8: Won JS, Nam H, Lee HW, Hwang JY, Noh YJ, Nam DH, Lee SH, Joo KM. In vivo distribution of U87MG cells injected into the lateral ventricle of rats with spinal cord injury. PLoS One. 2018 Aug 16;13(8):e0202307. doi: 10.1371/journal.pone.0202307. eCollection 2018. PubMed PMID: 30114270; PubMed Central PMCID: PMC6095526.

9: Kim HY, Kumar H, Jo MJ, Kim J, Yoon JK, Lee JR, Kang M, Choo YW, Song SY, Kwon SP, Hyeon T, Han IB, Kim BS. Therapeutic Efficacy-Potentiated and Diseased Organ-Targeting Nanovesicles Derived from Mesenchymal Stem Cells for Spinal Cord Injury Treatment. Nano Lett. 2018 Aug 8;18(8):4965-4975. doi: 10.1021/acs.nanolett.8b01816. Epub 2018 Jul 13. PubMed PMID: 29995418.

10: Young JS, Bernal G, Polster SP, Nunez L, Larsen GF, Mansour N, Podell M, Yamini B. Convection-Enhanced Delivery of Polymeric Nanoparticles Encapsulating Chemotherapy in Canines with Spontaneous Supratentorial Tumors. World Neurosurg. 2018 Sep;117:e698-e704. doi: 10.1016/j.wneu.2018.06.114. Epub 2018 Jun 27. PubMed PMID: 29960096; PubMed Central PMCID: PMC6113082.

11: Champagne PO, Westwick H, Bouthillier A, Sawan M. Colloidal stability of superparamagnetic iron oxide nanoparticles in the central nervous system: a review. Nanomedicine (Lond). 2018 Jun;13(11):1385-1400. doi: 10.2217/nnm-2018-0021. Review. PubMed PMID: 29949472.

12: Maralani PJ, Das S, Mainprize T, Phan N, Bharatha A, Keith J, Munoz DG, Sahgal A, Symons S, Ironside S, Faraji-Dana Z, Eilaghi A, Chan A, Alcaide-Leon P, Shearkhani O, Jakubovic R, Atenafu EG, Zaharchuk G, Mikulis D. Hypoxia Detection in Infiltrative Astrocytoma: Ferumoxytol-based Quantitative BOLD MRI with Intraoperative and Histologic Validation. Radiology. 2018 Sep;288(3):821-829. doi: 10.1148/radiol.2018172601. Epub 2018 Jun 26. PubMed PMID: 29944077.

13: Iv M, Choudhri O, Dodd RL, Vasanawala SS, Alley MT, Moseley M, Holdsworth SJ, Grant G, Cheshier S, Yeom KW. High-resolution 3D volumetric contrast-enhanced MR angiography with a blood pool agent (ferumoxytol) for diagnostic evaluation of pediatric brain arteriovenous malformations. J Neurosurg Pediatr. 2018 Sep;22(3):251-260. doi: 10.3171/2018.3.PEDS17723. Epub 2018 Jun 8. PubMed PMID: 29882734.

14: Lu Q, Dai X, Zhang P, Tan X, Zhong Y, Yao C, Song M, Song G, Zhang Z, Peng G, Guo Z, Ge Y, Zhang K, Li Y. Fe(3)O(4)@Au composite magnetic nanoparticles modified with cetuximab for targeted magneto-photothermal therapy of glioma cells. Int J Nanomedicine. 2018 Apr 23;13:2491-2505. doi: 10.2147/IJN.S157935. eCollection 2018. PubMed PMID: 29719396; PubMed Central PMCID: PMC5922298.

15: Shevtsov M, Nikolaev B, Marchenko Y, Yakovleva L, Skvortsov N, Mazur A, Tolstoy P, Ryzhov V, Multhoff G. Targeting experimental orthotopic glioblastoma with chitosan-based superparamagnetic iron oxide nanoparticles (CS-DX-SPIONs). Int J Nanomedicine. 2018 Mar 12;13:1471-1482. doi: 10.2147/IJN.S152461. eCollection 2018. PubMed PMID: 29559776; PubMed Central PMCID: PMC5856030.

16: Rhodes KR, Green JJ. Nanoscale artificial antigen presenting cells for cancer immunotherapy. Mol Immunol. 2018 Jun;98:13-18. doi: 10.1016/j.molimm.2018.02.016. Epub 2018 Mar 7. Review. PubMed PMID: 29525074; PubMed Central PMCID: PMC6084459.

17: Turan N, Heider RA, Roy AK, Miller BA, Mullins ME, Barrow DL, Grossberg J, Pradilla G. Current Perspectives in Imaging Modalities for the Assessment of Unruptured Intracranial Aneurysms: A Comparative Analysis and Review. World Neurosurg. 2018 May;113:280-292. doi: 10.1016/j.wneu.2018.01.054. Epub 2018 Jan 31. Review. PubMed PMID: 29360591.

18: Freeman AC, Platt SR, Holmes S, Kent M, Robinson K, Howerth E, Eagleson J, Bouras A, Kaluzova M, Hadjipanayis CG. Convection-enhanced delivery of cetuximab conjugated iron-oxide nanoparticles for treatment of spontaneous canine intracranial gliomas. J Neurooncol. 2018 May;137(3):653-663. doi: 10.1007/s11060-018-2764-1. Epub 2018 Jan 19. PubMed PMID: 29350351.

19: Varallyay CG, Nesbit E, Horvath A, Varallyay P, Fu R, Gahramanov S, Muldoon LL, Li X, Rooney WD, Neuwelt EA. Cerebral blood volume mapping with ferumoxytol in dynamic susceptibility contrast perfusion MRI: Comparison to standard of care. J Magn Reson Imaging. 2018 Aug;48(2):441-448. doi: 10.1002/jmri.25943. Epub 2018 Jan 4. PubMed PMID: 29314418; PubMed Central PMCID: PMC6034979.

20: Jang JT, Lee J, Seon J, Ju E, Kim M, Kim YI, Kim MG, Takemura Y, Arbab AS, Kang KW, Park KH, Paek SH, Bae S. Giant Magnetic Heat Induction of Magnesium-Doped γ-Fe(2) O(3) Superparamagnetic Nanoparticles for Completely Killing Tumors. Adv Mater. 2018 Feb;30(6). doi: 10.1002/adma.201704362. Epub 2017 Dec 20. Erratum in: Adv Mater. 2019 Mar;31(12):e1806347. PubMed PMID: 29266514.

