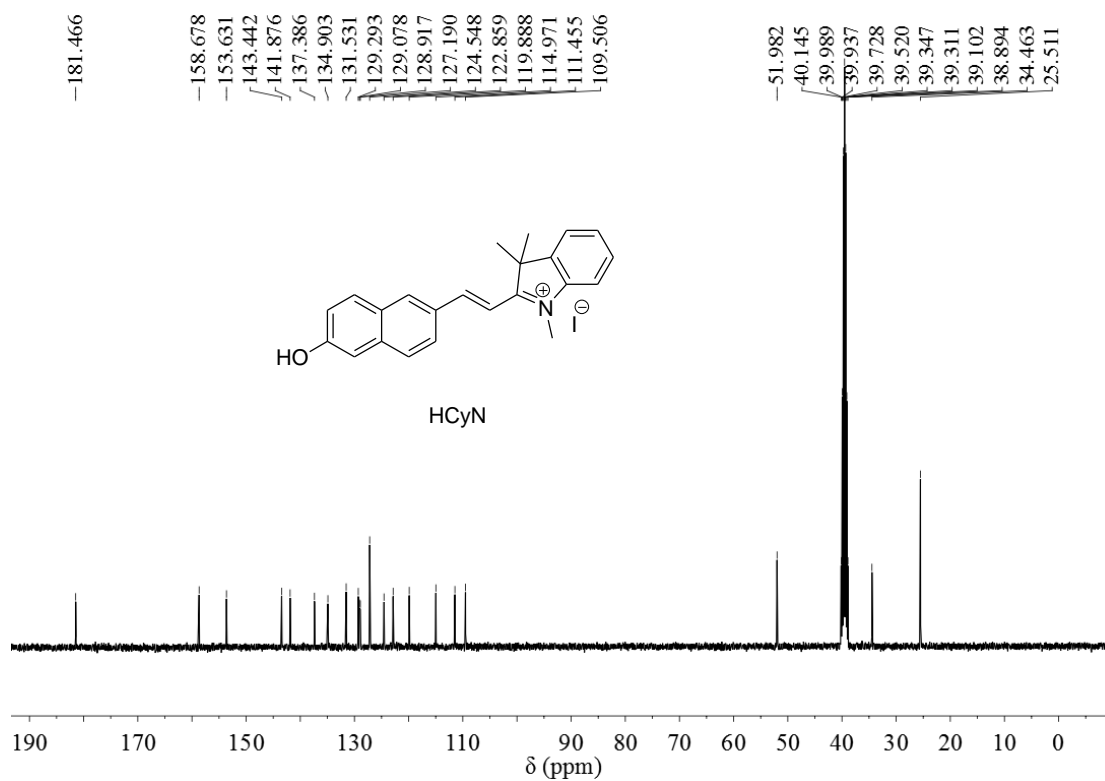


Fig. S4. ¹³C NMR of HCyN in *d*₆-DMSO.

