Section 8 - Biological Systems

UV resonance Raman spectroscopy of bovine hemoglobin: The protein recovers upon cooling the heated protein back to room temperature. The process is reversible, i.e., the spectral signature of the native conformation returns. Figure 1 shows the changes in spectrum of horse hemoglobin with increasing temperature. The lower temperature spectra exhibit a broader peak and a more intense Raman signal, indicating a more ordered structure. As the temperature increases, the peak narrows and shifts to higher wavenumbers, indicating a transition to a less ordered state. The data suggest that the protein undergoes a conformational change as it transitions through different temperature regimes.

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Structural Changes in Proteins and Polypeptides