

Abstract Submitted
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Entropically driven helix formation YEHUDA SNIR, RANDALL KAMIEN, University of Pennsylvania — We investigate a purely entropic approach to understanding the folding of helices that exclusively relies on a local and homogeneous interaction with depleting spheres. We found that by decreasing the size of the depleting spheres for a given volume fraction the helix formed becomes tighter. In the limit of small spheres the helix becomes the optimally tight helix of pitch to radius ratio of 2.5122 often found in alpha helices of proteins. The depletion interaction can be used as a surrogate for hydrophobicity, polymer-polymer interactions, and for boundary layers in elastica and liquid crystals.

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