



Company Name

Delee

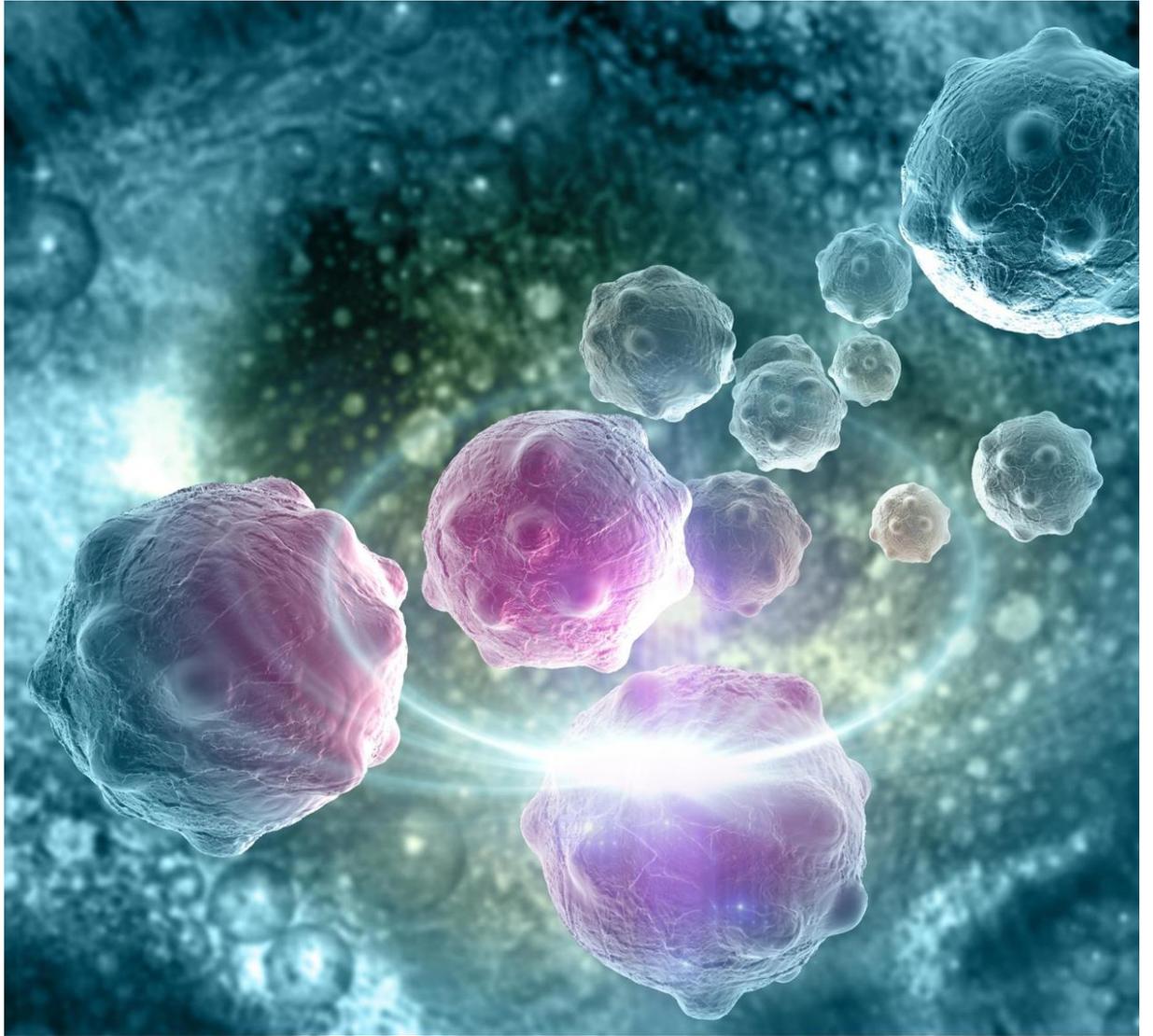
Logo



Headline

A blood testing device for early diagnosis of cancer and treatment monitoring

Cover photo



**Hero
Image****Tags**

Female Founders, Science, Tech, Health

**Pitch
text****Summary**

- A blood testing device that isolates and analyzes circulating tumor cells
- Aids to early diagnose cancer and to monitor the therapies effectiveness
- Y Combinator company that has raised over \$1.3 million USD in funding
- Presales with a value of \$1.4 million USD
- By 2023 this market will reach a valuation of 28.3 billion USD
- Delee has a fully functional precommercial technology
- The technology is being successfully tested for prostate cancer

