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Nota di contenuto	1.Confocal laser scanning microscopy and fluorescence correlation methods for evaluation of molecular interactions -- 2.Number and Brightness Imaging: visualization of protein oligomerization state in living cell -- 3.Single-molecule analysis on the coupling of molecular state and reaction kinetics -- 4.Imaging lipid rafts in the plasma membrane using novel probe and super-resolution microscopy -- 5. Multiplex Immunohistochemistry (IHC) -- 6.Micro-endoscopy for live small animal fluorescent imaging -- 7.Immuno-gold techniques -- 8. Correlative Light and Electron Microscopy for Nanoparticle-Cell Interaction -- 9.Diagnostic and Therapeutic Nanomedicine -- 10. Semiconductor nanocrystals for biological imaging and fluorescence spectroscopy -- 11.DNA/RNA fluorescence imaging by synthetic nucleic acids -- Section II: Label-free techniques and advanced tomographic imaging -- 12.“Magnetic resonance imaging for preclinical study -- 13.Holotomography techniques for 3D label-free imaging of live cells and tissues -- 14.Dynamic-contrast optical imaging techniques -- 15.Emerging biological and clinical applications of photoacoustic tomography -- Section III: Potential (synergic) biotechnologies to be joined with imaging techniques -- 16.Generation of genetically-engineered mouse models using CRISPR-Cas system -- 17.Highly efficient generation of cell lines stably expressing genes of interest via Cre recombinase mediated knock-in method in mouse

	embryonic stem (ES) cells and its application for microscopic imaging techniques -- 18.Mass spectrometry based metabolomics in translational research -- 19.Application of mass spectrometry in drug metabolism and pharmacokinetics for drug development -- 20. Discovery and Application of Chemical Probes for Translational Research -- 21.Regeneration of skin cells by mesenchymal stem cell-derived exosomes.
Sommario/riassunto	This book is a wide-ranging guide to advanced imaging techniques and related methods with important applications in translational research or convergence science as progress is made toward a new era in integrative healthcare. Conventional and advanced microscopic imaging techniques, including both non-fluorescent (i.e., label-free) and fluorescent methods, have to date provided researchers with specific and quantitative information about molecules, cells, and tissues. Now, however, the different imaging techniques can be correlated with each other and multimodal methods developed to simultaneously obtain diverse and complementary information. In addition, the latest advanced imaging techniques can be integrated with non-imaging techniques such as mass spectroscopic methods, genome editing, organic/inorganic probe synthesis, nanomedicine, and drug discovery. The book will be of high value for researchers in the biological and biomedical sciences or convergence science who need to use these multidisciplinary and integrated techniques or are involved in developing new analytical methods focused on convergence science. .