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| Nota di contenuto | Foreword -- Chapter 1: Design of Multi-wavelength Near Infra-Red probe to detect risk areas in diabetic foot -- Chapter 2: Cellular and molecular response for sensitising cancer cells and protecting the normal cells from radiation-induced damages -- Chapter 3: A Novel Approach for Production and Study of Medical Ultrasound from Low Cost Electromagnetic Transducers -- Chapter 4: Altered profile of regulatory T cells and NKT cells are characteristics of Chikungunya associated polyarthralgia -- Chapter 5: Cytotoxicity and Apoptosis of Human Colon Carcinoma Cell (HT 29 Cells), Treated with Methanolic |

Extract of *Chlorococcum humicola* -- Chapter 6: Universal primer design for the detection of diverged CTX-M Beta Lactamases (ESBL) that give penicillin and cephalosporin resistance during superbug infections -- Chapter 7: Lipopeptides as therapeutics: Molecular docking and drug design -- Chapter 8: Design and Simulation of Geometrical Shape and Size Variations of Micro-electrode for Cochlear Implant -- Chapter 9: Molecular and Protein Interaction Studies for Inhibiting Growth of Human Leukemic Cells: An *In silico* Structural Approach to Instigate Drug Discovery -- Chapter 10 -- Laccase Mediated Synthesis of Biomaterial using Agro-residues -- Chapter 11: Extraction of Fungal Xylanase using ATPS-PEG/sulphate and its Application in Hydrolysis of Agricultural Residues -- Chapter 12: Thyme (*Thymus vulgaris*) essential oil based antimicrobial nanoemulsion formulation for fruit juice preservation.

Sommario/riassunto

This book compiles selected articles presented at the International Conference on Biotechnology & Biological Sciences, BIOSPECTRUM 2017, organized by the Department of Biotechnology, University of Engineering & Management, Kolkata. Focusing on biotechnology-based analysis and intervention to address certain human diseases, the book includes a holistic discourse on disease profiling, molecular level analysis of diseases, and non-invasive medical interventions. It features articles on non-invasive treatment of iron deficiency anemia with iron nanoparticles; novel diagnosis methods based on microarray data; analysis using machine learning techniques like artificial neural network for early detection and treatment of cancer; and drug discovery for preventing the growth of human leukemic cells. Further, the book sheds light on *In silico* drug design using lipopeptides, and identifying the binding sites for their corresponding ligands. Presenting the concepts of the design of potent and safe antimicrobial compounds to fight multi drug resistant pathogens, it also includes interesting reviews on the design and development of various non-invasive methods, such as multi NIR wavelength probes to identify the risk areas in the diabetic foot at an early stage; and a low-cost cochlear implant prototype designed and developed from commercial off the-shelf components to empower the hearing impaired. The book appeals to students, academics and researchers in a wide range of subject areas, including biotechnology, life sciences, medicine and cancer research.
