TRAIL Publications

(from 2011 to 2018)

WP1 – MR Guided HIFU and interventional imaging

■ MRGHIFU: Methodological developments for preclinical & clinical applications of MR guided HIFU

Detection of Brain Tumors and Systemic Metastases Using NanoLuc and Fluc for Dual Reporter Imaging.
C. Germain-Genevois, O. Garandeau, F. Couillaud. Mol Imaging Biol (2015)

Improved Cardiac Magnetic Resonance Thermometry and Dosimetry for Monitoring Lesion Formation During Catheter Ablation.
V Ozenne, S Toupin, P Bour, B Denis de Senneville, M Lepetit-Coiffe, M Boissenin, J Benois-Pineau, M Hansen, S Inati, A Govari, P Jais, and B Quesson, Magnetic Resonance in Medicine, Jan 2016

Non-invasive cardiac pacing with image-guided focused ultrasound.
Fabrice Marquet, Pierre Bour, Fanny Vaillant, Sana Amraoui, Rémi Dubois, Philippe Ritter, Michel Haïssaguerre, Mélèze Hocini, Olivier Bernus & Bruno Quesson, Nature Scientific Reports, Oct 16

Combination of principal component analysis and optical-flow motion compensation for improved cardiac MR thermometry.
S Toupin , B Denis de Senneville, V Ozenne, P Bour, M Lepetit-Coiffe, M Boissenin, P Jais and B Quesson, Physics in Medicine & Biology, Jan 2017

Feasibility of real-time MR thermal dose mapping for predicting radiofrequency ablation outcome in the myocardium in vivo.
S Toupin , P Bour, M Lepetit-Coiffé, V Ozenne, B Denis de Senneville, R Schneider, A Vaussy, A Chaumeil, H Cochet, F Sacher, P Jaïs, and B Quesson, Journal of Cardiovascular Magnetic Resonance, Feb 2017

Impact of surface grafting density of PEG macromolecules on dually fluorescent silica nanoparticles used for the in vivo imaging of subcutaneous tumors.
L Adumeau, C Genevois, L Roudier, C Schatz, F Couillaud, S Mornet, BBA - General Subjects, Feb 2017

Real-Time Monitoring of Tissue Displacement and Temperature Changes during MR-Guided High Intensity Focused Ultrasound.
Pierre Bour, Fabrice Marquet, Valery Ozenne, Solenn Toupin, Erik Dumont, Jean-Francois Aubry, Matthieu Lepetit-Coiffe, and Bruno Quesson, Magnetic Resonance in Medicine, Jan 2017

Imaging of conditional gene silencing in vivo using a bioluminescence-based method with thermo-inducible microRNAs.
K Pinel, C Genevois, C Debeissat, F Couillaud, Nature Scientific Reports 2018; 8:4694

MR-ARFI-based method for the quantitative measurement of tissue elasticity: application for monitoring HIFU therapy.
J Vappou, P Bour, F Marquet, V Ozenne, B Quesson, Phys. Med. Biol. 63 (2018) 095018

Real-Time 3D ultrasound-based motion tracking for the treatment of mobile organs with MR-guided high-intensity focused ultrasound.
P Bour, V Ozenne, F Marquet, B Denis de Senneville, E Dumont, and B Quesson, International Journal of Hyperthermia, 2018, Vol 34, Issue 8

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WP2 - New sequence and new contrast

■ HRDTI: High Resolution DTI method

Collaborative patch-based super-resolution for diffusion-weighted images.
P Coupé, J Manjón, M Chamberland, M Descoteaux, B Hiba. NeuroImage 83 (2013) 245–261

Diffusion weighted image denoising using overcomplete local PCA.
J Manjón, P Coupé, L Concha, A Buades, D Collins, M Robles. PLoS ONE Sept 2013, Volume 8, Issue 9

Anatomically Constrained Weak Classier Fusion for Early Detection of Alzheimer's Disease.
Mawulawo Komlagan, Vinh-Thong Ta, Xingyu Pan, Jean-Philippe Domenger, D. Louis Collins, Pierrick Coupé, and the Alzheimer's Disease Neuroimaging Initiative. Machine Learning in Medical Imaging, pp 141-148, 2014.

