**Publications**

*Journal papers*


**Book chapters**


**Books**


2. Invited speaker. “Multinuclear, high-resolution NMR spectroscopic analysis of metabolic regulation and intracellular compartmentation in primary brain cell cultures.” Discussion forum of the Max-Planck-Institute for Neurological Research, Koeln, Germany; June 10th-14th, 2000.


7. Invited speaker. "Multinuclear aspects of NMR spectroscopy and 13C-isotopomer analysis in cells and animal brain." By Prof. Dr. R Gruetter. Workshop “In Vivo NMR Spectroscopy in Neurochemistry – Basic and Clinical Applications.” At the Biannual meeting of the International Society of Neurochemistry (ISN) and ASPN, Hong Kong, China, August 3-8, 2003 (meeting cancelled due to SARS.)


15. Invited seminar speaker. “13C-NMR evidence for an association of specific cellular metabolic components with early molecular events leading to apoptotic cell death initiation.” By Prof. Dr. Z. Bhujwalla, Department of Radiology, Division of Magnetic Resonance Research, Johns Hopkins University School of Medicine, Baltimore, USA, October 12th, 2005.

16. Invited seminar speaker. “Novel use of high-resolution NMR spectroscopy and 13C isotopomer analysis for the diagnosis and mechanistic investigations of liver diseases.” By Prof. Dr. Neil Kaplowitz, USC School of Medicine, Los Angeles, CA, USA, October 20th, 2005.


20. Invited speaker. “Anaplerosis and pyruvate carboxylase in acute and chronic liver failure.” By Prof. Dr. Karin Weissenborn, Department of Medicine, University of Hannover, 4th International “Hannoversche” Conference on Hepatic Encephalopathy, June 10-13, 2006, Dresden, Germany.

21. Invited plenary speaker. “NMR studies in metabolic brain disease – Hepatic Encephalopathy.” 11th Meeting of the Czech and Slovak Neurochemical Society: Molecular Basis of neurological and psychiatric disorders, Comenius University, Jessenius Faculty of Medicine, September 6-10, 2006, Martin, Slovak Republic.


23. Invited seminar speaker: “New NMR methods and developments for the diagnosis and mechanistic investigations in non-alcoholic fatty liver disease.” Invited by Prof. Dr. Roger Williams, Institute of Hepatology, Royal Free and University College Medical School, University College, London, GB, February 14th, 2007.


29. Invited seminar speaker. “Multinuclear NMR spectroscopy and isotopomer analysis: application in metabolic encephalopathies due to acute or chronic liver diseases.” Invited by Prof. M. Nelson, Pharmacology Department, School of Medicine, Burlington, Vermont, October 4th, 2007.


33. Invited conference speaker. 4th Wierzba meeting “Glutamate in the tripartite synapase: Functional and metabolic relations in norm and pathophysiology.” Wierzba, Poland, August 3rd-27th, 2008, Invited by Prof. J. Albrecht, Medical Research Centre, Warsaw, Poland.

34. Invited seminar speaker. "Metabolic regulation in experimental liver diseases by multinuclear NMR spectroscopy." Invited by Prof. Dr. Andrew Mason, Heritage Medical Center, University of Alberta, Edmonton, July 7th–8th, 2008.


38. Invited platform speaker. “How to apply novel analytical and tracer methods in biomedical research: from human to animal and cell culture studies.” Invited by Prof. Dr. Thomas Peters, Institute of Chemistry, Center of Structural and Cell Biology in Medicine, Luebeck, Germany, May 2010.


43. Invited speaker at the CASL/CDDW Winter meeting, group session “Metabonomics and Proteomics”, Toronto, Canada

44. Invited speaker “Potential of multinuclear NMR spectroscopy and 13C isotopomer analysis to study metabolic encephalopathies”. Max-Planck-Institute for Biological Cybernetics, Tuebingen, Germany, January 2013

45. Invited speaker at the Symposium “Ammonia homeostasis in health and disease” with “Energy metabolism in Hepatic Encephalopathy”, Copenhagen, Denmark, June 2013
Published abstracts - oral presentations


12. Zwingmann, C, Navarro, D, Butterworth RF, Leibfritz, D. Investigation of the mechanisms contributing to neuronal energy failure in experimental thiamine deficiency: Role of astrocytic changes and


26. Zwingmann C. Novel use of high-resolution NMR spectroscopy and $^{13}$C isotopomer analysis for the diagnosis and mechanistic investigations of liver diseases. Symposium: Hepatology tomorrow:
Emerging Tools for the Diagnosis and Management of Patients with Hepatobiliary Disorders. Winnipeg, Canada, August 8, 2005.


