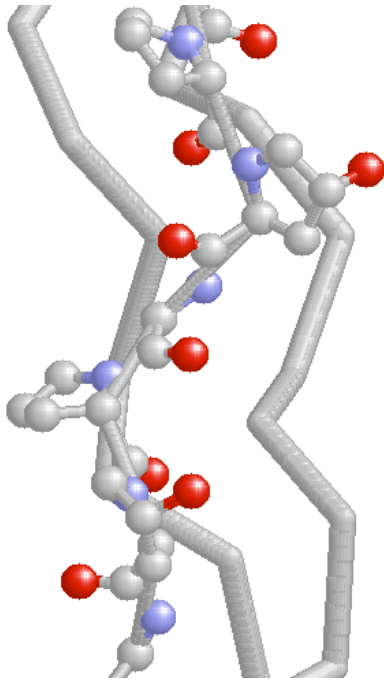


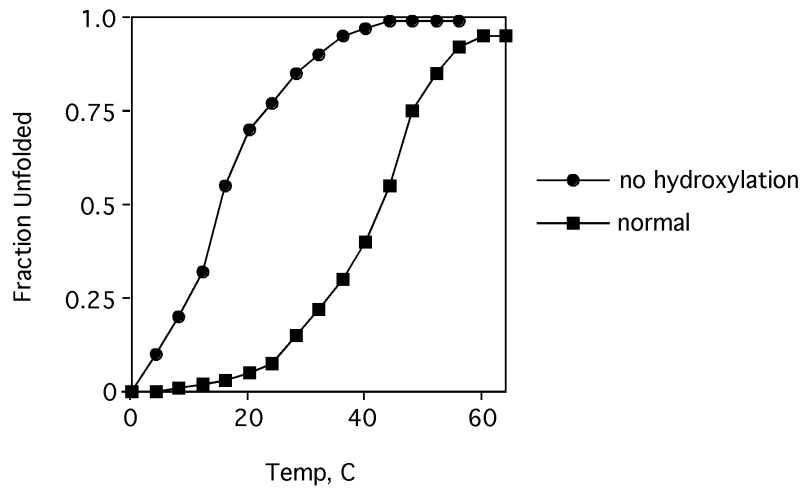
Fibrous proteins - highly elongated molecules whose secondary structures are their dominant structural motifs. **Collagen** is an example of a fibrous protein that plays a key connective and supportive role in all multi-cellular animals. In vertebrates, it is the major protein component of connective tissue and constitutes 25% of total protein.

Pro-Collagen Triple Helix



The stability of the collagen fiber, consisting of Gly-X-Y, depends on inter-chain H-bonds. In addition, Y is often an hydroxylated Pro residue. Hydroxylation (vitamin C dependent) is also critical for stability of the collagen helix. In absence of vitamin C, scurvy results. Symptoms include skin lesions, fragile blood vessels, loss of teeth and bleeding gums.

Pro-Collagen Transition Curve



Is loss of protein stability in absence of Pro hydroxylation due to a change in ΔH or ΔS ?