Problem




1 in 5 men & 1 in 6 women
will develop cancer

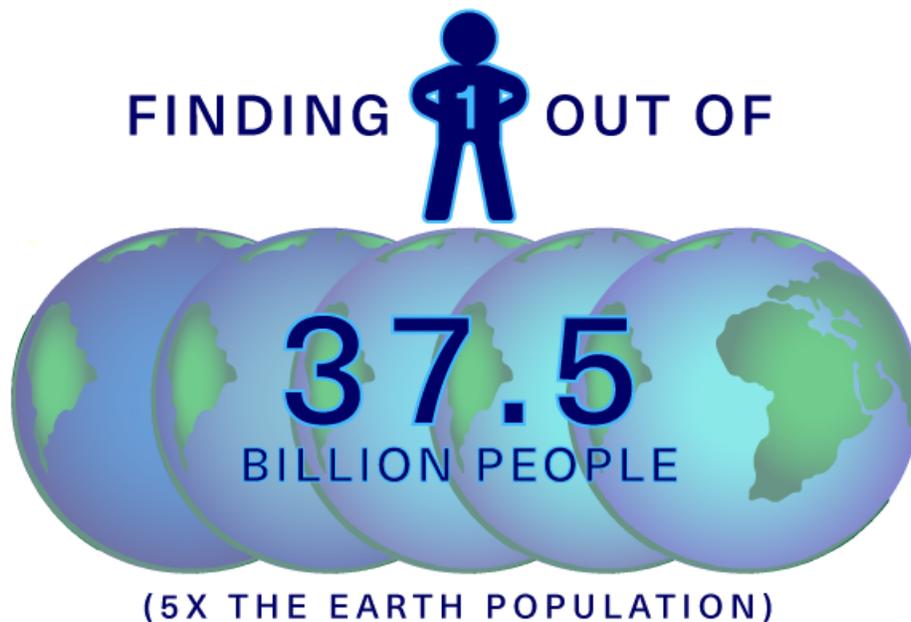
According to the WHO, in 2018, the global cancer burden increased to 18.1 million cases, causing 9.6 million deaths. Despite the many advances in the matter of treatment, it is estimated that **in 2040, cancer cases will increase to 29.5 million, and approximately 16.3 million will die because of it.** One of the main reasons causing such a high mortality rate is due to the current lack of clinical tests with sufficient sensitivity and specificity to **enable a timely diagnosis** of this disease. In addition, the **scarcity of technological resources to provide effective monitoring of the treatments applied, significantly reduces the patients' chances of survival.** The isolation of circulating tumor cells from the blood is a novel alternative to address these issues.

Finding the needle in the hay stack

For most types of cancer, when a person develops a tumor, even if it hasn't spread, it releases malignant cells into the bloodstream, known as circulating tumor cells, which play a key role in establishing metastasis in other organs.



In the past few years, it has been demonstrated that **CTCs can be isolated from** facilitating their enumeration and analysis. **This could enable early cancer diagnosis and allow the proper monitoring of the therapies' effectiveness when being administered to the patient.** However, the isolation of these malignant cells from represents a major technological challenge due to their rareness. You can find ~ billion cells in 7 ml of blood but, in a cancer patient, only 1 to 50 of those would cells; this is equivalent to identifying just a couple of people within the population of Earths.



Even though there are cell sorting methods such as flow cytometry, density gradient centrifugation, among others, **they do not have sufficient sensitivity and specificity to isolate CTCs.** To be able to detect these rare cells, **current methods would have to be ~100X more sensitive.**

Solution

CytoCatch: detecting circulating tumor cells

At Delee we have created the CytoCatch™, a device that with a simple blood starts a rapid process to **successfully isolate circulating tumor cells**.

Unlike other tests, **CytoCatch™** possesses the required sensitivity and spec analyze the CTCs genetic features, as well as predictive and therapeutic marker expressed on them. **Facilitating the early detection of cancer and enabling personalization and optimization of each patient's treatment**. Because of th patients and their families will be able to save time, reduce costs, prevent side e inefficient therapies, and more importantly, **increasing their odds of defeating**

CytoCatch™ has the sensitivity to detect **1 tumor cell out of 37.5 billion blood c**

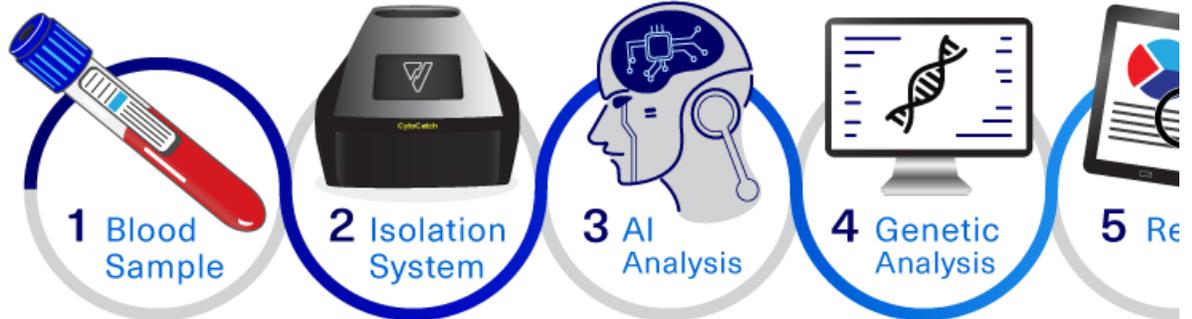


Product

Able to diagnose and monitor treatment

Once blood samples have been previously extracted by conventional methods, **CytoCatch™ isolates the CTCs and automatically performs the necessary procedures to stain the captured cells with fluorescent antibodies**, in order to discriminate the tumor ones from the other cellular components of the blood. **Later, an integrated imaging system, which possesses artificial intelligence algorithms, analyzes the malignant cells**, based on their morphology and the expression of specific antigens.