33. Zwingmann C. Anaplerosis and pyruvate carboxylase in acute and chronic liver failure. By Prof. Dr. Karin Weissenborn, Department of Medicine, University of Hannover. 4th International "Hannoversche" Conference on Hepatic Encephalopathy, June 10-13, 2006, Dresden, Germany.


36. Zwingmann C, Leibfritz, D. NMR studies in metabolic brain disease - Hepatic Encephalopathy. 11th Meeting of the Czech and Slovak Neurochemical Society: Molecular Basis of neurological and psychiatric disorders. Comenius University, Jessenius Faculty of Medicine, September 6-10, 2006, Martin, Slovak Republic.


40. Zwingmann C. Metabolic changes and oxidative stress in hepatocellular apoptosis and necrosis using multinuclear NMR studies and $^{13}$C isotopomer analysis. 5th Meeting of the Canadian Oxidative Stress Consortium, Montréal, QC, Canada, May 4-6, 2007.


45. Bosoi, C, Zwingmann, C, Huynh, J, Marin, H, Tremblay, M, Rose, CF. Impaired lactate metabolism, not brain ammonia and glutamine, contributes to the pathogenesis of brain edema in minimal hepatic encephalopathy. 10th Symposium on research topics in gastrointestinal disease, 2011, Vancouver, British Columbia

**Published abstracts - poster presentations**


78. Zwingmann, C., Chatauret, N., Rose, C., Leibfritz, D., Butterworth, RF. Correlation of mitochondrial glucose metabolism and lactate de novo synthesis with brain edema and encephalopathy in acute


88. Zwingmann, C, Chan, TS, Ethier, C, Raymond, VA, Leibfritz, D, Bilodeau, M. Changes in specific metabolic pathways are essential steps in the early apoptotic process in the liver. 13th Scientific Meeting of the International Society for Magnetic Resonance in Medicine, May 7-May 13, 2005. Proceedings ISMRM 2005 (Subl.).


90. Zwingmann, C, Chan, TS, Raymond, VA, Bilodeau, M. Changes in specific metabolic pathways are essential steps in the early apoptotic process in the liver. DDW (Digestive Disease Week), Chicago, May 14th – May 19th, 2005. Journal of Gastroenterology 2005 (Subl.).

91. Chan, TS, Zwingmann, C, Wilson, JC, Bilodeau, M., Leibfritz, D., O’Brien, PJ. Xenobiotic-mediated redirection of glucose flux through the D-glucuronic acid pathway in animal liver and isolated...
hepatocytes. DDW (Digestive Disease Week), Chicago, May 14-May 19, 2005. Journal of Gastroenterology 2005 (Subl.).


95. Zwingmann, C, Butterworth, RF. Imbalance between cortical and subcortical cellular metabolic activity during chronic liver failure induced by portacaval shunting. Biannual meeting of the International Society of Neurochemistry (ISN) and ESN, Innsbruck, Austria, August 21-26, 2005. J Neurochem 2005 (Subl.).


98. Zwingmann, C, Butterworth RF, Leibfritz D. The anaplerotic metabolic flux through pyruvate carboxylase is a prerequisite for ammonia detoxification in acute and chronic liver failure. 14th Scientific Meeting of the International Society for Magnetic Resonance in Medicine, Seattle, Washington, May 6-May 12, 2006. Proceedings ISMRM 2006 (Subl.).


100. Gottschalk, S, Chan T, Raymond VA, Bilodeau M, Leibfritz D, Zwingmann C. Changes in specific metabolic pathways are essential steps in the early apoptotic process in the liver. 14th Scientific Meeting of the International Society for Magnetic Resonance in Medicine, Seattle, Washington, May 6-May 12, 2006. Proceedings ISMRM 2006 (Subl.).


103. Zwingmann C, Chatauret N, Butterworth RF. Ammonia detoxification in liver failure is associated with the replenishment of Krebs cycle intermediates. 2nd Annual CASL Winter Meeting: Updates in


110. Gottschalk S, Hohnholt M, Bilodeau M, Leibfritz D, Zwingmann C. Metabolic characterization of patients with alcoholic and non-alcoholic steatohepatitis by NMR on body fluids. DDW (Digestive Disease Week), Washington DC, USA, May 19-May 24, 2005. Gastroenterology 2007 (Subl.).


126. Bosoi, CR; Zwingmann, C; Huynh, J; Marin, H; Tremblay, M; Rose, CF. L’augmentation de novo du lactate cérébral, indépendamment des niveaux d’ammoniaque et glutamine, est impliquée dans la pathogénèse de l’œdème cérébral dans l’insuffisance hépatique chronique.13e congrès annuel des étudiants, stagiaires et résidents du CRCHUM,Dec 2010, Montréal, Québec