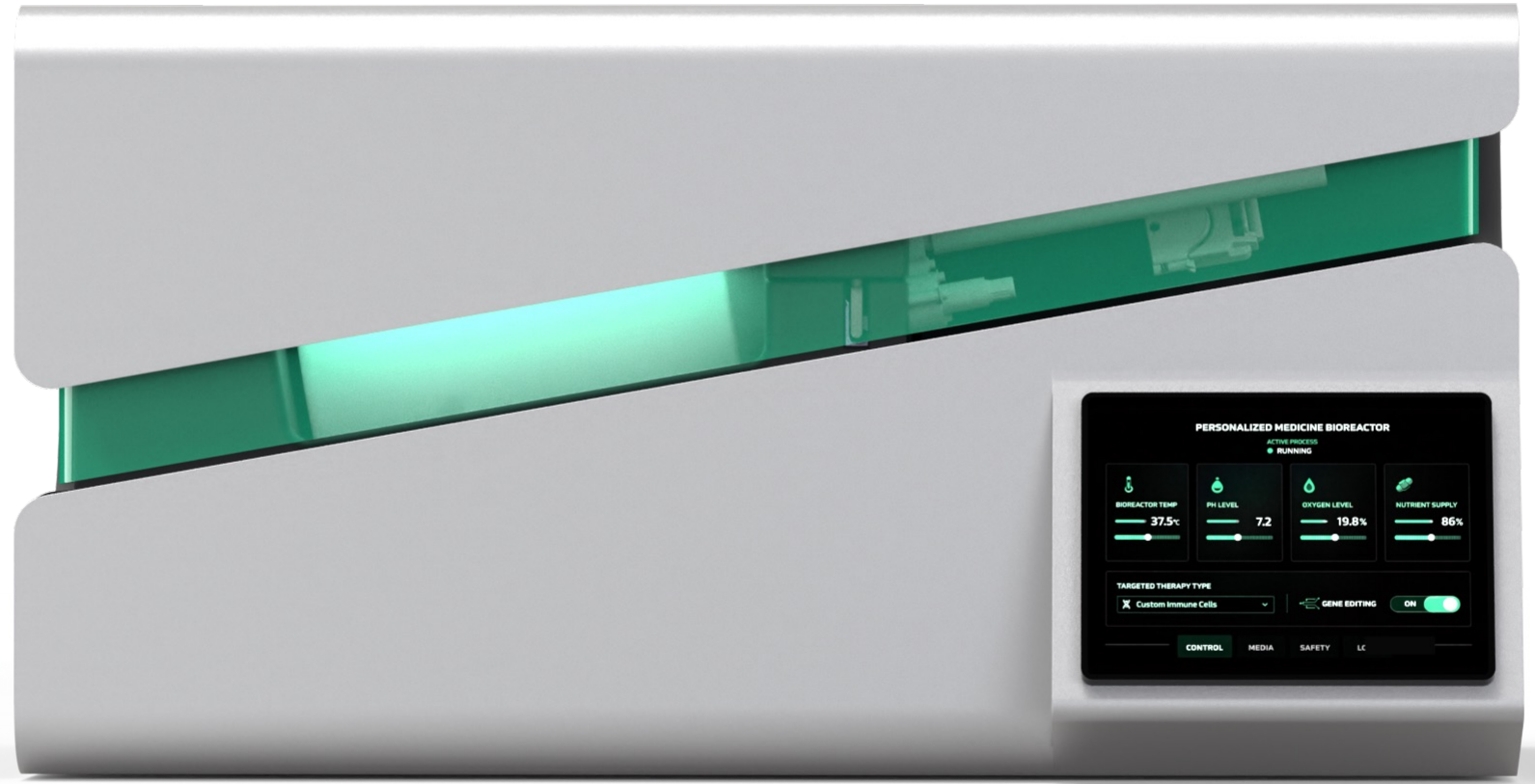


Archimedes® One

Dynamic Adherent Bioreactor

Adherent cell therapy,
made at scale.



Nearly 50 cell therapies are FDA-approved. Almost none can reach the patients they were designed for.

Take one example: Parkinson's disease. 10–12 million patients worldwide. At least three cell therapy programs in clinical development targeting it.

At current adherent-cell manufacturing capacity, the leading program can reach fewer than 0,1% of them.

