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Nota di contenuto	Biomaterials from Nature for Advanced Devices and Therapies; Contents; Contributors; Preface; PART I; 1 Collagen-Based Porous Scaffolds for Tissue Engineering; 1.1 Introduction; 1.2 Collagen Sponges; 1.3 Collagen Sponges with Micropatterned Pore Structures; 1.4 Collagen Sponges with Controlled Bulk Structures; 1.5 Hybrid Scaffolds; 1.6 Conclusions; References; 2 Marine Collagen Isolation and Processing Envisaging Biomedical Applications; 2.1 Introduction; 2.2 Extraction of Collagen From Marine Sources; 2.2.1 Extraction of Collagen from Fish, Jellyfish and Molluscs 2.2.2 Extraction of Collagen from Other Sources: Marine Sponges 2.3 Collagen Characterization; 2.3.1 Fourier Transform InfraRed Spectroscopy (FTIR); 2.3.2 Differential Scanning Calorimetry (DSC); 2.3.3 Circular Dichroism (CD); 2.3.4 Sodium Dodecyl Sulfate Polyacrylamide Gel Electrophoresis (SDS-PAGE); 2.3.5 Amino Acid Analysis ; 2.4 Marine Collagen Wide Applications; 2.4.1 Marine Collagen-Based Biomaterials Properties; 2.4.2 Marine Collagen Applications in Tissue Engineering; 2.4.3 Other Tissue Engineering Applications; 2.5 Final Remarks; Acknowledgements; References 3 Gelatin-Based Biomaterials For Tissue Engineering And Stem Cell Bioengineering 3.1 Introduction; 3.2 Crosslinking of Gelatin; 3.3

Physical Properties of Gelatin; 3.4 Application of Gelatin-Based Biomaterials In Tissue Engineering; 3.4.1 Cardiovascular Tissue Engineering; 3.4.2 Bone Tissue Engineering; 3.4.3 Hepatic Tissue Engineering; 3.4.4 Ophthalmology; 3.4.5 Dermatology ; 3.4.6 Miscellaneous Applications ; 3.5 Gelatin for Stem Cell Therapy; 3.5.1 Embryonic Stem Cells; 3.5.2 Adult Stem Cells; 3.5.3 Induced Pluripotent Stem Cells; 3.6 Application of Gelatin In Delivery Systems
3.7 Conclusion and Perspectives Acknowledgements; Abbreviations; References; 4 Hyaluronic Acid-Based Hydrogels on a Micro and Macro Scale; 4.1 Classification and Structure of Hydrogels; 4.2 Hyaluronic Acid; 4.3 Hydrogel Mechanical Properties; 4.3.1 Dynamic Mechanical Analysis; 4.3.2 Stress Strain Behavior; 4.4 HA-Based Hydrogel for Biomedical Applications; 4.4.1 Regenerative Medicine; 4.4.2 Drug Delivery; References; 5 Chondroitin Sulfate as a Bioactive Macromolecule for Advanced Biological Applications and Therapies; 5.1 CS Structure; 5.2 Biological Roles of CS; 5.3 Osteoarthritis Treatment 5.4 Cardio-Cerebrovascular Disease 5.5 Tissue Regeneration and Engineering; 5.6 Chondroitin Sulfate-Polymer Conjugates; 5.7 Conclusions and Future Perspectives; References; 6 Keratin; 6.1 Introduction; 6.2 Preparation of Keratoses; 6.3 Preparation of Kerateines; 6.4 Oxidative Sulfitolysis; 6.5 Summary; References; 7 Elastin-Like Polypeptides: Bio-Inspired Smart Polymers for Protein Purification, Drug Delivery and Tissue Engineering; 7.1 Introduction; 7.2 Recombinant Protein Production Using ELPs as Purification Tags; 7.2.1 ELP Expression; 7.2.2 ELP Purification; 7.2.3 Tag Removal 7.2.4 Biological Evaluation of Purified Protein
