



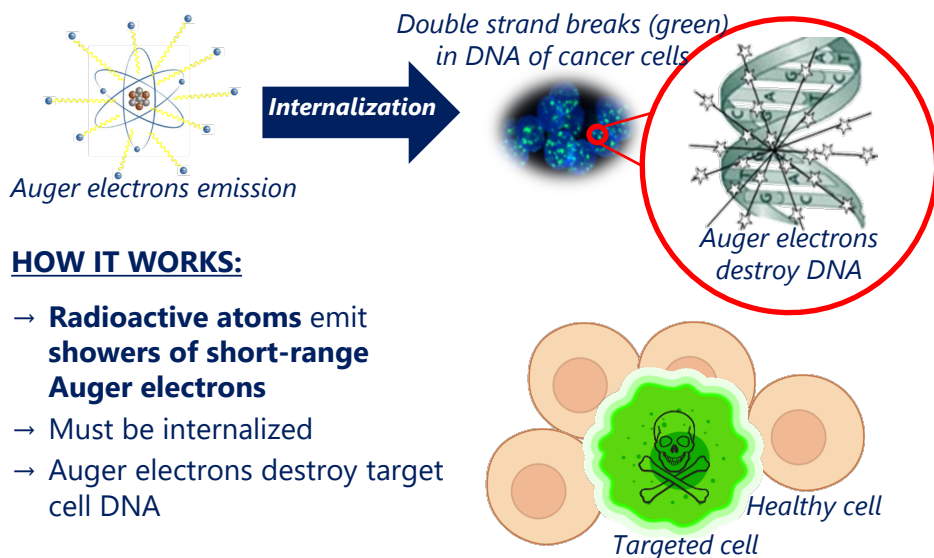
Targeted Auger Radiotherapy

A new drug class for glioblastoma

Value proposition and Field of application

New approach, AUGER RADIOTHERAPY (ART) to kill brain infiltrating cancer cells. Our concept rely on targeted ART compounds infused by Convection Enhanced Delivery (CED) to combat Glioblastoma Multiforme. We are developing two therapeutic strategies to achieve this.

Background and Technological description



HOW IT WORKS:

- **Radioactive atoms** emit **showers of short-range Auger electrons**
- Must be internalized
- Auger electrons destroy target cell DNA

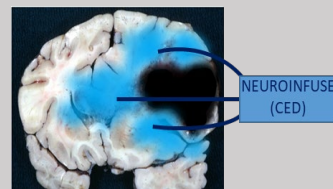
- ✓ **Only targeted cancer cells are killed**
- ✓ **Healthy brain cells are spared**
- ✓ **Ideal for killing infiltrating cancer cells**

OUR CONCEPT

After surgery, targeted ART compounds are infused by **Convection Enhanced Delivery (CED)**.

ART compounds destroy infiltrating cancer cells in most of brain

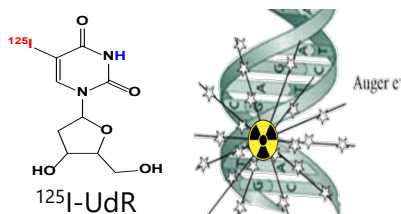
- ✓ Avoids the blood brain barrier
- ✓ Covers a large volume
- ✓ CED is an established technique



STRATEGY 1*:

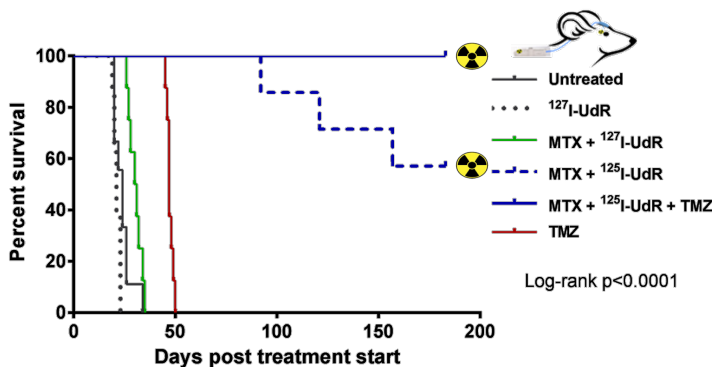
MODE OF ACTION

- $^{123/125}\text{I}$ -UdR is a nucleoside labeled with iodine-123/125
- Nanocarriers secure wide distribution and sustained release
- Is inserted into the DNA of dividing cells → **effective killing**



PROOF OF CONCEPT

^{125}I -UdR combination with adjuvant- and chemotherapy **cured** all glioblastoma-bearing rats!



Highly Effective Auger-Electron therapy in an orthotopic glioblastoma xenograft model using convection-enhanced delivery, H Thisgaard, B Halle, et al. Theranostics 6 (12), 2278

*STRATEGY 2: receptor-targeting approach with other Auger radionuclides

Current state of development

Program is in late-preclinical phase.

- ✓ PoC of efficacy in glioblastoma animal model of the active therapeutical compound
- ✓ Formulation as a nanocarrier pro-drug proves wide distribution & sustained release in pig brain
- ✓ In vitro efficacy of nanocarrier pro-drug

Team



Andreas I. Jensen, PhD Pharm
Radiochemist

Senior Scientist and research group leader at Technical University of Denmark

*13 years of experience in radio-pharmaceutical research, drug delivery & nanomedicine, radionuclide therapies.
Co-founder & CEO of TetraKit Technologies*



Helge Thisgaard, PhD
Medical Physicist

Head of Preclinical Research at Dept. of Nuclear Medicine at Odense University Hospital and University of Southern Denmark

16 years of experience in Auger radio-therapy research, radionuclide production and preclinical glioblastoma models



Bo Halle, MD, PhD
Neurosurgeon

Acting Chief Physician, Clinician at Odense University Hospital

16 years of experience in the clinical management of glioblastoma, & research in CED and glioblastoma

Intellectual property rights

1. Auger electron therapy for glioblastoma, US Patent (US10,583,210) and EP application (EP3157576)
2. Priority patent application, in preparation

Business opportunity and Call to action

We are looking for investment to our planned spin-out company to take the development through the remaining pre-clinical and clinical development. Regulatory professional and Business Developer is needed.

Contact information

Business Developer Lene Aarenstrup Nielsen, PhD, RTTP
University of Southern Denmark, SDU RIO
laan@sdu.dk

