

Estimating Conformation Content of a Protein Using Citrate-stabilized Au Nanoparticles

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Electronic Supplementary Information

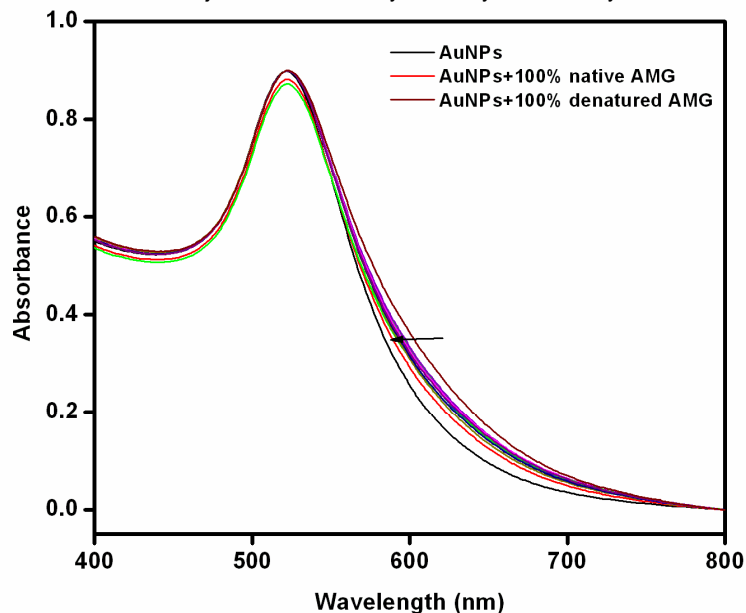


Figure S1. UV-vis extinction spectra of citrate-stabilized Au NPs before and after addition of protein solution with increasing mole fraction of the native form of AMG. The arrows in the figures show the increasing mole fraction content of the native form.

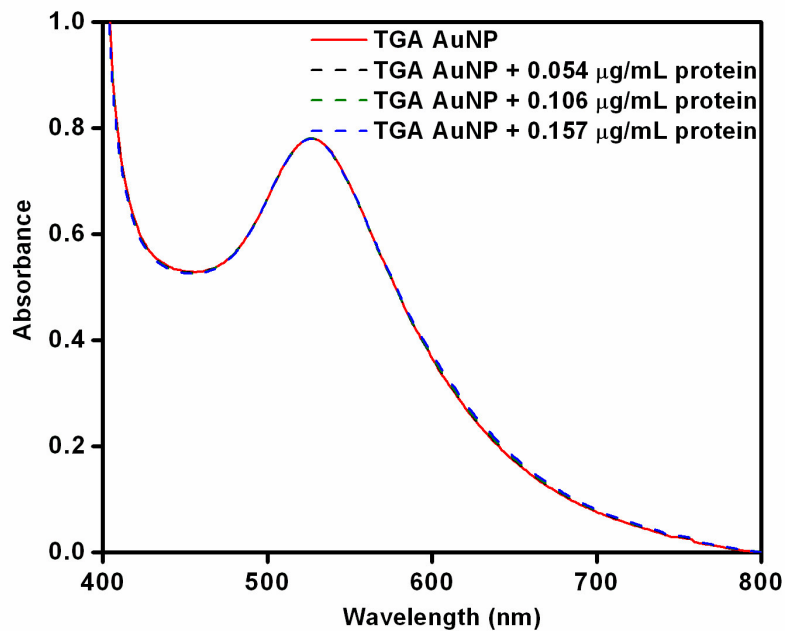


Figure S2. UV-vis extinction spectra of TGA stabilized Au NPs before and after addition of increasing amount of native α -amylase solution.

