

Research into new brain cancer therapies

Brain tumours such as glioblastoma multiforme (GBM) remain difficult if not impossible to cure due to their location deep inside the brain and their aggressive characteristics.

What current treatments are available?

Current standard treatment for GBM involves surgery, followed by radiotherapy and/or chemotherapy.



Surgery



Chemotherapy



Radiotherapy

HOWEVER, THESE THERAPIES SHOW LIMITED LONG-TERM SURVIVAL BENEFIT FOR THE PATIENTS

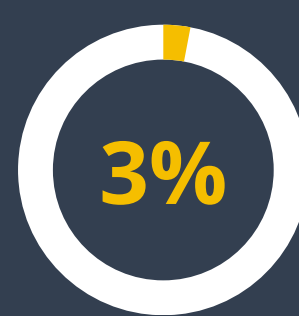
How many people are affected by GBM?



new cases each year in the EU and USA



Survival rate within one year of diagnosis



Survival rate over five years after diagnosis

THERE IS A PRESSING NEED TO FIND NEW THERAPIES WHICH ARE MORE EFFECTIVE AND COULD BE CURATIVE

What is FRINGE?



AN EU FUNDED PROJECT RESEARCHING RADICALLY NEW CANCER THERAPIES THROUGH A GENUINELY NEW HYBRID-TECHNOLOGY

FRINGE combines the advantages of photomedical therapies with the advantages of neutron-based therapies

Photomedical therapies

They use visible light to excite photoactivatable drugs, which upon interaction with oxygen they produce toxic intermediates that kill cancer cells



BENEFITS

Quite efficient where light reaches, non mutagenic, may offer immunity against the treated cancer, non chemotoxic



LIMITATIONS

Shallow depth of light penetration into tissue, difficult to distinguish treatment

Neutron-based therapies

Therapies like boron or Gadolinium neutron capture for the production of secondary radiation usually alpha radiation for the treatment of deep-lying cancers



BENEFITS

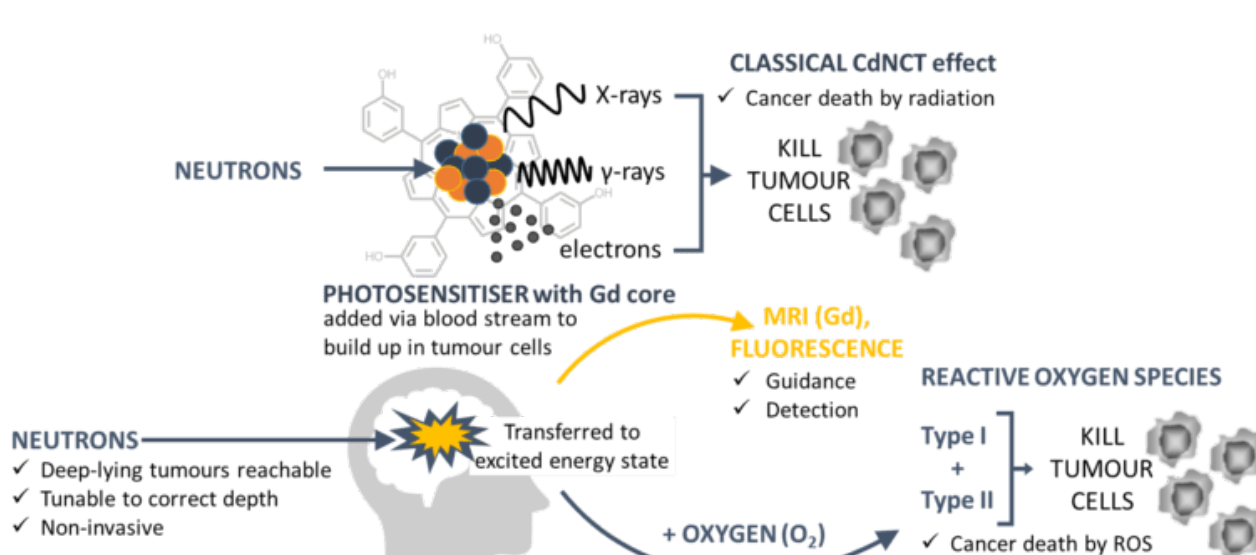
High tissue penetration depth



LIMITATIONS

Lack of cancer specificity

FRINGE PLANS TO USE NEUTRONS TO KILL THE CANCER BY EXCITING PHOTSENSITIVE DRUGS AND PRODUCING REACTIVE OXYGEN SPECIES WHICH WILL COMPLEMENT THE RADIOTHERAPY



What are the next steps?



IDEA

Basic principles
Concept formulated
Experiments
Proof of concept



LAB STUDIES

Cells experiments
In-vivo studies
Proof of concept



CLINICAL TRIALS

Through a spin-off company



APPROVAL

FDA approval to release therapy globally

Want to find out more?



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