Our device is capable to individually collect tumor cells by implementing micromanipulation techniques, **enabling to perform molecular analysis and determine the genetic characteristics of the CTCs**. Finally, a report with the results will be generated for the physician.



Clinical applications

The **CytoCatch™** has the specificity and sensibility required to successfully **isolate and analyze circulating tumor cells from blood**, deriving on the following clinical applications:

EARLY DETECTION

CTCs have the potential to be used as a biomarker for prognosis and early cancer detection.

THERAPY MONITORING

Measuring CTCs levels in patients and monitoring changes over time is associated with the effectiveness of the administered therapies.

PERSONALIZED MEDICINE

The analysis of CTCs can enable the continuous assessment of mutations that cause therapeutic susceptibility or resistance to specific targeted therapies.



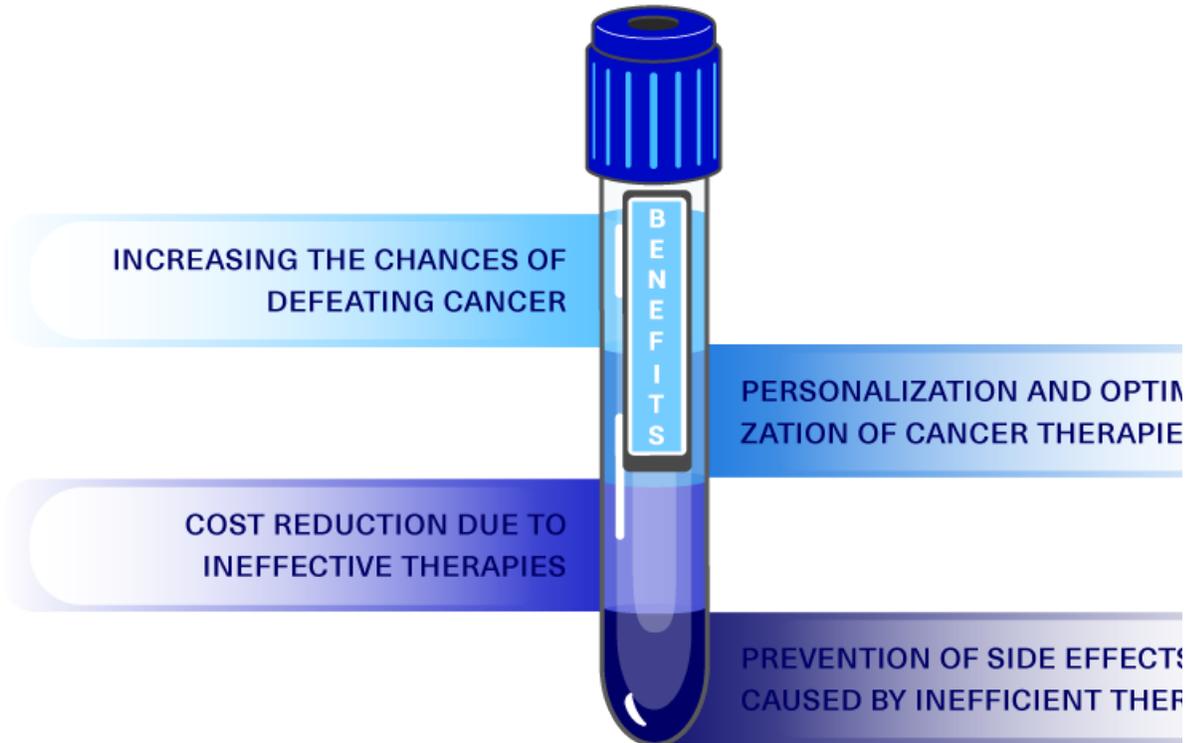
providing physicians with paramount information
optimizing cancer treatments.

PREDICT DISEASE EVOLUTION

CTCs can be used as a prognostic indicator of disease progression
overall survival in patients.