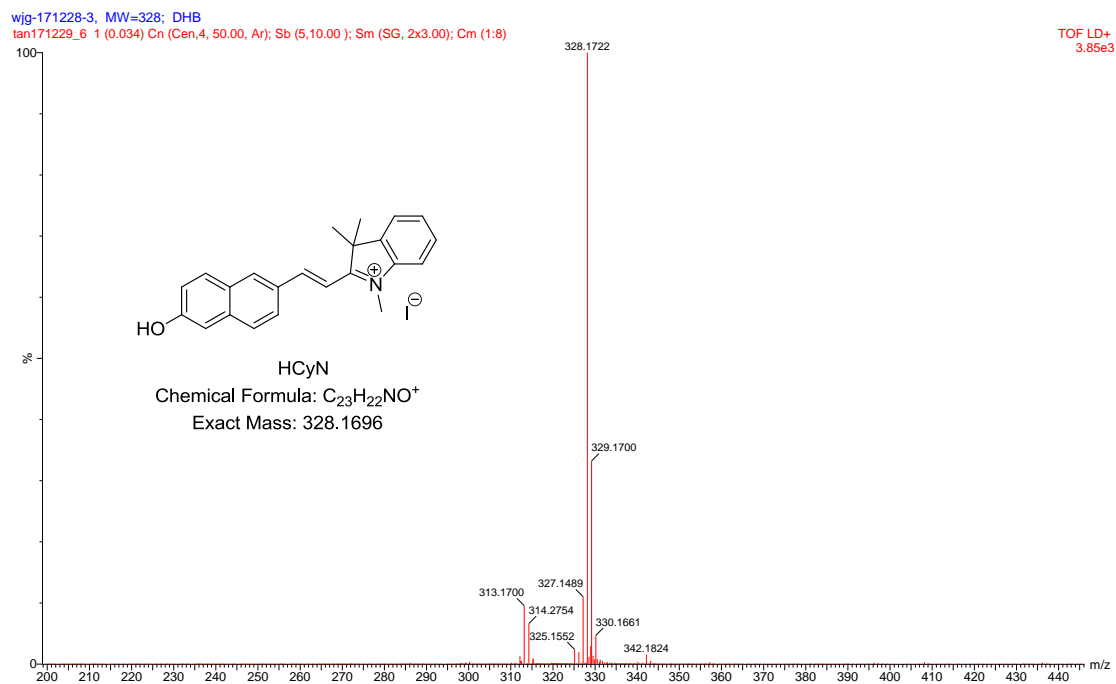


Fig. S5. HRMS spectrum of HCyN.

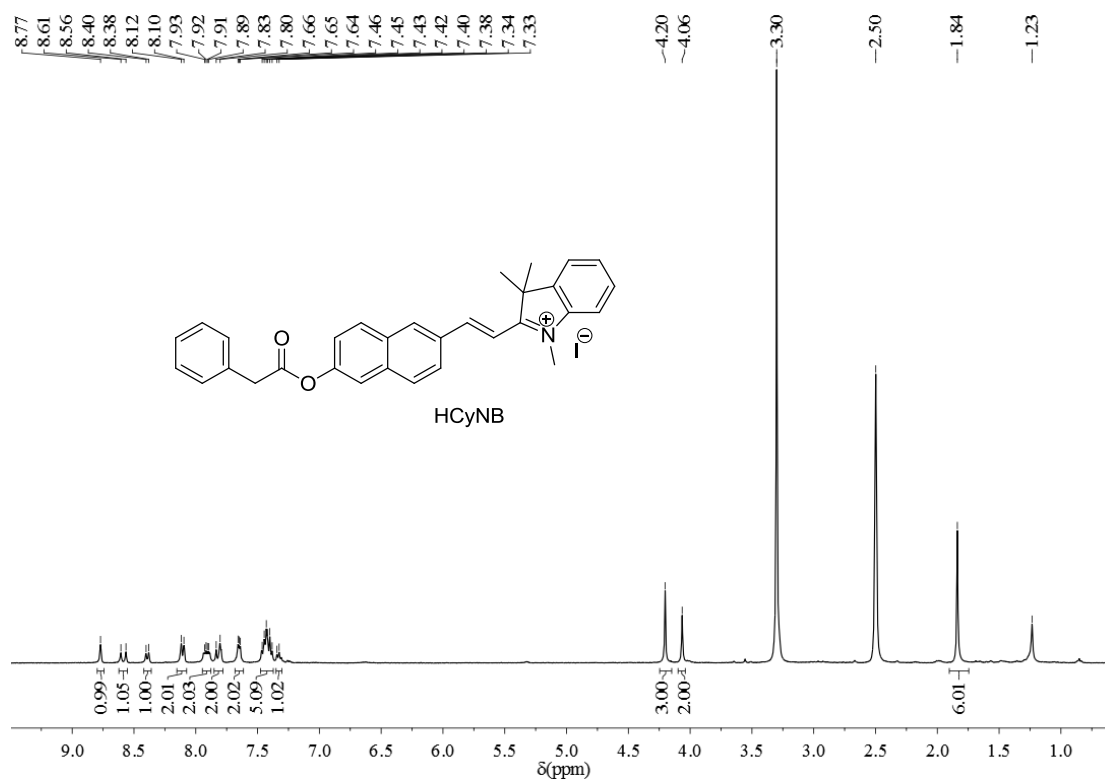


Fig. S6. ¹H NMR of HCyNB in *d*₆-DMSO.

