

1. Record Nr.	UNINA9910960676403321
Titolo	Biological aspects of human health and well-being / / Tsisana Shartava, editor
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2011
ISBN	1-61470-792-8
Edizione	[1st ed.]
Descrizione fisica	1 online resource (291 p.)
Collana	Medicine and biology research developments
Altri autori (Persone)	ShartavaTsisana
Disciplina	612.015
Soggetti	Biochemistry Clinical biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"International journal of medical and biological frontiers, Volume 16, Issue 1/2."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- BIOLOGICAL ASPECTS OF HUMAN HEALTH AND WELL-BEING -- BIOLOGICAL ASPECTS OF HUMAN HEALTH AND WELL-BEING -- CONTENTS -- PREFACE -- Chapter I CONTROL OF EMERGING INFECTIOUS AGENTS CAUSING NOSOCOMIAL AND COMMUNITY- ACQUIRED CROSS INFECTIONS IN IMMUNOCOMPROMISED HOSTS. -- COMMENTARY -- REFERENCES -- Chapter II GENETIC TOOLS APPLICATIONS TO BIOTECHNOLOGY OF CYANOBACTERIA -- ABSTRACT -- INTRODUCTION -- CYANOBACTERIA ARE SOURCE OF A LARGE VARIETY OF BIOPRODUCTS -- CYANOBACTERIA ARE PROMISING PRODUCERS OF MOLECULAR HYDROGEN - FUTURE ECOLOGICALY PURE FUEL -- CYANOBACTERIA AND ENVIRONMENT -- CYANOBACTERIA AND NANOTECHNOLOGY -- CONCLUSION -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter III WHY GLUCOSE IS THE PRINCIPAL SOURCE OF ENERGY FOR LIVING BEINGS? AND THE EXPLANATION OF HUMAN DISEASES -- DEDICATION -- INTRODUCTION -- THE HYPOTHESIS OF THE BIOLOGICAL COMPETITION AND ITS CONSEQUENCES -- EXPLANATION OF HUMAN DISEASES BASED ON THE BIOLOGICAL COMPETITION -- DISCUSSION -- CONCLUSION -- REFERENCES -- Chapter IV THE EVOLUTION BIOLOGY OF HEALTH AND DISEASE CLINICAL MEDICINE AS SEEN FROM A DARWINIAN PERSPECTIVE -- ABSTRACT -- INTRODUCTION -- AUGMENTING MEDICINE WITH EVOLUTIONARY INSIGHTS -- WHY NATURAL SELECTION HAS LEFT US