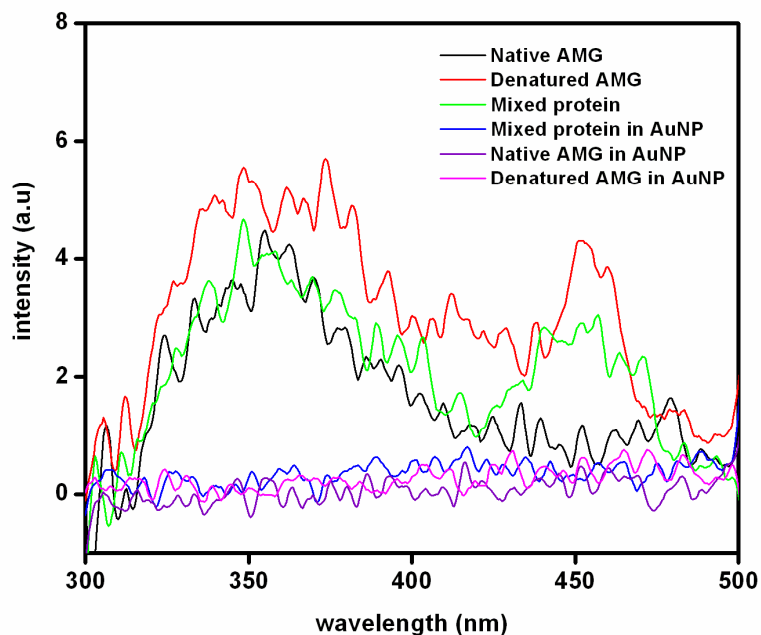


Figure S3. Fluorescence spectra of various compositions of AMG in presence and absence of citrate-stabilized Au NPs.

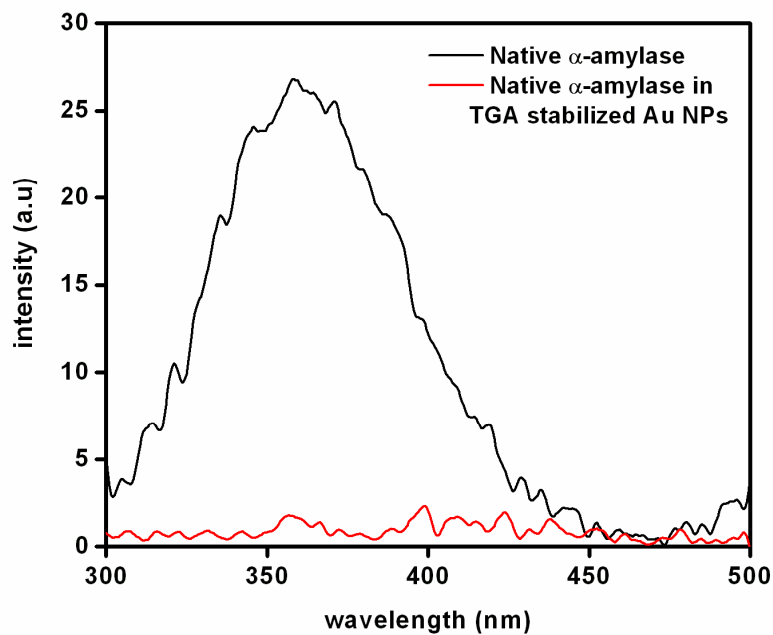


Figure S4. Fluorescence spectra of native α -amylase in presence and absence of TGA-stabilized Au NPs.

