

**illumicell AI Fund 1 LLC****Next-Generation Cellular Intelligence Platform**

Classification	Regulatory Pathway	Raising Via
Class IIa	FDA 510K	SAFE

Valuation

Regulation CF (RegCF)

Currently Raised in this round

USD 50,000

of \$1,235,000.00

4.05%

100%

Time remaining

327 Days

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Offering at a Glance

- 1 Raised \$2.6M in Pre-Seed Lead: Brent Ahrens (GP at Canaan Partners); incl. Accel, Urology KOLs
- 2 Obtained clinical data validating its accuracy in quantifying key male fertility parameters
- 3 Achieved 99.6% concordance with WHO-based manual semen analysis across clinical samples spanning concentrations from 1.6M to 105M/mL, with a lower detection limit of 0.1M/mL
- 4 Installed three illumicell AI systems in the US and Switzerland
- 5 Kicked off a pilot with Baylor College of Medicine (Houston, TX)
- 6 Filed a provisional patent for the system and its future applications, focusing on immuno-oncology

Problem Proposition

The problem illumicell AI is solving is three-fold:

- 1. Diagnostic testing is centralized in a relatively small number of laboratories
- 2. These laboratories are slow, costly and dependent on specialized staff
- 3. Access is limited, creating delays and bottlenecks across the entire healthcare system

Diagnostic testing is the backbone of healthcare delivery, yet almost all of it is funneled into centralized laboratories. Whether samples come from hospitals, physician offices, pharmaceutical companies or digital health providers, they must pass through the same slow and resource-intensive infrastructure. Central labs require expensive equipment, trained technicians and long processing times, which **makes testing costly and difficult to scale**.

As healthcare volumes grow, the centralized lab model cannot keep pace, widening the gap between testing needs and testing availability.

In our first indication, male fertility, it can take up to 8 weeks from scheduling to receiving results, with costs reaching \$450 per test. Given that men and women contribute equally to conception, **these delays slow clinical decision-making, limit revenue opportunities for clinics and can meaningfully weaken patient outcomes**. In fields like immuno-oncology, understanding patient response to therapy can also take weeks and complex logistics, **costing pharmaceutical companies billions annually**.

With illumicell AI's scalable imaging module and cloud computing capabilities, diagnostic testing can be decentralized and brought to the point of care – empowering clinicians to make earlier decisions and improving patient outcomes at scale.

This decentralization makes data generation and capture effortless, allowing illumicell AI to build a constantly growing, real-world dataset that was impossible to scale in the traditional lab model.

Solution

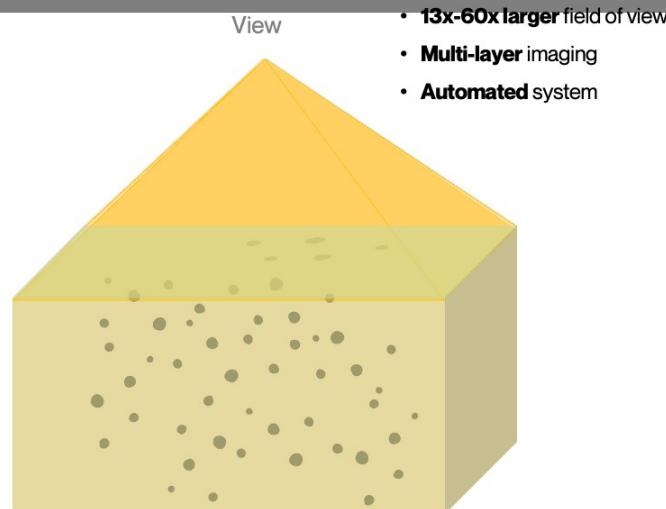
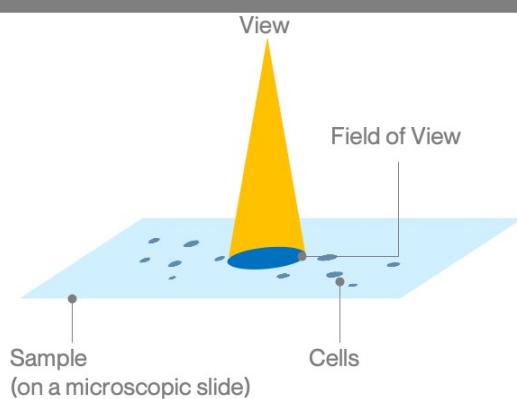
Our technology combines a novel imaging scanner with advanced Machine Learning algorithms to deliver a highly accurate, scalable and easy-to-use diagnostic tool with superior data precision and adaptability.

