

Pierre-Gilles HENRY

Center for Magnetic Resonance Research
2021 6th St. SE
Minneapolis MN 55455, USA

Phone: 612-626-2001
Fax: 612-626-2004
E-mail: henry@cmrr.umn.edu

EDUCATION

- March 2000** **Special formation for animal research.**
Faculty of biological and pharmaceutical sciences, University of Paris V.
- 1997-2000** **Ph. D. in Neuroscience** with summa cum laude. **Advisor:** Gilles Bloch
In vivo MRS for the study of animal models of Huntington's disease.
CEA-Service Hospitalier Frederic Joliot - ORSAY
- 1996-1997** **Master of Science (DEA)** in Neuroscience, University of Paris VI.
Specialization: Cellular and Molecular Biology.
- 1991-1995** **Engineering Degree** Ecole Supérieure d'Electricité (SUPELEC).
Specialization: Instrumentation and Measuring Systems.
Award from the Société des Ingénieurs de l'Automobile (SIA) in 1995.
- 1989** **Baccalaureat** (major: Mathematics and Physics) with high honors (mention très bien).

PROFESSIONAL EXPERIENCE

- 2006-present** **Assistant Professor (tenure-track) in Radiology** at CMRR in Minneapolis.
- 2003-2005** **Assistant Professor (research-track) in Radiology** at CMRR in Minneapolis.
- 2001-2002** **Postdoctoral Associate in Radiology** at CMRR in Minneapolis.
MRS study of brain function.
Recipient of a Lavoisier grant from the French government in 2001.
- 1995** **Engineering Degree training period** (3 months) at CEA-SHFJ.
In vivo NMR spectroscopy.
- 1993** **Technical training period** (2 months) at SHARP in Tenri (Japan).
Study and characterization of laser diodes.
- 1992** 1 month **worker training period**.

LANGUAGES

- English** Fluent
- German** Written
- Japanese** Three years studies. Level 3 at the Japanese Proficiency Test.

OTHER ACTIVITIES

- Associations** Organization of the Third Franco-Japanese Meeting (March 1993).
Vice-President of the SUPELEC-Japan association in 1992.
- Computer skills** MS-DOS, Windows, Unix, Pascal, C, C++, Matlab.
- Sports** Climbing, mountaineering.

JOURNAL ARTICLES (PEER-REVIEWED)

1. Iltis I, Marjańska M, Du F, Koski DM, Zhu XH, Uğurbil K, Chen W and Henry PG. ¹H MRS in the rat brain under pentobarbital anesthesia: Accurate quantification of *in vivo* spectra in the presence of propylene glycol. Magn Reson Med. 2008; in press
2. Marjanska M, Henry PG, Uğurbil K, Gruetter R. Editing through multiple bonds: Threonine detection. Magn Reson Med. 2008;59(2):245-251
3. Valette J, Park JY, Gröhn O, Uğurbil K, Garwood M, Henry PG. Spectroscopic imaging with volume selection by unpaired adiabatic π pulses: theory and application. J Magn Reson. 2007;189(1):1-12

