



THERYQ and Gustave Roussy have been selected as part of the "i-Démo" France 2030 call for projects, operated on behalf of the French government by Bpifrance, for the "FLASHDEEP" project, for an amount of 38 million euros

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- In 2020, the WHO estimated that nearly 10 million deaths were due to cancer worldwide (1). In France, **450,000 new cancer cases** were diagnosed in 2023, twice as many as in 1990 (2), and more than 150,000 people die each year (2).
- To treat various cancers, healthcare professionals have a wide range of therapeutic options, including **radiotherapy**. More than 50% of cancer patients benefit from it at some point in their care journey, and it is estimated that **40% of cured patients are cured by radiotherapy**, alone or combined with other treatments (3).
- Conventional radiotherapy is still limited by the **side effects caused to healthy tissues**, and some tumors remain resistant to it. Today, research and innovation bring a new therapeutic option for patients, **FLASH radiotherapy**, which will better protect healthy tissues (4) while drastically reducing the number of treatment sessions.
- THERYQ and Gustave Roussy have the pleasure of announcing that they have been selected as part of the "i-Démo" call for projects for **France 2030**, operated on behalf of the French government by Bpifrance for the **"FLASHDEEP" project**, for a total amount of 38 million euros.

In Europe, cancer is the second leading cause of mortality after cardiovascular diseases (5). This situation not only has an impact on individual health but also has considerable **social and economic consequences**. The overall economic impact of cancer in **Europe** is estimated at **100 billion euros per year** (5) and over 200 billion dollars in the United States (6). Cancer puts pressure on national healthcare and social protection systems, public budgets, as well as on productivity and economic growth.

Thanks to research, healthcare professionals now have a strong and effective therapeutic arsenal to manage patients. Among the existing solutions, radiotherapy is responsible for curing 40% of cancers, either alone or in combination with other treatments (3).

However, current **radiotherapy** techniques are not sufficient; side effects limit its use, and tumors with poor prognosis remain resistant. Today, FLASH radiotherapy, the research for which has intensified over

the past decade in expert centers, represents a new therapeutic option for patients. It involves delivering radiotherapy treatment in **a fraction of a second**, at a **very high dose rate**, which **reduces toxicity to healthy tissues** (7) around the tumor, and thus increases the amount of ionizing radiation to treat cancers resistant to conventional treatments. Preclinical developments in FLASH radiotherapy (8) and the **very first patient** (9) have shown promising results for transferring the technology to humans.

38 million euros for a new hope in cancer treatment

THERYQ, a French company specializing in the development of FLASH radiotherapy systems, and Gustave Roussy, the leading French and European center for cancer research, ranked 4th worldwide, are selected as part of the "i-Démo" / France 2030 call for projects for the "FLASHDEEP" project, with a budget of 38 million euros.

FLASHDEEP will be the **world's first FLASH radiotherapy device using very high-energy electrons** (VHEE; > 100 MeV). The particle acceleration technology developed by THERYQ stems from research initiated by the European Organization for Nuclear Research (CERN) and the University Hospital of Lausanne (CHUV).

The **first clinical FLASHDEEP device** will be installed in France, at Gustave Roussy, late 2026, to conduct clinical trials with eligible patients. This system will be able to treat deep solid tumors up to 20 cm thanks to a high-energy electron beam and a dose rate a thousand times higher than that used in conventional radiotherapy. FLASHDEEP represents a major technological advancement in the fight against cancer, offering the prospect of a more effective, better tolerated, shorter, and therefore cheaper treatment than conventional radiotherapy, with no equivalent on the market today.

« THERYQ's mission is to revolutionize cancer treatment by launching a new radiotherapy process called "FLASH." An advanced technique aiming to reduce irradiation time to just a fraction of a second, thus replacing multiple radiotherapy sessions while preserving the patient's healthy tissues. This technology offers the opportunity to treat more cancers resistant to today's radiotherapy treatments, paving the way for a more effective, less invasive, and less toxic treatment for cancer patients,» says Ludovic Le Meunier, CEO of THERYQ. He also adds: *"Thanks to this funding obtained following an excellent collaboration with the DGE and Bpifrance, THERYQ aims to make all types of solid cancer a manageable condition, allowing FLASH radiotherapy to unleash its curative potential. »*

« By irradiating more than 3000 times faster, we can achieve the same anti-tumor effect with fewer toxicities and fewer side effects or increase the irradiation dose on resistant tumors for cancers with less favorable prognoses. The French company THERYQ is the first to have demonstrated the "FLASH" effect based on the use of electrons emitted at very high rates. The first trials will start in 2027 and will focus on inoperable pancreatic and brain cancers. But before that, we need to deepen our knowledge in radiobiology and medical physics to develop new dose calculation methods linked to this new technology,» explains Professor Eric Deutsch, head of the Radiotherapy department at Gustave Roussy.