- **Point-of-care diagnostics:** A proprietary, lens-free Cell Scanner integrated with advanced AI algorithms delivers diagnostics where it matters most— at the clinic, not in centralized labs.
- **Automated and reliable:** The system eliminates human subjectivity, providing real-time, automated analysis with consistently high accuracy across diverse patient samples.
- **Superior visualization:** With a 13x-60x larger field of view and 3D imaging, the platform captures more data in a single pass than traditional microscopes, dramatically improving diagnostic precision.
- **No specialized staffing required:** The device requires no calibration, no specially trained technicians, freeing up clinical resources and lowering operational costs.

While our first indication is semen analysis, illumicell AI's technology is applicable to most fluids (incl. water), and has been validated on urine and blood, opening access to much broader clinical markets and future growth opportunities.



Your Account



- **13x-60x larger field of view**
- **Multi-layer imaging**
- **Automated system**

Competition

The primary competition for illumicell AI is not another device but the **status quo**. Manual semen analysis remains the global standard of care, even though it is slow, labor-intensive, and prone to significant error. Clinicians and labs have accepted its shortcomings for decades, which means the biggest hurdle is changing minds and resetting expectations about what semen analysis should deliver.

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Items – Expensive, complex, anilled operators, these tools are largely confined to specialized fertility centers.

- **Emerging digital platforms** – Built on narrow datasets, often focusing only on healthy patients, which limits their clinical relevance and reliability.

illumicell AI stands apart by combining **advanced imaging with adaptive AI**, creating a solution that not only matches but improves upon the gold standard. Each test analyzed feeds back into the system, sharpening performance and building a growing competitive moat.

Beyond outperforming current methods, the real opportunity lies in redefining the field. illumicell AI introduces a faster, more accurate, and more accessible alternative—transforming semen analysis from a cumbersome lab procedure into a streamlined, point-of-care test that clinicians can trust and patients can benefit from immediately.

Team



Michel Bielecki

Co-founder, CEO

Michel is a University of Zurich– and Harvard-trained physician with a background in public health and clinical research. During the the pandemic, he led nationwide COVID-19 testing for the Swiss Armed Forces while working as a postdoctoral clinical researcher at University Hospital Zurich and publishing in leading clinical journals, including *The Lancet Infectious Diseases*. He was commissioned as Chief Medical Officer for the NATO in the Balkans and co-founded a telemedical diagnostics company that scaled across multiple European countries.



Jeyla Sadikova

Co-founder, CCO

Prior to co-founding illumicell AI, Jeyla worked at BP and McKinsey & Company, advising multinational energy companies, governments and financial institutions on economic strategy, digital transformation and operational efficiency. She previously co-founded a telemedical services startup in Switzerland, scaling it across three European countries. Jeyla holds an honours degree from Imperial College London.