21: Horváth A, Varallyay CG, Schwartz D, Toth GB, Netto JP, Barajas R, Várallyay P, Szidonya L, Firkins J, Youngers E, Fu R, Ambady P, Bogner P, Neuwelt EA. Quantitative comparison of delayed ferumoxytol T(1) enhancement with immediate gadoteridol enhancement in high grade gliomas. Magn Reson Med. 2018 Jul;80(1):224-230. doi: 10.1002/mrm.27028. Epub 2017 Dec 4. PubMed PMID: 29205477; PubMed Central PMCID: PMC5876095.

22: Lin TE, Lu YJ, Sun CL, Pick H, Chen JP, Lesch A, Girault HH. Soft Electrochemical Probes for Mapping the Distribution of Biomarkers and Injected Nanomaterials in Animal and Human Tissues. Angew Chem Int Ed Engl. 2017 Dec 22;56(52):16498-16502. doi: 10.1002/anie.201709271. Epub 2017 Dec 1. PubMed PMID: 29083542.

23: Ludewig P, Gdaniec N, Sedlacik J, Forkert ND, Szwargulski P, Graeser M, Adam G, Kaul MG, Krishnan KM, Ferguson RM, Khandhar AP, Walczak P, Fiehler J, Thomalla G, Gerloff C, Knopp T, Magnus T. Magnetic Particle Imaging for Real-Time Perfusion Imaging in Acute Stroke. ACS Nano. 2017 Oct 24;11(10):10480-10488. doi: 10.1021/acsnano.7b05784. Epub 2017 Oct 4. PubMed PMID: 28976180.

24: Netto JP, Iliff J, Stanimirovic D, Krohn KA, Hamilton B, Varallyay C, Gahramanov S, Daldrup-Link H, d'Esterre C, Zlokovic B, Sair H, Lee Y, Taheri S, Jain R, Panigrahy A, Reich DS, Drewes LR, Castillo M, Neuwelt EA. Neurovascular Unit: Basic and Clinical Imaging with Emphasis on Advantages of Ferumoxytol. Neurosurgery. 2018 Jun 1;82(6):770-780. doi: 10.1093/neuros/nyx357. PubMed PMID: 28973554; PubMed Central PMCID: PMC6256943.

25: Li X, Varallyay CG, Gahramanov S, Fu R, Rooney WD, Neuwelt EA. Pseudo-extravasation rate constant of dynamic susceptibility contrast-MRI determined from pharmacokinetic first principles. NMR Biomed. 2017 Nov;30(11). doi: 10.1002/nbm.3797. Epub 2017 Sep 8. PubMed PMID: 28885746; PubMed Central PMCID: PMC5870763.

26: Beiranvand S, Karimi A. Effect of Encapsulated Artemisia aucheri. L Magnetic Nanogel Extract on Shoulder Block in Rat. Drug Res (Stuttg). 2018 Feb;68(2):65-71. doi: 10.1055/s-0043-117180. Epub 2017 Aug 28. PubMed PMID: 28847020.

27: Aoki T, Saito M, Koseki H, Tsuji K, Tsuji A, Murata K, Kasuya H, Morita A, Narumiya S, Nozaki K; MR Macrophage Imaging Study Investigators. Macrophage Imaging of Cerebral Aneurysms with Ferumoxytol: an Exploratory Study in an Animal Model and in Patients. J Stroke Cerebrovasc Dis. 2017

Oct;26(10):2055-2064. doi: 10.1016/j.jstrokecerebrovasdis.2016.10.026. Epub 2017 Jul 31. PubMed PMID: 28774792.

28: Thawani JP, Amirshaghaghi A, Yan L, Stein JM, Liu J, Tsourkas A. Photoacoustic-Guided Surgery with Indocyanine Green-Coated Superparamagnetic Iron Oxide Nanoparticle Clusters. Small. 2017 Oct;13(37). doi: 10.1002/smll.201701300. Epub 2017 Jul 27. PubMed PMID: 28748623; PubMed Central PMCID: PMC5884067.

29: Varallyay CG, Toth GB, Fu R, Netto JP, Firkins J, Ambady P, Neuwelt EA. What Does the Boxed Warning Tell Us? Safe Practice of Using Ferumoxytol as an MRI Contrast Agent. AJNR Am J Neuroradiol. 2017 Jul;38(7):1297-1302. doi: 10.3174/ajnr.A5188. Epub 2017 May 11. PubMed PMID: 28495944; PubMed Central PMCID: PMC5509484.

30: Toth GB, Varallyay CG, Horvath A, Bashir MR, Choyke PL, Daldrup-Link HE, Dosa E, Finn JP, Gahramanov S, Harisinghani M, Macdougall I, Neuwelt A, Vasanawala SS, Ambady P, Barajas R, Cetas JS, Ciporen J, DeLoughery TJ, Doolittle ND, Fu R, Grinstead J, Guimaraes AR, Hamilton BE, Li X, McConnell HL, Muldoon LL, Nesbit G, Netto JP, Petterson D, Rooney WD, Schwartz D, Szidonya L, Neuwelt EA. Current and potential imaging applications of ferumoxytol for magnetic resonance imaging. Kidney Int. 2017 Jul;92(1):47-66. doi: 10.1016/j.kint.2016.12.037. Epub 2017 Apr 20. Review. PubMed PMID: 28434822; PubMed Central PMCID: PMC5505659.

31: de Oliveira EA, Lazovic J, Guo L, Soto H, Faintuch BL, Akhtari M, Pope W. Evaluation of Magnetonanoparticles Conjugated with New Angiogenesis Peptides in Intracranial Glioma Tumors by MRI. Appl Biochem Biotechnol. 2017 Sep;183(1):265-279. doi: 10.1007/s12010-017-2443-2. Epub 2017 Mar 9. PubMed PMID: 28281182.

32: Pohland M, Glumm R, Wiekhorst F, Kiwit J, Glumm J. Biocompatibility of very small superparamagnetic iron oxide nanoparticles in murine organotypic hippocampal slice cultures and the role of microglia. Int J Nanomedicine. 2017 Feb 27;12:1577-1591. doi: 10.2147/IJN.S127206. eCollection 2017. PubMed PMID: 28280327; PubMed Central PMCID: PMC5339010.