Benefits

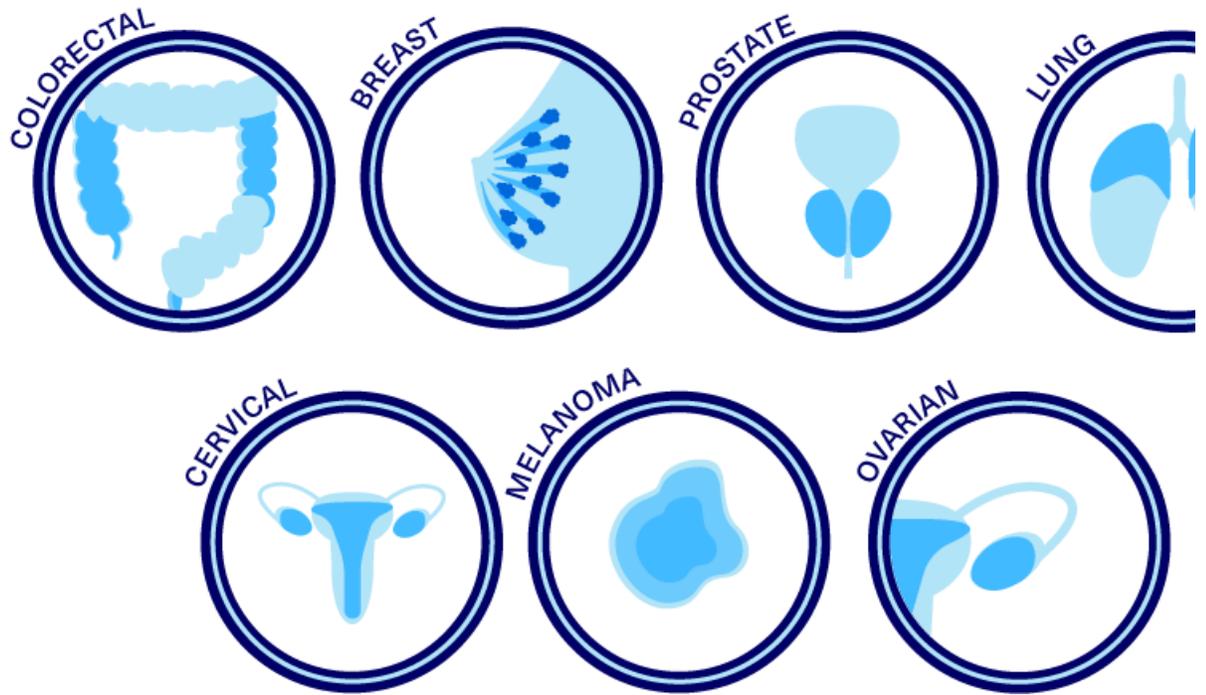
The early detection of cancer and the personalization of treatments for each patient can be translated into invaluable benefits for them and their families; the most important and the main reason for our work is to **increase their chances of defeating cancer and saving their lives**. Monitoring the effectiveness of cancer therapies could also **reduce the overall investment cost and the negative side effects** caused by drugs that do not be effective.



For what types of cancer?

There is clinical evidence that supports CTCs as a powerful biomarker that can early detect cancer and to monitor the effectiveness of the therapies that are being administered to patients with cancer, such as **prostate, breast, colorectal, lung, cervical, melanoma, ovarian, among others**. From the types mentioned above, four, alone, are responsible for more than a third of the defuncions occasioned

disease.

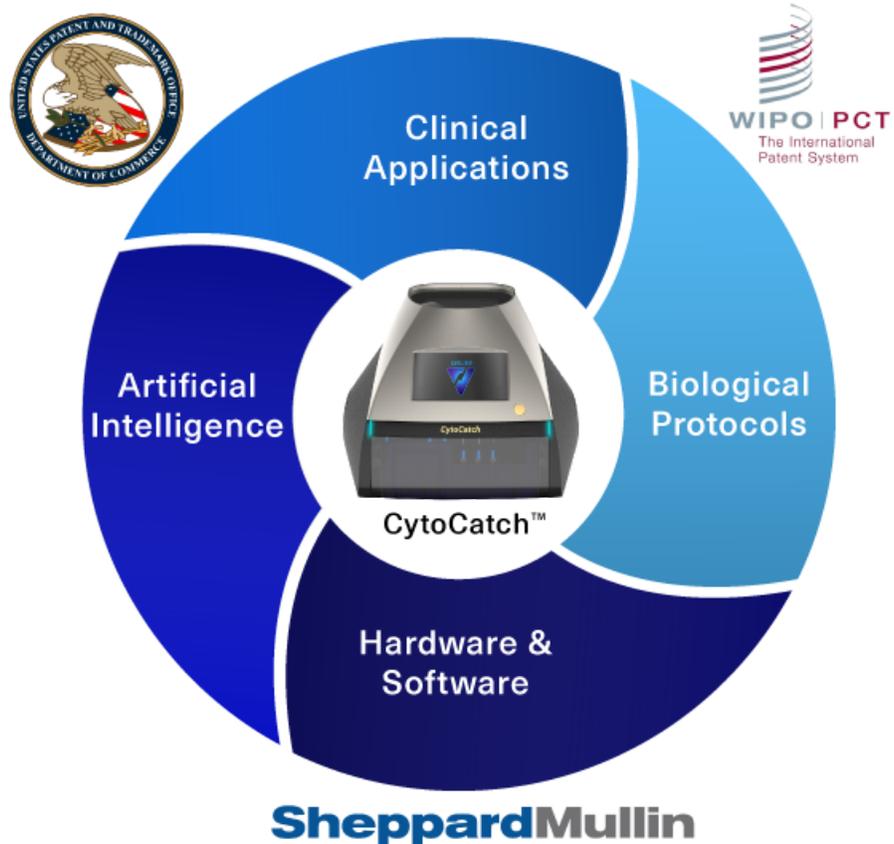


Traction

Presales with a value of **\$1.4 million US**

We've gotten great traction since our pre-commercial launch of the CytoCatch™. To date, **presales with a value of \$1.4 million USD** in potential revenue **have been secured from research centers of various hospitals, to use our technology for FDA clearance.** In addition, we've received attention from major research institutions and industry partners, including Harvard University, Stanford University, TEC de Monterrey, and UANL, among others.

Delee has partnered with Sheppard Mullin, one of the top multinational intellectual property firms, to develop a strong IP strategy that strengthens our business globally. **We've submitted both an international patent application PCT and provisional patent applications that encompass hardware, software, biological protocols, and data analysis methods.**



SheppardMullin

Our work has been published in top peer-reviewed journals, and has been presented in various international conferences. Recently, our research was recognized by the Fundació Puigvert, a highly renowned international institution in the United Kingdom, as the best clinical work presented at the congress of the American Confederation of Microbiology and Immunology.

as the best clinical work presented at the congress of the American Urological Association. This validates the interest of the medical community in our technology.