4. Öz G, Seaquist ER, Kumar A, Criego AB, Benedict LE, Rao JP, Henry PG, Van De Moortele PF, Gruetter R. Human brain glycogen content and metabolism: implications on its role in brain energy metabolism. *Am J Physiol* 2007; 292(3):E946-951
5. Shestov AA, Valette J, Ugurbil K, Henry PG. On the Reliability of ^{13}C Metabolic Modeling with Two-Compartment Neuronal-Glial Models. *J Neurosci Res* 2007; 85(15):3294-303
6. Henry PG, Russeth KP, Tkac I, Drewes LR, Andrews MT, Gruetter R. Brain energy metabolism and neurotransmission at near-freezing temperatures: *in vivo* ^1H MRS study of a hibernating mammal. *J. Neurochem* 2007; 101(6):1505-1515
7. Posse S, Otazo R, Caprihan A, Bustillo J, Chen H, Henry PG, Marjanska M, Gasparovic C, Zuo C, Magnotta V, Mueller B, Mullins P, Renshaw P, Ugurbil K, Lim KO, Alger JR. Proton Echo Planar Spectroscopic Imaging of J-Coupled Resonances in Human Brain at 3 and 4 Tesla. *Magn Reson Med* 2007; 58(2):236-244
8. Morgenthaler FD, Koski DM, Kraftsik R, Henry PG, Gruetter R: Biochemical quantification of total brain glycogen concentration in rats under different glycemic states. *Neurochem Int.* 2006; 48(6-7):616-622
9. Terpstra M, Marjanska M, Henry PG, Tkac I, Gruetter R. Detection of an antioxidant profile in the human brain *in vivo* via double editing with MEGA-PRESS. *Magn Reson Med* 2006; 56(6):1192-1199
10. Henry P.-G., Adriany G., Deelchand D.K., Gruetter R., Marjanska M., Öz G., Seaquist E.R., Shestov A., Ugurbil K. *In vivo* ^{13}C NMR spectroscopy and metabolic modeling in the brain: a practical perspective. *Magn Reson Imag* 24(4):527-39 (2006).
11. Deelchand, D., Ugurbil, K., Henry P.-G. Investigating Brain Metabolism at High Fields using Localized ^{13}C NMR Spectroscopy without ^1H Decoupling. *Submitted to Magn. Reson. Med.* 55(2):279-286 (2006).
12. Henry P.-G., Marjanska, M., Walls J.D., Valette, J., Gruetter, R., Ugurbil, K. POCE NMR spectroscopy in strongly coupled second order spin systems. *Magn. Reson. Med.* 55(2):250-257 (2006).
13. Marjanska, M., Curran, G.L., Wengenack, T.M., Henry, P.-G., Bliss, R.L., Poduslo, J.F., Jack, C.R., Ugurbil, K., Garwood, M. Progression of Alzheimer's Disease in a Transgenic Mouse Model Monitored with Proton Magnetic Resonance Spectroscopy. *Proc. Natl. Acad. Sci. USA*, 102:11906-11910 (2005).
14. Marjanska M., Henry P.-G., Bolan P.J., Vaughan B., Seaquist E.R., Gruetter R., Ugurbil K., Garwood M. Uncovering hidden *in vivo* resonances using editing based on localized TOCSY. *Magn. Reson. Med.* 55(4):783-789 (2005).
15. Öz, G., Henry, P.-G., Seaquist, E.R., Gruetter, R. Noninvasive Detection of Brain Glycogen in Humans. *Appl. Magn. Reson.*, 29(1):159-169 (2005).
16. Oz G., Berkich D.A., Henry P.-G., Xu Y., LaNoue K., Hutson S.M., Gruetter R. Neuroglial metabolism in the awake rat brain: CO₂ fixation increases with brain activity. *J. Neurosci.* 24, 11273-11279 (2004).
17. Bolan P.J., Henry P.-G., Baker E.H., Meisamy S., Garwood M. Measurement and correction of respiration-induced B₀ variations in breast ^1H MRS at 4 Tesla. *Magn. Reson. Med.*, 52, 1239-1245 (2004).
18. Tkac I., Henry P.-G., Andersen P., Keene C.D., Low W.C., Gruetter R. Highly resolved *in vivo* ^1H NMR spectroscopy of the mouse brain at 9.4 T. *Magn. Reson. Med.*, 52, 478-484 (2004).
19. Boumezbeur, F., Besret, L., Valette, J., Vaufrey, F., Henry, P.-G., Slavov, S., Giacomini, E., Hantraye, P., Bloch, G., Lebon, V. NMR measurement of brain oxidative metabolism in monkeys using a ^{13}C -labeled glucose without ^{13}C radiofrequency channel. *Magn. Reson. Med.*, 52, 33-40 (2004).
20. Ugurbil, K., Adriany, G., Andersen, P., Chen, W., Garwood, M., Gruetter, G., Henry, P.-G., S.-G., Liu, H., Tkac, I., Vaughan, T., Van De Moortele, P.-F., Yacoub, E., Zhu, X.-H. Ultrahigh field magnetic resonance imaging and spectroscopy. *Magn. Reson. Imag.*, 21, 1263-1281 (2003). Review
21. Henry, P.-G., Öz G., Provencher, S., Gruetter, R. Toward dynamic isotopomer analysis in the rat brain *in vivo*: Automatic quantitation of ^{13}C NMR spectra using LCModel. *NMR Biomed.*, 16, 400-412 (2003).
22. Gruetter, R., Adriany, G., Choi, I.-Y., Henry, P.-G., Lei, H.-X., Öz G. Localized *in vivo* ^{13}C NMR spectroscopy of the brain. *NMR Biomed.*, 16, 313-338 (2003). Review.
23. Henry, P.-G., Tkac, I., Gruetter R. ^1H -localized broadband *in vivo* ^{13}C NMR spectroscopy of the rat brain *in vivo* at 9.4T. *Magn. Reson. Med.*, 50, 684-692 (2003).
24. Terpstra M., Henry P.-G., Gruetter R. Measurement of reduced glutathione (GSH) in human brain using LCModel Analysis of Difference Edited Spectra. *Magn. Reson. Med.*, 50, 19-23 (2003).

