

Humimic Biosystems creates **organ-modeling platforms** that replace unreliable animal testing, giving **pharmaceutical companies** human-relevant data earlier to **cut drug development costs by \$250M** per approved drug and bring treatments to patients faster.

PROBLEM

In the pharmaceutical drug development process, 90% of drugs put into humans in clinical trials fail. Preclinical animal testing fails to accurately predict human responses, resulting in average R&D expenditures of \$2.6B per FDA-approved drug and a 10–15 year development cycle.

SOLUTION & PRODUCT PORTFOLIO

Humimic Biosystems' develops next-generation organ-on-chip (OOC) platforms that accurately model the heart, muscle, brain, and nasal airway. These devices house living human cells under physiologically-realistic conditions. By maintaining living human cells under physiologically relevant conditions, our platforms enable researchers to evaluate drug candidates earlier and more effectively, improving preclinical-to-clinical translation, accelerating FDA approval timelines by two years, and reducing development costs by \$250M per approved drug. Our patented and patent-pending products include:

Chips: Various disposable organ-model platforms



CoCo Chip™ & NICE Chip™
Heart muscle &
skeletal muscle model
US patent filed Aug 2025



MINT Chip™
Blood-brain barrier model
US patent granted Mar 2025



AirLOC™
Nasal airway model
US patent filed Aug 2023



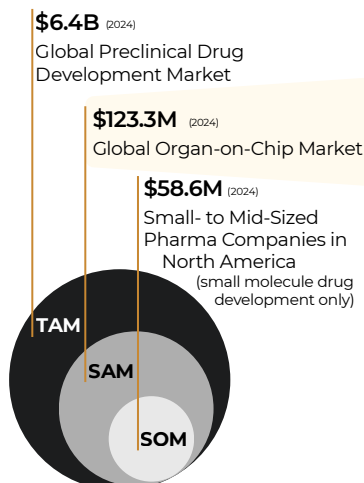
DynaMOC™
Heart valve model
US patent filed Jun 2026

Chip Readers: Reusable readers capture real-time data from the chips and give insights to “health” of the model (i.e. force measurements, electrical signals)

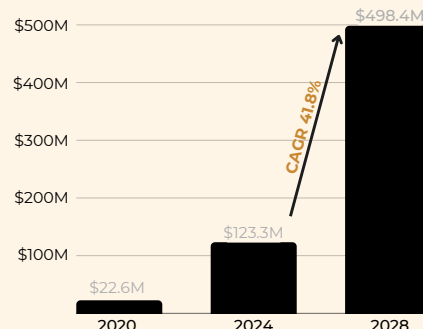


MARKET OVERVIEW

The global OOC market is \$123.3M and growing at a staggering 42% CAGR. This incredible growth is driven by new FDA regulations phasing out animal studies, decreasing number of available animals, an aging population with higher prevalence of chronic illnesses, and increased prescription drug use. We are strategically focused on small- to mid-size companies in North America, as they are budget conscious, but eager to shorten R&D cycles.



Global Organ-on-Chip Market Growth



BUSINESS MODEL

Humimic's integrated system drives recurring revenue through disposable organ model chips and captures long-term value from chip reader adoption. This suite yields attractive margins of 85%+, pointing to a clear path to profitability and long-term sustainability.

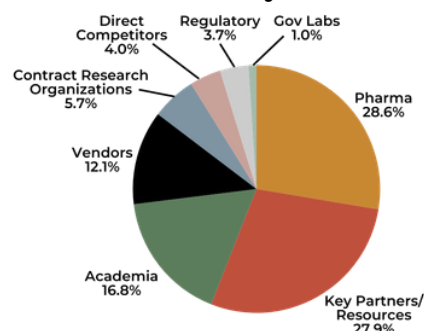
CUSTOMERS

All Humimic organ models are scientifically validated with 17 peer-reviewed publications. As of June 2026, Humimic has generated \$20k in revenue.

Our models are actively used in academic and government laboratories across the US. These labs serve as our ideal early adopters, providing validation data and publications that strengthen our market entry. We plan to scale into the pharmaceutical sector in 2027, targeting small- to mid-sized drug development companies. These customers are eager to shorten R&D cycles while maintaining budget-conscious operations. Large pharma companies require strong validation data to justify ROI, which we are actively building with early adopters.

To date, we have conducted 300+ interviews with potential customers and key stakeholders, confirming strong interest across both academic and pharma segments. Notably, Moderna, Pfizer, Bristol Myers Squibb, and Eurofins have expressed interest, and we have pending pilots for our brain, heart and nasal airway chips, contingent on internal validation.

Customer Discovery Breakdown



SALES & MARKETING STRATEGY

Our go-to-market strategy begins with academic laboratories, where adoption is driven by validation studies and peer-reviewed publications that build credibility. This early traction creates the scientific evidence base needed to expand into pharma. In addition, graduate researchers will graduate and enter industry, taking familiar technology with them. In 2027, we will transition into small- to mid-sized pharma companies. Our sales model combines direct engagement with pharma contacts, conference networking, and investor-backed introductions. Academic customers are reached through targeted scientific conferences, publications, and university partnerships. This hybrid academic-to-pharma pipeline ensures near-term sales revenue while building long-term scalability.

COMPETITIVE ENVIRONMENT

We stand out from competitors (Emulate, Mimetas, CN-Bio) through ease of integration to current workflows, lower cost, and automated data collection. Our chips are user-friendly, compatible with standard lab equipment, and priced at \$800 per chip and \$5k per reader at an 88%+ margin (in-house and outsourced production); far lower than \$1k+ per chip and \$100k+ for competitor equipment. We have conducted 300+ customer discovery interviews, confirming a strong market demand in both the academic and pharmaceutical industry.

Our true competition lies in research labs using no OOC technology at all (i.e. relying solely on animal models). We compete on clarity, data quality, and cost savings, offering more human-relevant data at a fraction of the time and cost of traditional preclinical research.

MANAGEMENT TEAM

Lexi Applequist, MS, CEO & Cofounder, is a biomedical engineer and inventor of the core technology. She holds a Graduate Certificate in Entrepreneurship, has worked for other medtech startups, and was recently recognized on the 2026 *Forbes 30 Under 30 Science* list. Her expertise includes OOC design, microfabrication techniques, and commercialization of biotechnology. **Kartik Balachandran, PhD**, CTO & Cofounder, has been an international leader in the OOC space for 20+ years. He is a bioengineer and core inventor on Humimic's technologies. **Daniel Koonce**, Head of Business Development, brings business acumen to the team with his expertise in entrepreneurship, emerging technologies, and scientific communication. Humimic's **Scientific and Business Advisory Boards** include successful leaders of biotech startups, top clinicians, a Moderna preclinical innovation lead scientist, and top national salesman for Medtronic and Pfizer.

FINANCIALS

The technology development is backed by \$4.9M+. Humimic Biosystems has received \$100K+ in non-dilutive business development funding and revenue, with an additional \$2M+ in federal grants pending. We are seeking \$1.5M through a SAFE agreement to set up manufacturing lab capabilities and begin fulfilling orders immediately. We expect to achieve profitability in 2027.