OUR OBJECTIVES

GLINT aims to develop a potentially disruptive new diagnostic tool and a set of technologies for in vivo cancer imaging which will allow for earlier, more accurate and more reliable cancer diagnosis.

The GLINT project develops a new MRI method that will bring the combination of native D-glucose and 3-O-methyl-Dglucose (3OMG) as a combined exam to European clinical oncology practice to assess cancer glucose uptake and metabolism in various cancer types, thereby providing a non-invasive, radiation-free method for cancer assessment.

PROJECT FACTS

Coordinator: Prof. **Xavier Golay**
University College London
Duration: 48 months
Runtime: 01/01/16 - 31/12/19
Total EU Funding: €6,454,612

CONSORTIUM

University College London **UK**
Tel Aviv University **IL**
University of Torino **IT**
Max Planck Gesellschaft **DE**
University of Zurich **CH**
Olea Medical **FR**
Bracco SpA **IT**
European Institute for Biomedical Imaging Research **AT**

For more information visit **www.glint-project.eu**
or contact the Project Office at **kkrischak@eibir.org**

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GLINT

GLUCOCEST IMAGING IN NEOPLASTIC TUMOURS

www.glint-project.eu

OUR MOTIVATION

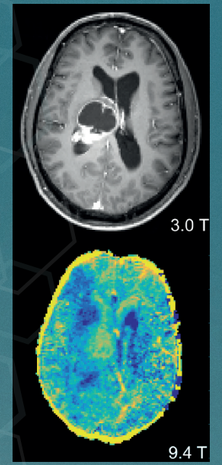
„What we hope to do with the technology developed through GLINT is to establish an MRI method that would not use any ionizing radiation. This would allow patients to have several exams within days of each other to assess whether the treatment is working.“

Xavier Golay
GLINT Scientific Coordinator

PROJECT OUTCOMES

- An advanced MR imaging technique for robust detection of small xchangerelated signals
- Pharmacokinetic analysis for quantification of GlucoCEST effect in vivo
- Assessment of potential biochemical pathways and sources of the GlucoCEST signal for native and methylated glucose analogues
- Validated detection thresholds and therapy response of glucose analogues in animal models
- Regulatory approvals for all used tracers, including toxicology, biodistribution and pharmacokinetics of 3OMG
- Assessment of the sensitivity, specificity staging, early prediction to therapy and evidence of treatment effects primarily in gliomas as cancer models in patient studies

THE FIRST RESULTS



- Detection of tumours using 3OMG in several breast cancer animal models
- Detection of in vivo changes in tumour acidosis using CEST-pH imaging
- Improved analytical equations of CEST quantification, which allow more accurate exchange rate determination of glucoCEST signal
- A new method, radiometric approach, for accurate estimation of pH change
- New data acquisition technique, snapshot-CEST, for fast and robust volumetric CEST imaging

Conventional gadolinium contrast-enhanced T1-weighted MRI of a brain tumour patient (top) shows the typical ring enhancement due to inflow of gadolinium due to the blood-brain barrier breakdown in the tumour. The dynamic glucose enhanced MRI of the same patient (bottom, same slice) shows hyper intensities in the tumour after injection of natural D-glucose.

Courtesy Kai Herz, Moritz Zaiss, Klaus Scheffler