Record Nr. UNINA9910146238203321 Pseudo-peptides in drug discovery [[electronic resource] /] / [edited by] **Titolo** Peter E. Neilsen Pubbl/distr/stampa Weinheim,: Wiley-VCH, c2004 **ISBN** 1-280-52069-8 9786610520695 3-527-60569-X 3-527-60190-2 Descrizione fisica 1 online resource (258 p.) Altri autori (Persone) NielsenPeter E. <1951-> Disciplina 615.19 Soggetti Peptide drugs - Design **Peptides** Amino acids - Synthesis Polyamides Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Pseudo-peptides in Drug Discovery; Contents; Preface; List of Contributors: 1 Versatile Oligo(N-Substituted) Glycines: The Many Roles of Peptoids in Drug Discovery; 1.1 Introduction; 1.2 Peptoid Synthesis; 1.2.1 Solid-Phase Synthesis; 1.2.2 Sub-monomer Solid-Phase Method; 1.2.3 Side Reactions; 1.2.4 Post-Synthetic Analysis; 1.3 Drug Discovery via Small-Molecule Peptoid Libraries; 1.3.1 Peptoid Drugs from Combinatorial Libraries; 1.3.2 Peptoid Inhibitors of RNA-Protein Interactions; 1.4 Peptoid-Based Drug Delivery and Molecular Transporters: Cellular Uptake 1.4.1 Peptoid Mimics of HIV-Tat Protein1.4.2 Cellular Delivery of Nucleic Acids; 1.5 Peptoid Mimics of Peptide Ligands; 1.6 Peptoids with Folded Structure; 1.6.1 Restricting Conformational Space; 1.6.2 Peptoid Helices; 1.6.2.1 CD and NMR Studies of a Helical Peptoid Pentamer with -Chiral Aromatic Side Chains; 1.6.2.2 CD Studies of Longer Peptoid Helices Containing -Chiral Aromatic Side Chains: 1.6.2.3 Structural

Studies of Peptoids with Aliphatic Side Chains by CD, NMR, and X-ray

Crystallography; 1.6.2.4 Summary; 1.6.3 Protein-mimetic Structures 1.7 Biomimetic Peptoid Structures for Therapeutic Applications 1.7.1 Peptoid Mimics of Antibacterial Peptides; 1.7.2 Peptoid-Based Mimics of Lung Surfactant Proteins; 1.7.3 Collagen-based Structures Containing Peptoid Residues; 1.8 Obstacles to the Development of Biomedically-useful Peptoids; 1.8.1 Enhance the Diversity of Secondary Structure in Peptoid Foldamers: 1.8.2 Improve Understanding of Peptoid Sequence/Structure Relationships; 1.8.3 Translate Bioactive Peptide Sequences into Bioactive Peptoid Sequences; 1.8.4 Develop Peptoids with Stable Tertiary Structure 1.8.5 Develop Peptoid Shuttles for Intracellular Import of Xenobiotic Agents 1.8.6 Optimize Pharmacological Profile of Oligopeptoids; 1.9 Conclusion; 1.10 References; 2 -Peptides, -Peptides and Isosteric Backbones: New Scaffolds with Controlled Shapes for Mimicking Protein Secondary Structure Elements; 2.1 Introduction; 2.2 Molecular Organization in -Peptide Oligomers; 2.2.1 Historical Background; 2.2.2 - Amino Acids versus - Amino Acids: An Enormous Increase in Chemical Diversity; 2.2.3 Helical Folds; 2.2.3.1 The 3(14)-Helix; 2.2.3.2 The 12/10- (10/12-) Helix; 2.2.3.3 The 2.5(12)-Helix 2.2.3.4 The 2(8)-Helix2.2.4 Extended -Peptide Strands, Turns and Formation of Sheet Structures; 2.3 Molecular Organization in -Peptide Oligomers; 2.3.1 Preparation of -Amino Acid Monomers for -Peptide Synthesis; 2.3.2 Helical Folds; 2.3.3 Turn and Sheet Structures; 2.4 Biological Activities of - and -Peptides; 2.4.1 Biological Stability; 2.4.2 Bioactive Peptides Based on Helical Scaffolds; 2.4.3 Bioactive Peptides Based on Open-Chain -Turn Mimetics; 2.4.4 Cell Penetrating -Peptides; 2.5 Isosteres; 2.5.1 Example 1: Oligomers of -Aminooxy Acids as -Peptide Mimetics 2.5.2 Example 2: N,N -Linked Oligoureas as -Peptide Mimetics

Sommario/riassunto

Peptides are among the most versatile bioactive molecules, yet the do not make good drugs, because they are quickly degraded or modified in the body. To overcome this problem, stable and at the same time biologically active pseudo-peptides have been developed. These novel compounds open up new perspectives in drug design by providing an entire range of highly specific and non-toxic pharmaceuticals. This is the first work devoted to the topic and draws together knowledge gained on different types of peptidomimetics and other pseudo-peptides with drug properties. As such, it includes pepto