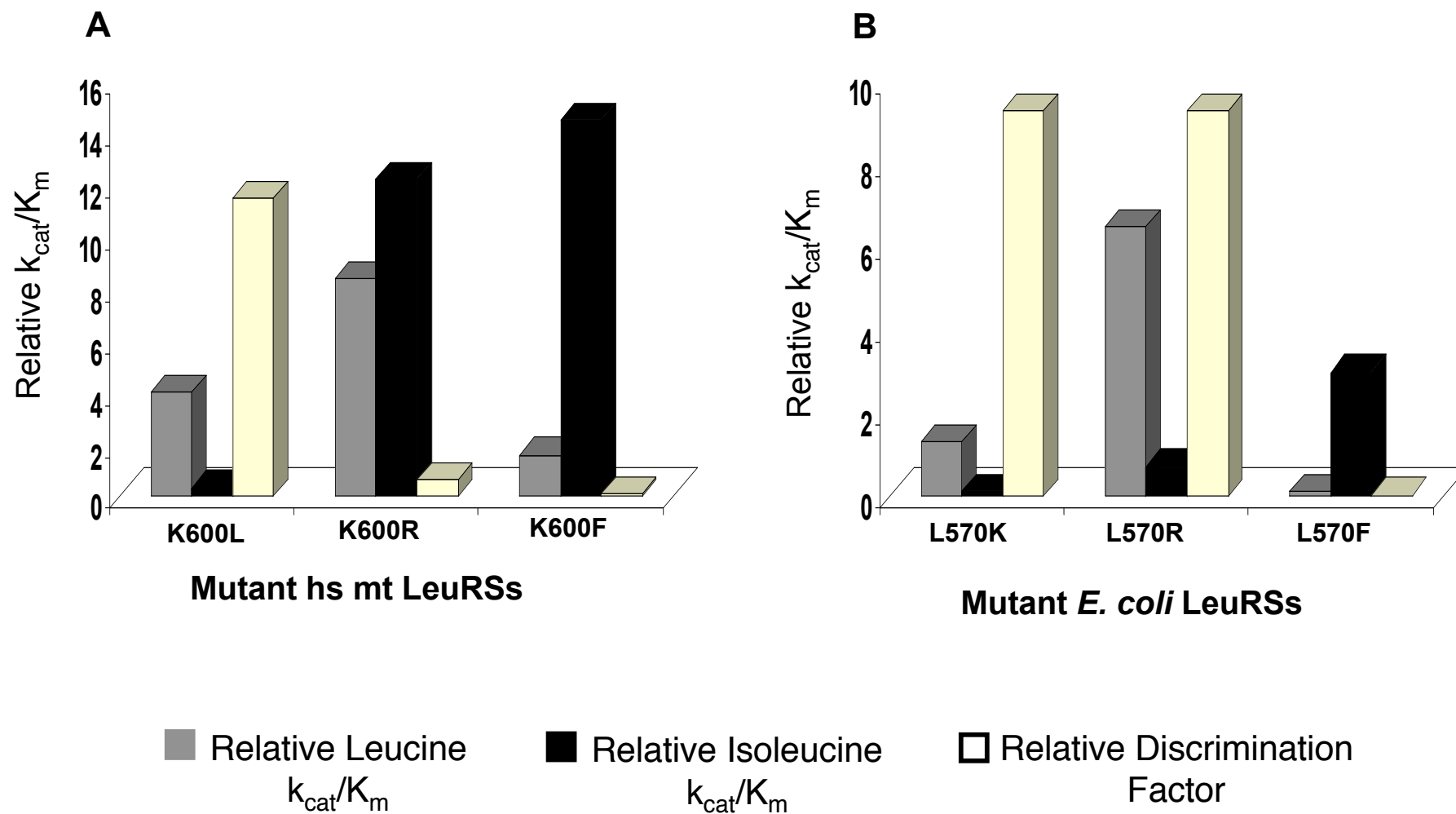


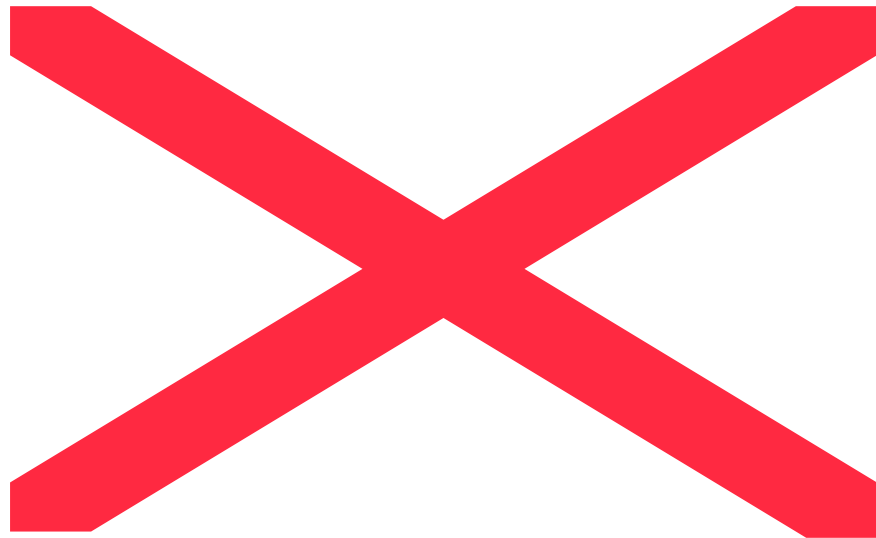
Supporting Figure 1. (A) Comparison of relative k_{cat}/K_m s for leucine and isoleucine and relative discrimination ratios for hs mt mutants K600L, K600R and K600F. (B) Comparison of relative k_{cat}/K_m s for leucine and isoleucine and relative discrimination ratios for *E. coli* mutants L570K, L570R and L570F. Relative k_{cat}/K_m values are represented for leucine (gray), relative k_{cat}/K_m for isoleucine (black) and relative discrimination ratios (white) respectively. Relative numbers were derived from corresponding WT enzymes.



Supporting Figure 2. (A) Comparison of relative k_{cat}/K_m values for hs mt tRNA^{Leu(UUR)} with WT and mutant hs mt (gray) and *E. coli* LeuRSs (black). (B) Comparison of relative k_{cat}/K_m for *E. coli* tRNA^{Leu(CUN)} with WT and mutant hs mt (gray) and *E. coli* LeuRSs (black). (*Inset*) Relative k_{cat}/K_m comparison of wild-type hs mt LeuRS to the hs mt K600 mutants with *E. coli* tRNA^{Leu(CUN)} alone. Relative numbers were derived from corresponding WT enzymes.

hs mt tRNA^{Leu(UUR)}

Relative k_{cat}/K_m



LeuRSs

SI Figure 2A

SI Figure 2B

