The thesis presents a systematic investigation of the conformational stability, unfolding, refolding, and chaperone-assisted refolding of *Escherichia coli* methionine adenosyltransferase (MetK). The study combines biochemical and biophysical approaches to characterize the effects of chemical and thermal perturbations on MetK and examines the role of osmolytes and the GroEL/ES chaperonin system in promoting productive folding. The findings provide insights into the heterogeneous nature of MetK unfolding, its tendency toward aggregation during spontaneous refolding, and the remarkable ability of GroEL/ES to accelerate productive refolding and restore enzymatic activity. The work has been carried out systematically and addresses an important question concerning why an obligate substrate of GroEL might need GroEL and how it achieves efficient folding under cellular conditions. The thesis makes a meaningful contribution to the understanding of protein folding and chaperone-assisted folding.