Supplemental Table 1. MICs of CTX-M-14 β-lactamase and mutant enzymes.

ß-lactamase	benzylpenicillin (μg/mL)	cephalothin (μg/mL)	cefotaxime (μg/mL)
CTX-M-14 (wt*)	>256	>256	12
S237A	>256	>256	0.38
R276A	>256	>256	2
R276N	>256	>256	1.5
S237A:R276A	>256	>256	0.5
S237A:R276N	>256	24	0.125
E. coli RB791	16	12	0.064

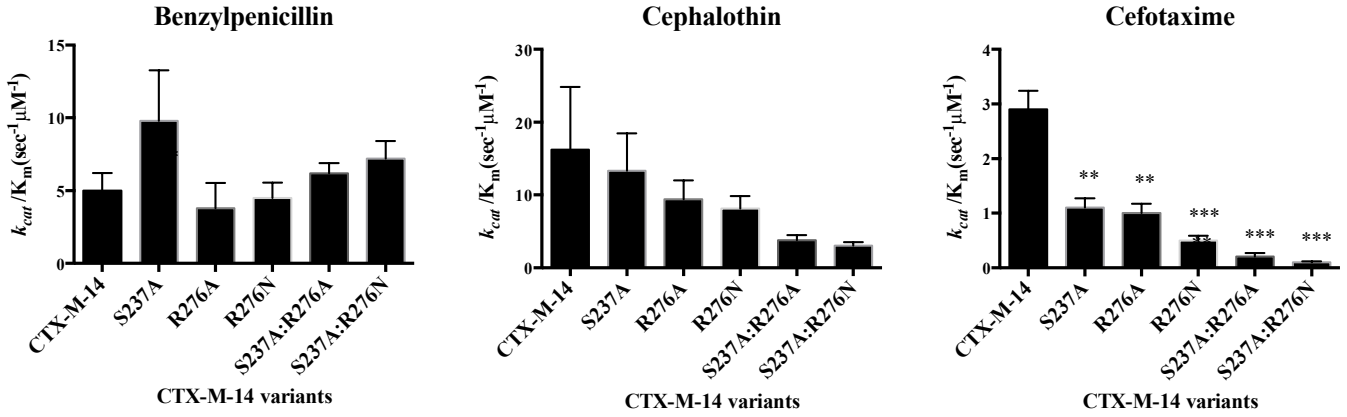
*CTX-M-14 and mutants used in this study are on the pTP123 vector

SUPPLEMENTAL FIGURE LEGENDS

Supp. Figure 1. Catalytic efficiency of CTX-M-14 β-lactamase and mutant enzymes. The catalytic efficiency (k_{cat}/K_m) of the enzyme is plotted on the y-axes and the CTX-M-14 variants are plotted on the x-axes. The catalytic efficiency is shown for three different substrates moving from left to right: benzylpenicillin, cephalothin and cefotaxime. Significant changes between CTX-M-14 and the variants are denoted as '**' (p-value<0.005) and '***' (p-value<0.0005) as determined by an unpaired T-test.

Supp. Figure 2. Fluorescence scan of CTX-M-14 β-lactamase and mutant enzymes. Normalized intensity is plotted on the y-axis and wavelength (nm) is plotted on the x-axis. The fluorescence scan for CTX-M-14 (WT) is shown as red dots, the S237A variant is shown as blue triangles and S237A:R276A variant is shown as boxes. All proteins tested exhibited maximum intensity between 333 nm and 335 nm.

Supplemental Figure 1.



Supplemental Figure 2.