

## Book review

### PROGRESS IN BIOLOGICAL CHIRALITY

#### Edited By

**Gyula Pályi,**

Department of Chemistry, University of  
Modena and Reggio Emilia, Modena, Italy

**Claudia Zucchi,**

Department of Chemistry, University of  
Modena and Reggio Emilia, Modena, Italy

**Luciano Caglioti,**

Department of Chemistry and Technology  
of Biologically Active Compounds,  
University "La Sapienza", Rome, Italy

#### Description

Following on from *Advances in BioChirality*, **Progress in Biological Chirality** provides a unique summary and review of the most recent developments in the field of biochirality. Living organisms use only one enantiomer of chiral molecules in the majority of biologically important processes. The exact origin and mechanisms for this surprising selectivity are not yet known. This book discusses current research aimed at

identifying the scientific reasons that may contribute to this phenomenon. **Progress in Biological Chirality** takes an interdisciplinary approach to this exciting field, covering a wide range of topics, such as, theory, palaeontology and food technology, to name but a few. This book presents findings via a broad spectrum of scientific approaches making it an excellent overview of Biological Chirality, suitable for postgraduate students, practitioners and researchers in the field of chemistry, biochemistry, biology, palaeontology, and food science with an interest in Chirality.

#### Audience

suitable for postgraduate students, practitioners and researchers in the field of biochemistry.

#### Contents

Proposed Table of Contents.

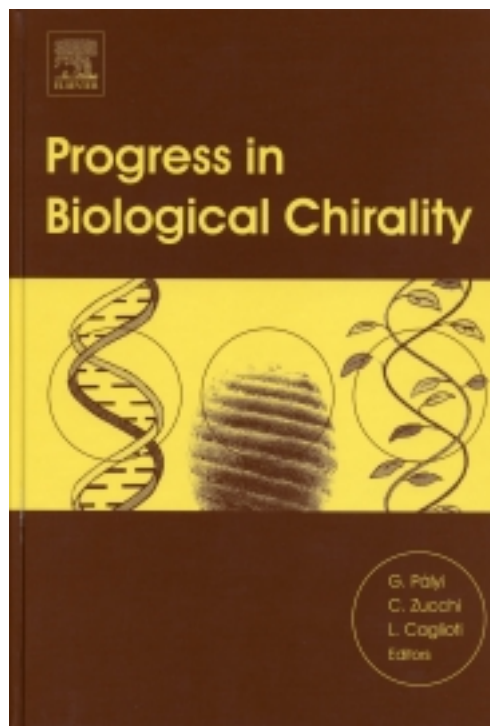
Origin of Biomacromolecular Chirality: In Search of Evolutional Dynamics (V. Avetisov).

Carbon Monoxide Clusters in the Formation of D-Sugars, L-Amino Acids, Ribonucleotides and Deoxyribonucleic Acids in Prebiotic Molecular Evolution on Earth (N. Aylward, N. Bofinger).

Molecular Clockworks as Tools for Biological Chirality (L. Bencze et al.).

Diastereomers Do, What They Should Not Do (H. Brunner).

Molecular Origins of Life: Homochirality as a Cosequence of the Dynamic Co-Emergence and Co-Evolution of Peptides and Chemical Energetics (A. Commeyras et al.).



---

Use of Amino Acids and Amino Acid Racemization for Age Determination in Archaeometry (J. Csapo et al.).

Enantiomeric Enrichment in Nonracemic Conglomerates. A Possible Component of the Solution to the Problem of the Origin of Biochirality (S.I. Goldberg).

Genetic Code: Self Referential and Functional Model (R.C. Guimaraes, C.H.C. Moreira).

Specific Symmetry of Living Systems (V.A. Gusev).

Chiral Crystal Faces of Common Rock-Forming Minerals (R.M. Hazen).

Origin of Biomolecules - Origin of Homochirality (C. Hajdu, L. Keszthelyi).

Implication of Polya's Urn Experiment and Cerebral Lateralization (N. Hokkyo).

Theory of Hierarchical Homochirality (D.K. Kondepudi).

Possible Mechanisms for Production of Larger Enantiomeric Excess (D.Z. Lippmann, J. Dix).

Sugar C-Sulfonic Acids (A. Liptak).

Racemization of Amino Acids in Hydrothermal Environments: a Contribution of Temperature Gradient (K. Matsuno, A. Nemoto).

The Theory of Chirality Induction and Chirality Reduction in Biomolecules (P.G. Mezey).

The Theory of Chirality Induction and Chirality Reduction in Biomolecules (K. Matsuno, P.G. Mezey).

Transfer of the Chiral Information of Natural Amino Acids in Biomimetic Organic Syntheses (K. Micskei et al.).

CD and Visual Science (K. Nakanishi, N. Fishkin, N. Berova).

Volatile Components of Food Aroma: Biosynthesis and Biotransformations (F. Bellesia et al.).

Chiral Spaces in Encapsulation Complexes (Julius Rebek, Jr. et al.).

Serum Albumin and Natural Products (L. Di Bari, S. Ripoli, Piero Salvadori).

Chiral Spaces in Encapsulation Complexes (R.F. Polishchuk et al.).

Selection in the Model Process of Prebiotic Synthesis of RNA Using Metal Ion Catalyst and Template (H. Sawai).

Different Internal Gradients for L and D Homochiral Solutions in Homogeneous Magnetic Fields (R. Scorei, V.M. Cimpoiasu).

Tryptophanase Activity on D-Tryptophan (A. Shimada et al.).

Deviation from Physical Identity Between D- and L-tyrosine (M. Shinitzky, A.C. Elitzur, D.W. Deamer).

Occurrence of D-Amino Acids in Food (L. Simon Sarkadi).

Asymmetric Autocatalysis, Absolute Asymmetric Synthesis and Origin of Homochirality of Biomolecules (K. Soai).

Deviation from Chemical Identity Between D and L Tyrosine? (M. Shinitzky et al.).

Charophyte Gyronites, the Result of Enantioselective Influence 250 Million Years Ago (I. Soulie-Marsche).

Chirality Transfer in the Formation of the Indole Alkaloids Derived from Secologanin (G. Beke et al.).

Origin of Biological Chirality (T. Yukawa).

#### **Bibliographic & ordering information**

Hardbound, ISBN: 0-08-044396-6, 444 pages, publication date: 2004  
Imprint: ELSEVIER

#### **Price:**

GBP 155, USD 248, EUR 225

János Csapó