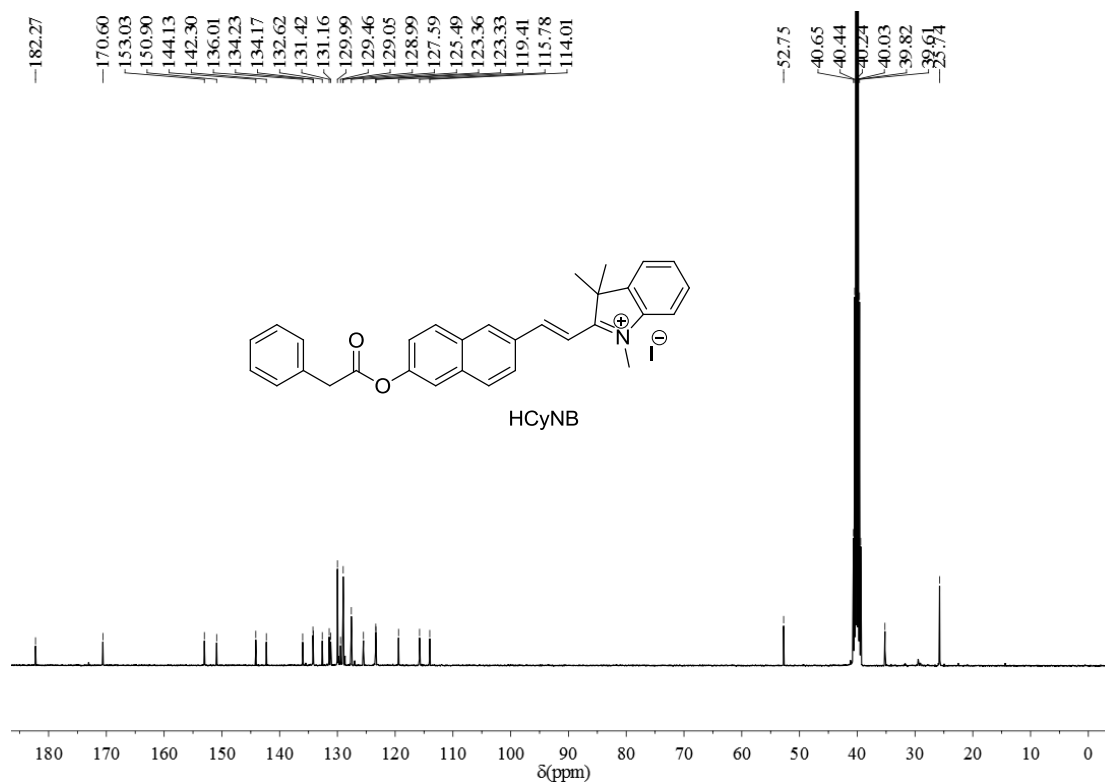


Fig. S7. ^{13}C NMR of HCyNB in d_6 -DMSO.

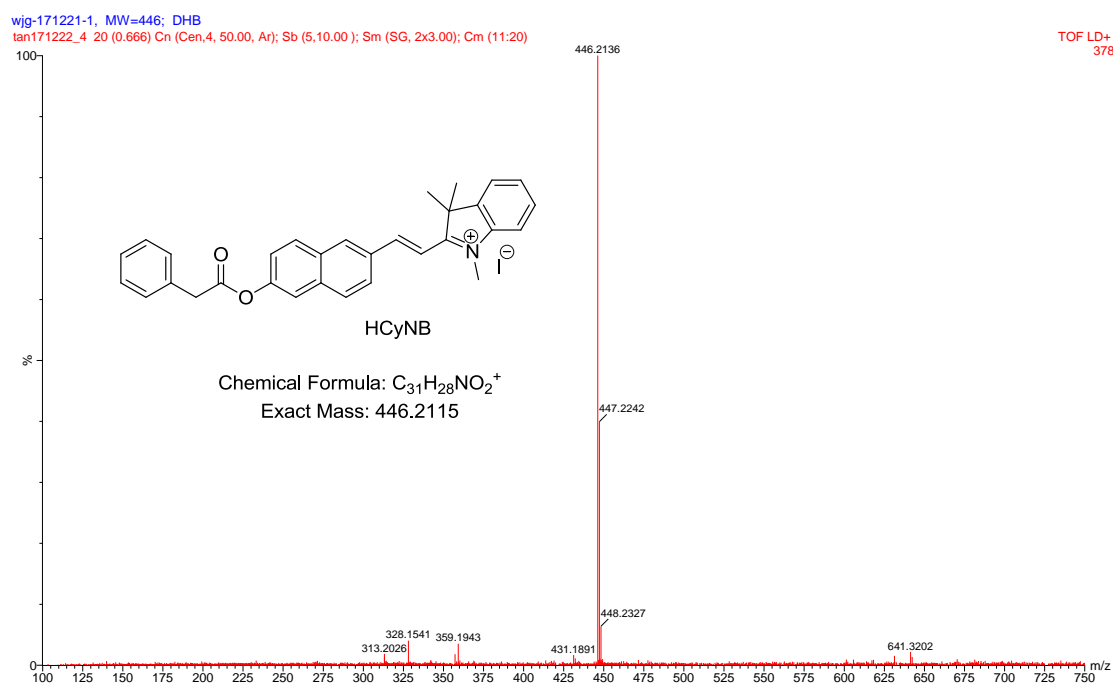


Fig. S8. HRMS spectrum of HCyNB.