33: Lamanna JJ, Gutierrez J, Urquia LN, Hurtig CV, Amador E, Grin N, Svendsen CN, Federici T, Oshinski JN, Boulis NM. Ferumoxytol Labeling of Human Neural Progenitor Cells for Diagnostic Cellular Tracking in the Porcine Spinal Cord with Magnetic Resonance Imaging. Stem Cells Transl Med. 2017 Jan;6(1):139-150. doi: 10.5966/sctm.2015-0422. Epub 2016 Aug 29. PubMed PMID: 28170192; PubMed Central PMCID: PMC5442757.

34: Lamanna JJ, Urquia LN, Hurtig CV, Gutierrez J, Anderson C, Piferi P, Federici T, Oshinski JN, Boulis NM. Magnetic Resonance Imaging-Guided Transplantation of Neural Stem Cells into the Porcine Spinal Cord. Stereotact Funct Neurosurg. 2017;95(1):60-68. doi: 10.1159/000448765. Epub 2017 Jan 28. PubMed PMID: 28132063; PubMed Central PMCID: PMC5359976.

35: Lassenberger A, Scheberl A, Stadlbauer A, Stiglbauer A, Helbich T, Reimhult E. Individually Stabilized, Superparamagnetic Nanoparticles with Controlled Shell and Size Leading to Exceptional Stealth Properties and High Relaxivities. ACS Appl Mater Interfaces. 2017 Feb 1;9(4):3343-3353. doi: 10.1021/acsami.6b12932. Epub 2017 Jan 20. PubMed PMID: 28071883; PubMed Central PMCID: PMC5290491.

36: Netto JP, Schwartz D, Varallyay C, Fu R, Hamilton B, Neuwelt EA. Misleading early blood volume changes obtained using ferumoxytol-based magnetic resonance imaging perfusion in high grade glial neoplasms treated with bevacizumab. Fluids Barriers CNS. 2016 Dec 20;13(1):23. doi: 10.1186/s12987-016-0047-9. PubMed PMID: 27998280; PubMed Central PMCID: PMC5175388.

37: Zanganeh S, Hutter G, Spitler R, Lenkov O, Mahmoudi M, Shaw A, Pajarinen JS, Nejadnik H, Goodman S, Moseley M, Coussens LM, Daldrup-Link HE. Iron oxide nanoparticles inhibit tumour growth by inducing pro-inflammatory macrophage polarization in tumour tissues. Nat Nanotechnol. 2016 Nov;11(11):986-994. doi: 10.1038/nnano.2016.168. Epub 2016 Sep 26. PubMed PMID: 27668795; PubMed Central PMCID: PMC5198777.

38: Hamilton BE, Woltjer RL, Prola-Netto J, Nesbit GM, Gahramanov S, Pham T, Wagner J, Neuwelt EA. Ferumoxytol-enhanced MRI differentiation of meningioma from dural metastases: a pilot study with immunohistochemical observations. J Neurooncol. 2016 Sep;129(2):301-9. doi: 10.1007/s11060-016-2175-0. Epub 2016 Jul 8. PubMed PMID: 27393348.

39: Yang L, Shao B, Zhang X, Cheng Q, Lin T, Liu E. Multifunctional upconversion nanoparticles for targeted dual-modal imaging in rat glioma xenograft. J Biomater Appl. 2016 Sep;31(3):400-10. doi: 10.1177/0885328216658779. Epub 2016 Jul 7. PubMed PMID: 27388895.

40: Bae S, Jeoung JW, Jeun M, Jang JT, Park JH, Kim YJ, Lee K, Kim M, Lee J, Hwang HM, Paek SH, Park KH. Magnetically softened iron oxide (MSIO) nanofluid and its application to thermally-induced heat shock proteins for ocular neuroprotection. Biomaterials. 2016 Sep;101:165-75. doi: 10.1016/j.biomaterials.2016.05.049. Epub 2016 Jun 1. PubMed PMID: 27294536.

41: McConnell HL, Schwartz DL, Richardson BE, Woltjer RL, Muldoon LL, Neuwelt EA. Ferumoxytol nanoparticle uptake in brain during acute neuroinflammation is cell-specific. Nanomedicine. 2016 Aug;12(6):1535-42. doi: 10.1016/j.nano.2016.03.009. Epub 2016 Apr 9. PubMed PMID: 27071335; PubMed Central PMCID: PMC4955720.

42: Hu Y, Zhou Y, Zhao N, Liu F, Xu FJ. Multifunctional pDNA-Conjugated Polycationic Au Nanorod-Coated Fe3 O4 Hierarchical Nanocomposites for Trimodal Imaging and Combined Photothermal/Gene Therapy. Small. 2016 May;12(18):2459-68. doi: 10.1002/smll.201600271. Epub 2016 Mar 21. PubMed PMID: 26996155.

43: Saito A, Mekawy MM, Sumiyoshi A, Riera JJ, Shimizu H, Kawashima R, Tominaga T. Noninvasive targeting delivery and in vivo magnetic resonance tracking method for live apoptotic cells in cerebral ischemia with functional Fe2O3 magnetic nanoparticles. J Nanobiotechnology. 2016 Mar 11;14:19. doi: 10.1186/s12951-016-0173-1. PubMed PMID: 26969152; PubMed Central PMCID: PMC4788935.

44: Zhang J, Chen N, Wang H, Gu W, Liu K, Ai P, Yan C, Ye L. Dual-targeting superparamagnetic iron oxide nanoprobes with high and low target density for brain glioma imaging. J Colloid Interface Sci. 2016 May 1;469:86-92. doi: 10.1016/j.jcis.2016.02.004. Epub 2016 Feb 2. PubMed PMID: 26874270.

45: Fang JH, Chiu TL, Huang WC, Lai YH, Hu SH, Chen YY, Chen SY. Dual-Targeting Lactoferrin-Conjugated Polymerized Magnetic Polydiacetylene-Assembled Nanocarriers with Self-Responsive Fluorescence/Magnetic Resonance Imaging for In Vivo Brain Tumor Therapy. Adv Healthc Mater. 2016 Mar;5(6):688-95. doi: 10.1002/adhm.201500750. Epub 2016 Jan 28. PubMed PMID: 26820074.