Optimized PatchMatch for Near Real Time and Accurate Label Fusion.
Vinh-Thong Ta, Rémi Giraud, D. Louis Collins, and Pierrick Coupé. MICCAI'14, 105-112, 2014.

An Optimized PatchMatch for Multi-scale and Multi-feature Label Fusion.
R. Giraud, V-T. Ta, N. Papadakis, J. V. Manjón, D. L. Collins, P. Coupé and ADNI. NeuroImage 2015

Detection of Alzheimer's Disease Signature in MR Images Seven Years Before Conversion to Dementia: Toward an Early Individual Prognosis.
P. Coupé, V. S. Fonov, C. Bernard, A. Zandifar, S. F. Eskildsen, C. Helmer, J. V. Manjón, H. Amieva, J-F. Dartigues, M. Allard, G. Catheline, D. L. Collins, and ADNI. Human Brain Mapping, 2015

MRI Noise Estimation and Denoising Using Non-local PCA.
J. V. Manjon, P. Coupé, A. Buades. Medical image analysis, 22(1): 35-47, 2015.

NABS: Non-local Automatic Brain Hemisphere Segmentation.
J. E. Romero, J. V. Manjon, J. Tohka, P. Coupé, M. Robles. Magnetic Resonance Imaging, 33(4): 474-484, 2015.

Non-local means inpainting of MS lesions in longitudinal image processing.
Nicolas Guizard, Kunio Nakamura, Pierrick Coupé, Vladimir S. Fonov, Douglas L. Arnold, D L. Collins, Frontiers In Neuroscience, Nov 2015

Rotation-invariant multi-contrast non-local means for MS lesion segmentation.
N. Guizard, P. Coupé, V. Fonov, J. V. Manjon, A Douglas, D. L. Collins. Neuroimage: Clinical, 8: 376-389, 2015.

Automatic thalamus and hippocampus segmentation from MP2RAGE: comparison of publicly available methods and implications for DTI quantification.
E Næss-Schmidt, A Tietze, J Udby Blicher, M Petersen, I K. Mikkelsen, P Coupé, J V. Manjón, S Fristed Eskildsen, International Journal of Computer Assisted Radiology and Surgery, 2016

Fasudil treatment in adult reverses behavioural changes and brain ventricular enlargement in Oligophrenin-1 mouse model of intellectual disability.
H Meziane, M Khelfaoui, N Morello, B Hiba, E Calcagno, S Reibel-Foisset, M Selloum, J Chelly, Y Humeau, F Riet, G Zanni, Y Herault, T Bienvenu, M Giustetto and P Billuart, Human Molecular Genetics, May 2016

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Non Local Spatial and Angular Matching: Enabling higher spatial resolution diffusion MRI datasets through adaptive denoising.
Samuel St-Jean, Pierrick Coupé, Maxime Descoteaux, Medical Image Analysis, March 2016

VolBrain: An Online MRI Brain Volumetry System.
José V. Manjón and Pierrick Coupé, Frontiers in Neuroinformatics, July 2016

CERES: A new cerebellum lobule segmentation method.
Jose Romero, Pierrick Coupe, Remi Giraud, Vinh-Thong Ta, Vladimir Fonov, Min Tae Park, Mallar Chakravarty, Aristotle Voineskos, Jose Manjon, NeuroImage, Jan 2017

HIPS: A new hippocampus subfield segmentation method.
Jose E. Romero, Pierrick Coupe, Jose V. Manjon, Neuroimage, Nov 2017

Towards a Unified Analysis of Brain Maturation and Aging across the Entire Lifespan: A MRI Analysis.
Pierrick Coupé, Gwenaelle Catheline, Enrique Lanuza, and José Vicente Manjón, Human Brain Mapping, 2017

SuperPatchMatch: An Algorithm for Robust Correspondences Using Superpixel Patches.
Rémi Giraud, Vinh-Thong Ta, Aurélie Bugeau, Pierrick Coupé, and Nicolas Papadakis, IEEE, july 2017