€50k–€500k

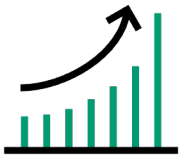
Current cost per dose at clinical-scale adherent manufacturing

<0,1%

Of the Parkinson's cell-therapy addressable population reachable at current capacity



Challenges in adherent cell manufacturing

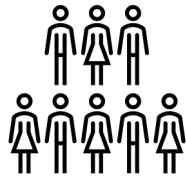


High Complexity

Option A: manual operations using stacks and roller bottles

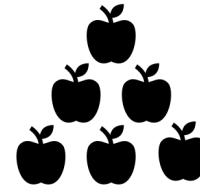
Option B: highly complex instrumentation e.g. fixed-bed reactors

Option C: forcing adherent biology into suspension



Resource Requirements

Today's adherent platforms demand excessive **human labor and cleanroom space**: two of the scarcest and most expensive resources in manufacturing.



Reproducibility & Scalability

As process complexity and human intervention increase, reproducibility decreases, and batch-to-batch variability becomes inherent to the system.

Current adherent manufacturing technologies are not designed for commercial scale and clinical environment

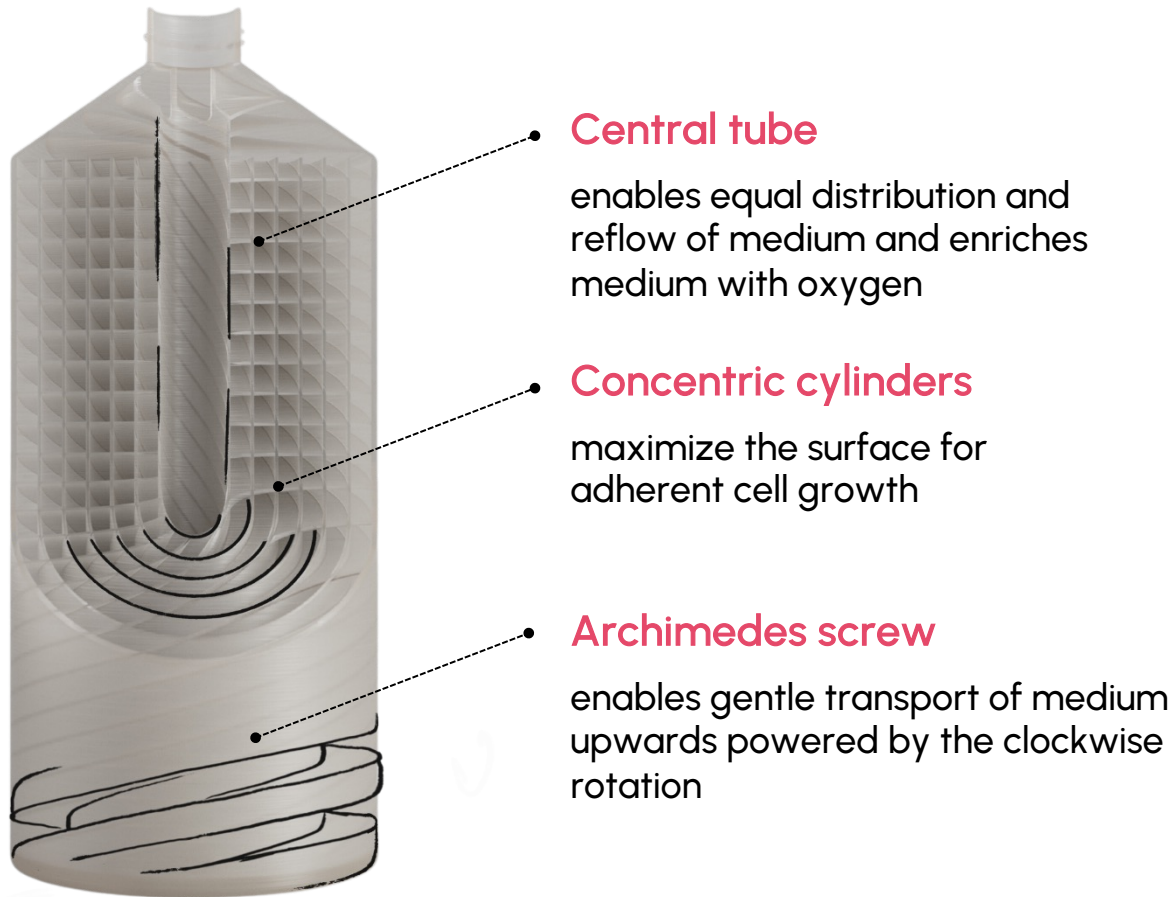


CMC issues e.g. manufacturing are a major barrier to FDA approvals



Our manual solution: The CellScrew®

The most compact adherent cell culture flask for scalable manufacturing.