The Team: combining diverse experience & clinical execution



Michel Bielecki, MD MPH

Co-founder, CEO



Jeyla Sadikova

Co-founder, CCO



Loup Cordey

Co-founder



Robert Brik

Head of Product



6 years in
AI x Medicine

Led AI
departments at
top global medical
institutions

Javier Barranco, PhD

Chief AI Officer



Anna Kuzmina, PhD

Head of R&D



Austin Lee, MD

Head of Clinical Integration



Mahmoud Mostafa, PhD

Head of Lab Operations



Product

illumicell AI platform combines proprietary imaging, machine learning and a scalable business model into a single diagnostic solution:

- **Cell Scanner:** A portable, lens-free imaging device with 1.1 μm resolution and no moving parts. Compact and cost-effective, it is designed for easy use in a wide range of clinical settings.
- **AI Algorithms:** Trained on large, real life, diverse datasets, the algorithms deliver accurate measurement of sperm concentration, motility and morphology, eliminating subjectivity and improving consistency for the first indication.
- **Software Subscription Model:** The platform generates revenue through hardware sales bundled with a subscription-based software service, offering recurring income streams and strong gross margins.

While our first indication is semen analysis, illumicell AI's technology is applicable to most fluids (incl. water), and has been validated on urine and blood, opening access to much broader clinical markets and future growth opportunities.

Combining two proprietary technologies



Cell Scanner

Patent filed

- Proprietary digital visualization tech
- 13x-60x larger field of view
- Captures 3D information



Machine Learning algorithms

Patent filed

- Analyzes cellular morphology
- Analyzes cell movement, interactions and activation
- Preserves contextual data

