Title:	Effect of intramolecular H-bonding and π-stacking interactions on the folding behavior of aromatic oligoamides
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Abstract:	The higher-order structure of biological macromolecules is very important as they perform complex biological functions and the stability of these structures generally relies on both primary structure and non-covalent interactions. These biological systems motivate chemists to synthesize non-natural structures that can apparently mimic biology. Synthetic polymers can fold into different structures like helix, sheet, turn, zigzag structures, etc. Motivated by the famous work of Hamilton and co-workers in the late '90s, a huge number of aromatic oligoamides based on different benzene derivatives have been synthesized and their folding study was done in both solid and solution states. Despite significant success in mimicking different types of folded structures, mimicking β-sheet structure is limited and the reason lies in the intermolecular aggregation between multiple β-strands. Having experienced the limitation of aromatic polyamides to be characterized by the NMR technique in millimolar concentration and also to overcome the solubility problem, we designed to prepare two different kinds of oligoamides which are periodically grafted with polyethylene glycol and their folding properties are going to be investigated by techniques like UV-Vis, fluorescence, 1D NMR, 2D NMR (DOSY), etc. Here one set of oligoamide contains both intramolecular H-bonding and π-π stacking while the other set lacks intramolecular H-bonding. The folding study is going to be studied soon to have a clear-cut idea about the individual as well as the cooperative effect of both H-bonding and π-stacking.
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