EMPIR 18HLT09 NeuroMET
Virtual MR Spectroscopy Workshop
May 27th, 2021

Literature List

A great point to start your literature research is the recent special issue: "Advanced methodology for in vivo magnetic resonance spectroscopy" from NMR in Biomedicine (Volume 34, Issue 5):

- I.-Y. Choi, R. Kreis: „Advanced methodology for in vivo magnetic resonance spectroscopy", NMR Biomed 34(5): e4504 (2021)
- R. Kreis, V. Boer, I.-Y. Choi, C. Cudalbu, R.A. de Graaf, C. Gasparovic, A. Heerschap, M. Krššák, B. Lanz, A.A. Maudsley, M. Meyerspeer, J. Near, G. Öz, S. Posse, J. Slotboom, M. Terpstra, I. Tkáč, M. Wilson, W. Bogner: "Terminology and concepts for the characterization of in vivo MR spectroscopy methods and MR spectra: Background and experts' consensus recommendations", NMR Biomed 34(5): e4347 (2020)
- A. Lin, O. Andronesi, W. Bogner, I.-Y. Choi, E. Coello, C. Cudalbu, C. Juchem, G.J. Kemp, R. Kreis, M. Krššák, P. Lee, A.A. Maudsley, M. Meyerspeer, V. Mlynarik, J. Near, G. Öz, A.L. Peek, N.A. Puts, E.-M. Ratai, I. Tkáč, P.G. Mullins, Experts' Working Group on Reporting Standards for MR Spectroscopy: "Minimum Reporting Standards for in vivo Magnetic Resonance Spectroscopy (MRSinMRS): Experts' consensus recommendations", NMR Biomed 34(5): e4484 (2021)
- G. Öz, D.K. Deelchand, J.P. Wijnen, V. Mlynárik, L. Xin, R. Mekle, R. Noeske, T.W.J. Scheenen, I. Tkáč, the Experts' Working Group on Advanced Single Voxel 1H MRS: "Advanced single voxel 1H magnetic resonance spectroscopy techniques in humans: Experts' consensus recommendations", NMR Biomed 34(5): e4236 (2020)
- A.A. Maudsley, O.C. Andronesi, P.B. Barker, A. Bizzi, W. Bogner, A. Henning, S.J. Nelson, S. Posse, D. C. Shungu, B.J. Soher: "Advanced magnetic resonance spectroscopic neuroimaging: Experts' consensus recommendations", NMR Biomed 34(5): e4309 (2020)
- I.-Y. Choi, O.C. Andronesi, P. Barker, W. Bogner, R.A.E. Edden, L.G. Kaiser, P. Lee, M. Marjańska, M. Terpstra, R.A. de Graaf: "Spectral editing in 1H magnetic resonance spectroscopy: Experts' consensus recommendations", NMR Biomed 34(5): e4411 (2020)
- C. Juchem, C. Cudalbu, R.A. de Graaf, R. Gruetter, A. Henning, H.P. Hetherington, V.O. Boer: "B0 shimming for in vivo magnetic resonance spectroscopy: Experts' consensus recommendations", NMR Biomed 34(5): e4350 (2020)
- I. Tkáč, D. Deelchand, W. Dreher, H. Hetherington, R. Kreis, C. Kumaragamage, M. Považan, D.M. Spielman, B. Strasser, R.A. de Graaf: „Water and lipid suppression techniques for advanced 1H MRS and MRSI of the human brain: Experts' consensus recommendations", NMR Biomed 34(5): e4459 (2020)
- O.C. Andronesi, P.K.Bhattacharyya, W. Bogner, I.-Y. Choi, A.T. Hess, P. Lee, E.M. Meintjes, M.D. Tisdall, M. Zaitsev, A. van der Kouwe: "Motion correction methods for MRS: Experts' consensus recommendations", NMR Biomed 34(5): e4364 (2020)
- J. Near, A.D. Harris, C. Juchem, R. Kreis, M. Marjańska, G. Öz, J. Slotboom, M. Wilson, C. Gasparovic: „Preprocessing, analysis and quantification in single-voxel magnetic resonance spectroscopy: Experts' consensus recommendations", NMR Biomed 34(5): e4257 (2020)