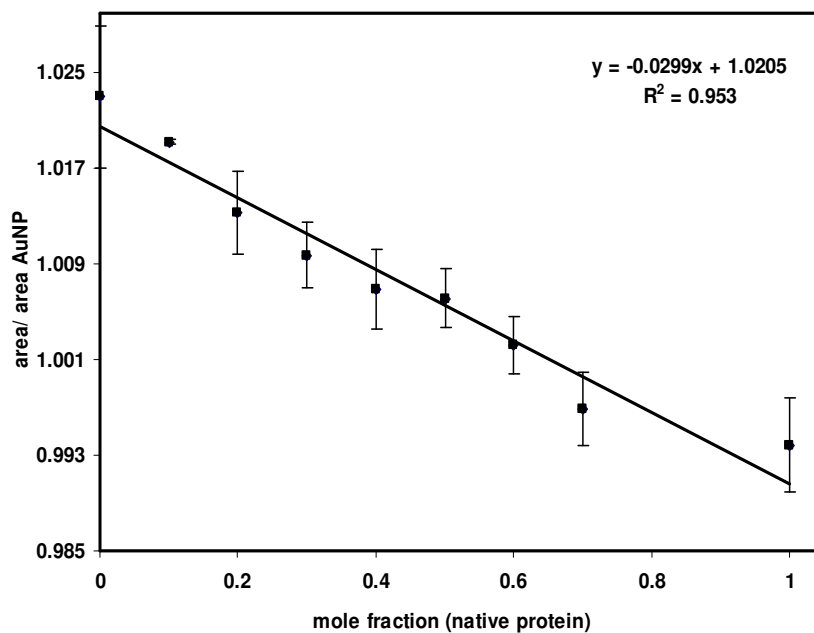


Figure S5. Ratio of the area under the UV-vis spectrum of citrate-stabilized Au NPs in presence of AMG to that of citrate-stabilized Au NPs (only) for different composition of native:denatured AMG (the enzyme being denatured at 80 °C). The data shown are the mean of three sets.

