1. Record Nr. UNISA996197616303316 Autore Shabarova Z (Zoe) **Titolo** Advanced organic chemistry of nucleic acids / / Z. Shabarova, A. Bogdanov, translated by Vladimir Vopyan Pubbl/distr/stampa Weinheim, Germany;; New York, New York:,: VCH,, [1994] ©1994 **ISBN** 1-281-75881-7 9786611758813 3-527-61593-8 3-527-61592-X Descrizione fisica 1 online resource (606 p.) Disciplina 574.87328 Soggetti Nucleic acids 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 Advanced Organic Chemistry of Nucleic Acids; Contents; 1 Structure of Nucleosides; 1.1 Introduction; 1.2 Pyrimidine and Purine Bases; 1.2.1 Pyrimidines: 1.2.2 Purines: 1.2.3 Nomenclature of Pyrimidines and Purines: 1.2.4 Abbreviations: 1.3 Carbohydrate Moieties of Nucleosides: 1.4 Bonding Between Carbohydrate Moiety and Heterocyclic Base; 1.4.1 Purine Nucleosides: 1.4.2 Pyrimidine Nucleosides: 1.5 Size of the Oxide Ring in the Sugar; 1.6 Configuration of the Glycoside (Anomeric) Center; 1.7 Nomenclature and Abridged Formulas of Nucleosides; 1.8 Minor Nucleosides: 1.9 Pseudouridine 1.10 Nucleoside Antibiotics1.10.1 Purine Nucleosides; 1.10.2 Pyrimidine Nucleosides: 1.11 Other Nucleosides: References: 2 Properties of Nucleosides; 2.1 Heterocyclic Bases; 2.1.1 General Concepts; 2.1.2 Tautomerism; 2.1.3 Reactions with Electrophilic Reagents; 2.1.4 Reactions with Nucleophilic Reagents; 2.1.5 Addition Reactions; 2.1.6 Reactions Involving Exocyclic Amino Groups; 2.2 Reactions at the Carbohydrate Moiety; 2.2.1 Substitution for Hydrogen Atoms in Hydroxyl Groups; 2.2.2 Oxidation; 2.3 Reactions Involving Heterocyclic Bases and the Carbohydrate Moiety 2.4 Stability of N-Glycosidic Bonds2.4.1 Effect of the Heterocyclic Base

Species: 2.4.2 Effect of Substituents in the Carbohydrate Moiety: 2.4.3 Mechanism of Hydrolysis of N-Glycosidic Bonds; 2.5 Properties of Pseudouridine; References; 3 Structure of Nucleotides; 3.1 Introduction; 3.2 Nomenclature and Isomerism; 3.3 Structure of Nucleotides; 3.3.1 Nucleoside 5'-Phosphates; 3.3.2 Nucleoside 3'- and 2'-Phosphates; 3.3.3 Nucleoside Cyclic Phosphates; 3.3.4 Nucleoside 3'(2').5'-Diphosphates; 3.4 General Comments Regarding the Structure of Monomer Units in Nucleic Acids; References 4 Properties of Nucleotides 4.1 Acid-Base Behavior; 4.1.1 Ionization of Bases; 4.1.2 Ionization of Hydroxyl Groups in Pentose; 4.1.3 Ionization of the Phosphate Group; 4.2 Formation of Derivatives with Metals; 4.3 Reactions at Heterocyclic Bases and Pentose; 4.4 Some Properties of the Phosphate Group (General Concepts); 4.4.1 Structure of the Phosphate Group and the Mechanism of Nucleophilic Substitution at the Phosphorus Atom: 4.4.2 Catalysis of Nucleophilic Substitution at the Phosphorus Atom; 4.4.3 Hydrolysis of Alkyl Phosphates; 4.4.4 Cyclic Phosphates; 4.4.5 B-Elimination Reactions 4.5 Reactions of Nucleotides Involving the Phosphate Group4.5.1 Chemical and Enzymatic Dephosphorylation; 4.5.2 Migration of the Phosphate Group; 4.5.3 Alkylation of the Phosphate Group; 4.5.4 Activation of the Phosphate Group in Nucleotides . Synthesis of Some Derivatives with Respect to the Phosphate Group; 4.5.5 Acylation of the Phosphate Group; 4.6 Properties of Nucleotide Derivatives with Substituents in the Phosphate Group: 4.6.1 Nucleoside Cyclic Phosphates; 4.6.2 Alkyl Esters of Nucleotides; 4.6.3 Mixed Anhydrides of Nucleotides; 4.6.4 Amides of Nucleotides 4.7 Hydrolysis of N-Glycosidic Bonds

Sommario/riassunto

Sequencing, cloning, transcription - these are but a few key techniques behind the current breathtaking advances in molecular biology and biochemistry. As these methods continuously diversify, biochemists need a sound chemical understanding to keep the pace. Chemists beginning working in the molecular biology lab need an introduction to this field from their point of view. This book serves both: it describes most of the known chemical reactions of nucleosides, nucleotides, and nucleic acids in sufficient detail to provide the desired background, and additionally, the fundamental relations betwe