MN-MRI

Multi-nuclear in vivo MRS and RF-coil development at 7T to detect metabolic alterations in tissue

1. The aim of our project:

Multi-nuclear magnetic resonance spectroscopy (MRS), as a non-invasive tool by 7 Tesla ultra-high field whole body MRI-Systems for investigating metabolism in human cells. The aim is improving the quality of life for better understanding physiologic and pathologic processes in elderly people. The metabolic changes will study under the influence of ageing as well as to diagnose diseases including metabolic disorders.

2. Experiences of cooperation in our project:

Three scientific disciplines have to cooperate for this project: medical science, physics and electrical engineering have to join to reach the project aims. The electrical engineering groups simulate and optimize the multi-nuclei RF-coils for use in MRS. The physics and medical part will evaluate the RF-coil by organizing a study with subjects at the Vienna University. Cooperation between all 3 groups is very dynamic and has broad bandwidth of knowledge in RF-Coil manufacture for ultra-high field MRI-Systems and application of muscle metabolism studies.

3. The benefits of cooperation with Korea/Europe:

Korea and Europe have a benefit by binding their knowledge and technical options to reach a higher level in ultra-high field MRS studies.

4. Tips for researchers who would like to start cooperation with Korea/Europe:

It is important the reach very fast a high level of reliance between Korean and German partners, because an open scientific discussions including criticism estimation will need this for a successful cooperation.
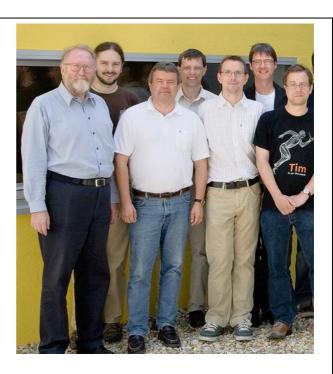
Photos of the MN-MRI project consortium

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