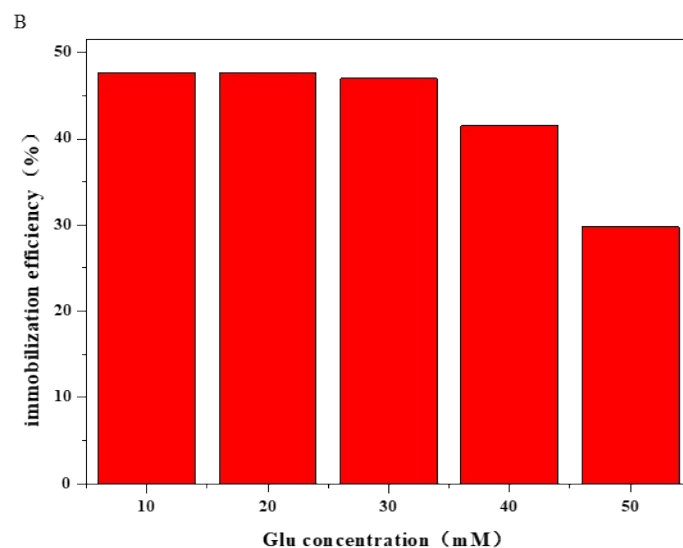
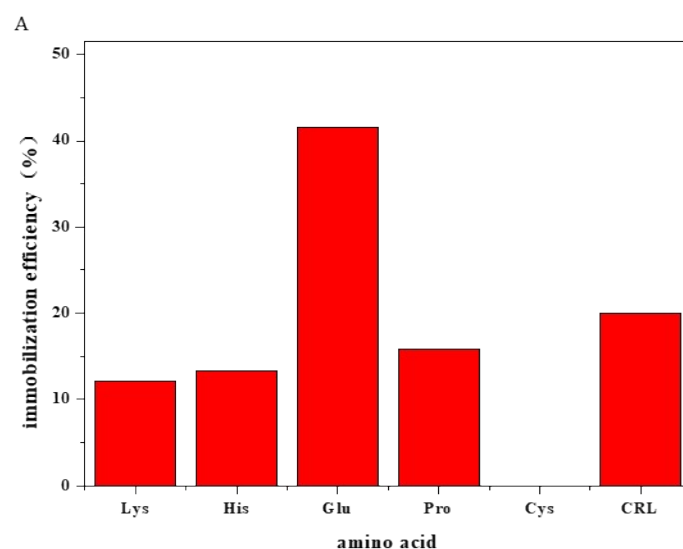


S1. Immobilization efficiency (%) was calculated as the lipase concentration in ZIFs compared to that in start of immobilization process. PVP/Glu/CRL@ZIF-8 demonstrated highest immobilization efficiency of 41.5%. The immobilization efficiency of PVP/Lys/CRL@ZIF-8, PVP/His/CRL@ZIF-8, PVP/Pro/CRL@ZIF-8 and CRL@ZIF-8 were 12.16%, 13.32%, 15.86% and 20%, respectively. And PVP/Cys/CRL@ZIF-8 system showed almost no enzyme encapsulated within the ZIF-8 structure.



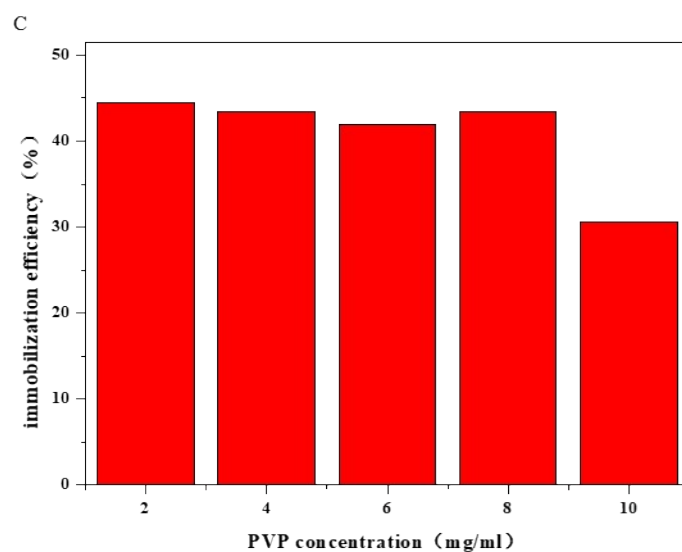


Figure S1. Effect of (A) different amino acids, (B) glutamate concentration and (C) PVP concentration on immobilization efficiency of CRL-ZIFs.

S2. The BCA result of free CRL was dark purple, and the supernatant after immobilization process showed light purple. Whereas, the BCA result of histidine was very similar to that of the supernatant.

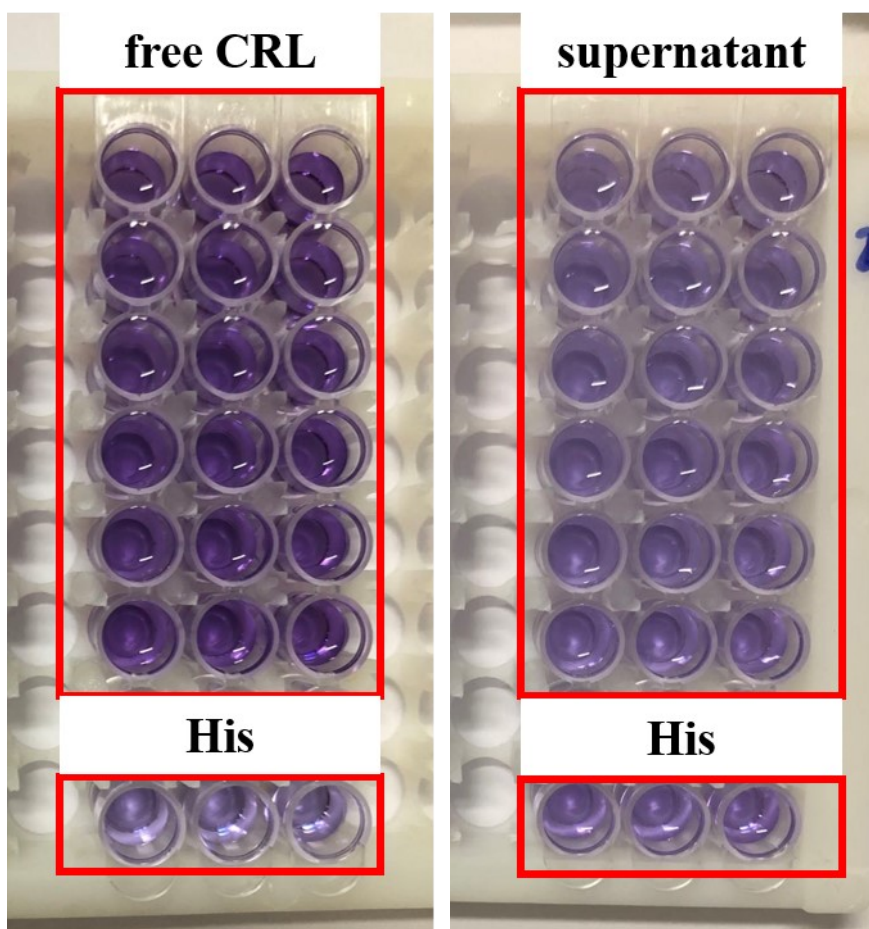


Figure S2. BCA readings of free CRL, supernatant of CRL after immobilization and Histidine.