

# Mechanical stability of proteins

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## Abstract

A number of experiments and experimentally-based simulations showed that  $\beta$ -proteins are mechanically more stable than  $\alpha$ -proteins. However, the theory that might explain this evidence has still been lacking. In this paper we have developed a simple elastic theory, which allows to estimate critical forces for stretching both kinds of proteins. It has been shown that unfolding of  $\beta$ -proteins does really require notably higher forces as compared to the stretching of  $\alpha$ - proteins.