MRI white matter lesion segmentation using an ensemble of neural networks and overcomplete patch-based voting.
José Manjón, Pierrick Coupé, Parnesh Raniga, Ying Xia, Patricia Desmond, Jurgen Fripp, Olivier Salvado.
Computerized Medical Imaging and Graphics, Volume 69, November 2018, pp 43-51

■ **MDMRI: Methodological Developments in High Spatial/Angular-resolution DTI for ex-vivo validation of tractography**

High-resolution 3D diffusion tensor MRI of anesthetized rhesus macaque brain at 3T.
Slimane Tounekti, Thomas Troalen, Yann Bihan-Poudec, Mathilda Froesel, Franck Lanberton, Valéry Ozenne, Justine Cléry, Nathalie Richard, Maxime Descoteaux, Suliann Ben Hamed, Bassem Hiba, NeuroImage, Volume 181, November 2018, pp 149-161

■ **NEWFISP: Improving MRI resolution to correctly MRI-diagnose cardiac pathologies and metastases**

Self-gated bSSFP sequences to detect iron-labeled cancer cells and/or metastases in vivo in mouse liver at 7 Tesla.
E. Ribot, T. Duriez, A. Trotier, E. Thiaudiere, JM Franconi, and S. Miraux. J Magn Reson Imaging. June 2014

Time-resolved TOF MR angiography in mice using a prospective 3D radial double golden angle approach.
A. Trotier, W. Lefrançois, E. Ribot, E. Thiaudiere, JM Franconi, and S. Miraux. Magn Reson Med. 2014 Mar 10.

Fast and robust 3D T1 mapping using spiral encoding and steady RF excitation at 7T: application to cardiac manganese enhanced MRI (MEMRI) in mice.
C. R. Castets, E. J. Ribot, W. Lefrançois, A. J. Trotier, E. Thiaudière, JM Franconi and S. Miraux. NMR in Biomedicine, mars 2015

Free-breathing 3D diffusion MRI for high-resolution hepatic, metastasis characterization in small animals.
Emeline J. Ribot, Aurelien J. Trotier, Charles R. Castets, Benjamin Dallaudiere, Eric Thiaudiere, Jean-Michel Franconi, Sylvain Miraux, Clin Exp Metastasis, Nov 2015

Positive contrast high-resolution 3D-cine imaging of the cardiovascular system in small animals using a UTE sequence and iron nanoparticles at 4.7, 7 and 9.4 T.
A. J. Trotier, W. Lefrançois, K. Van Renterghem, JM Franconi, E. Thiaudière and S. Miraux, Journal of Cardiovascular Magnetic Resonance (2015)

Water Selective Imaging and bSSFP Banding Artifact Correction in Humans and Small Animals at 3T and 7T, Respectively.
E Ribot, D Wecker, A Trotier, B Dallaudière, W Lefrançois, E Thiaudière, JM Franconi, S Miraux, PLoS ONE, 2015

Fast 3D Ultrashort Echo-Time Spiral Projection Imaging Using Golden-Angle: A Flexible Protocol for In Vivo Mouse Imaging at High Magnetic Field.
Charles R Castets, William Lefrançois, Didier Wecker, Emeline J Ribot, Aurelien J Trotier, Eric Thiaudiere, Jean-Michel Franconi, and Sylvain Miraux, Magnetic Resonance in Medicine, May 2016

USPIO-Enhanced 3D-Cine Self-Gated Cardiac MRI Based on a Stack-of-Stars Golden Angle Short Echo Time Sequence: Application on Mice With Acute Myocardial Infarction.
Aurelien J. Trotier, Charles R. Castets, William Lefrancois, Emeline J. Ribot, Jean-Michel Franconi, Eric Thiaudiere, and Sylvain Miraux, Journal of Magnetic Resonance Imaging, 2016

In vivo MEMRI characterization of brain metastases using a 3D LookLocker T1-mapping sequence.
Charles R. Castets, Néha Koonjoo, Andreea Hertanu, Pierre Voisin, Jean-Michel Franconi, Sylvain Miraux & Emeline J. Ribot, Nature Scientific Reports, Jan 2017

