1.	Record Nr.	UNINA9911019275403321
	Titolo	Modern synthetic methods in carbohydrate chemistry : from monosaccharides to complex glycoconjugates / / edited by Daniel B. Werz, Sebastien Vidal
	Pubbl/distr/stampa	Weinheim : , : Wiley-VCH, , [2014] ©2014
	ISBN	9783527658961 3527658963 9783527658947 3527658947 9783527658978 3527658971
	Descrizione fisica	1 online resource (407 p.)
	Altri autori (Persone)	VidalSebastien WerzDaniel B
	Disciplina	547.3
	Soggetti	Carbohydrates - Synthesis Carbohydrates
	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	Cover; Title Page; Copyright; Contents; Foreword; Preface; List of Contributors; 1 De Novo Approaches to Monosaccharides and Complex Glycans; 1.1 Introduction; 1.2 De Novo Synthesis of Monosaccharides; 1.3 Iterative Pd-Catalyzed Glycosylation and Bidirectional Postglycosylation; 1.3.1 Bidirectional Iterative Pd-Catalyzed Glycosylation and Postglycosylation; 1.3.2 Synthesis of Monosaccharide Aminosugar Library; 1.4 Synthesis of Monosaccharide Azasugar; 1.5 Oligosaccharide Synthesis for Medicinal Chemistry; 1.5.1 Tri- and Tetrasaccharide Library Syntheses of Natural Product 1.5.2 Anthrax Tetrasaccharide Synthesis1.6 Conclusion and Outlook; 1.7 Experimental Section; List of Abbreviations; Acknowledgments; References; 2 Synthetic Methodologies toward Aldoheptoses and Their Applications to the Synthesis of Biochemical Probes and LPS Fragments; 2.1 Introduction; 2.2 Methods to Construct the Heptose Skeleton; 2.2.1

Olefination of Dialdoses Followed by Dihydroxylation; 2.2.1.1 Olefination at C-5 Position of Pentodialdoses; 2.2.1.2 Olefination at C-1 Position of Hexoses; 2.2.1.3 Olefination at C-6 Position of Hexodialdoses; 2.2.2 Homologation by Nucleophilic Additions
2.2.2.1 Elongation at C-6 of Hexoses2.2.2.2 Elongation at C-1 Position of Aldose; 2.2.3 Heptose de novo synthesis; 2.3 Synthesis of Heptosylated Oligosaccharides; 2.3.1 Synthesis of the Core Tetrasaccharide of Neisseria meningitidis Lipopolysaccharide; 2.3.2 Synthesis of a Branched Heptose- and Kdo-Containing Common Tetrasaccharide Core Structure of Haemophilus influenzae; 2.3.3 Synthesis of the Core Tetrasaccharide of Neisseria gonorrhoeae Lipopolysaccharide
2.3.4 The Crich's Stereoselective -Glycosylation Applied to the Synthesis of the Repeating Unit of the Lipopolysaccharide from Plesimonas shigelloides2.3.5 De Novo Approach Applied to the Synthesis of a Bisheptosylated Tetrasaccharide; 2.4 Synthesis of Heptosides as Biochemical Probes; 2.4.1 Bacterial Heptose Biosynthetic Pathways; 2.4.2 Artificial D-Heptosides as Inhibitors of HldE and GmhA; 2.4.3 Inhibition Studies of Heptosyltransferase WaaC; 2.5 Conclusions; 2.6 Experimental Part; 2.6.1 Typical Synthesis of a D-glycero-Heptoside by Dihydroxylation of a C6-C7 Alkene
2.6.1.1 Phenyl 1-deoxy-2,3,4-tri-O-benzyl-1-thio-D-glycero--D-mannoheptopyranoside (167)2.6.2 Typical Synthesis of a L-glycero-Heptoside by Addition of Grignard Reagent Followed by a Tamao-Fleming Oxidation; 2.6.2.1 Methyl 2,3,4-tri-O-benzyl-7-(phenyldimethyl)silane-7-deoxy-L-glycero--D-manno-heptopyranoside (170); 2.6.2.2 Methyl 2,3,4-tri-O-benzyl-L-glycero--D-manno-heptopyranoside (171); List of Abbreviations; Acknowledgments; References; 3 Protecting-Group-Free Glycoconjugate Synthesis: Hydrazide and Oxyamine Derivatives in N-Glycoside Formation; 3.1 Introduction
3.2 Glycosyl Hydrazides (1-(Glycosyl)-2-acylhydrazines)

Sommario/riassunto

The fields of glycochemistry and glycoscience are rich and varied and where much can be learned from Nature. As Nature is not always able to produce carbohydrates in quantities useful for not only in research but also as therapeutic agents, new ways need to be found to optimize the yield. This book presents an overview of the latest developments in the field of carbohydrates, ranging from de-novo approaches via cyclodextrin chemistry to the synthesis of such highly complex glycoconjugates as glycosphingolipids and GPI anchors. The main emphasis remains on the synthetic aspects making t