Customers

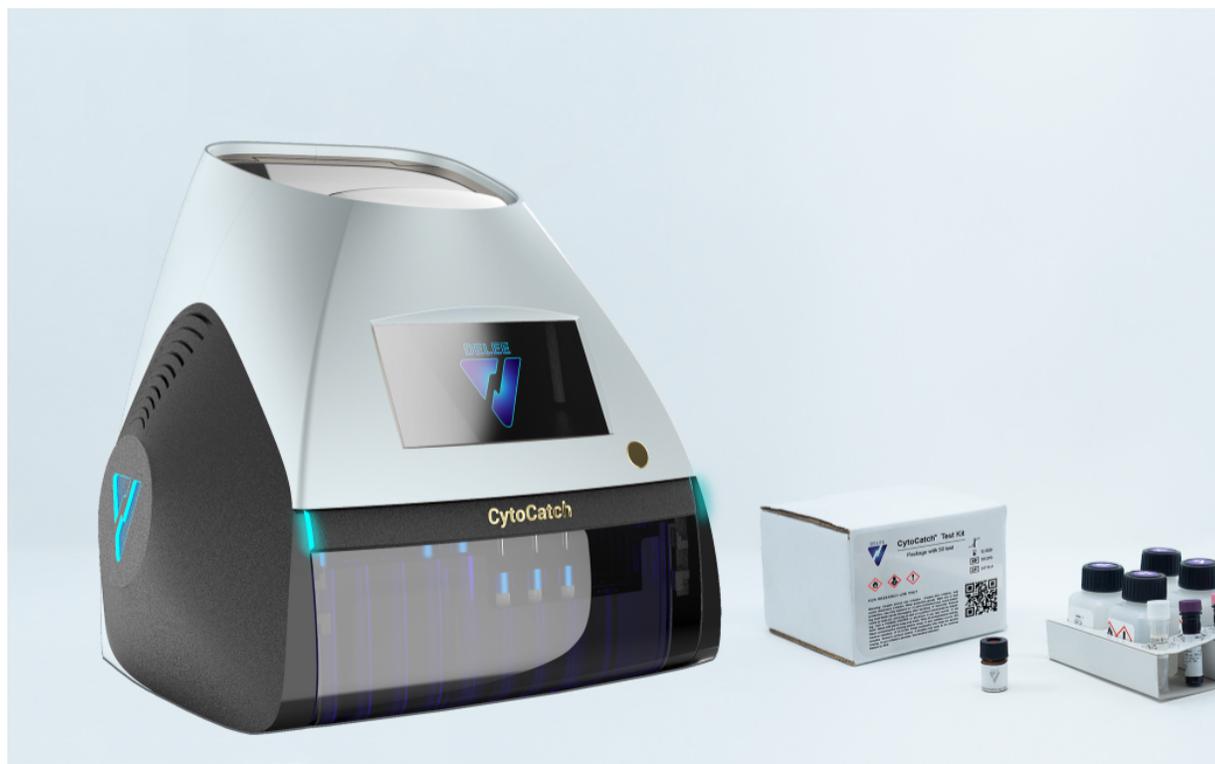
A tool for researchers and pharma

Prior to FDA clearance, Delee plans to commercialize the CytoCatch™ as a research tool; being **pharmaceutical companies and research centers** our main customers. Once the technology obtains the FDA approval, it can be commercialized, as a diagnostic medical device, to **hospitals and laboratories**.

Business Model

Recurring revenue through consumable and reagent sales

Prior to FDA clearance, **the razor and blades business model** will be followed, obtaining recurrent revenue by selling reagents and consumables to perform each test. This model will be maintained after obtaining FDA approval for the commercialization of our technology.

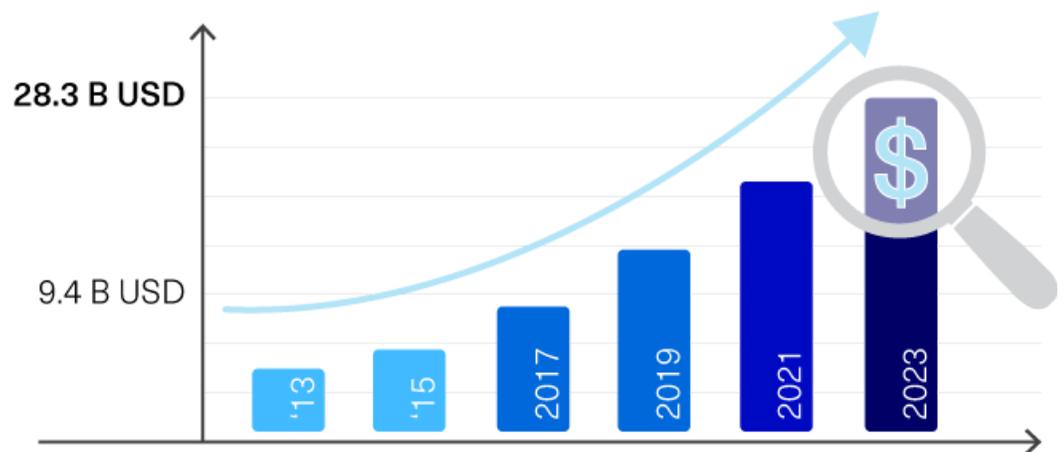


Market

A \$28.3B market by 2023

According to the report published by Market Research Future, in 2017, **the global market for circulating tumor cells** was valued at 9.39 billion USD, and it is estimated that by the end of 2023 it **will reach a valuation of 28.3 billion USD**. The increase in market valuation will be driven by the increment of the number of new cases and the expected growth rate over time.