■ **WHOBOMP2RAGE: Whole body ultra-fast 3D T1 mapping with non-cartesian MP2RAGE sequences**

Compressed-Sensing MP2RAGE sequence: Application to the detection of brain metastases in mice at 7T.
A Trotier, S Rapacchi, T Faller, S Miraux, E Ribot, Magnetic Resonance in Medicine 2018

WP3 - Dynamic Nuclear Polarization

■ ONCOFLUX: Metabolic flux MR imaging in tumors

MR imaging, targeting and characterization of pulmonary fibrosis using intra-tracheal administration of gadolinium-based nanoparticles.
Nawal Tassali, Andrea Bianchi, François Lux, Gérard Raffard, Stéphane Sanchez, Olivier Tillement and Yannick Crémillieux, Contrast Media and Molecular Imaging, May 2016

In vivo online magnetic resonance quantification of absolute metabolite concentrations in microdialysate.
Stefan Glöggler, Silvia Rizzitelli, Noël Pinaud, Gérard Raffard, Vanessa Zhendre, Véronique Bouchaud, Stéphane Sanchez, Guillaume Radecki, Luisa Ciobanu, Alan Wong, Yannick Crémillieux, Nature Scientific Reports, Nov 2016

Online ^{1}H-MRS measurements of time-varying lactate production in an animal model of glioma during administration of an anti-tumoral drug.
Yannick Crémillieux, Roberto Salvati, Ursule Dumont, Noël Pinaud, Véronique Bouchaud, Stéphane Sanchez, Stefan Glöggler, Alan Wong, NMR in Biomedicine, Oct 2017

Orotracheal manganese-enhanced MRI (MEMRI): An effective approach for lung tumor detection.
Andrea Bianchi, Oliviero L. Gobbo, Sandrine Dufort, Lucie Sancey, François Lux, Olivier Tillement, Jean-Luc Coll, Yannick Crémillieux, NMR in Biomedicine, Sept 2017

■ TRAILDNP: In vivo DNP in mice at 0.2T

Overhauser-enhanced MRI of elastase activity from in vitro human neutrophil degranulation.
E. Parzy, V. Bouchaud, P. Massot, P. Voisin, N. Koonjoo, D. Moncelet, J.M. Franconi, E. Thiaudiere, and P. Mellet, PLoS ONE. 8(2) 2013

Alkoxyamines: toward a new family of theranostic agents against cancer.
Moncelet D, Voisin P, Koonjoo N, Bouchaud V, Massot P, Parzy E, Audran G, Franconi JM, Thiaudière E, Marque SR, Brémond P, Mellet P. Mol Pharm. 2014 Jul 7;11(7):2412-9.

In vivo Overhauser-enhanced MRI of proteolytic activity.
Koonjoo N, Parzy E, Massot P, Lepetit-Coiffé M, Marque SR, Franconi JM, Thiaudiere E, Mellet P. Contrast Media Mol Imaging. 2014 Sep;9(5):363-71.

Enzymatically Shifting Nitroxides for EPR spectroscopy and Overhauser-Enhanced Magnetic Resonance Imaging.
G. Audran, L. Bosco, P. Bremond, JM Franconi, N. Koonjoo, S. Marque, P. Massot, P. Mellet, E. Parzy, and E. Thiaudiere, Angew. Chem. 2015, 127, 1–7

An elastase activity reporter for Electronic Paramagnetic Resonance (EPR) and Overhauser-enhanced Magnetic Resonance Imaging (OMRI) as a lineshifting nitroxide.
N Jugniot, I Duttagupt, A Rivot, P Massot, C Cardiet, A Pizzoccaro, M Jean, N Vanthuyne, JM Franconi, P Voisin, G Devouassoux, E Parzy, S Marque, A Bentaher, G Audran, P Mellet, Free Radical Biology and Medicine, Vol 126, Oct 2018, pp 101-112

■ **FITTING: 18F-Bioorthogonal probe for imaging traumatic brain injury glycol-biomarkers**

