

Articles on cell labeling and cell tracking with iron oxide,  
SPIO, USPIO, and MRI

**Superparamagnetic Iron Oxide Nanoparticles Function as a Long-Term, Multi-Modal Imaging Label for Non-Invasive Tracking of Implanted Progenitor Cells**

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<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0108695>

**Stem cell tracking using iron oxide nanoparticles**

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International Journal of Nanomedicine 2014:9 1641–1653

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3976208/>

**Viability, Differentiation Capacity, and Detectability of Super-Paramagnetic Iron Oxide-Labeled Muscle Precursor Cells for Magnetic-Resonance Imaging**

Fahd Azzabi, PhD, Markus Rottmar, PhD, Virginija Jovaisaite, MSc, Markus Rudin, PhD, Tullio Sulser, MD, Andreas Boss, MD, PhD, and Daniel Eberli, MD, PhD  
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**Magnetic resonance monitoring of superparamagnetic iron oxide (SPIO)-labeled stem cells transplanted into the inner ear**

Yukiko Watada, Daisuke Yamashita, Masashi Toyoda, Kohei Tsuchiya, Naoko Hida, Akihiro Tanimoto, Kaoru Ogawa, Sho Kanzaki, Akihiro Umezawa  
doi:10.1016/j.neures.2015.01.010

**Ultrastructural characterization of mesenchymal stromal cells labeled with ultrasmall superparamagnetic iron-oxide nanoparticles for clinical tracking studies**

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Scandinavian Journal of Clinical & Laboratory Investigation, August 2014, Vol. 74, No. 5 :  
Pages 437-446.

<https://doi.org/10.3109/00365513.2014.900698>

**Magnetic resonance imaging tracking of ultra small superparamagnetic iron oxide labeled rabbit dendritic cells**

Zhou J, Yang F, Zhou Q, Yang K, Chen W.

Exp Biol Med (Maywood). 2014 Jan;239(1):13-23. doi: 10.1177/1535370213508712

**Functional investigations on embryonic stem cells labeled with clinically translatable iron oxide nanoparticles**

Jing Liu, Liqin Wang, Jianbo Cao, Yue Huang, Yu Lin, Xiaoyun Wu, Zhiyong Wang, Fan Zhang, Xiuqin Xu and Gang Liu

Nanoscale, 2014,6, 9025-9033

DOI: 10.1039/C4NR01004C

**Combining perfluorocarbon and superparamagnetic iron-oxide cell labeling for improved and expanded applications of cellular MRI.**

Hitchens TK,<sup>1</sup> Liu L,<sup>1</sup> Foley LM,<sup>1</sup> Simplaceanu V,<sup>1,2</sup> Ahrens ET,<sup>1,2,3</sup> Ho C.<sup>1,2</sup>

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Magn Reson Med. 2014 Jan 29.

<http://onlinelibrary.wiley.com/doi/10.1002/mrm.25120/full>

**Optimal Labeling Dose, Labeling Time, and Magnetic Resonance Imaging Detection Limits of Ultrasmall Superparamagnetic Iron-Oxide Nanoparticle Labeled Mesenchymal Stromal Cells**

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**Flow-Mediated Stem Cell Labeling with Superparamagnetic Iron Oxide Nanoparticle Clusters**

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ACS Appl. Mater. Interfaces, 2013, 5 (20), pp 10266-10273

DOI: 10.1021/am4030998

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**In vivo MRI tracking of iron oxide nanoparticle-labeled human mesenchymal stem cells in limb ischemia**

Li XX, Li KA, Qin JB, Ye KC, Yang XR, Li WM, Xie QS, Jiang ME, Zhang GX, Lu XW

**Effect of Labeling with Iron Oxide Particles or Nanodiamonds on the Functionality of Adipose-Derived Mesenchymal Stem Cells**

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**Labeling Stem Cells with Superparamagnetic Iron Oxide Nanoparticles: Analysis of the Labeling Efficacy by Microscopy and Magnetic Resonance Imaging**

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**Self-Assembling Nanocomplexes by combining Ferumoxytol, Heparin And Protamine For Cell Tracking by MRI**

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Nat Med. 2012 February 26; 18(3): 463–467. doi: 10.1038/nm.2666

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**Personalized nanomedicine advancements for stem cell tracking**

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Adv Drug Deliv Rev. 2012 October ; 64(13): 1488–1507. doi:10.1016/j.addr.2012.07.008  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3477295/>

### **Cancer stem cell labeling using poly(L-lysine)-modified iron oxide nanoparticles**

Xueqin Wang<sup>a</sup>, Fang Wei<sup>a</sup>, Ajing Liu<sup>a</sup>, Lei Wang<sup>a</sup>, Jian-Chun Wang<sup>b</sup>, Li Ren<sup>a</sup>, Wenming Liu<sup>a, b</sup>, Qin Tu<sup>b</sup>, Li Li<sup>a</sup>, Jinyi Wang<sup>a, b</sup>,

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doi:10.1016/j.biomaterials.2012.01.058

### **Essential Elements to Consider for MRI Cell Tracking Studies with Iron Oxide-based Labeling Agents**

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Journal of Basic & Clinical Medicine 2012, 1(1):1-6

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### **Highly efficient magnetic stem cell labeling with citrate-coated superparamagnetic iron oxide nanoparticles for MRI tracking**

Andreas K, Georgieva R, Ladwig M, Mueller S, Notter M, Sittinger M, Ringe J. Highly efficient magnetic stem cell labeling with citrate-coated superparamagnetic iron oxide nanoparticles for MRI tracking.

Biomaterials. June 2012;33(18):4515-4525.

### **Cell labeling with magnetic nanoparticles: Opportunity for magnetic cell imaging and cell manipulation**

Jelena Kolosnjaj-Tabi, Claire Wilhelm, Olivier Clément, Florence Gazeau

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### **Long-Term MR Cell Tracking of Neural Stem Cells Grafted in Immunocompetent Versus Immunodeficient Mice Reveals Distinct Differences in Contrast Between Live and Dead Cells**

Stacey Cromer Berman<sup>1,2</sup>, Chulani Galpoththawela<sup>1,2</sup>, Assaf A. Gilad<sup>1,2</sup>, Jeff W. M. Bulte<sup>1,2,3,4</sup>, and Piotr Walczak<sup>1,2</sup>,

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Magn Reson Med. 2011 February ; 65(2): 564–574. doi:10.1002/mrm.22613.

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**Labeling stem cells with ferumoxytol, an FDA-approved iron oxide nanoparticle.**

Castaneda RT, Khurana A, Khan R, Daldrup-Link HE.

Department of Radiology, Molecular Imaging Program at Stanford, USA.

J Vis Exp. 2011 Nov 4;(57):e3482. doi: 10.3791/3482.

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**MRI assessment of blood outgrowth endothelial cell homing using cationic magnetoliposomes**

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Biomaterials 32 (2011) 4140-4150

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**Monitoring of In Vivo Function of Superparamagnetic Iron Oxide Labelled Murine Dendritic Cells during Anti-Tumour Vaccination**

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**Superparamagnetic Iron Oxide Labeling of Stem Cells for MRI Tracking and Delivery in Cardiovascular Disease**

Dorota A. Kedziorek and Dara L. Kraitchman

Methods Mol Biol. 2010; 660: 171-183.

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PMCID: PMC3096997. NIHMSID: NIHMS279496

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3096997/>

**In Vivo MRI Cell Tracking: Clinical Studies**

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doi:10.2214/AJR.09.3107

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2857985/>

**Synthetic and biogenic magnetite nanoparticles for tracking of stem cells and dendritic cells**

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