46: Muroski ME, Morshed RA, Cheng Y, Vemulkar T, Mansell R, Han Y, Zhang L, Aboody KS, Cowburn RP, Lesniak MS. Controlled Payload Release by Magnetic Field Triggered Neural Stem Cell Destruction for Malignant Glioma Treatment. PLoS One. 2016 Jan 6;11(1):e0145129. doi: 10.1371/journal.pone.0145129. eCollection 2016. PubMed PMID: 26734932; PubMed Central PMCID: PMC4703386.

47: Shevtsov MA, Nikolaev BP, Ryzhov VA, Yakovleva LY, Dobrodumov AV, Marchenko YY, Margulis BA,

Pitkin E, Mikhrina AL, Guzhova IV, Multhoff G. Detection of experimental myocardium infarction in rats by MRI using heat shock protein 70 conjugated superparamagnetic iron oxide nanoparticle. Nanomedicine. 2016 Apr;12(3):611-621. doi: 10.1016/j.nano.2015.10.017. Epub 2015 Dec 2. PubMed PMID: 26656626.

48: Muehe AM, Feng D, von Eyben R, Luna-Fineman S, Link MP, Muthig T, Huddleston AE, Neuwelt EA, Daldrup-Link HE. Safety Report of Ferumoxytol for Magnetic Resonance Imaging in Children and Young Adults. Invest Radiol. 2016 Apr;51(4):221-227. doi: 10.1097/RLI.0000000000000230. PubMed PMID: 26656202; PubMed Central PMCID: PMC4783197.

49: Shevtsov MA, Nikolaev BP, Yakovleva LY, Parr MA, Marchenko YY, Eliseev I, Yudenko A, Dobrodumov AV, Zlobina O, Zhakhov A, Ischenko AM, Pitkin E, Multhoff G. 70-kDa heat shock protein coated magnetic nanocarriers as a nanovaccine for induction of anti-tumor immune response in experimental glioma. J Control Release. 2015 Dec 28;220(Pt A):329-340. doi: 10.1016/j.jconrel.2015.10.051. Epub 2015 Oct 29. PubMed PMID: 26522072.

50: Chen L, Zhang G, Shi Y, Qiu R, Khan AA. Neuropilin-1 (NRP-1) and Magnetic Nanoparticles, a Potential Combination for Diagnosis and Therapy of Gliomas. Curr Pharm Des. 2015;21(37):5434-49. Review. PubMed PMID: 26377659.

51: Long Q, Li J, Luo Q, Hei Y, Wang K, Tian Y, Yang J, Lei H, Qiu B, Liu W. MRI tracking of bone marrow mesenchymal stem cells labeled with ultra-small superparamagnetic iron oxide nanoparticles in a rat model of temporal lobe epilepsy. Neurosci Lett. 2015 Oct 8;606:30-5. doi: 10.1016/j.neulet.2015.08.040. Epub 2015 Aug 25. PubMed PMID: 26318841.

52: Muhammad G, Jablonska A, Rose L, Walczak P, Janowski M. Effect of MRI tags: SPIO nanoparticles and 19F nanoemulsion on various populations of mouse mesenchymal stem cells. Acta Neurobiol Exp (Wars). 2015;75(2):144-59. PubMed PMID: 26232992; PubMed Central PMCID: PMC4889457.

53: Bouras A, Kaluzova M, Hadjipanayis CG. Radiosensitivity enhancement of radioresistant glioblastoma by epidermal growth factor receptor antibody-conjugated iron-oxide nanoparticles. J Neurooncol. 2015 Aug;124(1):13-22. doi: 10.1007/s11060-015-1807-0. Epub 2015 May 17. PubMed PMID: 25981803; PubMed Central PMCID: PMC4498963.

54: Connor JR, Zhang X, Nixon AM, Webb B, Perno JR. Comparative evaluation of nephrotoxicity and management by macrophages of intravenous pharmaceutical iron formulations. PLoS One. 2015 May 14;10(5):e0125272. doi: 10.1371/journal.pone.0125272. eCollection 2015. PubMed PMID: 25973894; PubMed Central PMCID: PMC4431721.

55: Kaluzova M, Bouras A, Machaidze R, Hadjipanayis CG. Targeted therapy of glioblastoma stem-like cells and tumor non-stem cells using cetuximab-conjugated iron-oxide nanoparticles. Oncotarget. 2015 Apr 20;6(11):8788-806. PubMed PMID: 25871395; PubMed Central PMCID: PMC4496184.

56: Temel Y, Jahanshahi A. Neuroscience. Treating brain disorders with neuromodulation. Science. 2015 Mar 27;347(6229):1418-9. doi: 10.1126/science.aaa9610. PubMed PMID: 25814569.

57: Neubert J, Wagner S, Kiwit J, Bräuer AU, Glumm J. New findings about iron oxide nanoparticles and their different effects on murine primary brain cells. Int J Nanomedicine. 2015 Mar 13;10:2033-49. doi: 10.2147/IJN.S74404. eCollection 2015. PubMed PMID: 25792834; PubMed Central PMCID: PMC4364595.

58: Shevtsov MA, Nikolaev BP, Yakovleva LY, Dobrodumov AV, Zhakhov AV, Mikhrina AL, Pitkin E, Parr MA, Rolich VI, Simbircev AS, Ischenko AM. Recombinant interleukin-1 receptor antagonist conjugated

to superparamagnetic iron oxide nanoparticles for theranostic targeting of experimental glioblastoma. Neoplasia. 2015 Jan;17(1):32-42. doi: 10.1016/j.neo.2014.11.001. PubMed PMID: 25622897; PubMed Central PMCID: PMC4309733.

59: Liu Z, Huang L, Liu L, Luo B, Liang M, Sun Z, Zhu S, Quan X, Yang Y, Ma T, Huang J, Luo Z. Activation of Schwann cells in vitro by magnetic nanocomposites via applied magnetic field. Int J Nanomedicine. 2014 Dec 17;10:43-61. doi: 10.2147/IJN.S74332. eCollection 2015. PubMed PMID: 25565803; PubMed Central PMCID: PMC4275057.

60: Zhang D, Fa HB, Zhou JT, Li S, Diao XW, Yin W. The detection of β-amyloid plaques in an Alzheimer's disease rat model with DDNP-SPIO. Clin Radiol. 2015 Jan;70(1):74-80. doi: 10.1016/j.crad.2014.09.019. Epub 2014 Nov 15. PubMed PMID: 25459675.

