Press release

Development of the first inner ear organoids by 3D bioprinting for pharmacological screening in hearing disorders: CTIBIOTECH™ announces strategic agreement with SATT AxLR and CILCARE

FOR IMMEDIATE RELEASE

Lyon and Montpellier, France - October 9, 2025

- **CTIBIOTECH™** has been selected by **SATT AxLR** and **CILCARE** to develop the OrgaEar project, a disruptive innovation in hearing disorders research.
- **Hearing disorders** are a growing public health crisis. The development of innovative therapeutic solutions is an urgent strategic priority.
- Facilitating a highly advanced non-animal New Approach Methods **NAMs** alternative in the hearing disorders sector, CTIBIOTECH™ strengthens its position at the forefront of a cell-based bioassay market estimated at 28 billion euros by 2028, CAGR > 7%).

T +33 9 67 10 74 55
orders@ctibiotech.com

Bat A16, 5 avenue Lionel Terray
69330 Meyzieu, Lyon, France

ctibiotech.com
ctiskin.com
ctipharma.fr
independentbiobank.com

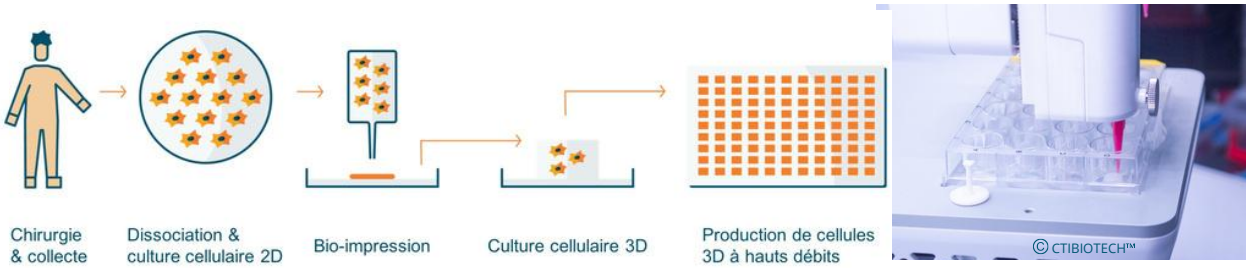

Figure 1: Schematic representation of 3D bioprinting and 3D bioprinter in action.

CTIBIOTECH™, a leading innovator in human tissue engineering and 3D bioprinting, is proud to announce its **selection by SATT AxLR and CILCARE** to support the development of the OrgaEar project. This **strategic collaboration** aims to create a **world first**: **3D bioprinted inner ear organoids** from human induced pluripotent stem cells (hiPSC).

This innovative project addresses a **critical need in hearing disorders research** by developing **advanced pharmacological screening tools**, positioned as intermediaries between traditional cell lines and animal models. The aim is to transpose and optimize the previously established protocol for obtaining inner ear organoids by integrating **CTIBIOTECH™ 3D bioprinting technology**, thus guaranteeing reproducibility, optimal quality and yield, and **industrialization in the medium term to contribute to CILCARE's development** and business.

