

PhD position on “Theranostic Riboflavin-Targeted Drug Delivery”

The Institute for Experimental Molecular Imaging (ExMI) offers a PhD position to a candidate with a background in biochemistry, biotechnology or biology to continue our project on riboflavin targeted drug delivery systems. The project comprises synthetic work on the theranostic drug carriers, their in vitro and in vivo characterization as well as the evaluation of their therapeutic potential in tumor bearing mice. In this context, imaging with MRI, μ CT, fluorescence molecular tomography, PET, SPECT and advanced microscopy will also play a major role.

The PhD student will work in an interdisciplinary and highly international institute (more than 15 nations are represented in ExMI) and will benefit from the strong international network of its members. The topic has certainly the potential to generate a solid basis for a future scientific career.

Previous publications on the topic:

1. Beztsinna N., Tsvetkova Y., Jose J., Frih B., Al Rawashdeh W., Lammers T., Kiessling F.*, Bestel I*. Photoacoustic imaging of tumor targeting with riboflavin-functionalized theranostic nanocarriers. *Int J Nanomedicine*, e-pub ahead of print (*corresponding authors)
2. Jayapaul J., Arns S., Bunker M., Weiler M., Rutherford S., Comba P., Kiessling F. (2016) In vivo evaluation of riboflavin receptor targeted fluorescent USPIO in mice with prostate cancer xenografts. *Nano Res*, 9:1319-1333
3. Tsvetkova Y., Beztsinna N., Jayapaul J., Weiler M., Arns S., Shi Y., Lammers T., Kiessling F. (2016) Refinement of adsorptive coatings for fluorescent riboflavin receptor targeted iron oxide nanoparticles. *Contrast Media Mol Imaging*, 11(1):47-54
4. Beztsinna N., Tsvetkova Y., Bartneck M., Lammers T., Kiessling F., Berque-Bestel I. (2016) Amphiphilic phospholipid-based riboflavin derivatives for tumor targeting nanomedicines. *Bioconjug Chem*, 27:2048-61
5. Mertens M.E., Frese J., Bölükbas D.A., Hrdlicka L., Golombek S., Koch S., Mela P., Jockenhövel S., Kiessling F., Lammers T. (2014) FMN-coated fluorescent USPIO for cell labeling and non-invasive MR imaging in tissue engineering. *Theranostics*, 4:1002-13
6. Jayapaul J., Arns S., Lederle W., Lammers T., Comba P., Gätjens J., Kiessling F. (2012) Riboflavin carrier protein-targeted fluorescent USPIO for the assessment of vascular metabolism in tumors. *Biomaterials*, 33:8822-9
7. Jayapaul J., Hodenius M., Arns S., Lederle W., Lammers T., Comba P., Kiessling F., Gaetjens J. (2011) FMN-coated fluorescent iron oxide nanoparticles for RCP-mediated targeting and labeling of metabolically active cancer and endothelial cells. *Biomaterials*, 32:5863-5871

For more information about ExMI please visit <http://exmi.rwth-aachen.de/> or find us at facebook <https://www.facebook.com/Expmolimaging/>.

Please send your application including a motivation letter, CV and university grades to bvanmarwick@ukaachen.de