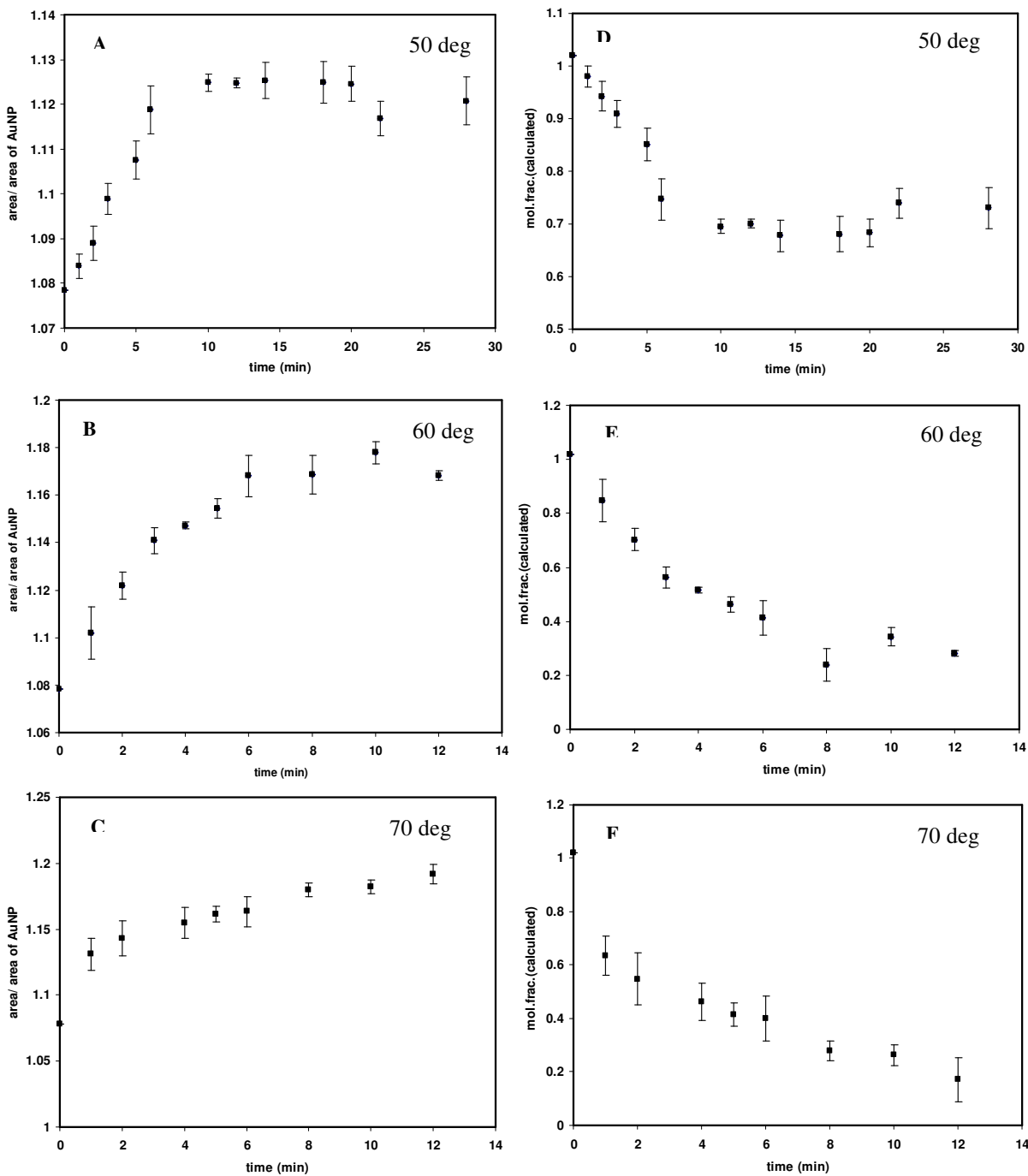


Figure S6. (A-C) Ratio of the area of UV-vis spectrum of solution of BSA (0.05 mL of 1.64 μg/mL) in 3 mL citrate-stabilized Au NPs solution to that of only citrate-stabilized Au NPs plotted against the time for denaturation. (D-F) Time-dependent changes in the mole fraction of native protein of BSA denatured at different temperatures. The legends show the temperature at which the protein solution was thermally heated for denaturation. The mole fractions in D-F correspond to area ratios in A-C and were calculated from the area of the Au NP peaks based on data in Figure 4B. The data shown are the mean of three sets.

