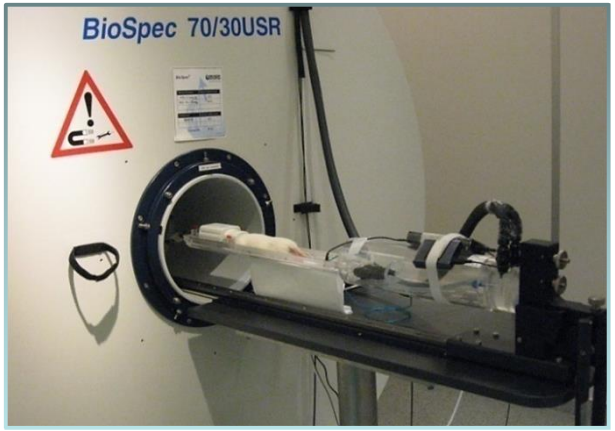
9th WORKSHOP ON MAGNETIC RESONANCE SPECTROSCOPY AND IMAGING (MRI/MRS)

Applied to Laboratory animals

November 25th-28th, 2014



Organized by:

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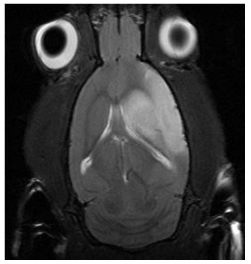
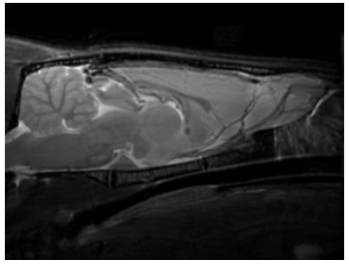
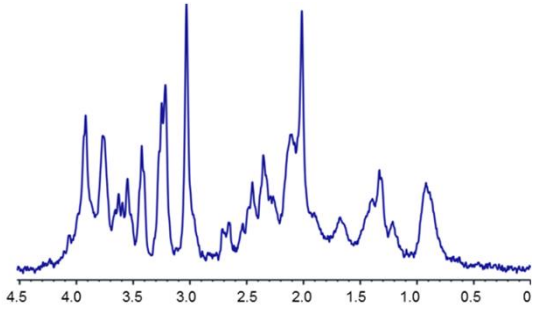
Objectives

This workshop provides an introduction to the magnetic resonance imaging (MRI) technique and its application to preclinical studies. A major focus will be hands-on-training using small animals in a 7 Tesla Bruker BioSpec spectrometer.

The course is designed for small groups to facilitate teacher-participant interaction and full participation in the hands-on sessions which constitute 70% of the workshop time.







Workshop **limited to 4 participants**

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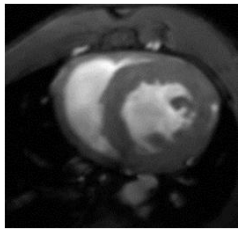
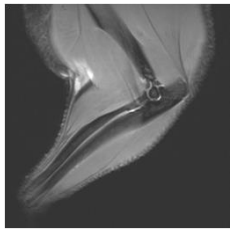
Topics

- Safety issues in an NMR facility.
- Description of MRI hardware.
- NMR and MRI basic principles.
- MRI classical sequences.
- Description of ParaVision tools.
- MRI quantification.
- Description of common MRI artifacts.
- Introduction to spectroscopy and diffusion techniques.
- *In vivo* hands-on sessions.





Registration Fees	Before October 20th, 2014	After October 20th, 2014
Standard	2.000 ú	2.300 ú
Public University or Research Institution	1.300 ú	1.500 ú
UAB member	750 ú	900 ú

Course coordinator:

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Programme at a Glance

Workshop on Magnetic Resonance Spectroscopy and Imaging (MRS/MRI)

Applied to Laboratory Animals

	Day 1	Day 2	Day 3	Day 4
9h00 - 10h30		Acquisition of MRI experiments: Sample positioning, tuning, etc	Classical MRI sequences (SE, GE, IR, RARE, EPI) I: Theory.	*In vivo* MRI I: Animal handling, anesthesia, monitoring.
10h30 -11h00	Welcome	Break	Break	Break
11h00 - 13h00	NMR safety issues and policy Work-place description MRI system hardware BIOSPEC USR 70/30 (Components, coils, coil selection)	Description of the tools in ParaVision software.	Classical MRI sequences (SE, GE, IR, RARE, EPI) I: Hands-on	*In vivo* MRI II: In vivo Image acquisition. T1 and T2 weighted images. T1 and T2 maps. FLAIR and STIR images
13h00 -14h00	Lunch	Lunch	Lunch	Lunch
14h00 -15h15	Introduction to NMR physics: FID and NMR relaxation T1, T2 y T2*.	Contrast ($T1_w$, $T2_w$, r_w): Theory and hands-on.	Introduction to advanced applications I: Localized Spectroscopy.	*In vivo* MRI III: Localized spectroscopy. Demonstration of common MRI image artifacts
15h15 -15h30	Break	Break	Break	Break
15h30 -17h00	MRI basics: Gradients, NMR signal, spatial localization and principles of MR image formation.	MRI quantification: T1 and T2 maps. Data acquisition and processing.	Introduction to advanced applications II: Diffusion.	*In vivo* MRI IV: Diffusion. Acquisition of DWI and DTI. ADC and FA maps

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