61: Doyle KP, Quach LN, Arceuil HE, Buckwalter MS. Ferumoxytol administration does not alter infarct volume or the inflammatory response to stroke in mice. Neurosci Lett. 2015 Jan 1;584:236-40. doi: 10.1016/j.neulet.2014.10.041. Epub 2014 Nov 1. PubMed PMID: 25449870; PubMed Central PMCID: PMC4268374.

62: Tan C, Shichinohe H, Abumiya T, Nakayama N, Kazumata K, Hokari M, Hamauchi S, Houkin K. Short-, middle- and long-term safety of superparamagnetic iron oxide-labeled allogeneic bone marrow stromal cell transplantation in rat model of lacunar infarction. Neuropathology. 2015 Jun;35(3):197-208. doi: 10.1111/neup.12180. Epub 2014 Nov 6. PubMed PMID: 25376270.

63: Yuan G, Yuan Y, Xu K, Luo Q. Biocompatible PEGylated $Fe_3O_4$ nanoparticles as photothermal agents for near-infrared light modulated cancer therapy. Int J Mol Sci. 2014 Oct 17;15(10):18776-88. doi: 10.3390/ijms151018776. PubMed PMID: 25329618; PubMed Central PMCID: PMC4227246.

64: Doolittle ND, Muldoon LL, Culp AY, Neuwelt EA. Delivery of chemotherapeutics across the blood-brain barrier: challenges and advances. Adv Pharmacol. 2014;71:203-43. doi: 10.1016/bs.apha.2014.06.002. Epub 2014 Aug 22. Review. PubMed PMID: 25307218; PubMed Central PMCID: PMC5505259.

65: Janowski M, Walczak P, Kropiwnicki T, Jurkiewicz E, Domanska-Janik K, Bulte JW, Lukomska B, Roszkowski M. Long-term MRI cell tracking after intraventricular delivery in a patient with global cerebral ischemia and prospects for magnetic navigation of stem cells within the CSF. PLoS One. 2014 Jun 11;9(2):e97631. doi: 10.1371/journal.pone.0097631. eCollection 2014. PubMed PMID: 24919061; PubMed Central PMCID: PMC4053317.

66: Zadnik PL, Molina CA, Sarabia-Estrada R, Groves ML, Wabler M, Mihalic J, McCarthy EF, Gokaslan ZL, Ivkov R, Sciubba D. Characterization of intratumor magnetic nanoparticle distribution and heating in a rat model of metastatic spine disease. J Neurosurg Spine. 2014 Jun;20(6):740-50. doi: 10.3171/2014.2.SPINE13142. Epub 2014 Apr 4. PubMed PMID: 24702509.

67: Xu HS, Ma C, Cao L, Wang JJ, Fan XX. Study of co-transplantation of SPIO labeled bone marrow stromal stem cells and Schwann cells for treating traumatic brain injury in rats and in vivo tracing of magnetically labeled cells by MRI. Eur Rev Med Pharmacol Sci. 2014;18(4):520-5. PubMed PMID: 24610619.

68: Zhang S, An Q, Li Q, Huang J, Chen X, Chen X, Zhang J, Wang Y, Yang GY, Zhu W. Therapeutic benefit of bone marrow-derived endothelial progenitor cell transplantation after experimental aneurysm embolization with coil in rats. PLoS One. 2014 Feb 28;9(2):e90069. doi:

10.1371/journal.pone.0090069. eCollection 2014. PubMed PMID: 24587209; PubMed Central PMCID: PMC3938595.

69: Blasiak B, Landry J, Tyson R, Sharp J, Iqbal U, Abulrob A, Rushforth D, Matyas J, Ponjevic D, Sutherland GR, Wolfsberger S, Tomanek B. Molecular susceptibility weighted imaging of the glioma rim in a mouse model. J Neurosci Methods. 2014 Apr 15;226:132-138. doi: 10.1016/j.jneumeth.2014.01.034. Epub 2014 Feb 10. PubMed PMID: 24525326.

70: Nasseri M, Gahramanov S, Netto JP, Fu R, Muldoon LL, Varallyay C, Hamilton BE, Neuwelt EA. Evaluation of pseudoprogression in patients with glioblastoma multiforme using dynamic magnetic resonance imaging with ferumoxytol calls RANO criteria into question. Neuro Oncol. 2014 Aug;16(8):1146-54. doi: 10.1093/neuonc/not328. Epub 2014 Feb 11. PubMed PMID: 24523362; PubMed Central PMCID: PMC4096172.

71: Shevtsov MA, Nikolaev BP, Yakovleva LY, Marchenko YY, Dobrodumov AV, Mikhrina AL, Martynova MG, Bystrova OA, Yakovenko IV, Ischenko AM. Superparamagnetic iron oxide nanoparticles conjugated with epidermal growth factor (SPION-EGF) for targeting brain tumors. Int J Nanomedicine. 2014;9:273-87. doi: 10.2147/IJN.S55118. Epub 2014 Jan 3. PubMed PMID: 24421639; PubMed Central PMCID: PMC3888267.

72: Hudson JS, Hoyne DS, Hasan DM. Inflammation and human cerebral aneurysms: current and future treatment prospects. Future Neurol. 2013 Nov 1;8(6). doi: 10.2217/fnl.13.40. PubMed PMID: 24376373; PubMed Central PMCID: PMC3873146.

73: Chalouhi N, Jabbour P, Hasan D. Inflammation, macrophages, and targeted imaging in intracranial aneurysms. World Neurosurg. 2014 Feb;81(2):206-8. doi: 10.1016/j.wneu.2013.12.002. Epub 2013 Dec 17. PubMed PMID: 24355516.

74: Chalouhi N, Jabbour P, Magnotta V, Hasan D. Molecular imaging of cerebrovascular lesions. Transl Stroke Res. 2014 Apr;5(2):260-8. doi: 10.1007/s12975-013-0291-0. Epub 2013 Oct 23. Review. PubMed PMID: 24323714.

75: Barczewska M, Wojtkiewicz J, Habich A, Janowski M, Adamiak Z, Holak P, Matyjasik H, Bulte JW, Maksymowicz W, Walczak P. MR monitoring of minimally invasive delivery of mesenchymal stem cells into the porcine intervertebral disc. PLoS One. 2013 Sep 13;8(9):e74658. doi: 10.1371/journal.pone.0074658. eCollection 2013. PubMed PMID: 24058619; PubMed Central PMCID: PMC3772957.

