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Titolo	Microarray Bioprinting Technology : Fundamentals and Practices // edited by Moo-Yeal Lee
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Descrizione fisica	1 online resource (XIII, 175 p. 120 illus., 114 illus. in color.)
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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1. Overview of Microarray Bioprinting Technology -- 2. Microarray Spotter and Printing Technologies -- 3. Chip Platforms and Chip Surface Treatments -- 4. Biological Sample Printing -- 5. High Content Cell Staining -- 6. 3D-Cultured Cell Image Acquisition -- 7. High-Content Image Analysis -- 8. Applications of Microarray Bioprinting.
Sommario/riassunto	This book introduces key fundamentals of microarray bioprinting, including the required chip platforms and associated instruments/devices, experimental protocols for cell printing and biochemical- and cell-based assays, and several example applications. Various bioprinting approaches that allow for the rapid testing of hundreds of different cell culture conditions in combinations on a single chip are discussed in detail. Also covered is high-content, 3D cell-based imaging assays of tissue functions on miniaturized tissue constructs for high-throughput, predictive screening of drug efficacy and toxicity. This is an ideal book for graduate and postgraduate

students in the field of biomedical engineering as well as scientists in the pharmaceutical industry. This book also: Broadens readers' understanding of the principles of microarray bioprinting, chip platforms and associated instruments/devices, and surface chemistry for micropatterning of cells on the chip platform Covers the latest developments in printing cells in hydrogels and methods of gelation as well as printing other biological samples in aqueous solutions Illustrates the complete process for cell staining and high-content imaging of 3D cells on the chip and predicting human metabolism and toxicology on the chip.