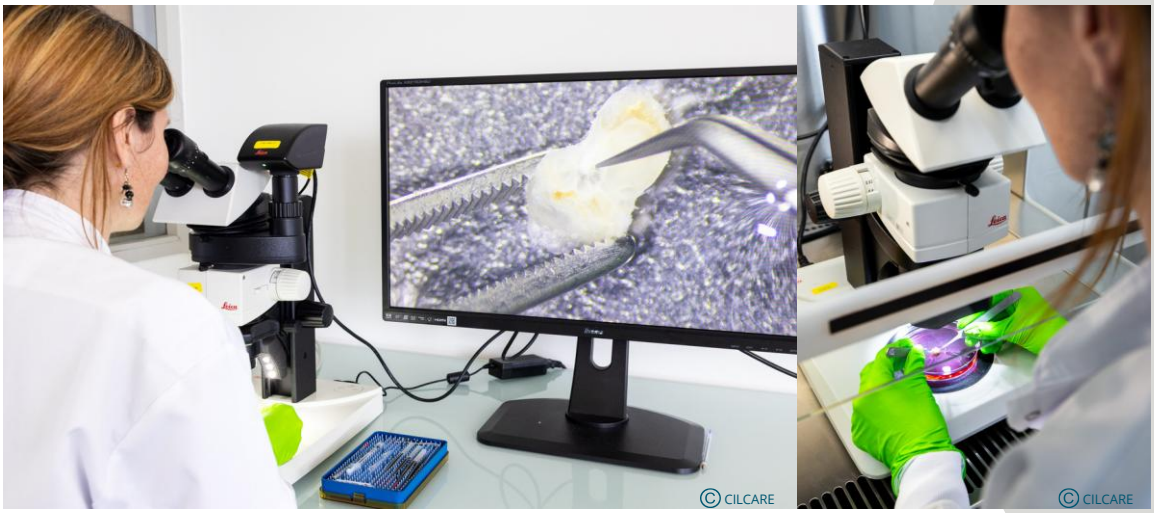

Figure 2: Research in the preclinical phase focusing on cochlea physiology and pathologies.

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Protocols have been developed by the **Bioengineering and Nanosciences Laboratory (LBN) at the University of Montpellier** enabling the design and production of inner ear organoids from hiPSCs. The **CTIBIOTECH™** teams were selected by SATT AxLR for their **unique expertise in 3D bioprinting**, the fruit of over 15 years of R&D in human tissue biomanufacturing to facilitate the **translation and industrial production of this technology at CILCARE**. Having demonstrated its ability to mass-produce complex human skin models - recently including the first computer-connected skin with sensory nervous system - CTIBIOTECH™ will now apply its bioproduction, bio-extrusion additive manufacturing and automation technologies to inner ear organoids. CTIBIOTECH™ by facilitating a **highly advanced non-animal NAMs** (New Approach Methods) **alternative in the hearing disorders sector**, strengthens its position at the forefront of a **cell-based bioassay market estimated at 28 billion euros by 2028, CAGR > 7%).**

Professor Colin McGUCKIN, President and Chief Scientific Officer of CTIBIOTECH™, noted: "We are honored to have been selected for this pioneering project. Our expertise in 3D bioprinting of complex human tissues, including our ability to integrate functional nerve structures, is particularly well suited to the challenges of this project. Inner ear organoids represent one of the most sophisticated models in tissue engineering, and we are convinced that our bioprinting automation approach will significantly accelerate research into hearing disorders."

Dr. Nico FORRAZ, Chief Executive Officer of CTIBIOTECH™, emphasized the strategic importance of this agreement: "This support perfectly illustrates our mission: to put our 3D bioprinting technology at the service of biomedical innovation. Working alongside CILCARE and SATT AxLR, we are helping to develop tools that will accelerate the discovery of treatments for hearing pathologies affecting more than 1 billion people worldwide. This collaboration fits in perfectly with our strategy of reducing drug development costs and time through innovation in automation."

Hearing disorders are a growing global public health issue. According to the World Health Organization, **one in four people will be affected by hearing loss by 2050**, and over **a billion young people are already at high risk due to unsafe listening practices**, notably via the prolonged use of high-volume headphones.

Beyond the individual impact - on quality of life, mental health, cognitive abilities and social integration - the economic consequences are considerable. **The WHO estimates the global cost of unmanaged hearing loss at $980 billion a year**, including lost productivity, special education and healthcare costs.

