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Effect of Intrinsic Disorder and Self-Association on the Translational Diffusion of Proteins: The Case of α-Casein

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Abstract

© 2017 American Chemical Society. Translational diffusion is the major mode of macromolecular transport in leaving organisms, and therefore it is vital to many biological and biotechnological processes. Although translational diffusion of proteins has received considerable theoretical and experimental scrutiny, much of that attention has been directed toward the description of globular proteins. The translational diffusion of intrinsically disordered proteins (IDPs), however, is much less studied. Here, we use a pulsed-gradient nuclear magnetic resonance technique (PFG NMR) to investigate the translational diffusion of a disordered protein in a wide range of concentrations using α-casein that belongs to the class of natively disordered proteins as an example.

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