Aquaporins through the brain in health and disease: From water to gas movements.
Friscourt F, Badaut J, J Neuro Res. Aug 2017

Fluorogenic Sydnone-Modified Coumarins Switched-On by Copper-Free Click Chemistry.
Camille Favre and Frédéric Friscourt, Organic Letters, 2018, 20, 14, 4213-4217

Sydnone Reporters for Highly Fluorogenic Copper-Free Click Ligations.
Camille Favre, Lucie de Cremoux, Jérôme Badaut, and Frédéric Friscourt, The Journal of Organic Chemistry 2018 83(4), 2058-2066

WP4 – Tracers and contrast agents

■ IMMELAPT: SPECT molecular imaging and optimized aptamers for tumor detection

Ex Vivo and In Vivo Imaging and Biodistribution of Aptamers Targeting the Human Matrix MetalloProtease-9 in Melanomas.
David Kryza, Frédéric Debordeaux, Laurent Azéma, Aref Hassan, Olivier Paurelle, Jürgen Schulz, Catherine Savona-Baron, Elsa Charignon, Pauline Bonazza, Jacqueline Taleb, Philippe Fernandez, Marc Janier, Jean-Jacques Toulmé, Plos ONe, Feb 2016

■ NANOMULTIMAG: Smart multimodal nanoprobes for MRI/MPI/NIRF imaging with magneto/optical contrast agents for atheroma plaque targeting

Bright Electrogenerated Chemiluminescence of a Bis-Donor Quadrupolar Spirofluorene Dye and Its Nanoparticles.
Haidong Li, Jonathan Daniel, Jean-Baptiste Verlhac, Mireille Blanchard-Desce, and Neso Sojic, Chemistry a European Journal, July 2016

In vitro imaging of b-cells using fluorescent cubic bicontinuous liquid crystalline nanoparticles.
V. Miceli, V. Meli, M. Blanchard-Desce, T. Bsaibess, M. Pampalone, P. G. Conaldi, C. Caltagirone, M. Obiols-Rabasa, J. Schmidt, Y. Talmon, A. Casu, and S. Murgia, RCS Advances, June 2016

Z-Shaped Pyrrolo[3,2-b]pyrroles and Their Transformation into p-Expanded Indolo[3,2-b]indoles.
Rafał Stezycki, Marek Grzybowski, Guillaume Clermont, Mireille Blanchard-Desce and Daniel T. Gryko, Chemistry a European Journal, Feb 2016

■ NEPMIP: NanoEmulsion Platform for Magnetic Particle Imaging

Data on atherosclerosis specific antibody conjugation to nanoemulsions.
Prévot G, Duonor-Cérutti M, Larivière M,Laroche-Traineau J, Jacobin-Valat MJ Barthélémy P Clofent-Sanchez G, Crauste-Manciet S. Data in Brief, 2017

Data on iron oxide core oil-in-water nanoemulsions for atherosclerosis imaging.
Prévot G, Mornet S, Lorenzato C, Kauss T, Gaubert A, Baillet J, Adumeau L, Barthélémy P, Clofent-Sanchez G, Crauste-Manciet S. Data in Brief, 2017

Iron oxide core oil-in-water nanoemulsion as tracer for atherosclerosis MPI and MRI imaging.
Geoffrey Prévota, Tina Kaussa, Cyril Lorenzato, Alexandra Gauberta, Mélusine Larivière, Julie Bailleta, Jeanny Laroche-Traineau, Marie Josée Jacobin-Valat, Laurent Adumeau, Stéphane Mornet, Philippe Barthélémy, Martine Duonor-Cérutti, Gisèle Clofent-Sanchez, Sylvie Crauste-Manciet, International Journal of Pharmaceutics, oct 2017

■ PIAF: PET Imaging of Angiogenesis by 18F-RGD

[^{18}F]Si-RiboRGD : the winning combination. From the design and the synthesis to the imaging of $a_v\beta_3$ integrins in melanoma tumors.
E Amigues, J Schulz, M Szlosek-Pinaud, P Fernandez, S Silvente-Poirot, S Brillouet, F Courbon and E Fouquet, ChemPlusChem 2012, 77, 345-349.

