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Nota di contenuto	Catalytic Antibodies; Foreword; Table of Contents; Preface; List of Contributors; 1 Immunological Evolution of Catalysis; 1.1 Introduction; 1.2 Parallels between Antibody and Enzyme Evolution; 1.3 Evolution of Catalytic Antibodies; 1.4 Ferrochelatase Antibody 7G12 - Evolution of the Strain Mechanism; 1.5 Esterase Antibody 48G7 - Effect of Distant Mutations on Catalysis; 1.6 Sulfur Oxidase Antibody 28B4 - Incremental Changes in Evolution; 1.7 Oxy-Cope Antibody AZ28 - Evolution of Conformational Diversity in Catalysis 1.8 Diels-Alderase Antibody 39A11 - Evolution of a Polyspecific Antibody combining Site 1.9 Conclusions; References; 2 Critical Analysis of Antibody Catalysis; 2.1 Introduction; 2.2 Exploiting Antibodies as Catalysts; 2.3 Catalytic Efficiency; 2.4 Hapten Design; 2.5 Representative Catalytic Antibodies; 2.5.1 Proximity Effects; 2.5.1.1 Sigmatropic Rearrangements; 2.5.1.2 Cycloadditions; 2.5.2 Strain; 2.5.2.1 Ferrochelatase Mimics; 2.5.2.2 Other Systems; 2.5.3 Electrostatic Catalysis; 2.5.3.1 Acyl Transfer Reactions; 2.5.4 Functional Groups; 2.5.4.1 Aldolases; 2.6 Perspectives 2.6.1 General Lessons from Comparisons of Enzymes and Antibodies

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Sommario/riassunto

Exploiting the inherent combinatorial mechanism in the biosynthesis of antibodies, an almost limitless variety of biocatalysts may be generated. Catalytic antibodies are capable of performing almost any type of reaction with high selectivity and stereospecificity. Here, the pioneers in the use of catalytic antibodies review the entire scope of this interdisciplinary field, covering such topics as: * theoretical aspects of structure, mechanism and kinetics * practical considerations, from immunization techniques to screening methods * in vitro evolution and other modern approaches
