

1. Record Nr.	UNINA9911019559303321
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Titolo	Synthetic multivalent molecules : concepts and biomedical applications // Seok-ki Choi
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, c2004
ISBN	9786610541911 9781280541919 1280541911 9780471577706 0471577707 9780471578901 0471578908
Descrizione fisica	1 online resource (446 p.)
Disciplina	615/.31
Soggetti	Multivalent molecules - Synthesis Multivalent molecules - Design Multivalent molecules - Physiological effect
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	SYNTHETIC MULTIVALENT MOLECULES; CONTENTS; Preface; Notes for Organization and Classification; Abbreviations; 1 Introduction; 1.1 Nomenclature and Definitions; 1.1.1 Valency; 1.1.2 Linkers; 1.1.3 Scaffolds; 1.1.4 Ligand Density; 1.1.5 Homo- and Heterovalent Molecules; 1.2 Mechanistic Aspects of Multivalent Interaction; 1.2.1 Affinity Constant and Avidity; 1.2.2 Thermodynamics; 1.2.3 Kinetics; 1.2.4 Steric Effects; 1.3 Biological Roles of Multivalent Ligands; 2 Multivalent Molecules Applied to Viral Targets; 2.1 Influenza Virus; 2.1.1 Hemagglutinin; 2.1.1.1 Divalent Sialic Acid 2.1.1.2 Tetraivalent Sialoside2.1.1.3 Dendrimers Presenting Sialosides; 2.1.1.4 Sialic Acid Displayed in Liposomes; 2.1.1.5 Polymerized Liposome Presenting Sialic Acid; 2.1.1.6 Sialic Acid in Langmuir-Blodget Monolayers; 2.1.1.7 Sialic Acid Presented on Biopolymer Surfaces; 2.1.1.8 Poly(acrylamide) Presenting Sialosides; 2.1.1.9 Poly (acrylic acid) Presenting Sialosides; 2.1.1.10 Poly(acrylamide) Presenting

C-Sialosides; 2.1.1.11 Postmodification of Activated Polymers; 2.1.1.12 Modes of Action of Polymeric Sialosides; 2.1.1.13 OPTCOL Assay; 2.1.1.14 ter-Poly(acrylic acid) Presenting Sialosides 2.1.1.15 Poly(glutamic acid) Presenting Lysogangliosides 2.1.1.16 Poly (glutamic acid) Bearing Sialic Acid-Containing Trisaccharides; 2.1.1.17 Poly(acrylamide) Bearing Sialic Acid Linked at the C(4) Position; 2.1.1.18 Poly(acrylamide) Tethering 9-O-Acetylsialosides; 2.1.1.19 Neoglycoprotein Displaying Sialic Acids; 2.1.1.20 Natural b-Inhibitors; 2.1.2 Neuraminidase; 2.1.2.1 Poly(glutamic acid) Presenting NA Inhibitors; 2.2 Human Immunodeficiency Virus; 2.2.1 HIV-1 Protease; 2.2.1.1 Divalent Terminal Peptides; 2.2.2 HIV-1 Reverse Transcriptase; 2.2.2.1 Heterodimers Composed of NRTI and NNRTI 2.2.3 Glycoprotein 120 (gp120) on Viral Surfaces 2.2.3.1 Neoglycoprotein-Displaying CD4 Peptide; 2.2.3.2 Galactosyl Ceramide Immobilized on Viral Surfaces; 2.2.3.3 Multivalent Anions; 2.2.3.4 Bivalent Antagonists of CXCR4; 2.2.4 Surface Carbohydrates on HIV; 2.2.4.1 Oligomannose Sugars Present on gp120; 2.2.4.2 Modes of CVN Recognition; 2.3 Rotavirus; 2.4 Polyoma Virus; 2.5 Picorna Virus; 2.6 Respiratory Syncytial Virus; 2.7 Dengue Virus; 2.8 Nucleic Acids of Viruses; 2.8.1 RNA-Protein Interactions; 2.8.1.1 Neomycin B Linked to Acridine; 2.8.1.2 Neamine Linked to Pyrene-Carboxylic Acid 2.8.2 RNA-Enzyme Interactions 2.8.3 Binders to the Minor Groove of Viral DNA; 2.8.3.1 Hairpin-Shaped Polyamide Dimers; 2.8.3.2 H-Shaped Polyamide Dimers; 2.8.3.3 Naturally Occurring Dimers; 2.9 Synthetic Multivalent Vaccines; 2.9.1 Peptide-Based Anti-influenza Vaccines; 2.9.2 Gp41-Based Anti-HIV Vaccine; 2.9.3 Peptide-Based Anti-FMDV Vaccines; 3 Multivalent Molecules Applied to Bacterial Targets; 3.1 Targets in Bacterial Cell Membranes; 3.1.1 D-Ala-D-Ala Peptide Precursors; 3.1.1.1 Mode of Action by Antibiotics of the Vancomycin Class; 3.1.1.2 Dimerization of Glycopeptide Antibiotics 3.1.1.3 Di- and Trivalent Vancomycin

Sommario/riassunto

This book provides basic principles of multivalent interactions found in biological systems as well as an up-to-date and thorough coverage in design concepts, syntheses, and biological activities of multivalent molecules.* Contains practical examples of synthetic multivalent molecules in chemistry, biology, and medicine* Can be used as both a textbook for students and a reference book for libraries and professionals* Includes detailed case studies* Fills a void in current literature through its devotion solely to multivalent molecules