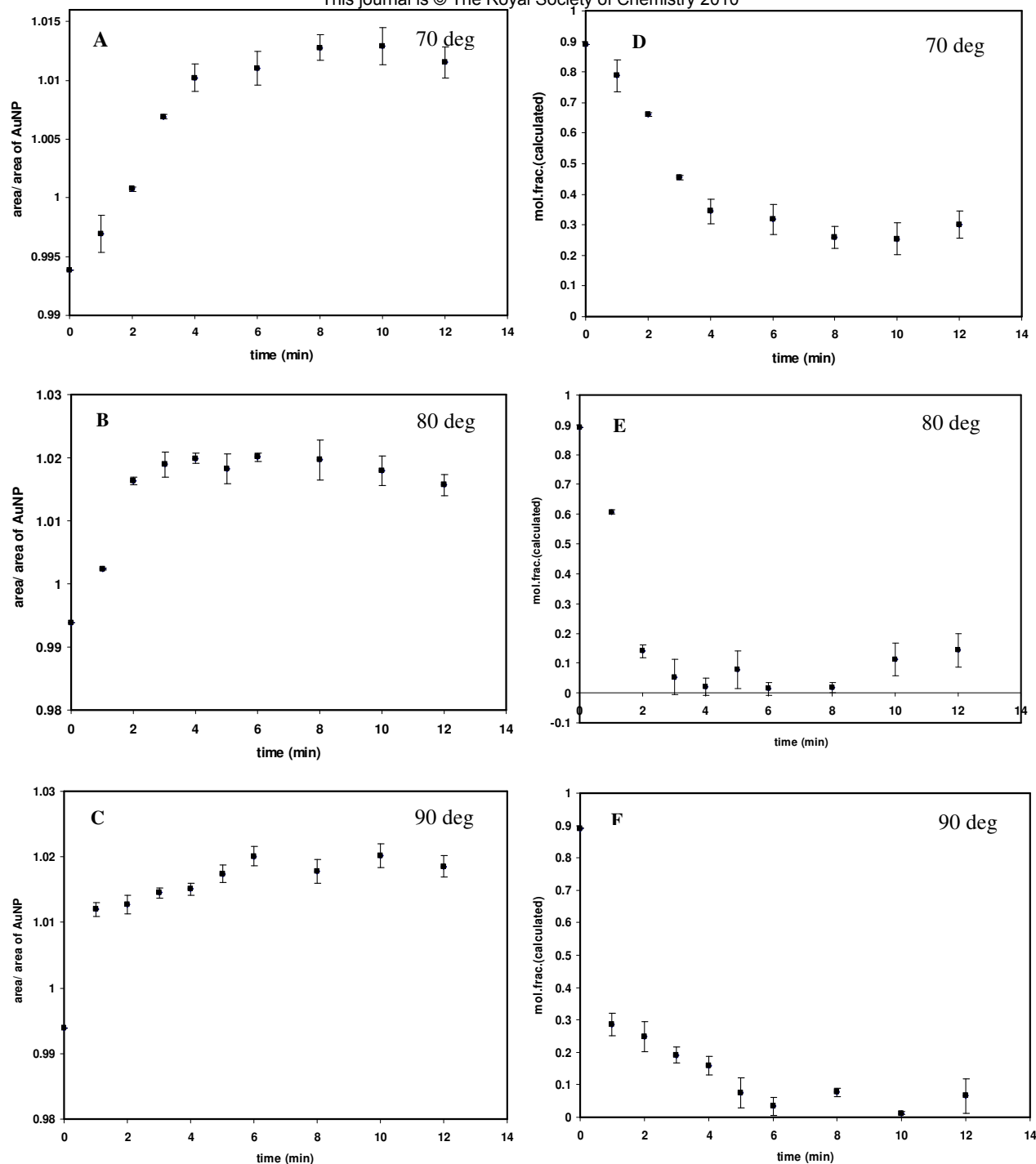


Figure S7. (A-C) Ratio of the area of UV-vis spectrum of solution of AMG (0.05 mL of 0.125 μg/mL) in 3 mL citrate-stabilized Au NPs solution to that of only citrate-stabilized Au NPs plotted against the time of denaturation. (D-F) Time-dependent changes in the mole fraction of native protein of AMG denatured at different temperatures. The legend shows the temperature at which the protein solution was thermally heated for denaturation. The mole fractions in D-F correspond to area ratios in A-C and were calculated from the area of the Au NP peaks based on data in Figure S2. The data shown are the mean of three sets.