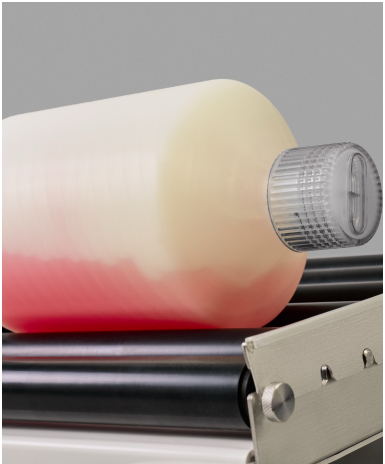


- 3D-printed form plant-based PLA
- Available in 850-10,000 cm²
- enabling scale-up from research to GMP-compatible workflows
- Supports many adherent cell types widely used in CGT

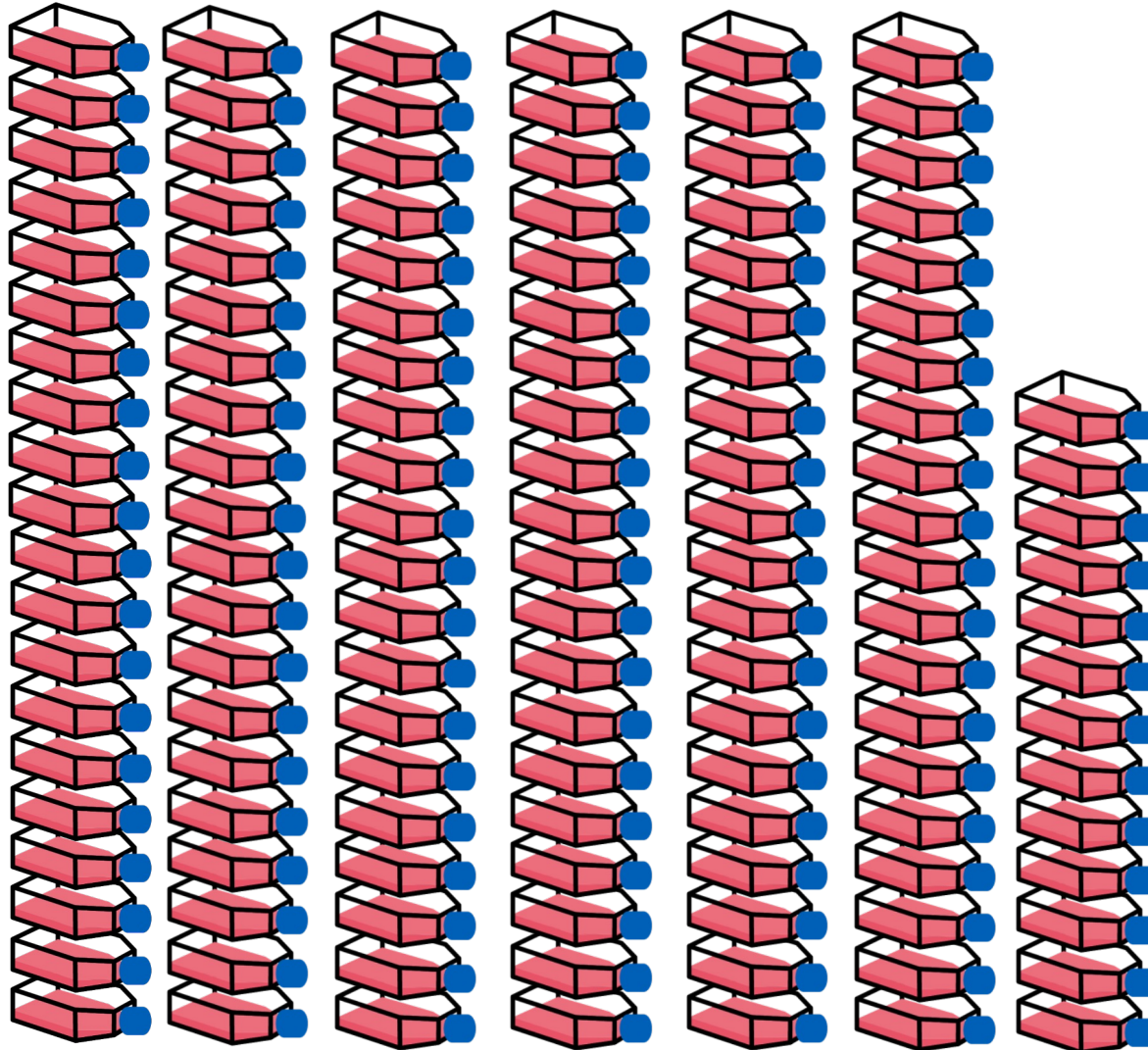
HEK-293	iPSC
VERO	Adipocytes
MSCs	Keratinocytes
Murine Melanoma	L-929
HeLa	MDCK II
Fibroblasts	Mammalian Kidney Cells
CHO-K1	Macrophages
C2C12	Human Lung Carcinoma Cells



