Title:	Fluorescence Depolarization Kinetics to Study the Conformational Preference, Structural Plasticity, Binding, and Assembly of Intrinsically Disordered Proteins
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Abstract:	Fluorescence depolarization kinetics measured by the time-resolved fluorescence anisotropy decay serves as a sensitive and powerful methodology to study the conformational dynamics of macromolecules. This methodology allows us to delineate the different modes of biomolecular motional dynamics including the local, segmental, and global rotational dynamics on the timescale ranging from picoseconds to nanoseconds. In this chapter, we describe the principles and applications of this methodology to obtain unique molecular insights into the intrinsically disordered proteins (IDPs). Fluorescence depolarization kinetics, when performed in a site-specific manner, can offer a reliable tool to monitor the intrinsic backbone torsional dynamics of expanded IDPs and is capable of discerning the conformational preference of IDPs. Additionally, the time-resolved fluorescence anisotropy measurements allow us to investigate the mechanism of binding and assembly of a wide range of IDPs that are involved in crucial function and disease.
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