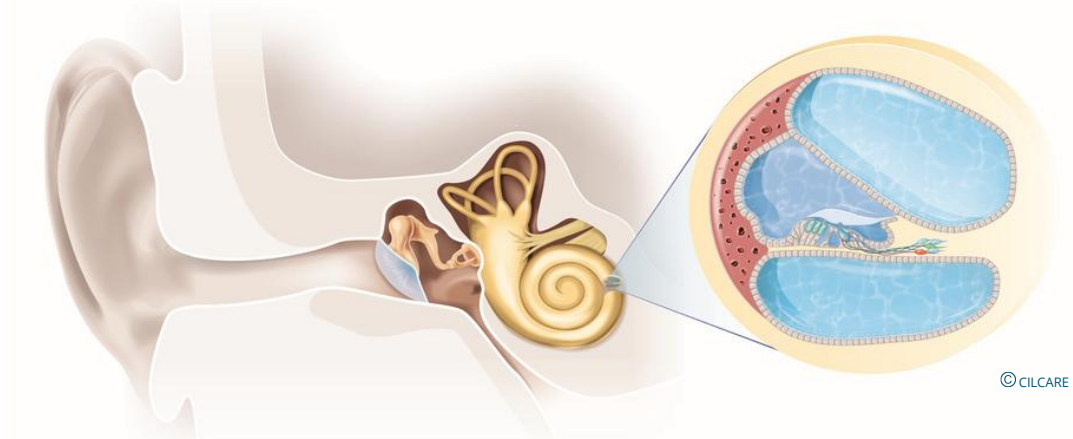

Figure 3: Diagram of the human ear, showing the inner ear and cochlea, where the sensory hair cells responsible for converting sound into nerve signals are located.

However, to date, no pharmacological treatment exists to prevent or restore hearing loss. Hearing aids and implants can improve sound perception, but do not target the biological causes and remain only partially effective, particularly in noisy environments. In this context, the development of innovative therapeutic solutions is an urgent and strategic public health priority.

The development of 3D bioprinted inner ear organoids represents a major step forward to:

- **Accelerate pharmacological screening**: standardized, reproducible models will enable rapid testing of new drug candidates;
- **Reduce animal testing**: An ethical and more predictive alternative for research into hearing disorders;
- **Improve clinical relevance:** Human organoids offer superior predictive power to traditional mouse models;
- **Industrialize production:** 3D bioprinting will enable mass production with consistent quality.

"Organoids are set to become essential tools in medical research. The research program financed by SATT AxLR and the support of CTIBIOTECH, in this key stage, will enable Cilcare to accelerate the development of new therapeutic solutions and thus become the leader in the treatment of hearing pathologies" - Philippe Nérin President of SATT AxLR

"Organoids are changing the way we think about preclinical research: they reduce the time needed to discover and validate new therapies, while improving their biological relevance. This is a key step towards faster, more responsible medical innovation," comments Sylvie Pucheu, Director of Preclinical Innovation and co-founder of Cilcare.

About CTIBIOTECH™

CTIBIOTECH™ is a biotechnology company specializing in the development of advanced human tissue models for research, drug discovery and cosmetic testing. Using state-of-the-art bioprinting and tissue engineering techniques, CTIBIOTECH creates highly realistic and functional human tissue models that offer superior predictive power and ethical alternatives to traditional testing methods.
To find out more, visit: https://ctibiotech.com

About CILCARE

Cilcare is a biotechnology company specializing in hearing sciences, developing cutting-edge solutions for the characterization, diagnosis and treatment of hearing disorders and related diseases. Founded by three visionary female entrepreneurs, the company today brings together a team of 45 international collaborators, supported by a scientific advisory board. Since its creation in 2014, Cilcare has been dedicated to meeting these global challenges by combining an advanced R&D platform, a promising portfolio of drug candidates and the use of artificial intelligence and machine learning to characterize the various forms of hearing loss. For the past 10 years, the company has also been making its technology available to manufacturers and researchers in Europe, the United States and Asia to accelerate the development of drugs, gene and cell therapies, and medical devices for hearing disorders.
To find out more, visit: www.cilcare.com

About SATT AxLR

SATT AxLR is a technology transfer accelerator. It specializes in the maturation and commercialization of innovative projects stemming from public research. It works with most of the public research laboratories located in Occitanie Est, one of the most dynamic regions in France and Europe, with almost 200 laboratories and nearly 11,000 researchers and research staff. Since its creation, SATT AxLR has financed over 200 innovation programs, invested over €80 million, signed more than 220 transfer contracts with companies and supported 150 start-ups.
For more information: www.axlr.com

For more information, please contact:

CTIBIOTECH™
Dr Nico FORRAZ
Managing Director
office@ctibiotech.com
+33 6 78 90 38 50
www.ctibiotech.com

CILCARE
Marie Peytavy,
Marketing & Communication Director
marie.peytavy@cilcare.com
www.cilcare.com

SATT AxLR
Laurent Biasetti
Partnership and Communication
+33 6 15 33 01 57
Laurent.biasetti@axlr.com
www.axlr.com