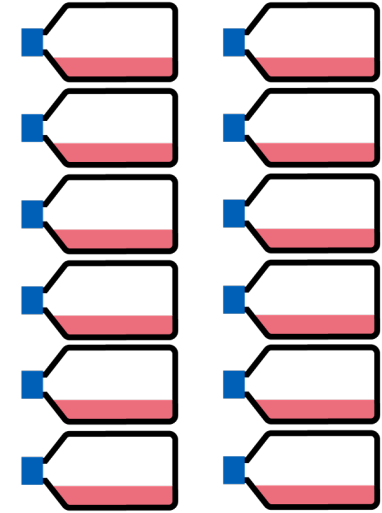
Maximizing Output, Minimizing Resources



1x CellScrew



133x T-75 flasks



12x Roller Bottles

or



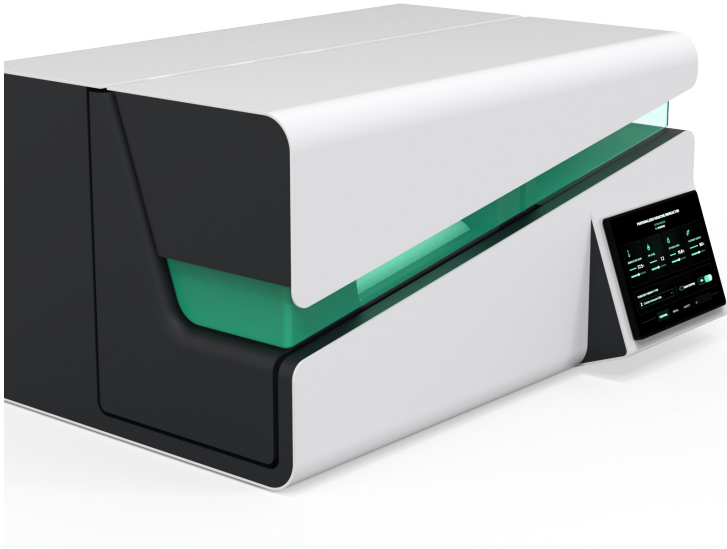
1.6 x Multi Tray Stacks



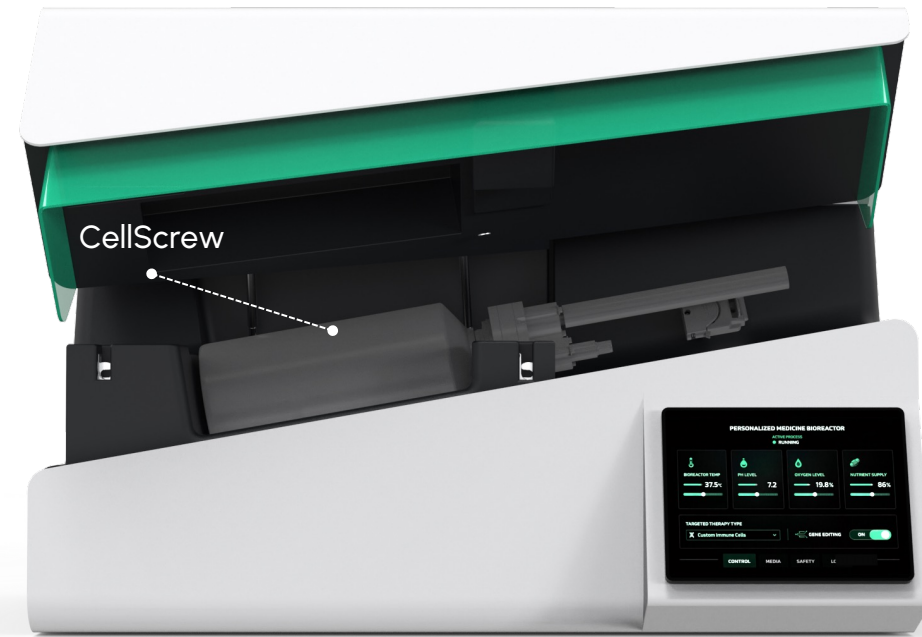
Our automated solution: Archimedes One®

The Dynamic Adherent Bioreactor

It's adherent bioprocessing, finally made simple.