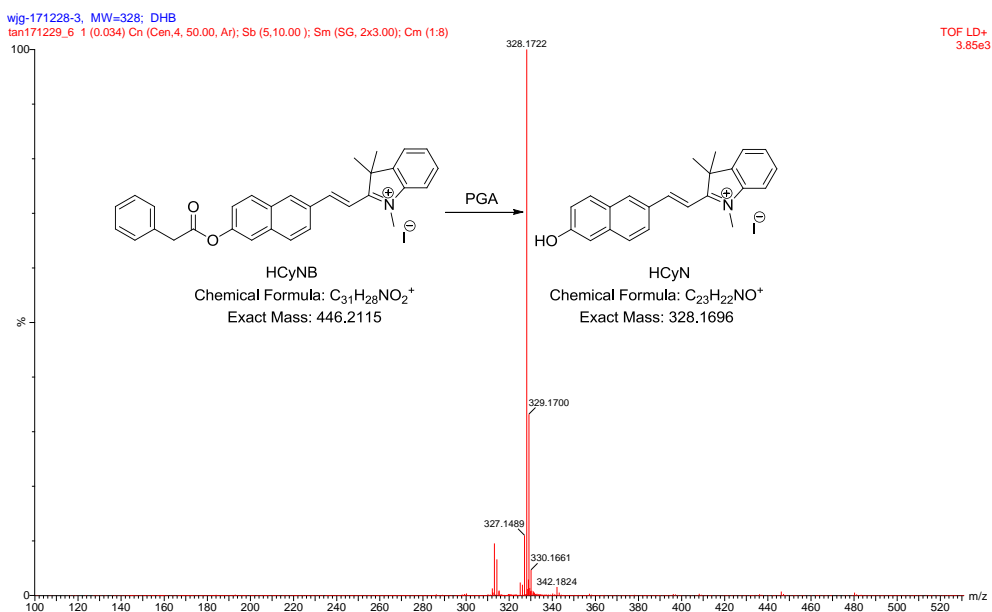


Fig. S9. HRMS spectrum of HCyNB after incubation with PGA (0.1 U/mL) for 15 min at 37 °C.

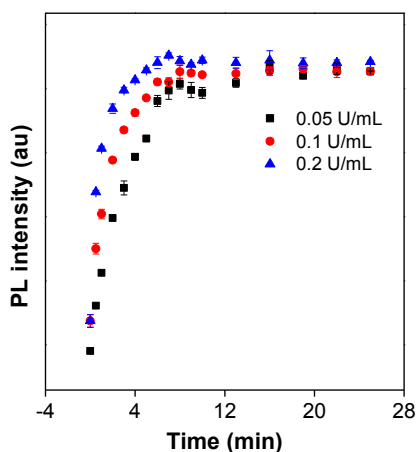


Fig. S10. The fluorescence intensity at 593 nm of HCyNB (10 μ M) incubated with different concentrations of PGA as a function of time. ($E_{ex} = 443$ nm).

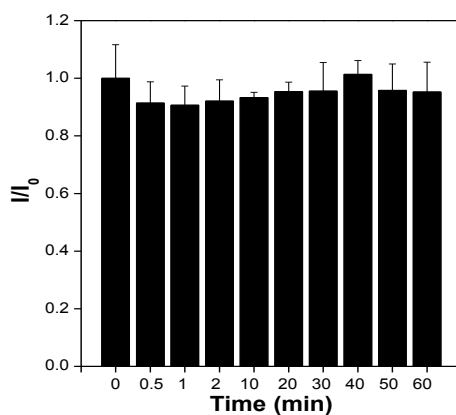


Fig. S11. Stability of HCyNB. I_t/I_0 is the fluorescence intensity ratio at 570 nm after and before t-minute incubation at 37 °C.

