

Chirality is widely studied and omnipresent in biological molecules. However, how the retention of enantiomeric forms persists in many life processes without racemization is still unclear, and the molecular understanding of the stringent chiral specificity in enzymatic reactions is sparse. An overview of the influence of chirality in driving reactions within enzymatic cavities, **Chirality in Biological Nanospaces: Reactions in Active Sites** covers:

- Influences of molecular chirality on the structure of the active site and network of interactions to drive reactions with improved speed, accuracy, and efficiency
- The conserved features of the organization of the active site structures of enzymes
- The intricate interplay of electrostatic, hydrophobic, and van der Waals interactions
- Interactions between the active site residues and the substrate molecules

Despite being time-consuming and expensive, trial-and-error is often the primary method used to develop synthetic enzymes. This book describes methods that combine crystallographic studies with electronic structure-based computational analysis. These methods may lead to future elucidation of new drugs that can target biological active sites with better efficacy and can be used to design custom-made novel biocytos with better efficiency.



CRC Press
Taylor & Francis Group
an informa business

www.crcpress.com

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K11852

ISBN: 978-1-4398-4002-3



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