Control of the stereo-selectivity of styrene epoxidation by cytochrome P450 BM3 using structure-based mutagenesis

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Supplemental figures

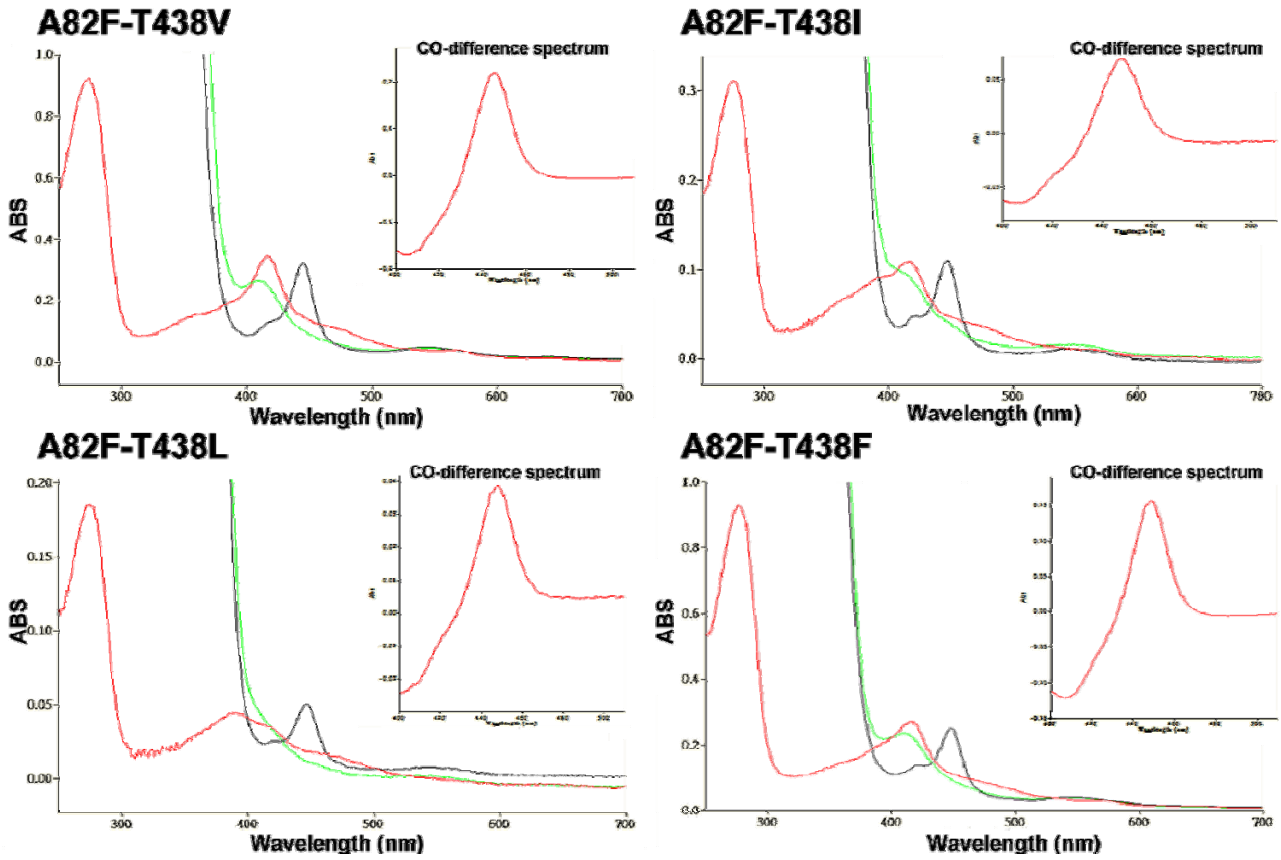

Figure S1 UV-Visible absorption spectra of purified P450 BM3 A82F-T438(V/I/L/F) mutants of 'resting' enzymes (red lines), enzymes reduced by sodium dithionite (green lines) and the reduced form CO-bound spectra (black lines). The CO-difference spectra were shown in insets for each mutant.