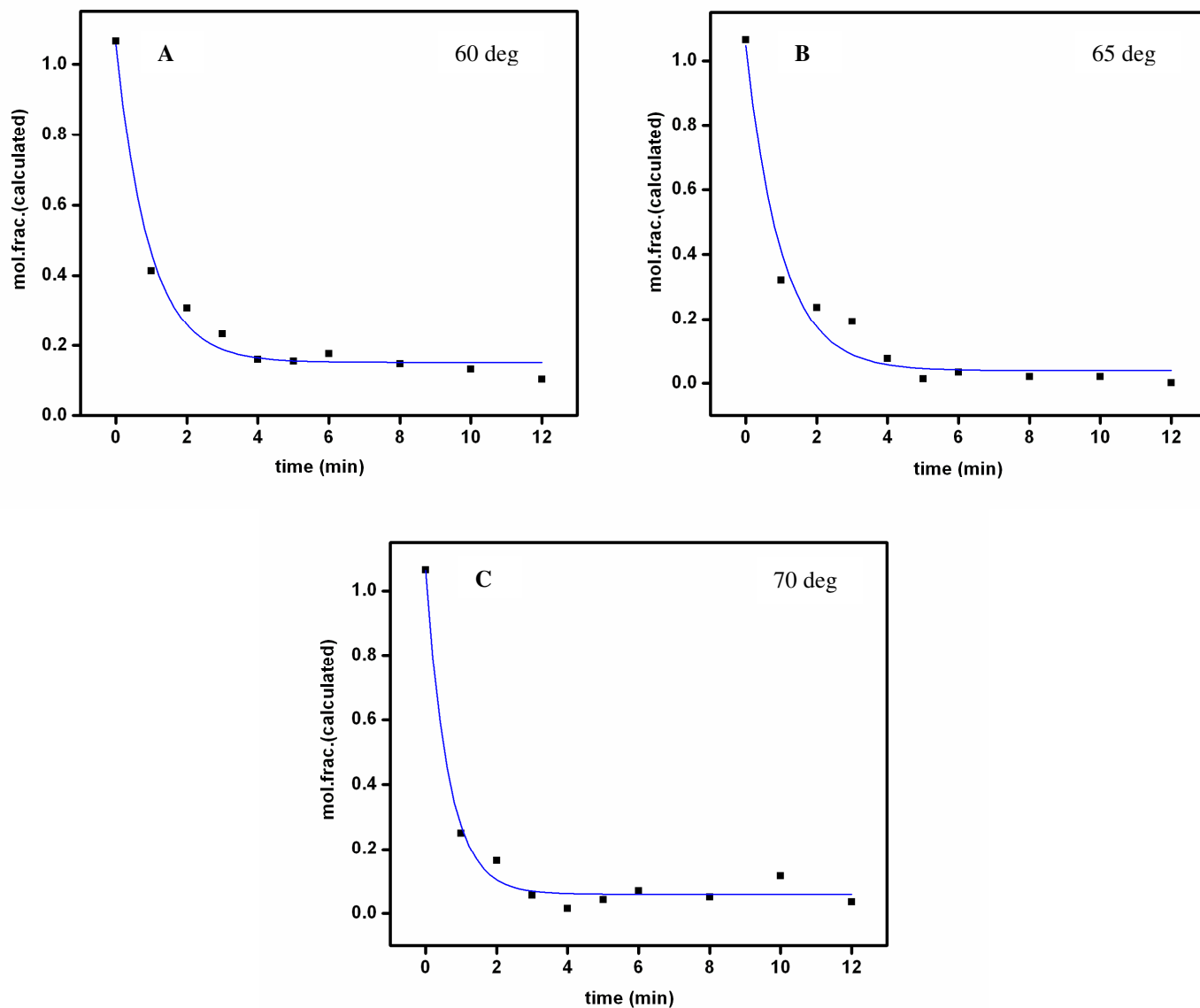


Figure S8. Single exponential fits of the data obtained in the time-dependent thermal denaturation studies for α -amylase. Temperatures of denaturation are shown in the legends.

