

1. Record Nr.	UNINA9910821663403321
Titolo	Natural lactones and lactams : synthesis, occurrence and biological activity // edited by Tomasz Janecki
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH Verlag GmbH & Co. KGaA, , [2014] ©2014
ISBN	3-527-66693-1 3-527-66691-5 3-527-66694-X
Descrizione fisica	1 online resource (394 p.)
Altri autori (Persone)	JaneckiTomasz
Disciplina	547.59
Soggetti	Lactones Lactams
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	Natural Lactones and Lactams; Title Page; Copyright; Contents; Preface; List of Contributors; Chapter 1 Tetrionic Acids; 1.1 Introduction; 1.2 Natural Occurrence, Biological Activities, and Biosynthesis; 1.3 5-Ylidene Tetrionic Natural Products; 1.3.1 Pulvinic Acids and Pulvinones; 1.3.2 Agglomerins; 1.3.3 Tetronomycin; 1.3.4 Stemofoline Alkaloids; 1.3.5 Variabilin; 1.3.6 Tetrodecamycin; 1.4 5-Monosubstituted Tetrionic Natural Products; 1.4.1 Carlic, Carlosic, Carolic, Carolinic, and Viridicatic Acids; 1.4.2 RK-682; 1.4.3 Massarilactone B; 1.4.4 Annularins F, G, and H; 1.4.5 Palinurin 1.4.6 Pesthetoxin 1.4.7 Rotundifolides A and B; 1.5 5-Disubstituted Tetrionic Natural Products; 1.5.1 5-Dialkyl Tetrionic Natural Products; 1.5.1.1 Vertinolide; 1.5.1.2 Papyracillic Acid B; 1.5.1.3 Bisorbibutenolide; 1.5.2 5-Spirotetrionic Natural Products; 1.5.2.1 Spirotetrionic Antibiotics; 1.5.2.2 Ircinianin and Wistarin; 1.5.2.3 Stemonamine Alkaloids; 1.5.2.4 Abyssomicins; 1.6 5-Unsubstituted Tetrionic Natural Products; 1.6.1 Tetronasin; 1.7 Conclusions; References; Chapter 2 Recent Advances in the Field of Naturally Occurring 5,6-Dihydropyran-2-ones; 2.1 Introduction 2.2 Synthetic Methodologies for 5,6-Dihydropyran-2-ones 2.2.1

Lactonization of Substituted  $\gamma$ -Hydroxy Acid Derivatives; 2.2.2 Oxidation of Substituted Dihydropyran Derivatives; 2.2.3 Ring-Closing Metathesis; 2.2.4 Miscellaneous Methods; 2.3 Formation of Stereogenic Centers inside the Dihydropyrone Ring; 2.3.1 Use of Chiral Precursors; 2.3.1.1 Carbohydrate and Related Precursors; 2.3.1.2 Chiral Hydroxy Acids; 2.3.1.3 Chiral Epoxides; 2.3.1.4 Other Chirons; 2.3.2 Asymmetric (Enantioselective) Reactions; 2.3.2.1 Asymmetric (Enantioselective) Sharpless Epoxidations or Dihydroxylations; 2.3.2.2 Asymmetric Aldol-Type Reactions; 2.3.2.3 Asymmetric Allylations; 2.3.2.4 Asymmetric Carbonyl Reductions; 2.3.2.5 Asymmetric Alkylations; 2.3.2.6 Asymmetric Epoxide Hydrolysis; 2.3.2.7 Asymmetric Cycloadditions; 2.3.2.8 Other Asymmetric Methods; 2.4 Pharmacological Properties of Pyrones; 2.5 Biosynthetic Formation of Pyrones; 2.6 Syntheses of Natural 5,6-Dihydropyran-2-ones Reported during the Period from 2006 to the First Half of 2012; References; Chapter 3 -Lactams; 3.1 Introduction; 3.1.1 Biosynthesis of Penicillin and Cephalosporin; 3.2 Monocyclic  $\gamma$ -Lactams; 3.2.1 Biosynthesis of Nocardicin A; 3.2.2 Synthetic Approaches to Construct  $\gamma$ -Lactam Ring; 3.2.2.1 Cycloaddition Reactions; 3.2.2.2 Cyclization Reactions; 3.2.2.3 Miscellaneous Approaches; 3.2.3 Biological Activity of Monocyclic 2-Azetidinones; 3.3 Penams; 3.3.1 Synthetic Approaches to Penam Skeleton; 3.3.2 Biological Activity of Penams; 3.4 Cephalosporins; 3.4.1 Synthetic Approaches to Cephalosporin Skeleton; 3.4.2 Biological Activity of Cephalosporins; 3.5 Clavulanic Acid; 3.5.1 Synthetic Approaches to Clavam Skeleton; 3.5.2 Biological Activity of Clavams; 3.6 Carbapenems; 3.6.1 Synthetic Approaches to Carbapenem Skeleton

---

#### Sommario/riassunto

While there are numerous books on heterocycles and natural products, this text fills the need for an up-to-date summary focusing on recently developed and improved synthetic methods for the preparation of the most important classes of lactones and lactams - all in one volume. Comprehensive in its coverage, this book also provides readers with a brief description of the occurrence and biological or pharmaceutical activity of the compounds, and each chapter deals with a certain class of lactones or lactams to enable quick access to the information needed. A valuable resource for organic chemists.

---