Pd°-catalyzed methyl transfer on nucleosides and oligonucleotides envisaged as a PET tracer.
E. Fouquet et al. Molecules, 2013, 18, 13654-13665.

General Last-Step Labeling of Biomolecule-Based Substrates by [^{12}C], [^{13}C], and [^{11}C] Carbon Monoxide.
Thomas Cornilleau, Hélène Audrain, Aude Guillemet, Philippe Hermange and Eric Fouquet. Org. Lett. 2015, 17, 354–357

■ PRITOR: NeuroPeptide Receptors Imaging for TumOR Targeting

A phantom-based method to standardize dose-calibrators for new β+ emitters: ^{68}Ga as demonstrative working example.
Morgat C, Mazère J, Fernandez P, Buj S, Vimont D, Schulz J, Lamare F. Nucl Med Commun. 2014.

Targeting neuropeptides receptors for cancer imaging and therapy: Perspectives with bombesin, neurotensin and neuropeptide-Y receptors.
Morgat C, Mishra A.K, Varshney R, Allard M, Fernandez P, Hindié E. J Nucl Med. 2014;55(10)

A new class of radiopeptides for PET imaging of neuromedin-β receptor: ^{68}Ga-ranatensin analogs.
C. Morgat, R. Varshney, D. Vimont, C. Savona-Baron, C. Riès, C. Chanseau, S. Bertrand, A. K. Mishra, E. Hindié, P. Fernandez and J. Schulz, Med Chem Commun., April 2016

Comparison between Three Promising β-emitting Radionuclides, (67)Cu, (47)Sc and (161)Tb, with Emphasis on Doses Delivered to Minimal Residual Disease.
Champion C, Quinto MA, Morgat C, Zanotti-Fregonara P, Hindié E. Theranostics. 2016 Jun

Dose Deposits from ^{90}Y, ^{177}Lu, ^{111}In, and ^{161}Tb in Micrometastases of Various Sizes: Implications for Radiopharmaceutical Therapy.
Hindié E, Zanotti-Fregonara P, Quinto MA, Morgat C, Champion C., J Nucl Med. 2016 May

Evaluation of ^{68}Ga-DOTA-TOC PET/CT for the detection of duodenopancreatic neuroendocrine tumors in patients with MEN1.
Clément Morgat & Fritz-Line Vélayoudom-Céphise & Paul Schwartz & Martine Guyot & Delphine Gay5 & Delphine Vimont & Jürgen Schulz & Joachim Mazère & Marie-Laure Nunes & Denis Smith & Elif Hindié & Philippe Fernandez & Antoine Tabarin, EJNMMI, Jan 2016

Expression of Gastrin-Releasing Peptide Receptor in Breast Cancer and Its Association with Pathologic, Biologic, and Clinical Parameters: A Study of 1,432 Primary Tumors.
Clément Morgat, Gaétan MacGrogan, Véronique Brouste, Valérie Vélasco, Nicolas Sévenet, Hervé Bonnefoi, Philippe Fernandez, Marc Debled, and Elif Hindié, Journal of Nuclear Medicine, Oct 2017

■ **SUPSIFLU: Supported Silyl Fluorination**

Gold-catalysed cross-coupling between aryldiazonium salts and arylboronic acids: probing the usefulness of photoredox conditions.
Thomas Cornilleau, Philippe Hermange and Eric Fouquet, Chem Communication, Jul 2016

Last-Step Pd-Mediated [^{11}C]CO Labeling of a Moxestrol-Conjugated o-Iodobenzyl Alcohol: From Model Experiments to in Vivo Positron Emission Tomography Studies.
Thomas Cornilleau, Mette Simonsen, Maylou Vang, Nada Taib-Maamar, Jean Dessolin, Hélène Audrain, Philippe Hermange, and Eric Fouquet, Bioconjugate Chemistry, Nov 2017