Thanks to the funding provided by Bpifrance as part of France 2030, THERYQ and Gustave Roussy will bring together biologists, physicists, and physicians to conduct the necessary preclinical and clinical studies to demonstrate the improved tolerance and efficacy of FLASHDEEP compared to conventional radiotherapy. They will also submit the CE marking application so that French and European patients in need can benefit from this new therapeutic option as quickly as possible.

In parallel, THERYQ plans to build and equip its industrial platform to enable the launch of the first machines, followed by mass production of FLASHDEEP devices and the start of their commercialization in Europe. This industrial deployment project also represents a great economic opportunity for France, with the creation of more than 600 direct and indirect jobs in the country. Ultimately, it will lead to the revival of a French radiotherapy industrial sector, a field that has been neglected since the late 1980s.

Sources

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About THERYQ

THERYQ, a subsidiary of the French group ALCEN, is an innovative medical technology company specialized in the design, manufacturing, and marketing of FLASH radiotherapy systems. THERYQ aims to expand the use of radiotherapy in oncology and develop new treatments for cancer patients. The company aims to improve patient care and have a positive impact on their quality of life by providing effective, precise, and ultra-short radiotherapy treatments.

To learn more about THERYQ: www.theryq.com

About Gustave Roussy

Ranked as the top French center, top European, and fourth worldwide, Gustave Roussy is a comprehensive expertise hub entirely dedicated to patients living with cancer. The Institute is a founding pillar of the Paris-Saclay Cancer Cluster biocluster. As a source of therapeutic innovations and diagnostic advances, the Institute welcomes nearly 50,000 patients each year, including 3,500 children and adolescents, and develops an integrated approach between research, care, and education. A specialist in rare cancers and complex tumors, Gustave Roussy treats all types of cancer, at all ages. It offers its patients personalized care that combines innovation and humanity, where both treatment and physical, psychological, and social quality of life are taken into account. With 4,100 employees spread across two sites, Villejuif and Chevilly-Larue, Gustave Roussy brings together the expertise necessary for high-level cancer research; 40% of treated patients are included in clinical studies. To learn more about Gustave Roussy and follow the Institute's news: www.gustaveroussy.fr, Twitter, Facebook, LinkedIn, Instagram.

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About France 2030

- ✓ Translate a dual ambition: to transform key sectors of our economy (health, energy, automotive, aerospace, and space) through technological innovation, and to position France not only as a player but as a leader in the world of tomorrow. From fundamental research to the emergence of an idea to the production of a new product or service, France 2030 supports the entire life cycle of innovation until its industrialization.
- ✓ Is unprecedented in its scale: €54 billion will be invested to ensure that our companies, universities, and research organizations fully succeed in their transitions in these strategic sectors. The challenge: to enable them to competitively address the ecological and attractiveness challenges of the coming world and to bring forth the future leaders of our excellence sectors. France 2030 is defined by two transversal objectives consisting of dedicating 50% of its expenditure to the decarbonization of the economy, and 50% to emerging actors, bearing innovation without expenditures detrimental to the environment (in the sense of the Do No Significant Harm principle).
- ✓ Will be implemented collectively: conceived and deployed in consultation with economic, academic, local, and European stakeholders to determine strategic orientations and flagship actions. Project leaders are invited to submit their files through open, demanding, and selective procedures to benefit from state support.
- ✓ Is led by the General Secretariat for Investment on behalf of the Prime Minister and implemented by the Agency for Ecological Transition (ADEME), the National Research Agency (ANR), Bpifrance, and the Bank of Territories.

More information on: france2030.gouv.fr | [@SGPI_avenir](https://twitter.com/SGPI_avenir)

About Bpifrance

Bpifrance finances companies at every stage of their development, providing credit, guarantees, and equity. It supports them in their innovation projects and internationally, and also ensures their export activity through a wide range of products. Advice, university education, networking, and acceleration programs for startups, SMEs, and intermediate-sized enterprises (ETIs) are also part of the services offered to entrepreneurs. Thanks to Bpifrance and its 50 regional locations, entrepreneurs benefit from a close, unique, and effective contact to help them meet their challenges.

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