25. Oz G., Henry P.-G., Seaquist E.R., Gruetter R. Direct, non-invasive measurement of brain glycogen metabolism in humans. *Neurochem. Int.*, 43, 323-329 (2003).
26. Henry P.-G., Lebon V., Vaufrey F., Brouillet E., Hantraye P., Bloch G. Decreased TCA cycle rate in the rat brain after acute 3-NP treatment measured by *in vivo* ^1H - $\{^{13}\text{C}\}$ NMR spectroscopy. *J. Neurochem.*, 82, 857-866 (2002).
27. Henry P.-G., Dautry C., Hantraye P., Bloch G. Brain GABA editing without macromolecule contamination. *Magn. Reson. Med.* 45, 517-520 (2001).
28. Henry P.-G., Roussel R., Vaufrey F., Dautry C., Bloch G. Semiselective POCE NMR spectroscopy. *Magn. Reson. Med.* 44, 395-400 (2000).
29. Dautry C., Vaufrey F., Brouillet E., Bizat N., Henry P.-G., Condé F., Bloch G., Hantraye P. Early N-acetylaspartate depletion is a marker of neuronal death in rats and primates chronically treated with the mitochondrial toxin 3-nitropropionic acid. *J. Cereb. Blood Flow Metab.* 20, 789-799 (2000).
30. Henry P.-G., van de Moortele P.-F., Giacomini E., Nauwerth A., Bloch G. Field-frequency locked *in vivo* proton MRS on a whole-body spectrometer. *Magn. Reson. Med.* 42, 636-642 (1999).

INVITED CONFERENCES

2008. Workshop, "Brain Energy Metabolism", Beijing, China
 2008. Winter Conference on Brain Research. Snowbird, UT
 2007. Neurospin.
 2007. Minnesota Workshop, Minneapolis, MN
 2006: Workshop, "Data Processing for MR Spectroscopy and Imaging", Warrenton, Virginia
 2006: Workshop, "Brain Energy Metabolism", Lausanne, Switzerland
 2005: International School on Magnetic Resonance and Brain Function, Erice, Sicily
 2005: Workshop, "Prospects of Biomedical Imaging: The Brain and Beyond", Dallas, TX
 2004: Educational course, "Spectroscopy: The Brain and Beyond", ISMRM, Kyoto, Japan
 2003: Workshop, "Dynamic NMR spectroscopy", Orlando, FL

RESEARCH SUPPORT

ACTIVE

R01NS38672 (PI: Pierre-Gilles Henry) 06/01/2007 – 05/31/2012
 NIH

Title: Dynamic MRI and MRS studies of focal neuronal activation

R21AG029582 (PI: Melissa Terpstra) 07/01/2007 – 06/30/2009

Title: Human Brain Antioxidant Levels Measured *In Vivo* as a Function of Age and Diet

Role: Co-Inv

PENDING

P41RR08079 (PI: Ugurbil) 06/01/2008 – 05/31/2013

Title: NMR imaging and spectroscopy

Role: PI of Core Project IV: High-field Brain Spectroscopy