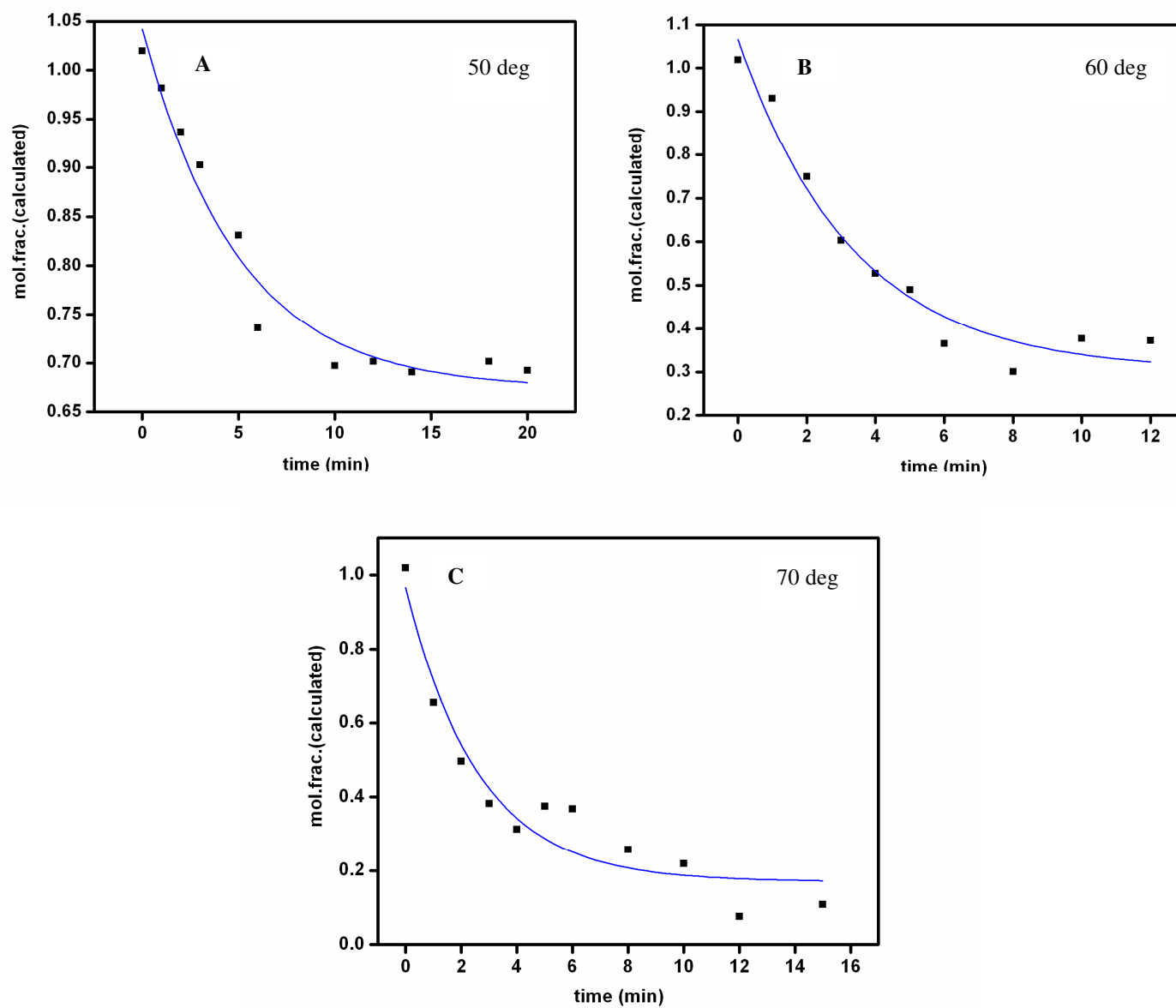


Figure S9. Single exponential fits of the data obtained in the time-dependent thermal denaturation studies for BSA. Temperatures of denaturation are shown in the legends.

