

KFSP Tumor Oxygenation

Newsletter 1

April 16, 2013

Kickoff Meeting



The KFSP Kickoff Meeting took place at the beautiful Hotel Restaurant Zürichberg.

Mission

One of our population's main health threats is cancer (25.7% of deaths in Switzerland in 2010). Four out of ten people in Switzerland will contract cancer during their lifetime, with increasing incidence, leading to personal distress and a substantial and rapidly increasing proportion of the healthcare spending. And we still have no sufficient cures. Today, we know that for cancer diagnosis and treatment, oxygen is one of the most important prognostic biomarkers (i.e. low oxygenation is strongly associated with unfavorable outcomes) and therapeutic targets (i.e. oxygenation highly affects the effectiveness of therapies). So far, the accurate measurement of tumor oxygenation in a non invasive, non toxic, yet repetitively constant manner has not been possible.

The aim of the KFSP Tumor Oxygenation is to provide novel methods of biophotonics, such as 3D near-infrared imaging technologies, BOLD-MRI and positron emission tomography (PET) to image and measure tumor oxygenation and oxygen metabolism in vivo at the animal and human level. Our research focuses on head and neck cancers and might be extended to other important



tumor entities at a later stage. The oxygenation of these cancers will be studied before and during surgery, radiotherapy and chemotherapy as well as photodynamic therapy and, ultimately, the therapy will be optimized by being able to predict treatment response before and during therapy. By striving for multidisciplinary medical research, we aim for a personalized approach of cancer treatment that limits harmful side-effects as a trade-off to effective treatment. Specifically, the KFSP Tumor Oxygenation will provide the tools to better understand, possibly prevent and more effectively treat cancer, thereby reducing social cost and personal distress and increasing the quality of life of cancer patients.

Spotlight

Kickoff Meeting

On December 10, 2012 the KFSP Kickoff Meeting was held at Hotel Restaurant Zürichberg as a one day event.

At the meeting every research group gave a presentation of their research, finalized the research plans in detail and defined their milestones. During the coffee breaks, lunchtime and aperitif, we witnessed a lively exchange of ideas and got to know all researchers involved.

Website

The website of the KFSP Tumor Oxygenation was launched on March 7, 2013. It displays detailed information on the KFSP's mission, research plans of every



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KFSP Tumor Oxygenation

group, involved researchers, a schedule of our monthly seminar “Forschungskolloquium KFSP Tumor Oxygenation” (VVZ 4578), links to related websites and contact information. The research of every group is supplemented with a picture illustrating the essence of the respective research so that even non-experts can quickly get an idea of the research contents.

Seminar

Forschungskolloquium KFSP Tumor Oxygenation

On March 21, 2013 the first session of the “Forschungskolloquium KFSP Tumor Oxygenation” (VVZ 4578) took place in PATH C22 with 15 participants from the involved research groups.

The first speech was on “Tumors and state of the art clinical treatment options” and was given by Dr. Dr. Marius Bredell, Co-Director of the KFSP Tumor Oxygenation and Chief Physician at the Clinic of Cranio-maxillofacial & Oral Surgery, UniversityHospital Zurich. The second talk was on “Oxygenation measurement using near infrared imaging”

and was given by Prof. Dr. Martin Wolf, Director of the KFSP Tumor Oxygenation and Head of Biomedical Optics at the Clinic of Neonatology, UniversityHospital Zurich.

After the speeches, we enjoyed stand-up pizza on site of the lecture hall and had the chance to chat about the speeches and the respective teams` research progresses. As we received an enthusiastic response on conducting the seminar together with a joint unofficial dinner afterwards, we plan to stick to this kind of event execution. We may switch to more official dinners in the case of external guests giving the speeches.

Special lectures in the framework of the KFSP

We encouraged all researchers involved in the KFSP Tumor Oxygenation to take part in the seminars of the Cancer Network Zurich (www.cnz.uzh.ch/Seminars.html).

Furthermore, we invited all interested parties from the Biomedical Photonics Network to attend the speech “Evaluation of mental stress and relaxation by near infrared spectroscopy” given by Prof. Kaoru Sakatani, Department of Electrical and

Electronics Engineering, Nihon University, Japan on March 11, 2013.

Publications

Papers

The first publication in the framework of the KFSP Tumor Oxygenation is authored inter alia by Dr. Katrin Orłowski from the Clinic of Radio-Oncology:

Orłowski K., Rohrer Bley C., Zimmermann M., Vuong V., Hug D., et al. (2012), *Dynamics of Tumor Hypoxia in Response to Patupilone and Ionizing Radiation*, PLoS ONE 7(12): e51476. doi:10.1371/journal.pone.0051476.

Selected Presentations

On January 30, 2013 Prof. Dr. Martin Wolf presented the content, scope and research aims of the KFSP Tumor Oxygenation at the official meeting of the medical faculty of the University of Zurich.

On March 25, 2013 Dr. Yuliya Dahlem presented the KFSP Tumor Oxygenation project at the continuing education program of the Clinic of Cranio-maxillofacial & Oral Surgery at the UniversityHospital Zurich.



People

New Team Members

Since March 15, 2013 **Dr. Yuliya Dahlem** is employed as a research associate in the clinical research group of Dr. Dr. Marius Bredell, Clinic of Cranio-maxillofacial & Oral Surgery at the UniversityHospital Zurich. Prior to joining our team, Dr. Yuliya Dahlem earned her PhD in Biology from the University of Magdeburg in Germany (2002). Afterwards she conducted research work at the University of Magdeburg and the Charité in Berlin, Germany. In 2006, she started her studies in Medicine at the Charité and passed the second state examination and received her approbation in November 2012. Welcome to the team!

Since April 1, 2012 **Dr. Katarzyna Nytko-Karouzakis** is employed as a postdoctoral research associate in the preclinical group of Prof. Dr. Martin Pruschy, Clinic of Radio-Oncology at the UniversityHospital Zurich. Dr. Nytko-Karouzakis replaced Dr. Katrin Orlowski who left for a position as a research coordinator at Novartis. Prior to joining our team, Dr. Nytko-Karouzakis earned her doctorate at the Institute of Physiology at the University of Zurich (2006-2011) and continued her

postdoctoral studies at the Division of Immunology at the University Children's Hospital Zurich (2011-2012). Welcome to the team!



Newsletter 2 will appear in October, 2013.

Publishing Information

Editor	KFSP Tumor Oxygenation Steering Committee
Editorial work	Dr. Julia Hillebrandt
Periodicity	2 editions per year
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