VULNERABLE TO DISEASE -- ALLERGY AND CANCER: A COMPLEX RELATIONSHIP -- GENE/ENVIRONMENT INTERACTION IN ATHEROSCLEROSIS -- ECOLOGY OF ANTIBIOTIC RESISTANCE -- EXPERIMENTAL EVOLUTION -- THE POLYMORPHIC MAJOR HISTOCOMPATIBILITY COMPLEX -- "RECENT" EVOLUTION IN HOMO SAPIENS -- CONCLUSION -- REFERENCES -- Chapter V A QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIP FOR THE GASTROPROTECTIVE EFFECT OF FLAVONOIDS EVALUATED IN HUMAN COLON ADENOCARCINOMA HT-29 CELLS -- ABSTRACT -- INTRODUCTION -- CHEMICAL STRUCTURE OF FLAVONOIDS -- PHYSICOCHEMICAL PROPERTIES OF FLAVONOIDS -- Bond Dissociation Energy (BDE) -- Lipophilicity (log P). CYTOPROTECTION ASSAY -- MATERIALS AND METHODS -- Materials -- Assessment of Cell Viability -- Culture and Treatment of HT-29 Cells -- Annexin V Staining and Flow Cytometric Analysis -- CALCULATION OF RESULTS -- Cell Death Index (CDI) -- Calculation of 50% Reduction in Cell Death (EC50) -- QUANTUM CHEMICAL CALCULATIONS -- Calculation of Heat of Formation -- Calculation of Log P -- RESULTS AND DISCUSSION -- Cytotoxic effects of H<sub>2</sub>O<sub>2</sub> -- Cytotoxicity of Flavonoids -- The Influence of Trolox on Cytotoxic Effects of H<sub>2</sub>O<sub>2</sub> -- STRUCTURAL RELATED CYTOPROTECTIVE ACTIVITY OF FLAVONOIDS -- Effects of Hydroxyl Groups in the B Ring -- Effect of the 3-OH Group, 2,3-Double Bond and 4-Keto Group -- Effect of the Carbohydrate Moieties -- CYTOPROTECTIVE AND PHYSICOCHEMICAL PROPERTIES OF FLAVONOIDS -- Correlation between O-H Bond Dissociation Enthalpy (BDE) and Cytoprotective Activity (EC50) of Flavonoids -- Correlation between Partition Coefficient (Log P) and Cytoprotective Activity (EC50) of Flavonoids -- Quantitative Structure-Activity Relationship (QSAR) Model -- CONCLUSION -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter VI SIALYLATION MECHANISM IN BACTERIA: FOCUSED ON CMP-N-ACETYLNEURAMINIC ACID SYNTHETASES AND SIALYLTRANSFERASES -- ABSTRACT -- INTRODUCTION -- BIOSYNTHESIS OF SIALIC ACIDS AND SIALYL-GLYCOCONJUGATES -- CMP-Neu5Ac Synthetase -- Origin of Bacterial CMP-Neu5Ac Synthetase -- Features of Bacterial CMP-Neu5Ac Synthetases -- SIALYLTRANSFERASES -- Origin and Classification of the Bacterial Sialyltransferases -- Tertiary Structure of Bacterial Sialyltransferases -- Reaction of GT Family 80 Sialyltransferases -- Sialyltransferases Belong to GT Family 80 -- 2,6-Sialyltransferase Obtained from *P. damsela* -- 2,6-Sialyltransferase Obtained from *P. leiognathi* --  $\alpha$ -Galactoside 2,3-sialyltransferase from *Vibrio* sp. Multi-Functional 2,3 Sialyltransferase from *P. multocida* -- CONCLUSION -- REFERENCES -- Chapter VII THE HEPATOCELLULAR DYSFUNCTION CRITERIA: HEPATOCYTE CARBOHYDRATE METABOLIZING ENZYMES AND KUPFFER CELL LYSOSOMAL ENZYMES IN 2'NITROIMIDAZOLE EFFECT ON AMOEBOIC LIVER ABSCESS (ELECTRON MICROSCOPIC - ENZYME APPROACH) -- ABSTRACT -- INTRODUCTION -- METHODS AND MATERIALS -- RESULTS -- DISCUSSION -- CHALLENGES, LIMITATIONS AND FUTURISTIC APPROACHES -- CONCLUSION -- ACKNOWLEDGMENT -- REFERENCES -- Chapter VIII THE EFFECT OF NITROIMIDAZOLE ON GLUCOKINASE ENZYME REGULATORY PROPERTIES: GLUCOKINASE AS BIOSENSOR# -- ABSTRACT -- INTRODUCTION -- MATERIALS AND METHODS -- RESULTS -- DISCUSSION -- REFERENCES -- Chapter IX POST-TRANSCRIPTIONAL EFFECTS OF ESTROGENS ON GENE EXPRESSION: MESSENGER RNA STABILITY AND TRANSLATION REGULATED BY MICRORNAs AND OTHER FACTORS -- ABSTRACT -- INTRODUCTION -- ESTROGENS STABILIZE AND DESTABILIZE SPECIFIC MRNAs -- ESTROGENS AFFECT mRNA