Highly hindered 2-(aryl-di-*tert*-butylsilyl)-*N*-methyl-imidazoles: a new tool for the aqueous ^{19}F- and ^{18}F-fluorination of biomolecule-based structures.
Marion Tisseraud, Jurgen Schulz, Delphine Vimont, Murielle Berlande, Philippe Fernandez, Philippe Hermange and Eric Fouquet, Chem.Com, 2018, 54, 5098-51010

■ **TARGLIN: Targetting Glioblastoma with Nanoparticles, imaging siRNA targeting of glioblastoma using peptide-based nanoparticules**

In Vivo Follow-up of Brain Tumor Growth via Bioluminescence Imaging and Fluorescence Tomography.
Genevois C, Loiseau H and Couillaud F, International Journal of Molecular Sciences, Oct 2016

A retro-inverso cell-penetrating peptide for siRNA delivery.
Vaissière A, Aldrian G, Konate K, Lindberg MF, Jourdan C, Telmar A, Seisel Q, Fernandez F, Viguier V, Genevois C, Couillaud F, Boisguerin P & Deshayes S Journal of Nanobiotechnology, May 2017

PEGylation rate influences peptide-based nanoparticles mediated siRNA delivery in vitro and in vivo.
Aldrian G, Vaissière A, Konate K, Seisel Q, Vivès E, Fernandez F, Viguier V, Genevois C, Couillaud F, Démèné H, Aggad D, Covinhes A, Barrère-Lemaire S, Deshayes S & Boisguerin P, Journal of Controlled Release, April 2017

TRAIL Publications

(from 2011 to 2018)

WP5 - Biological bioimaging markers

■ **BIOPSYPROSTAPROBE: Antibody-based fluorescence probe for biopsy guidance of prostate cancer**

In vivo imaging of prostate cancer using an anti-PSMA scFv fragment as a probe.
Mazzocco C, Fracasso G, Germain-Genevois C, Dugot-Senant N, Figini M, Colombatti M, Grenier N & Couillaud F, Scientific Reports 6, 23314, Mar 2016

Radiologic imaging of the renal parenchyma structure and function.
Nicolas Grenier, Pierre Merville and Christian Combe, Nature Reviews Nephrology, April 2016

In Vivo Imaging of Local Gene Expression Induced by Magnetic Hyperthermia.
Olivier Sandre, Coralie Genevois, Eneko Garaio, Laurent Adumeau, Stéphane Mornet, and Franck Couillaud, Genes, Feb 2017

In vivo imaging of prostate cancer tumors and metastasis using non-specific fluorescent nanoparticles in mice.
Coralie Genevois, Arnault Hocquelet, Claire Mazzocco, Emilie Rustique, Franck Couillaud, and Nicolas Grenier. Int. J. Mol. Sci. 2017

■ **BRAIN-RESV: Neuroprotective effect of resveratrol in hypoxic ischemic rat pups: how supplementation of the pregnant female could impact brain lesion of the pups?**

Consumption of Alcopops During Brain Maturation Period: Higher Impact of Fructose Than Ethanol on Brain Metabolism.
El Hamrani D, Gin H, Gallis J-L, Bouzier-Sore A-K, and Beauvieux M-C, Frontiers in Nutrition (2018) 5:33

Insulin treatment partially prevents cognitive and hippocampal alterations as well as glucocorticoid dysregulation in early-onset insulin-deficient diabetic rats.
Marissal-Arvy N, Campas M-N, Semont A, Ducroix-Crepy C, Beauvieux M-C, Brossaud J, Corcuff J-B, Helbling J-C, Vancassel S, Bouzier-Sore A-K, Touyarot K, Ferreira G, Barat P, Moisan M-P, Psychoneuroendocrinology 93 (2018) 72-81

■ **GMCOG: Grey matters! Toward a better understanding of grey matter alteration and cognitive deficit associated with multiple sclerosis**

In Vivo 7T MR Quantitative Susceptibility Mapping Reveals Opposite Susceptibility Contrast between Cortical and White Matter Lesions in Multiple Sclerosis.
X W. Bian, X E. Tranvinh, X T. Tourdias, X M. Han, X T. Liu, X Y. Wang, X B. Rutt, and X M.M. Zeineh, AJNR, 2016