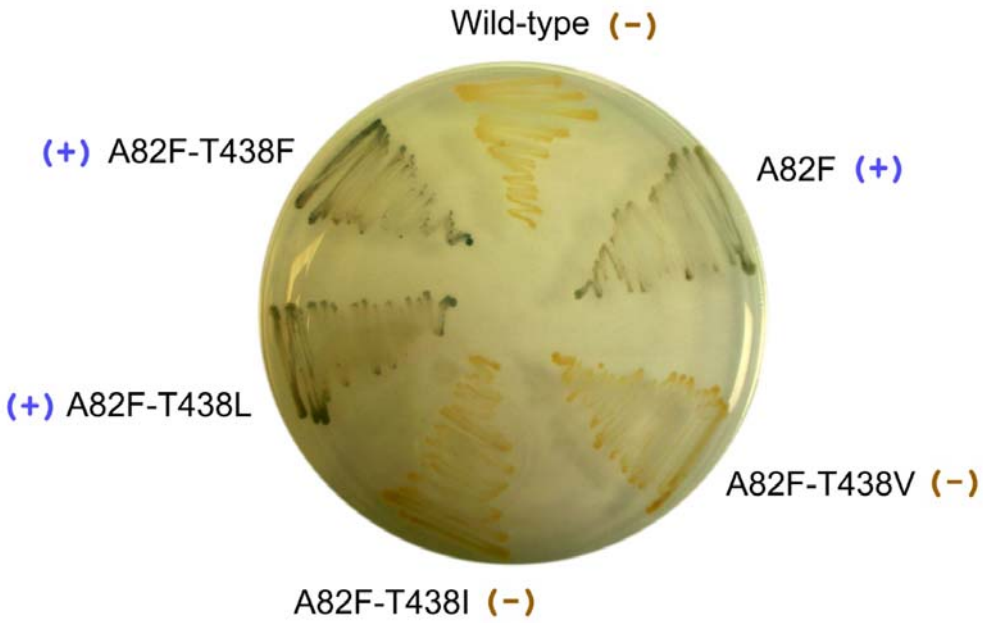

Figure S2 Phenotypes of *E. coli* JM109 cells containing P450 BM3 A82F-T438V, A82F-T438I, A82F-T438L, and A82F-T438F mutant genes streaked on a LB-Amp agar plate. Wild-type, A82F-T438V and A82F-T438I present a normal *E. coli* phenotype colour; on the other hand, A82F, A82F-T438L and A82F-T438F transform the phenotype of *E. coli* cell to blue colour, reflecting the formation of indigo.

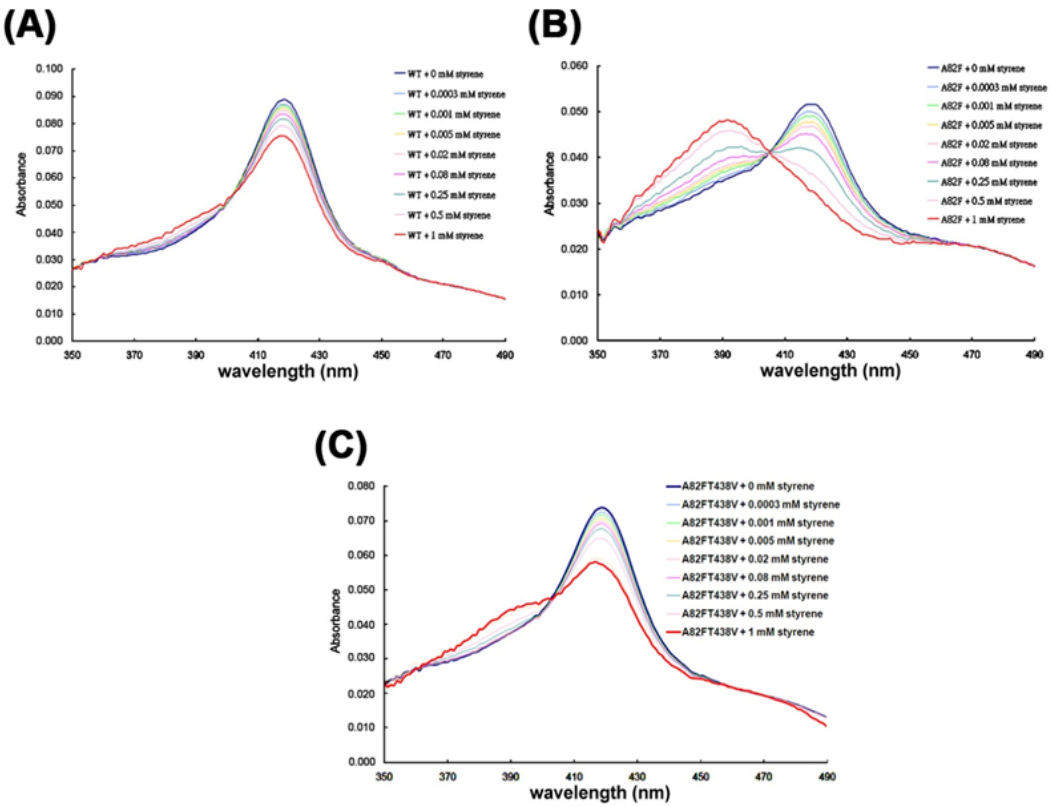

Figure S3 Optical titration of styrene binding to (A) wild-type P450 BM3, (B) A82F mutant, and (C) A82F-T438V mutant.

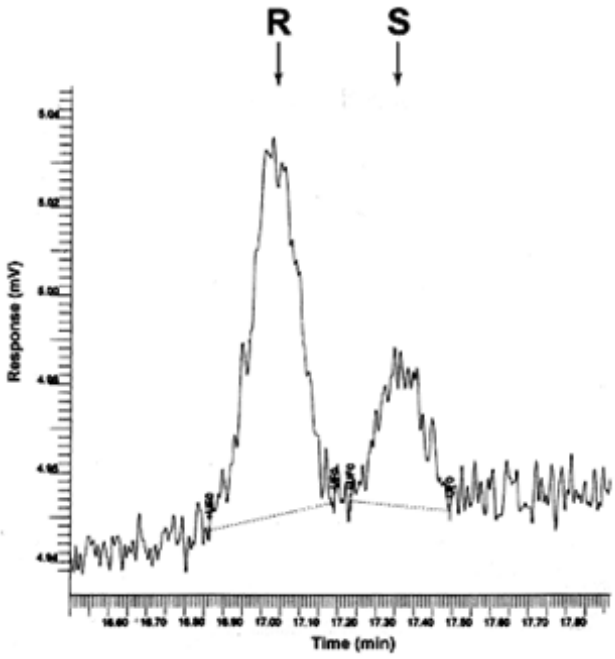

Figure S4 GC chromatograms of the products of styrene epoxidation by P450 BM3 mutants. Samples were petroleum ether extracts of reaction mixtures containing 800 µM styrene, 300 µM NADPH and 1 µM P450 BM3 A82F-T438L mutant