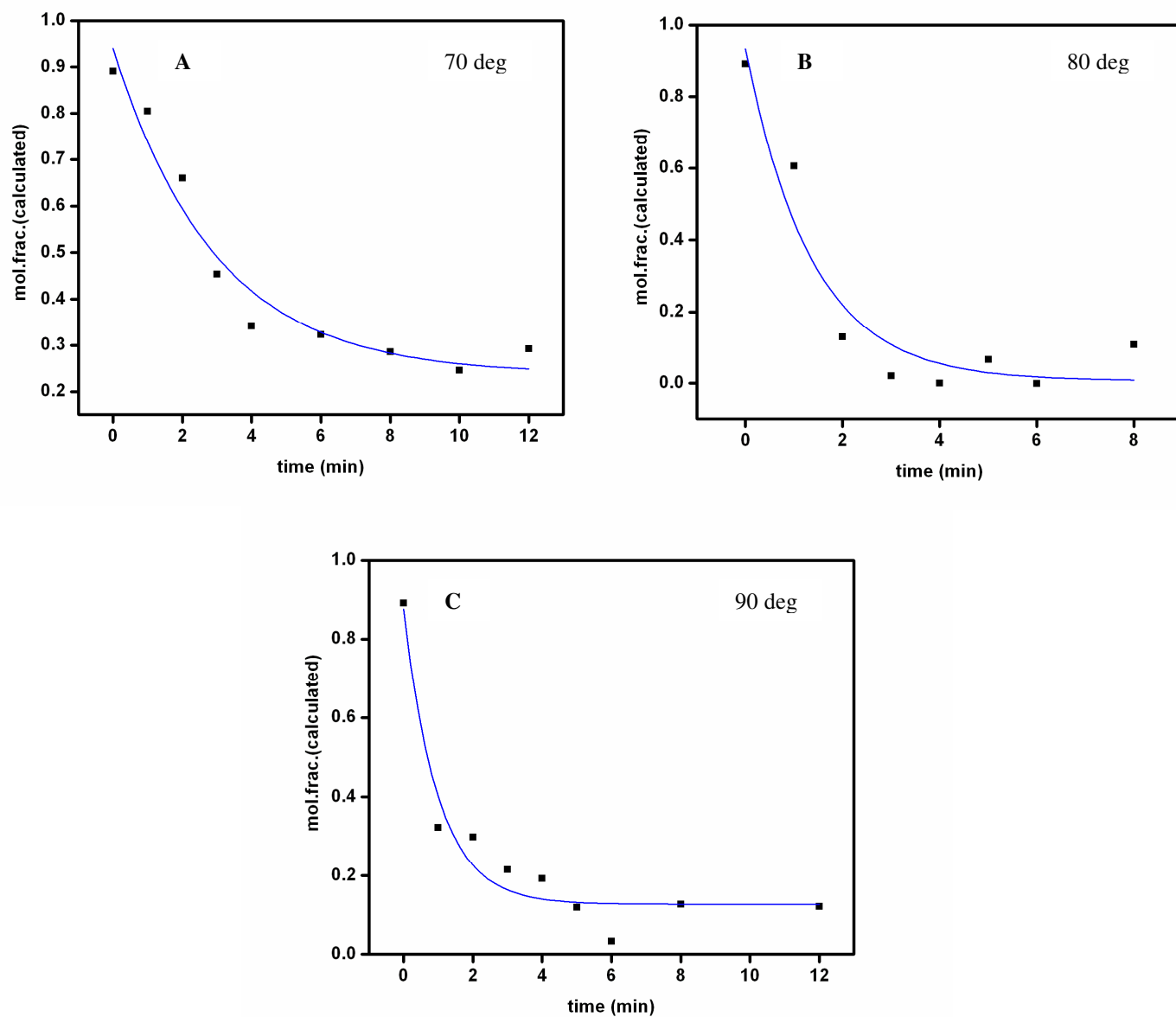


Figure S10. Single exponential fits of the data obtained in the time-dependent thermal denaturation studies for AMG. Temperatures of denaturation are shown in the legends.

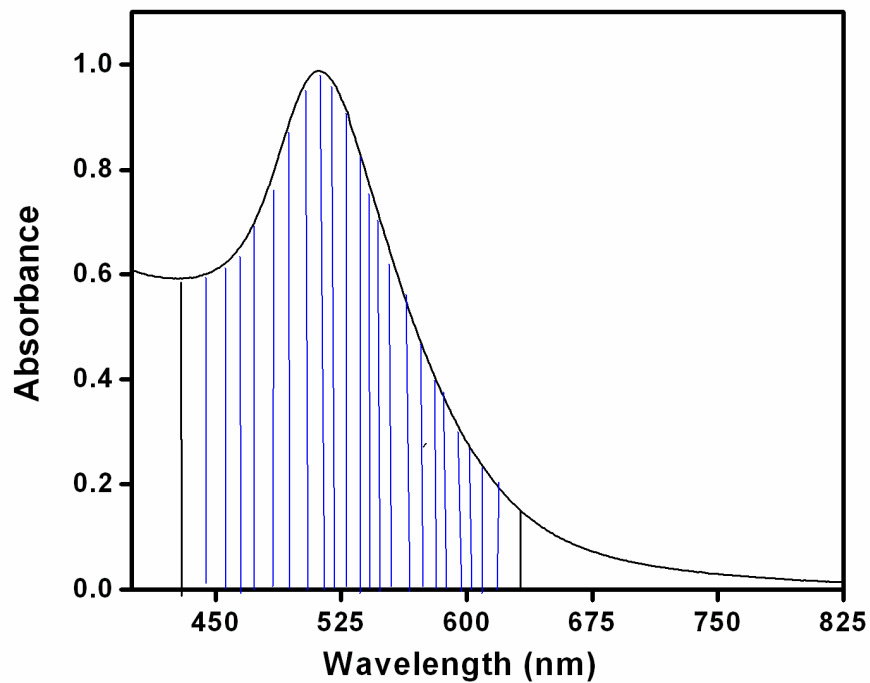


Figure S11: A typical graph showing the area under each extinction spectrum considered in the present study.