

1. Record Nr.	UNINA9910145735503321
Titolo	Iminosugars [[electronic resource]] : from synthesis to therapeutic applications / / editors, Philippe Compain and Olivier R. Martin
Pubbl/distr/stampa	Chichester, West Sussex, England ; ; Hoboken, NJ, USA, : J. Wiley, c2007
ISBN	1-281-13531-3 9786611135317 0-470-51743-3 0-470-51744-1
Descrizione fisica	1 online resource (487 p.)
Altri autori (Persone)	CompainPhilippe MartinOlivier R
Disciplina	572.565 612/.01578
Soggetti	Imino sugars - Synthesis Imino sugars - Therapeutic use
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	Iminosugars; Contents; Foreword; Preface; List of contributors; 1 Iminosugars: past, present and future; 2 Naturally occurring iminosugars and related alkaloids: structure, activity and applications; 2.1 Introduction; 2.2 -Glucosidase inhibitors; 2.3 -Glucosidase inhibitors; 2.4 - and -Galactosidase inhibitors; 2.5 -Mannosidase inhibitors; 2.6 Concluding remarks and future prospects; References; 3 General strategies for the synthesis of iminosugars and new approaches towards iminosugar libraries; 3.1 Introduction; 3.2 Monocyclic compounds; 3.3 1-N-Iminosugars; 3.4 Bicyclic compounds 3.5 Other bicyclic compounds3.6 Iminosugar conjugates; 3.7 Conclusions; References; 4 Iminosugar C-glycosides: synthesis and biological activity; 4.1 Introduction; 4.2 Synthesis of iminosugar C-glycosides; 4.3 Biological activity of iminosugar C-glycosides; 4.4 Conclusion; References; 5 Imino-C-disaccharides and analogues: synthesis and biological activity; 5.1 Introduction; 5.2 Synthesis of imino-C-disaccharides; 5.3 Conformations of imino-C-disaccharides; 5.4 Glycosidase inhibitory activities of imino-C-disaccharides

5.5 Efficient combinatorial method for the discovery of glycosidase inhibitors 5.6 Antitumour activity of new -mannosidase inhibitors; 5.7 Conclusion; References; 6 Isofagomine, noeuromycin and other 1-azasugars, iminosugar-related glycosidase inhibitors; 6.1 Introduction; 6.2 1-Azasugars that are piperidines (isofagomine, noeuromycin, etc.); 6.3 1-Azasugars that are hydrazines; 6.4 1-Azasugars that are oxazines; 6.5 1-Azasugars that are piperidones; 6.6 Sulphur-containing analogues of 1-azasugars; 6.7 Slow inhibition and thermodynamics of binding
6.8 Are 1-azasugars (and iminosugars) transition state analogues? References; 7 Iminosugar-based glycosyltransferase inhibitors; 7.1 Biological role and structural features of glycosyltransferases; 7.2 Development of inhibitors of glycosyltransferases; 7.3 Conclusion; References; 8 Transition state analogue inhibitors of N-ribosyltransferases; 8.1 Introduction; 8.2 Nucleoside hydrolases; 8.3 Purine nucleoside phosphorylases (PNPs); 8.4 5'-Methylthioadenosine (MTA) nucleosidases and phosphorylases; 8.5 Ricin A-chain; References; 9 Iminosugars as antiviral agents; 9.1 Introduction 9.2 The relationship between glucosidase inhibition and antiviral action 9.3 Fate of viral glycoproteins in glucosidase-inhibited cells; 9.4 Specificity of glucosidase inhibition; 9.5 N-Alkyl DNJs inhibit virus growth by non-glucosidase inhibitory mechanisms - other potential activities of these compounds; 9.6 New directions for improving glucosidase inhibitors as antiviral agents; References; 10 Iminosugars as active-site-specific chaperones for the treatment of lysosomal storage disorders; 10.1 Introduction; 10.2 Degradation of glycosphingolipids
10.3 Lysosomal enzyme biosynthesis and ER-associated degradation (ERAD)

Sommario/riassunto

Iminosugars form undoubtedly the most attractive of carbohydrate mimics reported so far. In these structures, the substitution of the endocyclic oxygen of sugars by a basic nitrogen atom leads to remarkable biological properties and raises many challenges in organic synthesis. Since the discovery of their biological activity as glycosidase inhibitors in the 1970's, these polyvalent molecules have progressively made their way from the laboratory to the clinic. The impressive series of discoveries in the field over the past ten years indicates clearly that it is "a boom time" for iminosugar