- C. Cudalbu, K.L. Behar, P.K. Bhattacharyya, W. Bogner, T. Borbath, R.A. de Graaf, R. Gruetter, A. Henning, C. Juchem, R. Kreis, P. Lee, H. Lei, M. Marjańska, R. Mekle, S. Murali-Manohar, M. Považan, V. Rackayová, D. Simicic, J. Slotboom, B.J. Soher, Z. Starčuk Jr., I. Tkáč, S. Williams, M. Wilson, A.M. Wright, L. Xin, V. Mlynárik: "Contribution of macromolecules to brain 1H MR spectra: Experts' consensus recommendations", NMR Biomed 34(5): e4393 (2020)
- M. Krššák, L. Lindeboom, V. Schrauwen-Hinderling, L.S.Szczepaniak, W. Derave, J. Lundbom, D. Befroy, F. Schick, J. Machann, R. Kreis, C. Boesch: „Proton magnetic resonance spectroscopy in skeletal muscle: Experts' consensus recommendations", NMR Biomed 34(5): e4266 (2020)
- M. Meyerspeer, C. Boesch, D. Cameron, M. Dezortová, S.C. Forbes, A. Heerschap, J.A.L. Jeneson, H.E. Kan, J. Kent, G. Layec, J.J. Prompers, H. Reyngoudt, A. Sleigh, L. Valkovič, G.J. Kemp, Experts' Working Group on 31P MR Spectroscopy of Skeletal Muscle: "31P magnetic resonance spectroscopy in skeletal muscle: Experts' consensus recommendations", NMR Biomed 34(5): e 4246 (2020)
- B. Lanz, A. Abaei, O. Braissant, I.-Y. Choi, C. Cudalbu, P.-G. Henry, R. Gruetter, F. Kara, K. Kantarci, P. Lee, N. W. Lutz, M. Marjańska, V. Mlynárik, V. Rasche, L. Xin, J. Valette, the Experts' Working Group on magnetic resonance spectroscopy in the rodent brain: "Magnetic resonance spectroscopy in the rodent brain: Experts' consensus recommendations", NMR Biomed 34(5): e4325 (2020)

More literature, that was referred to in the lectures:

- L.G. Hanson: "Is Quantum Mechanics Necessary for Understanding Magnetic Resonance?", Concept Magn Reson A: 32A: 329-340 (2008)
- C.B. Paschal, H.D. Morris: "K-Space in the Clinic", J Magn Reason Imag 19: 145-159 (2004)
- I. Tkáč, G. Öz, G. Adriany, K. Uğurbil, R. Gruetter: "In Vivo 1H NMR Spectroscopy of the Human Brain at High Magnetic Fields: Metabolite Quantification at 4T vs. 7T", Magn Reson Med 62(4): 868-879 (2009)
- J. Weis, P. Ring, T. Olofsson, F. Ortiz-Nieto, J. Wikström: „Short Echo Time MR Spectroscopy of Brain Tumors: Grading of Cerebral Gliomas by Correlation Analysis of Normalized Spectral Amplitudes", J Magn Reson Imag 31: 39-45 (2010)
- A. Fillmer, T. Köbe, S. Aydin, L. Goeschel, A. Flöel, F. Schubert, B. Ittermann: „Correlations Between Brain Structural Volumes and Brain Metabolite Concentrations in Alzheimer's Disease: Preliminary Results from the NeuroMET Project", Proc Int Soc Magn Reson Med 26: 3903 (2018)
- E. Heckova, B. Strasser, G.J. Hangel, M. Považan, A. Dal-Bianco, P.S. Rommer, P. Bednarik, S. Gruber, F. Leutmetzer, H. Lassmann, S. Trattnik, W. Bogner: „7 T Magnetic Resonance Spectroscopic Imaging in Multiple Sclerosis: How Does Spatial Resolution Affect the Detectability of Metabolic Changes in Brain Lesions?", Invest Radiol 54: 247-254 (2019)
- A. Marsman, R.C.W. Mandl, D.W.J. Klomp, M.M.Bohlken, V.O. Boer, A. Andreychenko, W. Cahn, R.S. Kahn, P.R. Luijten, H.E. Hulshoff Pol: "GABA and glutamate in schizophrenia: A 7 T 1H-MRS study", NeuroImage: Clinical 6: 398-407 (2014)
- K. Landheer, R.F. Schulte, M.S. Treacy, K.M. Swanberg, C. Juchem: „Theoretical Description of Modern 1H In Vivo Magnetic Resonance Spectroscopic Pulse Sequences", J. Magn Reson Imag: 26846 (2019)
- P. Bottomley: "Spatial Localization in NMR Spectroscopy in Vivo", Ann N Y Acad Sci 508: 333-348 (1987)
- J. Frahm, K.-D. Merboldt, W. Hänicke: „Localized Proton Spectroscopy Using Stimulated Echoes", J Magn Reson 72: 502-508 (1987)
- R.J.Ordidge, A. Connelly, J.A.B. Lohman: "Image-Selected in Vivo Spectroscopy (ISIS). A New Technique for Spatially Selective NMR Spectroscopy", J Magn Reson 66: 283-294 (1986)
- L. DelaBarre, M. Garwood: "LASER: Adiabatic Single Shot Localization with J-Refocusing", Proc Int Soc Magn Reson Med 6: 358 (1998)
- T.W.J. Scheenen, D.W.J. Klomp, J.P.Wijnen, A. Heerschap: "Short Echo Time 1H-MRSI of the Human Brain at 3T With Minimal Chemical Shift Displacement Errors Using Adiabatic Refocusing Pulses", Magn Reson Med 59: 1-6 (2008)
- R. Mekle, V. Mlynárik, G. Gambarota, M. Hergt, G. Krueger, R. Gruetter: „MR Spectroscopy of the Human Brain With Enhanced Signal Intensity at Ultrashort Echo Times on a Clinical Platform at 3T and 7T", Magn Reson Med 61: 1279-1285 (2009)
- A. Fuchs, M. Luttje, P. Boesiger, A. Henning: „SPECIAL semi-LASER with lipid artifact compensation for 1H MRS at 7 T", Magn Reson Med 69: 603-612 (2013)

