

Aminoxy Acids as Building Blocks of Foldamers

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In this talk, I will report our foldamer research based on aminoxy acid (a class of unnatural amino acids) building blocks. Through computational and experimental studies, we showed that α -, β - and γ -aminoxy acids, when incorporated into peptides, could induce novel secondary structures such as turns and helices. In addition, these turns and helices are independent of side-chains. As peptides containing aminoxy acids have excellent metabolic stability, aminoxy acids will be of tremendous potential in molecular design of peptide analogs for drug discovery. We have discovered a series of aminoxy acid-based small molecules that self-assemble into cation channels and anion channels, and explore their biomedical applications.

