

Supporting Information

Figure S1: Kinetics of Guanine Incorporation for *E. coli* Mutant TGTs. A) TGT (V217G), B) TGT (C145V/T146V), C) TGT (C145V/T146V/V217G), D) TGT (C145V/T146V/P147N/V217G). These curves were obtained from non-linear fits of initial velocity data (three independent determinations) to the Michaelis-Menten equation. The tRNA concentration was held constant at 20 mM while guanine concentration was varied over the range shown. Error bars are shown, denoting the standard deviation from these three sets of data.

Figure S2: Inhibition of Wild-Type *E. coli* TGT by Pterin. The curve was obtained from two independent determinations of initial velocity data using Kaleidagraph. The tRNA concentration was held constant at 20 mM while guanine and inhibitor concentrations were varied over the ranges shown.

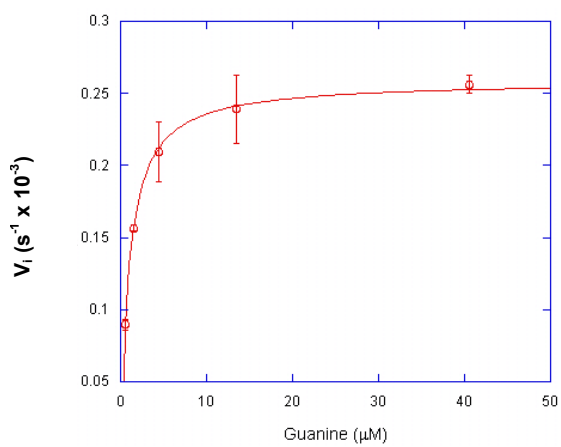
Figure S3: Inhibition of *E. coli* TGT (C145V/T146V). A) Pterin, B) Biopterin. These curves were obtained as described for Figure S2.

Figure S4: Inhibition of *E. coli* TGT (C145V/T146V/V217G). A) Pterin, B) Biopterin. These curves were obtained as described for Figure S2.

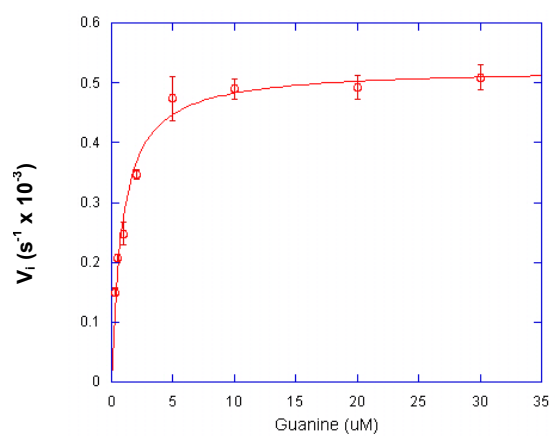
Figure S5: Inhibition of *E. coli* TGT (C145V/T146V/P147N/V217G). A) Pterin, B) Biopterin. These curves were obtained as described for Figure S2.