combining the **CellScrew®** geometry with rotation, integrated sensors, and automated harvesting

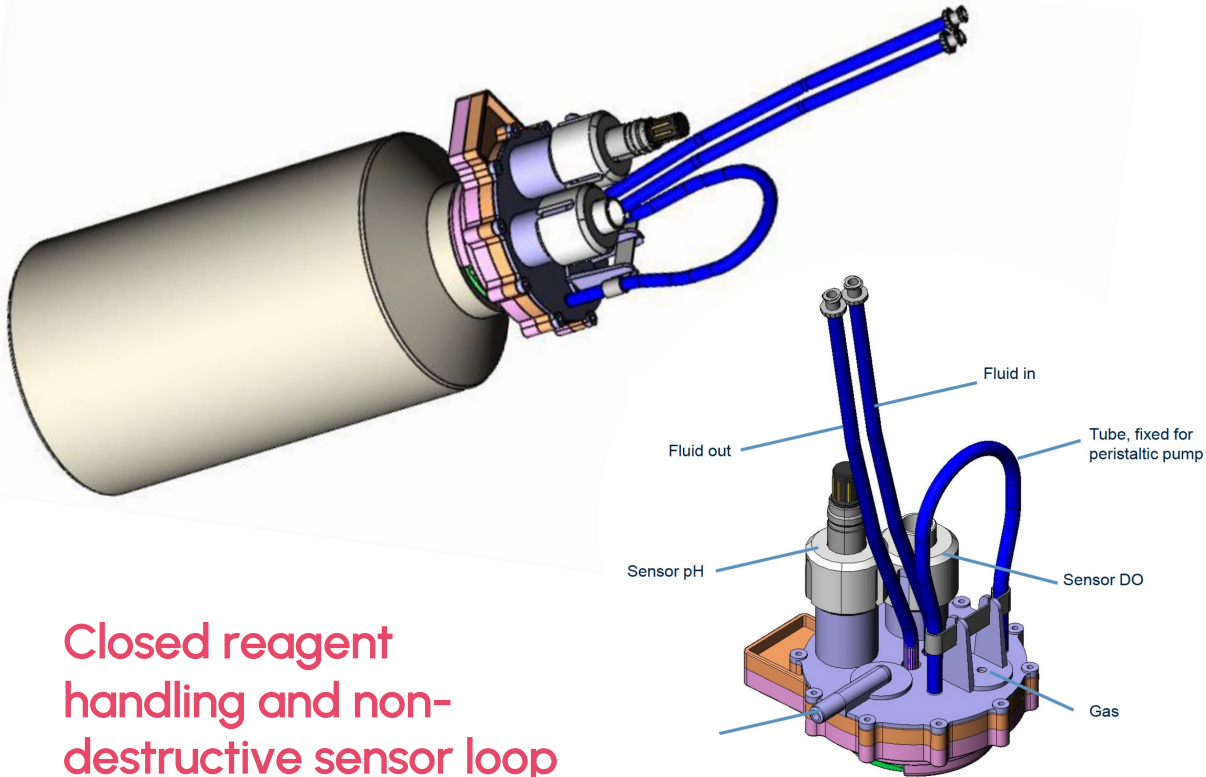


controlled, perfusion-mode adherent culture without conditioning vessels, complex subsystems or changing cell biology



Key features

Keep adherent biology. Remove manual work. Add real bioprocess control.