TRANSLATION -- ESTROGEN ACTIONS AND MICRORNAs -- MicroRNAs - Biogenesis and Regulation of Gene Expression -- Estrogens Regulate Expression of MicroRNA Genes in Responsive Tissues During Normal Physiology and Disease -- MicroRNAs Regulate ER Gene Expression and Estrogen Actions -- FUTURE THERAPEUTIC APPROACHES TO REGULATING POST-TRANSCRIPTIONAL ESTROGEN ACTIONS -- CONCLUSION -- REFERENCES -- Chapter X EPIGENETICS OF GESTATIONAL TROPHOBlastic DISEASE: GENOMIC IMPRINTING AND X CHROMOSOME INACTIVATION -- ABSTRACT -- INTRODUCTION -- PLACENTA DEVELOPMENT AND TROPHOBlastic CELLS -- GENOMIC IMPRINTING AND PLACENTAL DEVELOPMENT -- GESTATIONAL TROPHOBlastic DISEASES: ABNORMAL GENOMES AND GENOMIC IMPRINTING -- X CHROMOSOME INACTIVATION AND PLACENTAL DEVELOPMENT -- PATERNAL X CHROMOSOME IN THE PATHOGENESIS OF HUMAN TROPHOBlastic DISEASES -- CONCLUSION -- REFERENCES. Chapter XI THE ROLE OF SUPRASPINAL GABA AND GLUTAMATE IN THE MEDIATION AND MODULATION OF PAIN -- ABSTRACT -- ABBREVIATIONS -- INTRODUCTION -- THE GABAERGIC AND GLUTAMATERGIC SYSTEMS -- GABA RECEPTORS -- GABA Receptor Subunit Composition -- GABAB Receptor Subunit Composition -- IONOTROPIC GLUTAMATE RECEPTORS -- NMDA Receptor Subunit Composition -- AMPA Receptor Subunit Composition -- Kainate Receptor Subunit Composition -- METABOTROPIC GLUTAMATE RECEPTORS -- SOME IMPORTANT CONSIDERATIONS -- THE ROLE OF SUPRASPINAL GABAERGIC AND GLUTAMATERGIC SYSTEMS DURING PAIN -- PLASTICITY OF SUPRASPINAL GABAERGIC AND GLUTAMATERGIC SYSTEMS DURING PAIN -- Changes in Activity of Supraspinal GABA and Glutamate Neurons in Animal Models of Acute Pain -- Changes in Activity of Supraspinal GABA and Glutamate Neurons in Animal Models of Inflammatory and Neuropathic Pain -- Brain Regional Alterations in Levels of GABA and Glutamate or Their Receptors in Animal Models of Inflammatory and Neuropathic Pain -- PHARMACOLOGICAL ELUCIDATION OF THE ROLES OF SUPRASPINAL IONOTROPIC AND METABOTROPIc GABA AND GLUTAMATE RECEPTOR SUBTYPES IN ANIMAL MODELS OF ACUTE PAIN -- Effects of Supraspinal Administration of Agents Acting at GABA Receptors in Animal Models of Acute Pain -- Effects of Supraspinal Administration of Agents Acting at GABAB Receptors in Animal Models of Acute Pain -- Effects of Supraspinal Administration of Agents Acting at Ionotropic Glutamate Receptors in Animal Models of Acute Pain -- Effects of Supraspinal Administration of Agents Acting at Metabotropic Glutamate Receptors in Animal Models of Acute Pain -- PHARMACOLOGICAL ELUCIDATION OF THE ROLES OF SUPRASPINAL IONOTROPIC AND METABOTROPIc GABA AND GLUTAMATE RECEPTOR SUBTYPES IN ANIMAL MODELS OF INFLAMMATORY AND NEUROPATHIC PAIN. Effects of Supraspinal Administration of Agents Acting at GABA Receptors in Animal Models of Inflammatory and Neuropathic Pain -- Effects of Supraspinal Administration of Agents Acting at GABAB Receptors in Animal Models of Inflammatory and Neuropathic Pain -- Effects of Supraspinal Administration of Agents Acting at Ionotropic Glutamate Receptors in Animal Models of Inflammatory and Neuropathic Pain -- Effects of Supraspinal Administration of Agents Acting at Metabotropic Glutamate Receptors in Animal Models of Inflammatory and Neuropathic Pain -- THE ROLE OF CENTRAL GABA AND GLUTAMATE IN THE ANTINOCICEPITIVE EFFECTS OF ANALGESICS -- NSAIDs and Paracetamol -- Opioids -- Cannabinoids -- Anticonvulsants and Antidepressants -- CONCLUSION -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter XII MULTIPHOTON

MICROSCOPY OF INTRAVITAL DEEP OCULAR TISSUES -- ABSTRACT --  
1. INTRODUCTION -- 2. MULTIPHOTON IMAGING SYSTEM -- 3.  
SUBJECTS AND EXAMINATIONS -- 3.1. Corneal and Sclera Examinations  
-- 3.2. Retinal Examinations -- 4. CORNEAL MULTIPHOTON IMAGING  
-- 4.1. Optical Overview of Corneal Architecture with Subcellular  
Resolution Based on Multiphoton Excitation Microscopy/Tomography  
-- 4.1.1. Multiphoton Autofluorescence Tomography of Corneal  
Epithelial Layers (At Depths of 10, 25, and 41 Microns, Respectively) --  
4.1.2. Revealing of Stromal Intact Cellular and Collagenous Networks  
Based on Multiphoton Excitation Imaging -- (i) Selective Displaying of  
Intratissue Keratocyte Networks in Stroma with Intracellular Spatial  
Resolution -- (ii) SHG Signal Imaging of Collagen Lamellas in Corneal  
Stroma -- (iii) Microstructural Co-localization and Topography of  
Keratocytes and their Hosting Collagen Lamellas in Corneal Stroma  
Based on 2PF and SHG -- 4.1.3. Multiphoton Excitation Detection of  
Endothelial Cells at a Corneal Depth of 369 Microns with Living  
Animals.  
4.2. Optical Determination of Bowman's Layer with In-tandem  
Combination Assistance of 2PF and SHG Signal Imaging.

---

**Sommario/riassunto**

This book presents and discusses current research in the field of biology, with a particular emphasis on biological factors and their role in health and well-being. Topics discussed include the biotechnology of cyanobacteria; the reasons why glucose is the principal source of energy for living beings; post-transcriptional effects of estrogen on gene expression; sialylation mechanism in bacteria and the evolution biology of health and disease clinical medicine from a Darwinian perspective.

---