Figure S1

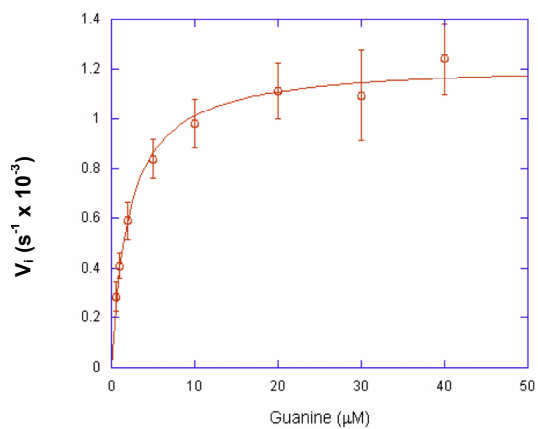
A



B



C



D

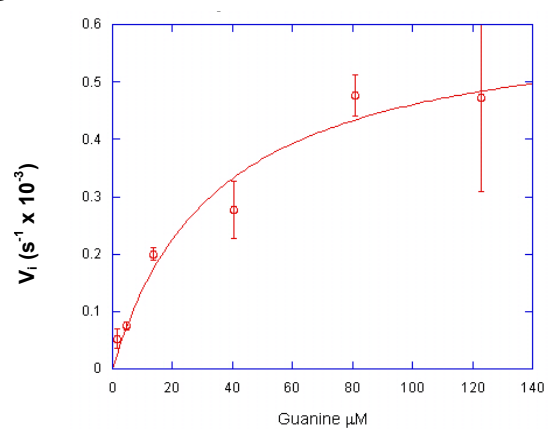


Figure S2

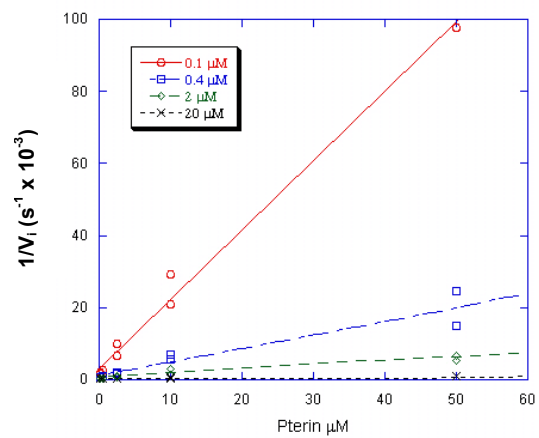
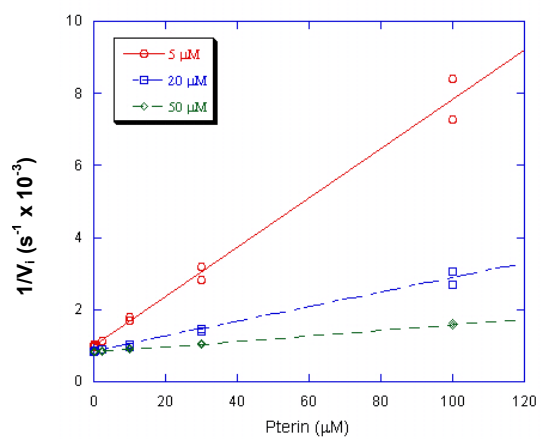


Figure S3

A



B

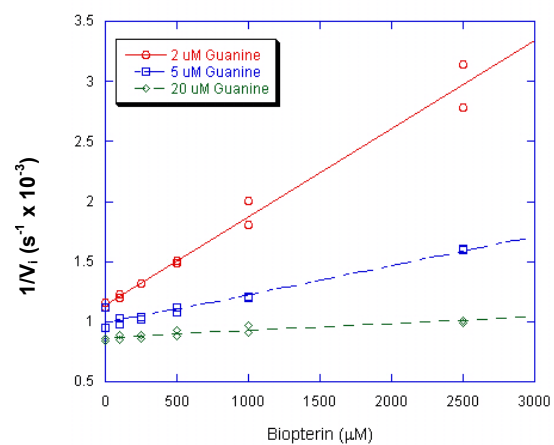
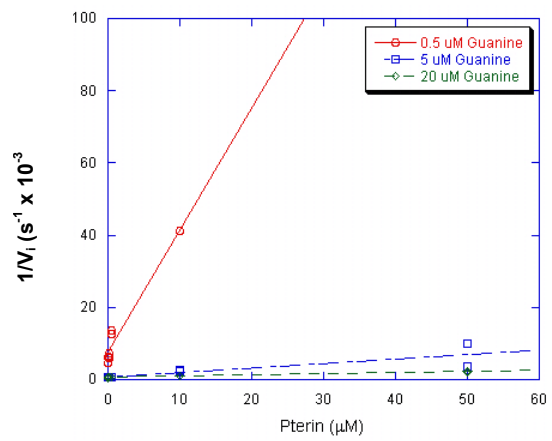
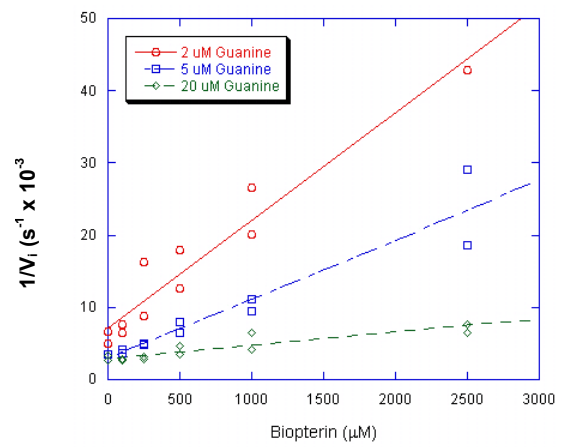


Figure S4

A



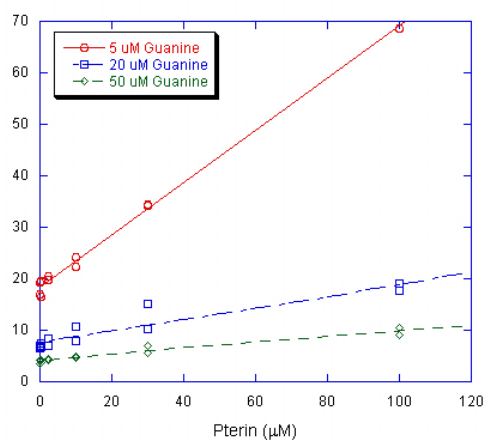
B



$1/M_1 \text{ (s}^{-1} \times 10^{-3})$

Figure S5

A



B