50X
FASTER

20X
CHEAPER

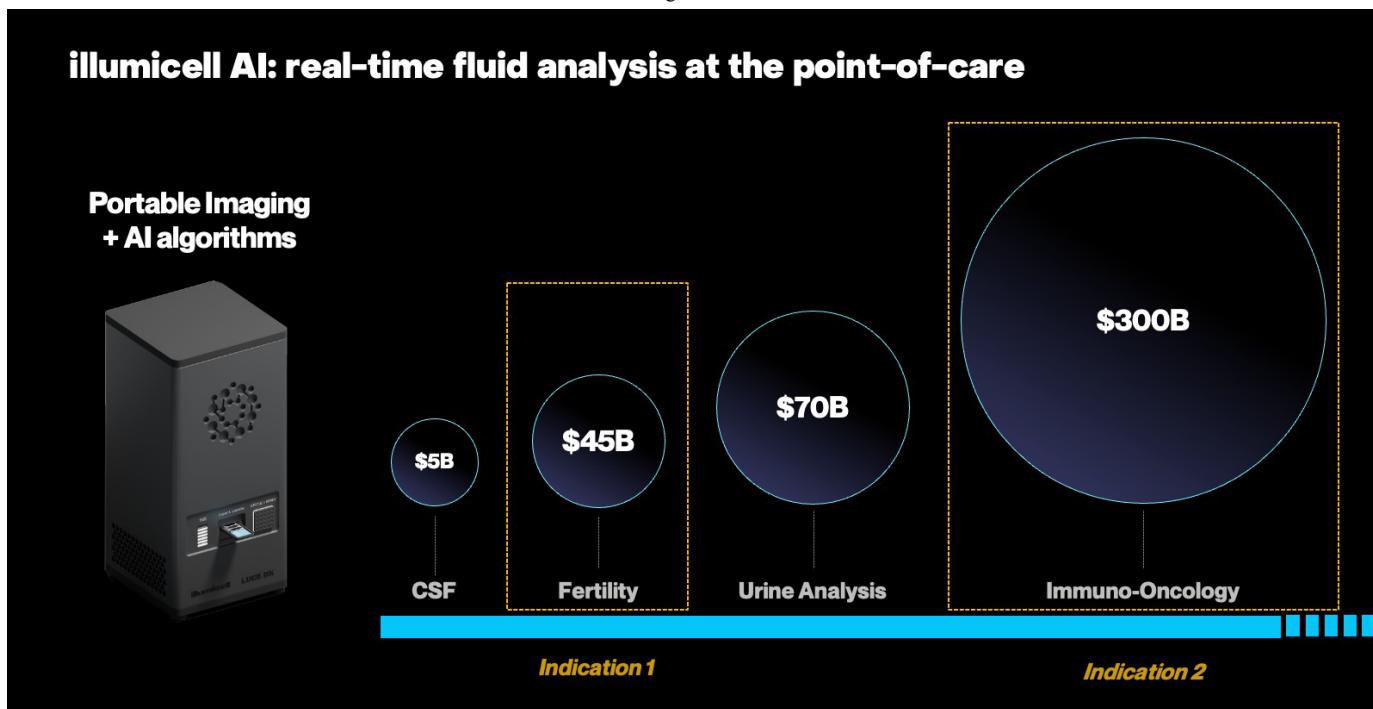
400X
MORE SCALABLE

Market

The fertility market represents the first and most immediate opportunity for illumicell AI. Male infertility remains one of the largest unmet needs in reproductive health, with current diagnostics failing to keep pace with rising global demand. By delivering a rapid, accurate, and cost-effective semen analysis at the point of care, illumicell AI positions itself at the center of a multi-billion-dollar market that is primed for disruption.

- **Fertility Clinics:** A global fertility market valued at approximately \$45 billion, growing at a 13% CAGR. Clinics represent the front line of adoption, with strong demand for faster, more reliable diagnostics.
- **Urology:** With 14,000 urologists in the U.S. alone, high-frequency practices represent an estimated \$360 million annual opportunity.
- **OB-GYN:** The 57,000 OB-GYN and reproductive endocrinology practices in the U.S. account for roughly \$440 million in addressable market potential.
- **Primary Care:** Over 150,000 primary care physicians expand access more than 400-fold beyond fertility centers, driving significant downstream market growth.

Overall, illumicell AI is tapping into a multi-billion-dollar diagnostic opportunity, supported by favorable reimbursement dynamics and strong out-of-pocket willingness from patients seeking faster answers and better outcomes.



Advisors/KOLS

illumicell AI is guided by an extensive network of clinical experts, scientific innovators, seasoned business leaders and investors worldwide.

Clinical Leadership: The company is supported by leading voices in reproductive medicine, urology and pharma, including advisors affiliated with Harvard, Stanford, Boston IVF and CUHK. These include respected clinical key opinion leaders such as Dr. Dean Elterman and Dr. Jeremy Teoh who bring decades of hands-on experience in diagnosing and treating infertility.

Engineering & AI Expertise: Advisors from ETH Zurich, Imperial College, MIT and other leading institutions contribute cutting-edge knowledge in engineering and artificial intelligence.

Business & Investor Network: The advisory team also includes proven investors and strategic partners who have scaled life science companies from early stage to successful exits. Notable support comes from Brent Ahrens, General Partner at Canaan Partners and Daniel Hawkins, a serial medtech entrepreneur.

Pharmaceuticals: Former leaders at top Pharma companies (Novartis, J&J, Merck) guide illumicell AI's future product development and commercial pipeline, specifically in immuno-oncology application.

Military & Dual Use: Lt. Col. Swenson, a recipient of the Medal of Honor, is illumicell AI's independent board member. His experience provides a unique strategic advantage in navigating government partnerships and dual-use pathways through agencies such as the Department of Defense (DoD) and DARPA.

Together, this network delivers a powerful combination of scientific **credibility, regulatory insight and commercial traction**. Their confidence in illumicell AI is further reinforced by more than 30 letters of intent from prospective customers around the world, validating both the clinical need and the market demand for

the platform.

Advisory: experts in Fertility, Pharma, Commercial, IP & Military

Clinical



Dr. Denis Vaughan
Terra Fertility,
Boston IVF



Prof. Carmen Messerlian
Harvard Chan



Prof. Michael Eisenberg
Stanford Medicine

Pharma



Joseph Lehar
ex-Merck, Novartis & Google

Business, IP, Regulatory



David Schodin



Brian Rogers



Daniel Hawkins

Military & Veteran Affairs



Lt. Col. William Swenson
US Military,
Medal of Honor Recipient



HARVARD
MEDICAL SCHOOL



Mass General Brigham



**Beth Israel
Lahey Health**



BOSTON IVF



**Stanford
MEDICINE**



**HARVARD
T.H. CHAN**



ETH ZÜRICH



**Imperial College
London**



NOVARTIS



Google



MERCK



PathAI



Abbott



**Johnson
& Johnson**



U.S. ARMY

Backed by future customers & experienced life science investors

Urologist KOLs and notable life science investors participated in our Pre-seed round