76: Chalouhi N, Jabbour P, Magnotta V, Hasan D. The emerging role of ferumoxytol-enhanced MRI in the management of cerebrovascular lesions. Molecules. 2013 Aug 13;18(8):9670-83. doi: 10.3390/molecules18089670. Review. PubMed PMID: 23945642; PubMed Central PMCID: PMC6270297.

77: Huang HY, Hu SH, Hung SY, Chiang CS, Liu HL, Chiu TL, Lai HY, Chen YY, Chen SY. SPIO nanoparticle-stabilized PAA-F127 thermosensitive nanobubbles with MR/US dual-modality imaging and HIFU-triggered drug release for magnetically guided in vivo tumor therapy. J Control Release. 2013 Nov 28;172(1):118-127. doi: 10.1016/j.jconrel.2013.07.029. Epub 2013 Aug 9. PubMed PMID: 23933522.

78: Farrell BT, Hamilton BE, Dósa E, Rimely E, Nasseri M, Gahramanov S, Lacy CA, Frenkel EP, Doolittle ND, Jacobs PM, Neuwelt EA. Using iron oxide nanoparticles to diagnose CNS inflammatory diseases and PCNSL. Neurology. 2013 Jul 16;81(3):256-63. doi: 10.1212/WNL.0b013e31829bfd8f. Epub 2013 Jun 14. PubMed PMID: 23771486; PubMed Central PMCID: PMC3770167.

79: Marinescu M, Langer M, Durand A, Olivier C, Chabrol A, Rositi H, Chauveau F, Cho TH, Nighoghossian N, Berthezène Y, Peyrin F, Wiart M. Synchrotron radiation X-ray phase micro-computed tomography as a new method to detect iron oxide nanoparticles in the brain. Mol Imaging Biol. 2013 Oct;15(5):552-9. doi: 10.1007/s11307-013-0639-6. PubMed PMID: 23632952.

80: Hasan DM, Chalouhi N, Jabbour P, Dumont AS, Kung DK, Magnotta VA, Young WL, Hashimoto T, Richard Winn H, Heistad D. Evidence that acetylsalicylic acid attenuates inflammation in the walls of human cerebral aneurysms: preliminary results. J Am Heart Assoc. 2013 Feb 22;2(1):e000019. doi: 10.1161/JAHA.112.000019. PubMed PMID: 23525414; PubMed Central PMCID: PMC3603234.

81: Hasan DM, Chalouhi N, Jabbour P, Magnotta VA, Kung DK, Young WL. Imaging aspirin effect on macrophages in the wall of human cerebral aneurysms using ferumoxytol-enhanced MRI: preliminary results. J Neuroradiol. 2013 Jul;40(3):187-91. doi: 10.1016/j.neurad.2012.09.002. Epub 2013 Feb 18. PubMed PMID: 23428244.

82: Hasan D, Chalouhi N, Jabbour P, Dumont AS, Kung DK, Magnotta VA, Young WL, Hashimoto T, Winn HR, Heistad D. Early change in ferumoxytol-enhanced magnetic resonance imaging signal suggests unstable human cerebral aneurysm: a pilot study. Stroke. 2012 Dec;43(12):3258-65. doi: 10.1161/STROKEAHA.112.673400. Epub 2012 Nov 8. PubMed PMID: 23138441; PubMed Central PMCID: PMC3508354.

83: Hasan DM, Amans M, Tihan T, Hess C, Guo Y, Cha S, Su H, Martin AJ, Lawton MT, Neuwelt EA, Saloner DA, Young WL. Ferumoxytol-enhanced MRI to Image Inflammation within Human Brain Arteriovenous Malformations: A Pilot Investigation. Transl Stroke Res. 2012 Jul;3(Suppl 1):166-73. doi: 10.1007/s12975-012-0172-y. PubMed PMID: 23002401; PubMed Central PMCID: PMC3445332.

84: Wankhede M, Bouras A, Kaluzova M, Hadjipanayis CG. Magnetic nanoparticles: an emerging technology for malignant brain tumor imaging and therapy. Expert Rev Clin Pharmacol. 2012 Mar;5(2):173-86. doi: 10.1586/ecp.12.1. Review. PubMed PMID: 22390560; PubMed Central PMCID: PMC3461264.

85: Hasan DM, Mahaney KB, Magnotta VA, Kung DK, Lawton MT, Hashimoto T, Winn HR, Saloner D, Martin A, Gahramanov S, Dósa E, Neuwelt E, Young WL. Macrophage imaging within human cerebral aneurysms wall using ferumoxytol-enhanced MRI: a pilot study. Arterioscler Thromb Vasc Biol. 2012 Apr;32(4):1032-8. doi: 10.1161/ATVBAHA.111.239871. Epub 2012 Feb 9. PubMed PMID: 22328774; PubMed Central PMCID: PMC3557844.

86: Winer JL, Liu CY, Apuzzo ML. The use of nanoparticles as contrast media in neuroimaging: a statement on toxicity. World Neurosurg. 2012 Dec;78(6):709-11. doi: 10.1016/j.wneu.2011.08.013. Epub 2011 Nov 7. Review. PubMed PMID: 22120308.

87: Menon LG, Pratt J, Yang HW, Black PM, Sorensen GA, Carroll RS. Imaging of human mesenchymal stromal cells: homing to human brain tumors. J Neurooncol. 2012 Apr;107(2):257-67. doi: 10.1007/s11060-011-0754-7. Epub 2011 Nov 12. PubMed PMID: 22081298.

88: Hu SL, Lu PG, Zhang LJ, Li F, Chen Z, Wu N, Meng H, Lin JK, Feng H. In vivo magnetic resonance imaging tracking of SPIO-labeled human umbilical cord mesenchymal stem cells. J Cell Biochem. 2012 Mar;113(3):1005-12. doi: 10.1002/jcb.23432. PubMed PMID: 22065605.

89: Schlachter EK, Widmer HR, Bregy A, Lönnfors-Weitzel T, Vajtai I, Corazza N, Bernau VJ, Weitzel T, Mordasini P, Slotboom J, Herrmann G, Bogni S, Hofmann H, Frenz M, Reinert M. Metabolic pathway and

distribution of superparamagnetic iron oxide nanoparticles: in vivo study. Int J Nanomedicine. 2011;6:1793-800. doi: 10.2147/IJN.S23638. Epub 2011 Aug 26. PubMed PMID: 21980242; PubMed Central PMCID: PMC3184939.

