Additional file 6

The 2nd order multiple relationships of kinetic constants and amino acid composition. The 2nd order multiple regressions showing changes of the log-values of kinetic constants as dependent variables upon the frequences of occurrence for two amino acids in the yeast *Saccharomyces cerevisiae* enzyme sequences, where k_{cat} is the catalytic constant (A), K_M is the Michaelis-Menten constant (C), and k_{cat}/K_M is the specificity constant k_{sp} (E). The observed versus predicted plots (B,D,F) for the values of dependent variables (k_{cat}, K_M, and k_{cat}/K_M, respectively). The predicted values were calculated from the regression equations: $\log(k_{cat}) = 2.292 + 2.644*W - 0.584*W^2 - 1.634*M*W$ ($R^2_{adj.}$=92.36%, p=0.0000); $\log(K_M) = -15.938 + 10.145*N - 1.035*N^2 - 0.311*D*N$ ($R^2_{adj.}$= 79.40%, p=0.0001); $\log(k_{sp}) = 5.847 - 4.251*H + 0.247*A*H$ ($R^2_{adj.}$=51.71%, p=0.0035).