

1. Record Nr.	UNINA9910457787503321
Titolo	Stem cell labeling for delivery and tracking using noninvasive imaging / / edited by Dara L. Kraitchman, Joseph C. Wu
Pubbl/distr/stampa	Boca Raton : , : CRC Press, , 2012
ISBN	0-429-09600-3 1-283-34992-2 9786613349927 1-4398-0752-3
Descrizione fisica	1 online resource (473 p.)
Collana	Series in medical physics and biomedical engineering
Altri autori (Persone)	KraitchmanDara L WuJoseph Ching-Ming <1971->
Disciplina	616.02/774
Soggetti	Stem cells Molecular probes Radioisotope scanning Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	A Taylor & Francis book.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Human embryonic stem cells / Richard P. Davis, Edouard G. Stanley, and Christine L. Mummery -- Stem cell basics : mesenchymal stem cells from bone marrow / Mark F. Pittenger -- Hematopoietic stem cells / David C. Weksberg ... [et al.] -- Adipose-derived adult stem cells / Deepak M. Gupta, Nicholas J. Panetta, and Michael T. Longaker -- Umbilical cord stem cells / Suzanne Kadereit -- Induced pluripotent stem cells : imaging nuclear reprogramming to cardiac regeneration / Timothy J. Nelson ... [et al.] -- Radionuclide approaches to imaging stem cells and their biological effects on the myocardium / Fiona See and Lynne L. Johnson -- Fluorescence imaging of stem cells in vivo : evolving technologies and applications / David E. Sosnovik -- Ultrasound imaging basics / Howard Leong-Poi -- MRI basics and principles for cellular imaging / Lisa M. Gazdzinski ... [et al.] -- X-ray imaging basics / Jochen Cammin and Katsuyuki Taguchi -- Radionuclide cell-labeling methods / Rong Zhou and Hui Qiao -- Principles of bioluminescence imaging and its application in vivo /

Maarten A. Lijkwan, Ernst Jan Bos, and Joseph C. Wu --  
Quantum dot labeling methods / A.B.R. Kontorovich ... [et al.] --  
Magnetic resonance imaging cell labeling methods / Ali S. Arbab and  
Joseph A. Frank -- Ultrasound cell-labeling methods / Flordeliza S.  
Villanueva -- X-ray-guided delivery and tracking of cells / Jeff W.M.  
Bulte and Aravind Arepally -- Toward imaging of structure and function  
/ Jason M. Criscione, Albert J. Sinusas, and Tarek M. Fahmy -- Other  
non-stem cell therapies for cellular tracking, inflammatory cell tracking  
/ Yijun L. Wu ... [et al.] -- Bioluminescence, MRI, and PET imaging  
modalities of stem cell-based therapy for neurological disorders /  
Marcel M. Daadi, Raphael Guzman, and Gary K. Steinberg -- Clinical  
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the first reporter gene-based imaging clinical trial / Shahriar S.  
Yaghoubi and Sanjiv S. Gambhir -- Clinical cardiology stem cell  
applications / Anthony J. White ... [et al.] -- Musculoskeletal clinical  
applications of stem cells -- Regulatory hurdles to translation / Adrian  
D. Nunn.

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Sommario/riassunto

Stem Cell Labeling for Delivery and Tracking Using Noninvasive Imaging provides a comprehensive overview of cell therapy imaging, ranging from the basic biology of cell therapeutic choices to the preclinical and clinical applications of cell therapy. It emphasizes the use of medical imaging for therapeutic delivery/targeting, cell tracking, and determining therapeutic efficacy. The book first presents background information and insight on the major classes of stem and progenitor cells. It then describes the main imaging modalities and state-of-the-art techniques that are currently employed for stem cell tracking. In the final chapters, leading scholars offer clinical perspectives on existing and potential uses of stem cells as well as the impact of image-guided delivery and tracking in major organ systems. Through clear descriptions and color images, this volume illustrates how noninvasive imaging is used to track stem cells as they repair damaged tissue in the body. With contributions from some of the most prominent preclinical and clinical researchers in the field, the book helps readers to understand the evolving concepts of stem cell labeling and tracking as the field continues to move forward--Provided by publisher.

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