At Delee we are aiming to initially validate the CytoCatch™ in **prostate and breast cancer** and to further expand the validation to other types, such as **lung and colorectal cancer**. Because **these four types of cancer are responsible for 40% of the new cancer cases worldwide**, triggering the deaths of 3.6 million people a year.



The circulating tumor cells market will reach a valuation of **28.3 billion USD** by the end of 2023.

Competition

The more effective way to capture CTCs

Most tests employed as auxiliaries for cancer diagnosis and therapies' monitoring measure tumor marker levels in blood, typically proteins like PSA, CA 125, and AFP for prostate, ovarian, and liver cancer, respectively. Nevertheless, those tests lack sensitivity and specificity, leading to an elevated number of false positive and negative results.

The isolation and analysis of CTCs is a relatively new practice, and physicians are starting to recognize all its potential benefits. Most CTCs technologies, including the CytoCatch System, which is considered the gold standard, rely on the existence of specific proteins on the cell membrane to capture CTCs. However, cancer cells are incredibly heterogeneous; when entering the bloodstream, they undergo a process in which the proteins used to capture CTCs are downregulated, limiting the capture of tumor subpopulations with diminished expression of these specific proteins, thereby losing valuable information. **Our technology changes the norm by isolating CTCs irrespective of the level of proteins expressed in their membranes, allowing us to capture cells that other technologies can't.**

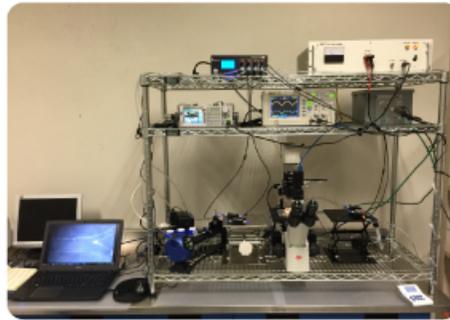
Vision

Launching the CytoCatch in 2020

What's been done



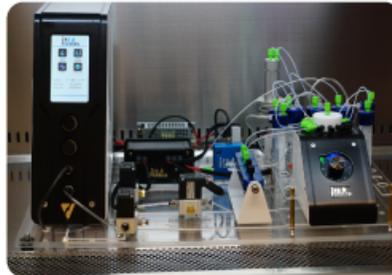
Q1 Development of an early-stage proto-
type of the **CytoCatch™**



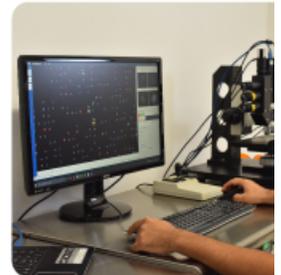
Q4 \$1.3 million USD raised in s
funding



Q3 Development of a fully automated
prototype of the **CytoCatch™**



Q4 Implementation of AI algori
automatically enumerate th
cells captured from a blood



Q1 Assessment of the **CytoCatch™** pro-
totype performance in a laboratory
setting



Q3 Preliminary clinical validatio
CytoCatch™ prototype with
samples from prostate canc



Q4 Meeting with a consulting firm to es-
tablish a clear pathway and strategy
looking for FDA clearance

What will be done



Q3 Finishing the commercial version of
the **CytoCatch™** device

Q4 Commercial launch of the C
device as a research tool





Investors

Delee is a Y-Combinator company

Delee has secured over **\$1.3 million USD** in funding from Wall Street, Silicon Valley, and healthcare investors.

Founders



Liza Vela

Chief Executive Officer



Co-Founder, and acting Chief Executive Officer (CEO) at Delee Corp. Vela is a Y Combinator alumna, and received a Bachelor of International Business degree, *sua* laude, from the Tecnológico de Monterrey. Throughout her career she has raised over 10 million USD through investments, government funds and multiple awards. At Delee Corp. she has been responsible for the development and execution of the company's strategy while leading a multidisciplinary team that has created a technology successful in treating patients with prostate cancer, for the isolation and analysis of Circulating Tumor Cells (CTCs) presales that exceed \$1.4 million USD. Additionally, she has enabled the establishment of strong relations with top hospitals and research centers. Vela's outstanding achievements have been highly regarded by international institutions such as Cartier Women's Initiative Awards and WeXchange (from the Inter-American Development Bank). In October 2019 she was acknowledged as one of the 50 most relevant people who are transforming Mexico, and was invited as a speaker on various international panels about entrepreneurship such as WeXchange 2019 and The Economist: War on Cancer 2019. She also led and supervised the development of the Zen Fluidics™ scientific group of products that enables researchers to develop their own microfluidic ap



