Record Nr.	UNINA9910144279103321
Titolo	Vitamin B12 and B12-proteins [[electronic resource] ] : lectures presented at the 4th European Symposium on Vitamin B12 and B12- Proteins / / edited by Bernhard Krautler, Duilio Arigoni and Bernard T. Golding
Pubbl/distr/stampa	Weinheim ; ; Chichester, : Wiley-VCH, c1998
ISBN	1-281-76388-8 9786611763886 3-527-61219-X 3-527-61218-1
Descrizione fisica	1 online resource (560 p.)
Altri autori (Persone)	KrautlerBernhard ArigoniDuilio GoldingBernard T
Disciplina	572.58
Soggetti	Vitamin B12 Vitamin B12 - Synthesis Vitamin B12 - Structure-activity relationships Electronic books.
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	<ul> <li>Vitamin B12 and B12-Proteins; Contents; I B12: An Overview; 1. B12</li> <li>Coenzymes, the Central Theme; II B12: Biosynthesis; 2. B12-</li> <li>Biosynthesis in an Aerobic Organism: How the Pathway was Elucidated;</li> <li>3. Vitamin B12 Biosynthesis in Pseudomonas denitrificans; 4. How</li> <li>Nature Synthesizes B12 Without Oxygen: Discoveries Along the Ancient,</li> <li>Anaerobic Pathway; 5. The Biosynthesis of Vitamin B12: Assembly of</li> <li>the Tetrapyrrole Ring System; 6. Investigations on the Biosynthesis of</li> <li>the 5,6- Dimethylbenzimidazole Moiety of Vitamin B12; III Bl2-Proteins:</li> <li>Enzymatic Methyltransfer</li> <li>7. Cobdamin-Dependent Methionine Synthase from Escherichia coli:</li> <li>Structure and Reactivity8. EPR Spectroscopic Evidence That in the</li> <li>Energy Conserving Methyltransferase Complex from Methanogenic</li> <li>Archaea a Histidine Residue is Ligated to the Cobamide-Cobalt; 9.</li> </ul>

1.

	Discovery of a Biological Organometallic Reaction Sequence Involving Vitamin B12; 10. Corrinoid-Dependent Methyl Transfer Reactions in Sporomusa ovata; 11 Spectroscopic and Molecular Genetic Characterization of the Two Mammalian B12-Dependent Enzymes; IV B12-Proteins: Enzymatic Rearrangements 12 A Mechanistic Overview of B12 Dependent Processes13 Insights on the Reaction Mechanism of Methylmalonyl-CoA Mutase from the Crystal Structure; 14. Tritium Isotope Effects and Site-Directed Mutagenesis as Probes of the Reaction Catalyzed by Methylmalonyl-CoA Mutase; 15 Mechanism of Coenzyme B12-Dependent Carbon-Carbon and Carbon- Oxygen Rearrangements; 16. Glutamate Mutase; 17. Isobutyryl-CoA Mutase from Streptomycetes; 18. Coenzyme B12-Dependent Enzymes and Their Models; 19. Model Studies for the Methylmalonyl-Succinyl Rearrangements 20. Recent Structure-Function Studies of B12 Coenzymes in Diol Dehydrase21 Adenosylcobalamin-Dependent Ribonucleotide Reductases: Still Amazing but no Longer Confusing; V Bl2 : Structure and Reactivity; 22. High-Resolution Crystal Structures of Cobalamins; 23. New NMR Structural and Dynamical Probes of Organometallic B12 Derivatives; 24 FT-Raman Spectroscopy of Methyl-B12 and of Imidazole and Imidazolate Methylcobinamide Derivatives; 25 Coenzyme B12-Based Chemical Precedent for Co-C Bond Homolysis and Other Key Elementary Steps 26. Insight into the Mechanism of B12-Dependent Enzymes: Magnetic Field Effects as a Probe of Reaction Mechanism and the Role of the Ribofuranose Ring Oxygen27. Cage Effects and Diastereomeric Control in the Breaking and Making of Carbon-Cobalt Bonds in Organocobalt Corrinoids; VI Without B12 and With B12 ?; 28. The Role of S- Adenosylmethionine As a Poor Man's Adenosylcobalamin in the Reaction of Lysine 2,3- Aminomutase; 29. New Structural and Biosynthetic Aspects of the Unusual Core Lipids from Archaebacteria; VII B12 : Medical Aspects; 30. Cobalamin Binding Proteins 31. Cellular Surface Receptors Important for Vitamin B12 Nutrition
Sommario/riassunto	This timely and topical book reviews the important developments in the 'B12-field' with regard to biological, chemical, pharmaceutical and medicinal aspects. In over 30 chapters the approx. 100 internationally renowned authors give deeper insight into the prospering research activites around B12. This book is a must for everybody who works with or on vitamins and porphyrine (-like) ring systems. Topics of particular interest include: Biosynthesis of Vitamin B12; B12-catalyzed enzymatic reactions and their mechanisms; structural B12-chemistry; reactivity of B12 and B12-models; structure