Selective dentate gyrus disruption causes memory impairment at the early stage of experimental multiple sclerosis.
V. Planche, A. Panatier, B. Hiba, E. Ducourneau, G. Raffard, N. Dubourdieu, M. Maitre, T. Lesté-Lasserre, B. Brochet, V. Dousset, A. Desmedt, S.H. Oliet, T. Tourdias. Brain Behavior and Immunity, dec 2016

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Hippocampal microstructural damage correlates with memory impairment in clinically isolated syndrome suggestive of multiple sclerosis.
Planche V, Ruet A, Coupé P, Lamargue-Hamel D, Deloire M, Pereira B, Manjon JV, Munsch F, Moscufo N, Meier DS, Guttmann CR, Dousset V, Brochet B, Tourdias T. Mult Scler. Nov 2017

Microstructural analyses of the posterior cerebellar lobules in relapsing-onset multiple sclerosis and their implication in cognitive impairment.
Moroso A, Ruet A, Lamargue-Hamel D, Munsch F, Deloire M, Coupé P, Charré-Morin J, Saubusse A, Ouallet JC, Planche V, Tourdias T, Dousset V, Brochet B. PLoS ONE Nov 2017

Pattern separation performance is decreased in patients with early multiple sclerosis.
Planche V, Ruet A, Charré-Morin J, Deloire M, Brochet B, Tourdias T. Brain Behav. Jun 2017

Deciphering the microstructure of hippocampal subfields with in vivo DTI and NODDI: Applications to experimental multiple sclerosis.
A Crombe, V Planche, G Raffard, J Bourel, N Dubourdieu, A Panatier, H Fukutomi, V Dousset, S Oliet, B Hiba, T Tourdias, NeuroImage 172 (2018) 357-368

Regional hippocampal vulnerability in early multiple sclerosis: Dynamic pathological spreading from dentate gyrus to CA1.
Vincent Planche, Ismail Koubiyr, José E. Romero, José V. Manjón, Pierrick Coupé, Mathilde Deloire, Vincent Dousset, Bruno Brochet, Aurélie Ruet, Thomas Tourdias, Hum Brain Mapp 2018; 00:1-11

■ IBIONI: Imaging Biomarkers of experimental and clinical neuroinflammation

Neuroinflammatory imaging biomarkers : Relevance to Multiple Sclerosis and its therapy.
Thomas Tourdias and Vincent Dousset. Neurotherapeutics. 2013 Jan; 10(1): 111–123.

Information processing speed impairment and cerebellar dysfunction in relapsing-remitting multiple sclerosis.
Ruet A, Hamel D, Deloire MS, Charré-Morin J, Saubusse A, Brochet B. J Neurol Sci. 2014 Oct 12;347(1-2):246-250

Optimization of Magnetization-Prepared 3-Dimensional Fluid Attenuated Inversion Recovery Imaging for Lesion Detection at 7 T.
Saranathan M, Tourdias T, Kerr AB, Berstein JD, Kerchner GA, Han MH, Rutt BK. Investigative Radiology 2014 49(5):290-8.

Optimization of white matter nulled magnetization prepared rapid gradient echo (MP-RAGE) imaging.
Saranathan M, Tourdias T, Bayram E, Ghanouni P, Rutt BK. Magn Reson Med 2014 May 29.

Visualization of intra-thalamic nuclei with optimized white-matter-nulled MPRAGE at 7T.
Tourdias T, Saranathan M, Levesque IR, Su J, Rutt BK. Neuroimage, 2014 Jan 1;84:534-45.

Multiple sclerosis lesions are better detected with 3D T1 gradient echo than with 2D T1 spin echo gadolinium enhanced imaging at 3 Tesla.
Crombe A, Saranathan M, Ruet A, Durieux M, Roquefeuil E, Ouallet JC, Brochet B, Dousset V, Tourdias T. AJNR Am J Neuroradiol 2015 Mar;36(3):501-7.

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"This study was achieved within the context of the Laboratory of Excellence TRAIL ANR-10-LABX-57."