Juan Felipe Yee

Chief Operating Officer



Co-Founder, and acting Chief Operating Officer (COO) at Delee Corp., where he actively participates in the development and execution of the company's strategy. Yee is a Y Combinator alumnus, and completed his B.Sc. in Biomedical Engineering and M.Sc. in Electronic Engineering at the Tecnológico de Monterrey. He has spent the last decade working and collaborating in the development of various medical devices and biosensors such as a high intensity phototherapy LED source to treat hyperbilirubinemic newborns, substrates made from carbon nanofiber mats coated with gold nanoparticles for the detection of specific molecules in simple solutions by SERS spectroscopy, and microfluidic devices for cell isolation based on antigen-antibody interactions, ion trapping, and dielectrophoresis. Yee has collaborated with the Biomedical Engineering Department at Tecnológico de Monterrey in projects related to biomaterial and tissue engineering, and the development of organ-on-chip systems. He is a co-creator of the CytoCatch™, a device that isolates and analyzes circulating tumor cells from blood samples, and the Zerobio scientific line, which targets the microfluidics market.



Alejandro Abarca

Chief Technology Officer



Co-Founder, and acting Chief Technology Officer (CTO) at Delee Corp., is responsible for the design and execution of Delee's strategic plans regarding product development. Abarca is a Physicist, and a Y Combinator, Singularity University, and a Royal Academy of Engineering LIF alumnus. He has over ten years of experience in developing and producing medical devices and biosensors such as a microfluidic device for the isolation of rare cell subpopulations based on dielectrophoretic separation, and manufacturing methods for embedding metal electrodes onto thermoplastic microfluidic applications, and an automated imaging system based on fluorescence microscopy to study cellular properties. Abarca also has collaborated in projects related to bioprocesses and point-of-care applications with various research groups at Tecnológico de Monterrey. His areas of expertise include microfabrication, manufacturing techniques for mass production, optics, and cell separation based on physical properties. He is a co-creator of Fluidics™ scientific line and the CytoCatch™ system, a device that isolates and analyzes circulating tumor cells from blood samples for the early diagnosis and monitoring of the efficiency of cancer therapies.

Directors



Joost Le

PHILIPS
Healthcare

STANFORD
BUSINESS GRADUATE
SCHOOL OF



Over 20 years experience in successfully driving top and bottom line growth for and professional business in and across multiple geographies. He served as Senior Global Head of Commerce responsible for Global Sales and Marketing for the Imaging Business of Phillips Healthcare. Prior to that, Joost had occupied several positions in the Phillips Organization, including Senior VP and CEO of Philips in Central and Eastern Europe, Senior VP and General Manager of Philips Lighting Senior VP, CEO and General Manager of Philips Electronics RUC in the Healthcare Consumer Lifestyle area, amongst others. He was the COCIR President, the Trade Association representing the medical imaging, health ICT, and electronics industries. Joost completed an Executive Program in Strategy and Organization at Stanford Business School and a Master in Business Economics at the University of Groningen.



Gabriel A. Ham



HARVARD
UNIVERSITY



JOHNS HOPKINS
UNIVERSITY



American financial executive, and serial entrepreneur. He founded two financial companies, a \$3 billion USD mutual fund family sold to Oppenheimer Funds in Alerian, a financial indexing company with \$15 billion USD in assets, sold in private equity consortium; both companies were wholly founder-owned. Additionally, he founded and served as the Chief Executive Officer, President and Portfolio Manager at SteelPath. Hammond is currently the CEO of Yleana Global Advisors, a multinational management firm. He is also an investor and member of the board of directors where he provides counsel to the organization, setting goals along with Delee for participating in the development of the company's strategic plans. Hammond graduated from Johns Hopkins and is currently pursuing his Ph.D. at Harvard University.

Scientific and Medical Advisory Board

Mario Moisés Alvarez

Ph.D.



HARVARD
MEDICAL SCHOOL



Massachusetts
Institute of
Technology



RUTGERS



Tecnológico
de Monterrey



Bristol-Myers
Squibb Company



Director of the Biomedical Engineering Group at Tecnológico de Monterrey. He has been a Visiting Professor at the Harvard-MIT Health Sciences and Technology Center at Harvard Medical School, and a Visiting Professor at the Microsystems Technology Laboratories (MTL) at the Massachusetts Institute of Technology. His research has been focused on the integration of bio-, micro-, and nanotechnologies into tissue, drug delivery, and biopharmaceutical engineering applications. His current academic projects are mainly focused on bioprinting, biomaterial and tissue engineering, development of organ-on-chip systems, point of care diagnostics, and biopharmaceutical engineering. Professor Alvarez completed an industrial postdoctoral stay at the Industrial and Pharmaceutical Technology at Bristol-Myers Squibb Company, USA. He holds a Ph.D. in Chemical and Biochemical Engineering from Rutgers University, a M.Sc. in Chemical and Biochemical Engineering from Rutgers University, a M.Sc. in Chemical Engineering from Tecnológico de Monterrey, and a B.Sc. in Biochemical Engineering from Tecnológico de Monterrey. Alvarez has published 85+ papers in international journals. He has been awarded with three US patents and twelve Mexican patents. Alvarez is a permanent member of the Mexican Academy of Sciences and a member of the National Research System. He has been awarded with the highest ranking for Mexican researchers (SNI Level 1).