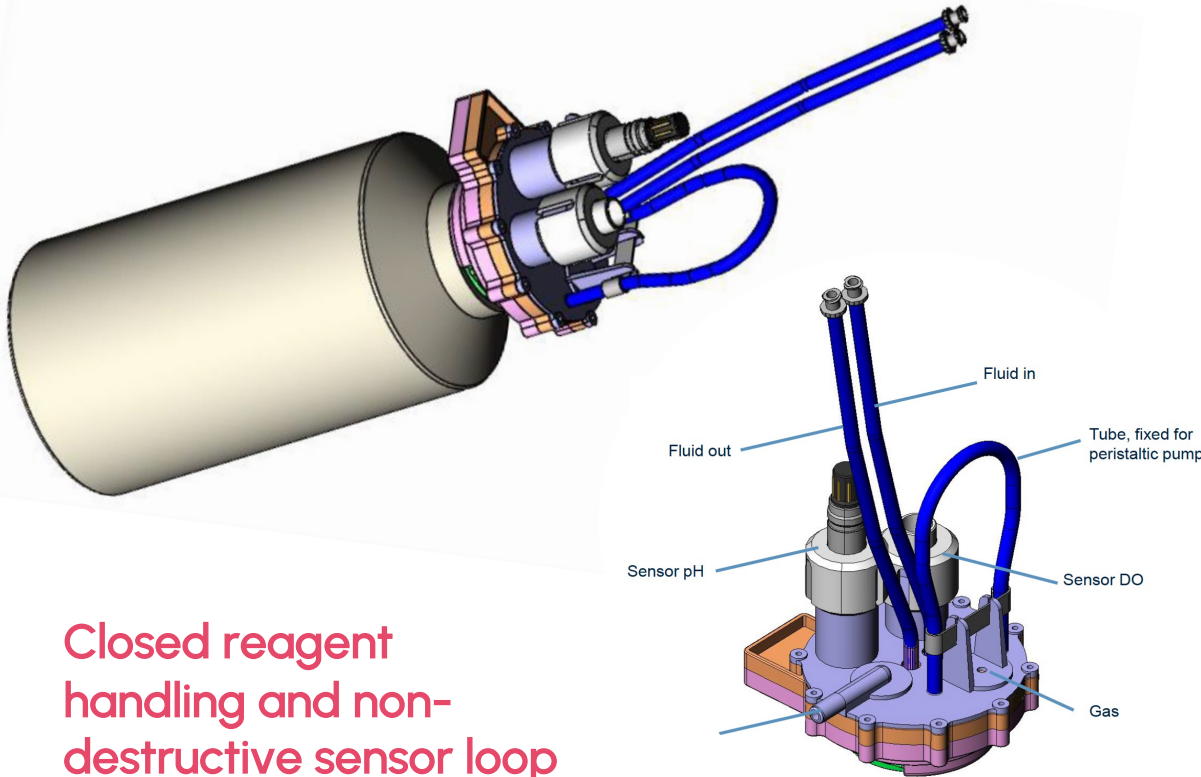


Closed reagent
handling and non-
destructive sensor loop



Key features

Keep adherent biology. Remove manual work. Add real bioprocess control.



Closed reagent
handling and non-
destructive sensor loop

- **Behaves like a (perfusion) bioreactor** but for adherent cells
- **Full process control (pH, DO, temperature)** with any standard biocontroller
- **Pre-assembled, single-use setup** for easy installation, run and harvest, GMP-compatible
- **Large growth surface** up to 10,000 cm²
- **Lower cost** than fixed-bed bioreactors
- Current TRL-stage: 6, IP filed
- TAM: \$6.8 billion, growing to \$14.5 billion by 2030 at 16% CAGR





LOEWE

Exzellente Forschung für
Hessens Zukunft



**Early Access
Program open:**



**Thank you for your
attention!**

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