1. Record Nr. UNINA9910298440503321

Autore Endo Kazuyoshi

Titolo Biomineralization: From Molecular and Nano-structural Analyses to

Environmental Science / / edited by Kazuyoshi Endo, Toshihiro Kogure,

Hiromichi Nagasawa

Pubbl/distr/stampa Singapore, : Springer Nature, 2018

Singapore:,: Springer Singapore:,: Imprint: Springer,, 2018

ISBN 981-13-1002-5

Edizione [1st ed. 2018.]

Descrizione fisica 1 online resource (XI, 413 p. 183 illus., 67 illus. in color.)

Disciplina 572

Soggetti Biochemistry

Mineralogy

Inorganic chemistry

Cell biology Biomaterials Dentistry

Biochemistry, general Inorganic Chemistry

Cell Biology

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Nota di contenuto Preface -- Part I. Structure and analysis of biominerals -- 1 On the

transition temperature to calcite and cell lengths for various biogenic aragonite -- 2 TEM study of the radular teeth of the chiton Acanthopleura japonica -- 3 Experimental cremation of bone - crystallite size and lattice parameter evolution -- 4 Effect of carbonic anhydrase immobilized on eggshell membranes on calcium carbonate crystallization in vitro -- 5 Proteomic Analysis of Venomous Fang Matrix Proteins of Protobothrops flavoviridis (Habu) Snake -- 6

analyses -- 7 Relationship between Bone Morphology and Bone Quality in Female Femurs: Implication for Additive Risk of Alternative Forced Molting -- 8 Spectroscopic investigation of shell pigments from the

Characterization of goldfish scales by vibrational spectroscopic

family Neritidae (Mollusca: Gastropoda) -- 9 3D visualization of calcified and non-calcified molluscan tissues using computed tomography -- Part II Molecular and cellular regulation of biomineralization -- 10 Calcium Ion and Mineral Pathways in Biomineralization: a Perspective -- 11 Identification of barnacle shell proteins by transcriptome and proteomic approaches -- 12 The optical characteristics of cultured Akoya pearl are influenced by both donor and recipient oysters -- 13 Influence of B vitamins on proliferation and differentiation of osteoblastic bovine cell cultures: an in vitro study --14 Rice plant biomineralization: Electron microscopic study on plant opals and exploration of organic matrices involved in biosilica formation -- 15 DMP1 binds specifically to type I collagen and regulates mineral nucleation and growth -- 16 Exploration of genes associated with sponge silicon biomineralization in the whole genome sequence of the hexactinellid Euplectella curvistellata -- Part III Genome-based analysis of biomineralization -- 17 The origin and early evolution of SCPP genes and tissue mineralization in vertebrates -- Part IV Evolution in biomineralization -- 18 Immunolocalization of enamel matrix protein-like proteins in the tooth enameloid of actinopterygian bony fish -- 19 Geographical and seasonal variations of the shell microstructures in the bivalve Scapharca broughtonii -- Part V Biomineralization in medical and dental sciences -- 20 Enhancement of bone tissue repair by octacalcium phosphate crystallizing into hydroxyapatite in situ -- 21 The relationship between the structure and calcification of dentin and the role of melatonin -- 22 Fabrication of hydroxyapatite nanofibers with high aspect ratio vialow-temperature wet precipitation methods under acidic conditions -- 23 Physicochemical characterisation of the processes involved in enamel remineralisation by CPP-ACP -- 24 Molecular Interactions of Peptide Encapsulated Calcium Phosphate Delivery Vehicle at Enamel Surfaces --25 Preparation of random and aligned polycaprolactone fiber as template for classical calcium oxalate through electrocrystallization --Part VI Bio-inspired materials science and engineering -- 26 Dysprosium biomineralization by acidophilic fungus Penidiella sp. strain T9 and its application for metal recovery -- 27 Various shapes of gold nanoparticles synthesized by glycolipids extracted from Lactobacillus casei -- 28 Octacalcium phosphate overgrowth on btricalcium phosphate substrate in metastable calcium phosphate solution -- Part VII Biominerals for environmental and paleoenvironmental sciences -- 29 Coral-based approaches to paleoclimate studies, future ocean environment assessment, and disaster research -- 30 An elemental fractionation mechanism common to biogenic calcium carbonate -- 31 Biomineralization of metallic tellurium by bacteria isolated from deep marine sediment in Niigata Bay Japan -- 32 Calcium oxalate crystals in plant communities of the southeast of the Pampean Plain, Argentina -- 33 Iron and calcium biomineralizations in the Pampean coastal plains, Argentina: their role in the environmental reconstruction of the Holocene -- Part VIII Mollusk shell formation -- 34 Skeletal organic matrices in molluscs: origin. evolution, diagenesis -- 35 Functional Analysis on Shelk2 of Pacific Ovster -- 36 Mollusk shells: Does the nacro-prismatic "model" exist? -- 37 The Marsh's membrane: a key-role for a forgotten structure --38 Pearl production by implantation of outer epithelial cells isolated from the mantle of Pinctada fucata and the effects of blending of epithelial cells with different genetic backgrounds on pearl quality --39 Functional analyses of MMP genes in the ligament of Pinctada fucata -- 40 Chitin degraded by chitinolytic enzymes induces crystal defects of calcites -- 41 Screening for genes participating in the formation of

Sommario/riassunto

prismatic and nacreous layers of the Japanese pearl oyster Pincatada fucata by RNA interference knockdown -- 42 Gene expression patterns in the mantle and pearl sac tissues of the pearl oyster Pincada fucata -- Part IX Appendix -- 43 Selected SEM and TEM images.

This open access book is the proceedings of the 14th International Symposium on Biomineralization (BIOMIN XIV) held in 2017 at Tsukuba. Over the past 45 years, biomineralization research has unveiled details of the characteristics of the nano-structure of various biominerals; the formation mechanism of this nano-structure, including the initial stage of crystallization; and the function of organic matrices in biominerals, and this knowledge has been applied to dental, medical, pharmaceutical, materials, agricultural and environmental sciences and paleontology. As such, biomineralization is an important interdisciplinary research area, and further advances are expected in both fundamental and applied research.