90: Liu HL, Chen PY, Yang HW, Wu JS, Tseng IC, Ma YJ, Huang CY, Tsai HC, Chen SM, Lu YJ, Huang CY, Hua MY, Ma YH, Yen TC, Wei KC. In vivo MR quantification of superparamagnetic iron oxide nanoparticle leakage during low-frequency-ultrasound-induced blood-brain barrier opening in swine. J Magn Reson Imaging. 2011 Dec;34(6):1313-24. doi: 10.1002/jmri.22697. Epub 2011 Sep 30. PubMed PMID: 21965168.

91: Gahramanov S, Muldoon LL, Li X, Neuwelt EA. Improved perfusion MR imaging assessment of intracerebral tumor blood volume and antiangiogenic therapy efficacy in a rat model with ferumoxytol. Radiology. 2011 Dec;261(3):796-804. doi: 10.1148/radiol.11103503. Epub 2011 Sep 21. PubMed PMID: 21940504; PubMed Central PMCID: PMC3219915.

92: Zeng G, Wang G, Guan F, Chang K, Jiao H, Gao W, Xi S, Yang B. Human amniotic membrane-derived mesenchymal stem cells labeled with superparamagnetic iron oxide nanoparticles: the effect on neuron-like differentiation in vitro. Mol Cell Biochem. 2011 Nov;357(1-2):331-41. doi: 10.1007/s11010-011-0904-4. Epub 2011 May 31. PubMed PMID: 21625950.

93: Oechtering J, Kirkpatrick PJ, Ludolph AG, Hans FJ, Sellhaus B, Spiegelberg A, Krings T. Magnetic microparticles for endovascular aneurysm treatment: in vitro and in vivo experimental results. Neurosurgery. 2011 May;68(5):1388-97; discussion 1397-8. doi: 10.1227/NEU.0b013e3182125eb0. PubMed PMID: 21311370.

94: Xu Q, Zhang HT, Liu K, Rao JH, Liu XM, Wu L, Xu BN. In vitro and in vivo magnetic resonance tracking of Sinerem-labeled human umbilical mesenchymal stromal cell-derived Schwann cells. Cell Mol Neurobiol. 2011 Apr;31(3):365-75. doi: 10.1007/s10571-010-9628-3. Epub 2010 Dec 1. PubMed PMID: 21120599.

95: Antell H, Numminen J, Abo-Ramadan U, Niemelä MR, Hernesniemi JA, Kangasniemi M. Optimization of high-resolution USPIO magnetic resonance imaging at 4.7 T using novel phantom with minimal structural interference. J Magn Reson Imaging. 2010 Nov;32(5):1184-96. doi: 10.1002/jmri.22181. PubMed PMID: 21031525.

96: Kinoshita M, Yoshioka Y, Okita Y, Hashimoto N, Yoshimine T. MR molecular imaging of HER-2 in a murine tumor xenograft by SPIO labeling of anti-HER-2 affibody. Contrast Media Mol Imaging. 2010 Jan-Feb;5(1):18-22. doi: 10.1002/cmmi.363. PubMed PMID: 20140973.

97: Cohen ME, Muja N, Fainstein N, Bulte JW, Ben-Hur T. Conserved fate and function of ferumoxides-labeled neural precursor cells in vitro and in vivo. J Neurosci Res. 2010 Apr;88(5):936-44. doi: 10.1002/jnr.22277. PubMed PMID: 19885865; PubMed Central PMCID: PMC3031987.

98: Hu SL, Zhang JQ, Hu X, Hu R, Luo HS, Li F, Xia YZ, Li JT, Lin JK, Zhu G, Feng H. In vitro labeling of human umbilical cord mesenchymal stem cells with superparamagnetic iron oxide nanoparticles. J Cell Biochem. 2009 Oct 1;108(2):529-35. doi: 10.1002/jcb.22283. PubMed PMID: 19623584.

99: Ke YQ, Hu CC, Jiang XD, Yang ZJ, Zhang HW, Ji HM, Zhou LY, Cai YQ, Qin LS, Xu RX. In vivo magnetic resonance tracking of Feridex-labeled bone marrow-derived neural stem cells after autologous transplantation in rhesus monkey. J Neurosci Methods. 2009 Apr 30;179(1):45-50. doi: 10.1016/j.jneumeth.2009.01.007. Epub 2009 Jan 20. PubMed PMID: 19428510.

100: Lei D, Zhao H, Deng X, Liu R, Zhang F, Yao D. Superparamagnetic iron oxide labeling of spinal

cord neural stem cells genetically modified by nerve growth factor-beta. J Huazhong Univ Sci Technolog Med Sci. 2009 Apr;29(2):235-8. doi: 10.1007/s11596-009-0220-3. Epub 2009 Apr 28. PubMed PMID: 19399412.

101: Feng M, Wang RZ, Zhu H, Zhang N, Wang CJ, Wei JJ, Lu S, Li Q, Yin XM, Han Q, Ma WB, Qin C, Zhao CH, An YH, Kong YG. [Ferumoxide labeled Flk1+ CD31- CD34- human bone marrow mesenchymal stem cells and its in vivo tracing in the brains of Macaca Fascicularis]. Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2008 Oct;30(5):559-63. Chinese. PubMed PMID: 19024386.

102: Neuwelt EA, Hamilton BE, Varallyay CG, Rooney WR, Edelman RD, Jacobs PM, Watnick SG. Ultrasmall superparamagnetic iron oxides (USPIOs): a future alternative magnetic resonance (MR) contrast agent for patients at risk for nephrogenic systemic fibrosis (NSF)? Kidney Int. 2009 Mar;75(5):465-74. doi: 10.1038/ki.2008.496. Epub 2008 Oct 8. Review. PubMed PMID: 18843256; PubMed Central PMCID: PMC2643331.

103: Kawahara I, Nakamoto M, Kitagawa N, Tsutsumi K, Nagata I, Morikawa M, Hayashi T. Potential of magnetic resonance plaque imaging using superparamagnetic particles of iron oxide for the detection of carotid plaque. Neurol Med Chir (Tokyo). 2008 Apr;48(4):157-61; discussion 161-2. PubMed PMID: 18434693.

