

PRESS RELEASE

For immediate release

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Immunotherapy Breakthrough: New Combination Proven to Shrink Tumours

Luxembourg Institute of Health collaboration unlocks the potential of STING agonist-based cancer immunotherapy

Researchers in Luxembourg have uncovered a new approach for shrinking tumours. Their findings, recently published in Molecular Oncology Journal, outlines a potent immunotherapy combination. This combination involves pairing a STING agonist, which enhances the immune system, with a compound that targets autophagy, a mechanism implicated in cancer immune evasion. This dual therapeutic approach markedly reduced tumour size and improved survival rates in preclinical studies, offering new hope of shifting the paradigm in cancer treatment.

A collaborative team effort led by the Tumor Immunotherapy and Microenvironment (TIME) group at the Luxembourg Institute of Health, along with Sprint Bioscience and Karolinska Institutet (Sweden) has published groundbreaking research article in the Molecular Oncology Journal, outlining a promising new strategy for cancer treatment. This strategy focuses on unlocking the full potential of STING agonists, a new class of drugs designed to boost the body's immune system to fight cancer.

Cancer cells can employ various strategies to evade the body's natural defences, rendering existing immunotherapies ineffective. Previous research work by the TIME group and Sprint Bioscience showed how inhibiting a specific protein (Vps34) involved in this immune evasion could enhance the effectiveness of existing cancer immunotherapy based on checkpoint blockades. Building upon this success, the latest study explores the exciting synergy between Vps34 inhibitors and STING agonists.

STING agonists work by stimulating a pivotal protein known as STING, which acts as a central coordinator of the immune system. Upon activation, STING triggers a robust response against cancer cells, mobilizing and empowering diverse immune cells, including T cells, natural killer cells, and dendritic cells.

The new research demonstrates that combining a Vps34 inhibitor with a STING agonist results in a potent double attack on tumours. This combination significantly shrinks tumours and improves survival rates in preclinical studies, offering a potential paradigm shift in cancer treatment.

"This research offers a new hope for overcoming the several disappointments encountered in past clinical trials with STING agonists," explains Dr Bassam Janji, Head of the TIME group. *"By enhancing the STING pathway and circumventing cancer's immune evasion strategies, we have the potential to develop durable and powerful new immunotherapies."*

This exciting research paves the way for further development, aiming to bring the promise of STING agonists to cancer patients. The full study was published in Molecular Oncology under the title *"Combining VPS34 inhibitors with STING agonists enhances type I interferon signaling and anti-tumor efficacy"* [doi:10.1002/1878-0261.13619](https://doi.org/10.1002/1878-0261.13619).

Funding and collaborations

This work was supported by the Luxembourg National Research Fund, the Swedish Foundation for Strategic Research and Stiftelsen Cancera, Sweden.

About the Luxembourg Institute of Health (LIH)

The Luxembourg Institute of Health (LIH) is a public biomedical research organisation focused on precision health and invested in becoming a leading reference in Europe for the translation of scientific excellence into meaningful benefits for patients.

The LIH places the patient at the heart of all its activities, driven by a collective obligation towards society to use knowledge and technology arising from research on patient derived data to have a direct impact on people's health. Its dedicated teams of multidisciplinary researchers strive for excellence, generating relevant knowledge linked to immune related diseases and cancer.

The institute embraces collaborations, disruptive technology and process innovation as unique opportunities to improve the application of diagnostics and therapeutics with the long-term goal of preventing disease.

About Sprint Bioscience:

Sprint Bioscience is a pharmaceutical company focused on developing drugs for cancer.

The company was founded in 2009 by an entrepreneurial team of five people, four from the Swedish pharmaceutical industry with the goal to build a Swedish long-term pharmaceutical company with excellence in preclinical drug development. The common driving force for everyone in the company is the opportunity to make a difference and to develop drugs that reach the market, and this characterizes all activities in the company.

At Sprint Bioscience, we believe that the success of effectively managing projects lies in close collaboration and close interaction between the various scientific disciplines involved in the work. To enable this we have chosen to invest in internal competence. We have recruited the top people in their fields and built up the key skills needed for preclinical drug development.

Sprint Bioscience currently employs about 35 employees, where the majority work in the laboratory in the company's drug development projects.

About Karolinska Institutet:

Karolinska Institutet is one of the world's leading medical universities. Our vision is to advance knowledge about life and strive towards better health for all. Karolinska Institutet accounts for the single largest share of all academic medical research conducted in Sweden and offers the country's broadest range of education in medicine and health sciences. The Nobel Assembly at Karolinska Institutet selects the Nobel laureates in Physiology or Medicine.

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