

Thanks to the SAKK/Dr. Paul Janssen Fellowship Award I had the possibility to spend a research fellowship at the Leiden University Medical Center (LUMC), the Netherlands. The LUMC possesses one of Europe's most modern and advanced research centers, providing researchers with a very inspiring scientific environment. During my research fellowship I had the great chance to be part of the Image-Guided Surgery Group, which is among the world's leading research groups in the field of near-infrared light fluorescence (NIRF) image-guidance in cancer surgery, headed by Dr. Alexander Vahrmeijer. Most of the research on image-guided surgery is currently performed in the Netherlands. The LUMC stands out with its Image-Guided Surgery Group in collaboration with the Harvard Medical School, Boston, and has by far the widest experience in this field. During my research fellowship I could take part in several studies and also had the possibility to execute my own projects. One of the main goals of this research fellowship was to learn and understand the techniques used for image-guidance in surgery. A promising project is the translation of a CEA-targeted NIRF tracer from the animal model to the operating room, as this tracer may inherit the possibility to clearly visualize the cancer during the operation. The CEA-targeted NIRF tracer was very recently EMA/FDA approved for in-vivo use in humans and the image-guided surgery group now performed the first clinical study worldwide. The investigation is still ongoing and will hopefully facilitate intraoperative tumor detection. A special focus of my research fellowship was the distribution of fluorescent tracers to the lymph nodes of colorectal cancer patients with the goal to better detect lymph nodes in their drainage basin as well as to detect lymph node metastases more accurately. This study is still ongoing and could allow better lymph node detection and evaluation in the near future. In general, I have learned that image-guided surgery has the enormous potential to enhance surgical thoroughness and patient safety in cancer surgery. I think that it is of central importance to keep in pace with this evolving technology and I would especially like to thank the SAKK and Janssen-Cilag AG for offering me the possibility to be part of the Image-Guided Surgery Group at the LUMC.

Figure:

A, intraoperative view of a lymph node with "normal" light; B, intraoperative view with NIRF. C and D, respective ex-vivo views.