David Mohler

M.D.

Stanford
University



Weill Cornell
Medicine

Ucla



Memorial Sloan Kettering
Cancer Center



HOSPITAL FOR
SPECIAL SURGERY



Orthopaedic Surgical Oncologist, Clinical Professor, and Chief of the Musculoskeletal Tumor Service Department of Orthopaedic Surgery and Sports Medicine from University Medical Center. Mohler received his B.Sc. from Stanford University and his M.D. from Cornell University Medical College. He completed an internship in General Surgery at UCLA, a residency in orthopedic surgery at the Hospital for Special Surgery, and a fellowship in Metabolic Bone Disease/Bone Tumor at the Memorial Sloan-Kettering Cancer Center. With over three decades of experience in the field, he has authored and co-authored more than 35 papers in peer-reviewed journals, 5 book chapters, and collaborated on various research projects. Mohler is currently a member of several prestigious associations, such as the Orthopaedic Research Society, the American Academy of Orthopaedic Surgeons, the Musculoskeletal Tumor Society, among others. He has an American Board of Orthopaedic Surgery certification and has been honored with awards like the Alpha Omega Alpha, The National Research Service Award and the Saul Halpern, MD Orthopaedic Educator Award.

Grissel Trujillo de Santiago

Ph.D.



Harvard-MIT
Health Sciences & Technology



Massachusetts
Institute of
Technology



UANL
UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN



Tecnológico
de Monterrey



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II



Professor at the School of Engineering and Sciences at Tecnológico de Monterrey, she was trained as a Chemistry & Pharmacy Biologist at Universidad Autónoma de Nuevo León (summa cum laude); she obtained her M.Sc. degree in Biotechnology (summa cum laude) from Tecnológico de Monterrey; and she received her Ph.D. degree in Biotechnology from Tecnológico de Monterrey. Dr. Trujillo de Santiago conducted research in Materials Science at the Università degli Studi di Napoli Federico II (Naples, Italy) during her Ph.D. She was a Postdoctoral Research Fellow at Dr. Khademhosseini's Lab in the Harvard Health Sciences and Technology Division for 2 years and the Microsystems Technology Laboratories at MIT, where she collaborated in several projects related to biomedical engineering, bioprinting, tissue engineering, organ-on-chip systems, and point-of-care applications. She has published 30 papers in Indexed International Journals and book chapters, has been awarded with a Mexican patent, and has more than thirty presentations in International Conferences. She was a recipient of the For Women in Science Award from the L'Oreal-UNESCO-CONACyT-AMC foundation in 2019. Her main area of research expertise is the design and fabrication of biomaterials suitable for biomedical applications such as Tissue Engineering and organs-on-chip. Dr. Trujillo de Santiago's research is currently focused on the development of novel platform-technologies to produce 3D micro- and nanostructures in fluid biopolymers.

Lauro S. Gómez

M.D., Ph.D.



Urologist and Research Director of the Department of Urology at the University of Nuevo León, “Dr. José Eleuterio González”. He has over 30 years of experience in the field of pediatric and male infertility, has authored and co-authored over 60 peer-reviewed journals, and is a reviewer of various specialized medical journals. He is the President of the School of Urologists of Nuevo León, a permanent member of the Mexican Academy of Surgery and the Mexican Society of Urology, and a member of the Urology Research System. Lauro completed his M.D. and specialty in urology at the Universidad Autónoma de Nuevo León, and received his subspecialty in pediatric urology, and microsurgery from the Puigvert e Institut Dexeus Foundation of the Autònoma University of Barcelona and Necker Hospital of the Paris University.

Team



Liza Velarde

Founder & CEO



Juan Felipe Yee

Founder & COO



Alejandro Abarca

Founder & CTO



Joost Leeflang

Director



Gabriel Hammond

Director

	Brenda Soto	Biotechnology Research Scientist
	Diana Aráiz	Biotechnology Research Scientist
	Rolando Delgado, Ph.D.	Biochemical Research Scientist
	Miguel Esparza, Ph.D.	Electronics Research Scientist
	Carlos Aguilar, Ph.D.	Artificial Intelligence Research Scientist
	Franco Chacón	Software & Firmware Engineer
	Jorge Zamora	Hardware & Electronics Engineer
	Mauricio González	Biomedical Engineer
	José Roberto Yee	Product & UI Engineer
	Karen Velarde	Marketing & Strategic Specialist
	Alitzel Trueba	Product Designer
	Marisol Abarca	Mechanical Design Engineer



Mario Moisés Alvarez, Ph.D.

Scientific Advisor



David Mohler, M.D.

Medical Advisor



Grissel Trujillo, Ph.D.

Scientific Advisor



Lauro Gómez, M.D., Ph.D.

Medical Advisor

Perks**\$500**

You'll have a special mention on our website as a distinguished investor. We'll send you 10 pictures of tumor cells captured from patients' blood.

\$1,500

All of the above Thank You letter from a patient enrolled in our clinical trial.

\$5,000

All of the above A USB personalized with the company logo and your name.

\$10,000

All of the above Be immortalized on one of our commercial units where an engraved QR include both, your name and picture.

FAQ**How do I earn a return?**

We are using Republic's Crowd SAFE security. Learn how this translates into investment here.