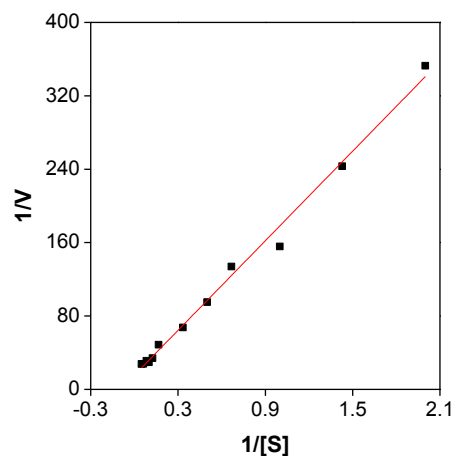


Fig. S12. Lineweaver-Burk plot for the enzyme-catalyzed reaction. The Michaelis-Menten equation was described as: $V=V_{\max}[S]/(K_m+[S])$, where V is the reaction rate, $[S]$ is the concentration of the probe HCyNB, and K_m is the Michaelis constant. Points were fitted using a linear regression model (correlation coefficient $R^2 = 0.992$). $Y=162.73X+15.56$.

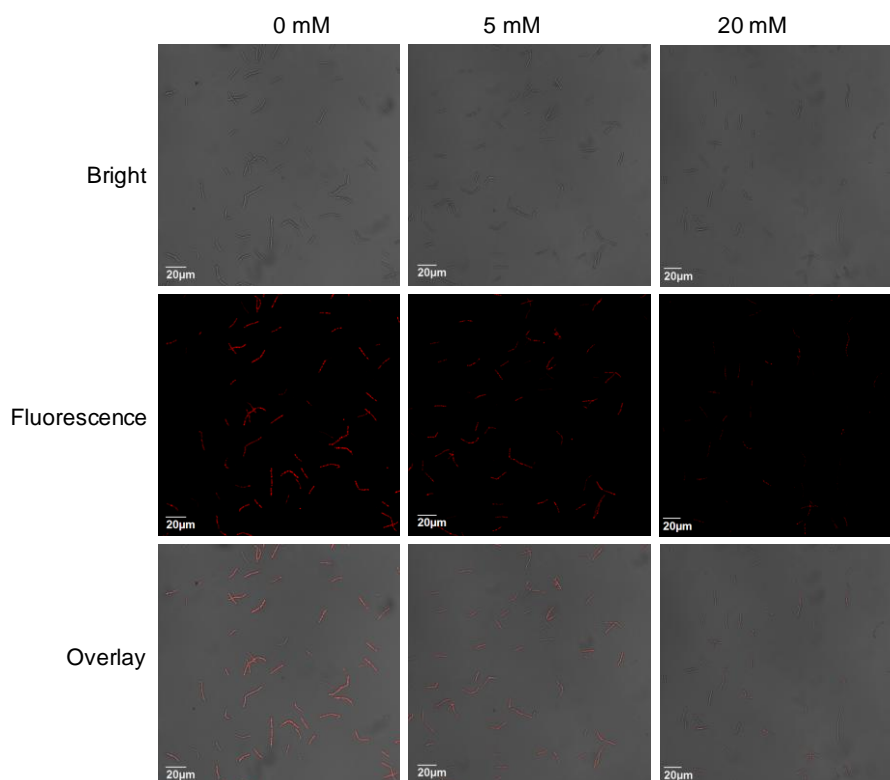


Fig. S13. Confocal fluorescence microscope images of HCyNB in penicillinase-producing *Bacillus cereus* strain CMCCB 63301 in the presence of different concentrations (0, 5 and 20 mM) of PGA inhibitor (penicillin G sodium salt).

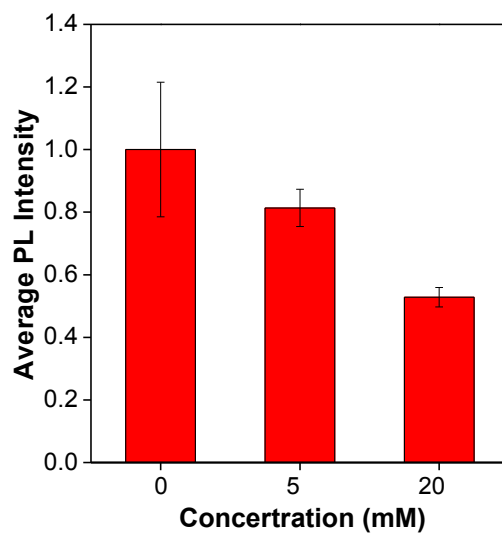


Fig. S14. Average PL intensity of probe HCyNB in penicillinase-producing *Bacillus cereus* strain CMCCB 63301 vs the concentration of PGA inhibitor.