Canaan
PARTNERS

Brent Ahrens

GP, West Coast at Canaan Partners
(since 1999)

Brent leads investments in an array of healthcare companies, with a focus on biopharma and medtech. Prior to joining Canaan, Brent worked in both commercial and technical roles at General Surgical Innovations, Ethicon Endo-Surgery (J&J), and IAP Research. He also has several surgical instrument patents to his credit.



Dr. Jeremy Teoh

Distinguished urologist based in Hong Kong, currently serving as the Assistant Dean (External Affairs) and an Associate Professor in the Faculty of Medicine at The Chinese University of Hong Kong (CUHK).

He has secured research grants totalling \$10M+ and has authored 400+ articles in peer-reviewed journals, including *Nature Reviews Urology*, *European Urology*, *Journal of Urology*, and *Annals of Surgery*.



Dr. Dean Elterman

Academic urologist based in Toronto, Canada, specializing in functional urology. He serves as an Associate Professor in the Division of Urology, Department of Surgery, at the University of Toronto, and practices at the University Health Network.

He is recognized for offering state-of-the-art treatments, such as sacral neuromodulation (bladder and bowel pacemakers) and techniques for prostate enlargement.

Use of Funds

Use of Proceeds Summary

The Company intends to use the net proceeds from this Offering primarily to advance regulatory and clinical validation, complete product development, and support ongoing operations and commercialization activities.

- **Regulatory and Clinical Validation (30%)**

The largest portion of proceeds will be allocated to regulatory preparation, clinical validation, and related activities necessary to support approvals and market entry.

- **Product Development and Engineering (25%)**

Funds will be used to further develop and refine the product, including engineering work, testing, and technical improvements.

- **Personnel and Operations (20%)**

Proceeds will support key personnel costs and day-to-day operational expenses required to execute the Company's business plan.

- **Marketing and Commercial Readiness (10%)**

A portion of funds will be used to prepare for commercialization, including marketing initiatives, go-to-market planning, and early commercial activities.

- **General and Administrative Expenses (10%)**

Funds will cover general corporate expenses, including legal, accounting, insurance, and administrative costs.

- **Working Capital Reserve (5%)**

A reserve will be maintained to provide financial flexibility and support general working capital needs.

FAQ

What are the key advantages of your technology? ▼

How far along are you with technology development? ▼

What have you protected in your patent? ▼

What are the clinical benefits of illumicell AI? ▼

Why is illumicell AI a game changer? ▼

What is the regulatory roadmap? ▼

What is the market potential of the opportunity [fertility application]? ▼

Who is your target customer [fertility application]? ▼

What is your primary go-to market and why [fertility application]? ▼

What is your revenue model [fertility application]? ▼

How do you know the market needs your solution [fertility application]? ▼

What is the reimbursement strategy for illumicell AI's first indication [fertility application]? ▼

What is the next application of illumicell AI's technology? ▼

Do you have evidence that your technology can work in immuno-oncology? ▼

What does illumicell AI do? ▼

What problem is illumicell AI addressing? ▼



**Supporting Clinicians to fund
MedTech Innovation**

Important Message

IN MAKING AN INVESTMENT DECISION, INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF THE ISSUER AND THE TERMS OF THE OFFERING, INCLUDING THE MERITS AND RISKS INVOLVED. INVESTMENTS ON MEDTECH SYNDICATES ARE SPECULATIVE, ILLIQUID, AND INVOLVE A HIGH DEGREE OF RISK, INCLUDING THE POSSIBLE LOSS OF YOUR ENTIRE INVESTMENT.

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