

Abstract Submitted  
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**UV Resonance Raman Spectral Hydrogen Exchange Studies of Poly-L-Lysine's Conformation** LU MA, SANFORD ASHER, University of Pittsburgh — The rate of exchange of peptide backbone NH group with the hydrogen of aqueous solvents is sensitive to the peptide secondary structure. In this work, we use a continuous flow rapid mixing technique and study H/D exchange rates of the model peptide poly-l-lysine (PLL) using UV resonance Raman spectroscopy. Different conformational equilibria of PLL between the helical ( $\alpha$ ,  $3_{10}$ , and  $\pi$ -helix) and extended conformations (PPII and  $2.5_1$ -helix) are obtained by controlling solvent pH and salt concentration. The AmII' band of the peptide backbone is used as the deuteration marker. The H/D change rate of PLL provides direct information of the stability of different conformations. Additionally, these results provide insight into backbone conformation fluctuations and how various factors affect the conformation.

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