- M. Mescher, A. Tannus, M. O'Neil Johnson, M. Garwood: „Solvent Suppression Using Selective Echo Dephasing", J Magn Reson 123: 226-229 (1996)
- K.M. Koch, D.L. Rothman, R.A. de Graaf: "Optimization of static magnetic field homogeneity in the human and animal brain in vivo", Prog Nugl Magn Reson Spectrosc 54(2): 69-96 (2009)
- J.F. Schenk: "The role of magnetic susceptibility in magnetic resonance imaging: MRI magnetic compatibility of the first and second kinds", Med Phys 23(6): 815-850 (1996)
- G.N. Chmurny, D.I. Hoult: "The Ancient and Honourable Art of Shimming", Concepts Magn Reson 2: 131-149 (1990)
- M.J.E. Golay: "Field Homogenizing Coils for Nuclear Spin Resonance Instrumentation", Rev Sci Inst 29(4): 313-315 (1958)
- C. Juchem, B. Muller-Bierl, F. Schick, N.K. Logothetis, J. Pfeuffer: „Combined passive and active shimming for in vivo MR spectroscopy at high magnetic fields", J Magn Reson 183: 278-289 (2006)
- A. Pfrommer, A. Henning: "On the Superlinear Increase of the Ultimate Intrinsic Signal-to-Noise Ratio with Regard to Main Magnetic Field Strength in a Spherical Sample", Int Conf Electromagnetics Adv App (ICEAA): 684-687 (2017)
- A. Xavier, C. Arteaga de Castro, M.E. Andia, P.R. Luijten, D.W. Klomp, A. Fillmer, J.J. Prompers: "Metabolite cycled liver 1H MRS on a 7 T parallel transmit system", NMR Biomed 33: e4343 (2020)
- B. Ding, M. Peterzan, F.E. Mózes, O.J. Rider, L. Valkovič, C.T. Rodgers: "Water-suppression cycling 3-T cardiac 1H-MRS detects altered creatine and choline in patients with aortic or mitral stenosis", NMR Biomed: e4513 (2021)
- A. Fillmer, A. Hock, D. Cameron, A. Henning: "Non-Water-Suppressed 1H MR Spectroscopy with Orientational Prior Knowledge Shows Potential for Separating Intra- and Extramyocellular Lipid Signals in Human Myocardium", Sci Rep 7: 16898 (2017)
- M. Gajdošík, G.L. Chadzynski, G. Hangel, V. Mlynárik, M. Chmelík, L. Valkovič, W. Bogner, R. Pohmann, K. Scheffler, S. Trattnik, M. Kršňák: "Ultrashort-TE stimulated echo acquisition mode (STEAM) improves the quantification of lipids and fatty acid chain unsaturation in the human liver at 7T", NMR Biomed 28: 1283-1293 (2015)
- R. Kreis: "Issues of spectral quality in clinical 1H-magnetic resonance spectroscopy and a gallery of artifacts", NMR Biomed 17: 361-381 (2004)
- M. Wilson, O. Andronesi, P.B. Barker, R. Bartha, A. Bizzi, P.J. Bolan, K.M. Brindle, I.-Y. Choi, C. Cudalbu, U. Dydak, U.E. Emir, R.G. Gonzales, S. Gruber, R. Gruetter, R.K. Gupta, A. Heerschap, A. Henning, H.P. Hetherington, P.S. Huppi, R.E. Hurd, K. Kantarci, R.A. Kauppinen, D.W.J. Klomp, R. Kreis, M.J. Kruiskamp, M.O. Leach, A.P. Lin, P.R. Luijten, M. Marjańska, A.A. Maudsley, D.J. Meyerhoff, C.E. Mountford, P.G. Mullins, J.B. Murdoch, S.J. Nelson, R. Noeske, G. Öz, J.W. Pan, A.C. Peet, H. Poptani, S. Posse, E.-M. Ratai, N. Salibi, T.W.J. Scheenen, I.C.P. Smith, B.J. Soher, I. Tkáč, D.B. Vigneron, F.A. Howe: "Methodological consensus on clinical proton MRS of the brain: Review and recommendations", Magn Reson Med 82: 527-550 (2019)
- H.J. Zöllner, M. Považan, S.C.N. Hui, S. Tapper, R.A.E. Edden, G. Oeltzschner: "Comparison of different linear-combination modelling algorithms for short-TE proton spectra", NMR Biomed 34: e4482 (2021)