

Course title	Multimodal Imaging of Cell Cycle Regulation
Learning objectives	<p>The aim of this integrated theoretical and practical course is to obtain insight into :</p> <ol style="list-style-type: none"> 1. imaging modalities which can be used for non-invasive imaging of endogenous gene regulation (PET, MRI, OI) 2. non-invasive imaging of therapeutical response in gliomas, 3. the analysis of gene expression in vitro and in vivo.
<p>Public</p> <p>Prerequisites</p> <p>Recommended reading</p>	<p>Early stage and experienced researchers.</p> <p>Basic knowledge of cell culture, molecular biology, animal physiology, radioactivity and radioprotection are expected.</p> <ul style="list-style-type: none"> - Monfared P, Jacobs A et al. Non-invasive Assessment of E2F-1-Mediated Transcriptional Regulation In vivo. <i>Cancer Res.</i>2008 ; 68 : 5932-5940. - Waerzeggers Y, Monfared P, Jacobs A et al. Methods to monitor gene therapy with molecular imaging. <i>Methods.</i> 2009 Jun ; 48(2) : 146-60. Epub 2009 Mar 24. - Jacobs et al. Imaging-guided gene therapy of experimental gliomas. <i>Cancer Res.</i> 2007 Feb 15 ; 67(4) : 1706-15. - Jacobs et al. Imaging in neurooncology. <i>NeuroRx.</i> 2005 Apr ; 2(2) : 333-47. Review. - Shah, Jacobs et al. Molecular imaging of gene therapy for cancer. <i>Gene Therapy</i> 2004 ; 11 : 1175-1187. - Jacobs et al. Universal HSV-1 amplicon vectors. <i>Human Gene Therapy</i> 2003 ; 14 : 277-297. - Jacobs et al. PET-based molecular imaging in neuroscience, <i>Eur J Nucl Med Mol Imag</i> 2003 ; 30 : 1051-1065 Hoehn et al. Monitoring of implanted stem cells. <i>PNAS</i> 2002 ; 99 : 16267-16272.
Lectures content and practical work	<p>Practical work consists on imaging of mice by microPET, optical imaging and MRI including animal handling, data analysis and co-registration of various imaging modalities.</p> <p>Lectures are given on the following topics : understand the molecular basis of signaling pathways (inhibitors+DNA damage signaling), principles of PET, MRI and optical imaging, radiochemical synthesis of marker gene substrate, cell culture analysis and vector development, multimodal imaging by microPET, MRI and optical imaging, image fusion software.</p>



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Training methods	50 % theoretical and 50 % practical course
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Course language	English
Duration	4 days
Course location	Laboratory for Gene Therapy and Molecular Imaging - MPI for Neurological Research - Cologne - GERMANY
Dates	March 16 - 19, 2010
Registration fees	DiMI/EMIL/MOLIM member : 100 € Public institutions : 400 € - Private institutions : 700 €
Registration deadline	February 26 th , 2010
Number of participants	8 participants maximum
Course leader	Ms Parisa MONFARED and Ms Yannic WAERZEGGERS Phone : +49 221 4726 261 e.mail : Parisa.Monfared@nf.mpg.de or yannic@nf.mpg.de
Keywords	Gene regulation, gliomas, cell cycle, PET, OI, MRI