104: Wu X, Hu J, Zhou L, Mao Y, Yang B, Gao L, Xie R, Xu F, Zhang D, Liu J, Zhu J. In vivo tracking of superparamagnetic iron oxide nanoparticle-labeled mesenchymal stem cell tropism to malignant gliomas using magnetic resonance imaging. Laboratory investigation. J Neurosurg. 2008 Feb;108(2):320-9. doi: 10.3171/JNS/2008/108/2/0320. PubMed PMID: 18240929.

105: Neri M, Maderna C, Cavazzin C, Deidda-Vigoriti V, Politi LS, Scotti G, Marzola P, Sbarbati A, Vescovi AL, Gritti A. Efficient in vitro labeling of human neural precursor cells with superparamagnetic iron oxide particles: relevance for in vivo cell tracking. Stem Cells. 2008 Feb;26(2):505-16. Epub 2007 Nov 1. PubMed PMID: 17975226.

106: Guzman R, Uchida N, Bliss TM, He D, Christopherson KK, Stellwagen D, Capela A, Greve J, Malenka RC, Moseley ME, Palmer TD, Steinberg GK. Long-term monitoring of transplanted human neural stem cells in developmental and pathological contexts with MRI. Proc Natl Acad Sci U S A. 2007 Jun 12;104(24):10211-6. Epub 2007 Jun 6. PubMed PMID: 17553967; PubMed Central PMCID: PMC1891235.

107: Chen ZC, Xu RX, Yang ZJ, Fan J, Xiu JG, Dai GH, Jiang XD, Wei L, Lei H. [Sinerem labeling and MRI tracking of neural stem cells in vivo and in vitro]. Nan Fang Yi Ke Da Xue Xue Bao. 2007 May;27(5):611-5. Chinese. PubMed PMID: 17545069.

108: Neuwelt EA, Várallyay CG, Manninger S, Solymosi D, Haluska M, Hunt MA, Nesbit G, Stevens A, Jerosch-Herold M, Jacobs PM, Hoffman JM. The potential of ferumoxytol nanoparticle magnetic resonance imaging, perfusion, and angiography in central nervous system malignancy: a pilot study. Neurosurgery. 2007 Apr;60(4):601-11; discussion 611-2. PubMed PMID: 17415196.

109: Wei JJ, Wang RZ, Lu JJ, Wang Y, Fan XT, Feng F, Ma WB, Yang Y, Li GL, Dou WC, Jin ZY, Kong YG. [In vivo tracking of bone marrow mesenchymal stem cells labeled with superparamagnetic iron oxide after cerebral ischemia in rats by magnetic resonance imaging]. Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2007 Feb;29(1):73-7. Chinese. PubMed PMID: 17380672.

110: Nishida K, Tanaka N, Nakanishi K, Kamei N, Hamasaki T, Yanada S, Mochizuki Y, Ochi M. Magnetic

targeting of bone marrow stromal cells into spinal cord: through cerebrospinal fluid. Neuroreport. 2006 Aug 21;17(12):1269-72. PubMed PMID: 16951567.

111: Muldoon LL, Sàndor M, Pinkston KE, Neuwelt EA. Imaging, distribution, and toxicity of superparamagnetic iron oxide magnetic resonance nanoparticles in the rat brain and intracerebral tumor. Neurosurgery. 2005 Oct;57(4):785-96; discussion 785-96. PubMed PMID: 16239893.

112: Nolte I, Vince GH, Maurer M, Herbold C, Goldbrunner R, Solymosi L, Stoll G, Bendszus M. Iron particles enhance visualization of experimental gliomas with high-resolution sonography. AJNR Am J Neuroradiol. 2005 Jun-Jul;26(6):1469-74. PubMed PMID: 15956517.

113: Hunt MA, Bagó AG, Neuwelt EA. Single-dose contrast agent for intraoperative MR imaging of intrinsic brain tumors by using ferumoxtran-10. AJNR Am J Neuroradiol. 2005 May;26(5):1084-8. Review. PubMed PMID: 15891164.

114: Dunning MD, Lakatos A, Loizou L, Kettunen M, ffrench-Constant C, Brindle KM, Franklin RJ. Superparamagnetic iron oxide-labeled Schwann cells and olfactory ensheathing cells can be traced in vivo by magnetic resonance imaging and retain functional properties after transplantation into the CNS. J Neurosci. 2004 Nov 3;24(44):9799-810. PubMed PMID: 15525765.

115: Jing M, Liu XQ, Liang P, Li CY, Zhang XT, Wang D, Luan Y, Liu EZ. [Labeling neural stem cells with superparamagnetic iron oxide in vitro and tracking after implantation with MRI in vivo]. Zhonghua Yi Xue Za Zhi. 2004 Aug 17;84(16):1386-9. Chinese. PubMed PMID: 15387949.

116: Toyoda K, Tooyama I, Kato M, Sato H, Morikawa S, Hisa Y, Inubushi T. Effective magnetic labeling of transplanted cells with HVJ-E for magnetic resonance imaging. Neuroreport. 2004 Mar 22;15(4):589-93. PubMed PMID: 15094458.

117: Ohno T, Wakabayashi T, Takemura A, Yoshida J, Ito A, Shinkai M, Honda H, Kobayashi T. Effective solitary hyperthermia treatment of malignant glioma using stick type CMC-magnetite. In vivo study. J Neurooncol. 2002 Feb;56(3):233-9. PubMed PMID: 12061729.

118: Tada T, Wendland M, Watson N, Kuriyama N, Kuriyama H, Roberts T, Burns M, Weiss W, Israel MA. A head holder for magnetic resonance imaging that allows the stereotaxic alignment of spontaneously occurring intracranial mouse tumors. J Neurosci Methods. 2002 Apr 30;116(1):1-7. PubMed PMID: 12007978.

119: Kroll RA, Pagel MA, Muldoon LL, Roman-Goldstein S, Neuwelt EA. Increasing volume of distribution to the brain with interstitial infusion: dose, rather than convection, might be the most important factor. Neurosurgery. 1996 Apr;38(4):746-52; discussion 752-4. PubMed PMID: 8692395.

120: Go KG, Bulte JW, de Ley L, The TH, Kamman RL, Hulstaert CE, Blaauw EH, Ma LD. Our approach towards developing a specific tumour-targeted MRI contrast agent for the brain. Eur J Radiol. 1993 Apr;16(3):171-5. PubMed PMID: 7685284.