

Micron Biomedical, Inc.

Category:

Best Startup

Company Name:

Micron Biomedical, Inc.

Turnover and/or Funding:

Micron Biomedical has received in excess of \$40M in funding from Series A financing and grants including more than \$24M in grants from the Bill & Melinda Gates Foundation. Additional investors include J2 Venture Partners, Global Health Investment Corp (BARDA), LTS Lohmann, and GRA Venture Fund.

Micron Biomedical partners with and/or receives funding from private and public pharmaceutical and biotech companies, the Bill & Melinda Gates Foundation, the Centers for Disease Control and Prevention (CDC), BARDA, PATH and the Georgia Research Alliance.

Sub-Category:

Biotechnology

Corporate history (creation, key milestones, main funding,...)Information on Condition / Disease and need for solution / product (prevalence, existing treatments / solutions):

2016: Micron Biomedical spins out of Georgia Tech to advance a first-in-class dissolvable microarray-based, drug and vaccine delivery technology

June 27, 2017: The Lancet publishes positive data about Micron Biomedical's technology used to painlessly vaccinate against influenza

October 2, 2018: Micron Biomedical successfully completes feasibility study with top-10 pharmaceutical partner

Jan 14, 2019: Nature publishes positive data on long-acting contraception possible with Micron Biomedical's technology

June 1, 2020: Steven Damon appointed Chief Executive Officer of Micron Biomedical

July 13, 2021: Micron Biomedical initiates first-ever microarray technology clinical trial in children as young as 9 months old

July 26, 2022: Micron Biomedical presents at the White House Summit on the Future of COVID-19 Vaccines

November 28, 2022: Micron Biomedical announces Series A round of funding with \$14M

May 10, 2023: Micron extends Series A to \$17M

May 17, 2023: Micron announces positive measles and rubella vaccination results from first clinical trial of microarray technology in children

November 16, 2023: Micron receives \$23.6M from the Bill & Melinda Gates Foundation to accelerate the world's only commercial manufacturing of needle-free vaccines, setting the stage for needle-free delivery of therapeutics

February 27, 2024: Global Health pioneer, Dr. Seth Berkley, joins Micron Biomedical as Scientific Advisor the the CEO

May 1, 2024: The Lancet publishes positive Phase 1/2 data from Micron Biomedical clinical trial of needle-free vaccines in children

History of the development of the solution/product (Intellectual Property, preclinical and clinical datas, development collaborations):

Micron Biomedical has conducted phase 1 trials for influenza and phase 1/2 trials for measles and rubella with positive results, with additional trials being announced later this year. Micron's phase 1/2 measles and rubella data was recently published in the prestigious Lancet medical journal along with a comment article that describes the implications of Micron's data and recognizes Micron's technology for its potential to be \"game changing in humanitarian settings.\" The Micron Biomedical study-the first clinical trial ever to evaluate microarray technology in children-was a double-blind, double-dummy, randomized, age-de-escalation study conducted by the Medical Research Council Unit in The Gambia (MRCG). Participants included eligible 18- to 40-year old adults, 15- to 18-month old toddlers and nine- to 10-month old infants. Micron's MR microarray technology was well-tolerated and safe with a robust immune response comparable to subcutaneous injection. All local reactions were mild. There were no related serious adverse events. The results offer new hope to eradicate vaccine preventable disease and inspired philanthropic titan, the Bill & Melinda Gates Foundation, to provide a \$23.6M grant to fund mass production of Micron's needle-free

vaccines.

In low- and middle-income countries, measles remains a leading cause of death, primarily due to infrastructure-related barriers to conventional vaccine access such as refrigeration for transport and storage and ample clinicians. Micron's needle-free version of the measles-rubella vaccine based on its proprietary microarray technology reduces the need for cold chain and allows for self-administration by applying the microarray technology to the skin and pressing a button that indicates vaccine delivery. Micron has the ability to reach millions of children in need globally and has proven safety and efficacy of its measles and rubella vaccine in adults and children as young as 9 months old in sub-Saharan Africa. The company is working with governmental bodies and major pharmaceutical companies to improve global accessibility and uptake of vaccines and traditionally injected treatments for a wide range of conditions including diabetes, infertility and obesity.

Micron's technology class has been heralded as the single-highest priority innovation to eradicate vaccine preventable diseases globally by the Vaccine Innovation Prioritisation Strategy (VIPS) alliance—a consortium between the World Health Organization, GAVI, UNICEF, PATH and the Bill & Melinda Gates Foundation.

Micron's executive leadership team, advisors and scientists include the world's foremost experts on microarray technology—including the inventor of dissolvable microarray technology, Mark Prausnitz, PhD, and the immediate past CEO of GAVI, The Vaccine Alliance, Dr. Seth Berkley who was recently recognized with the 2024 Jimmy and Rosalynn Carter Humanitarian Award.

Why this drug or device is innovative, the broad implications for future research, and/or how it will improve the human condition:

Micron Biomedical's unique technology is poised to revolutionize the delivery of vaccines and therapeutics and reduce barriers to access that prevent millions of children and adults worldwide from receiving life-saving treatments. Traditionally injected vaccines and medicines rely on complex and sophisticated infrastructure that includes cold chain transport and storage, ample skilled clinicians to administer drugs and a way to dispose of medical waste. These infrastructure hurdles restrict access to medicines for those living in remote areas both globally and within the United States and other highly industrialized nations. Micron Biomedical's technology, which creates vaccines and therapeutics in dry, shelf-stable form which dissolve painlessly into the skin and can be self-administered, greatly reduces or eliminates common barriers to access.

The positive impact on the human condition cannot be overstated—this discovery can allow for routine vaccination of millions of vulnerable children globally that otherwise

lack access to conventional vaccines. The technology can also provide more convenient, affordable and efficient treatments for individuals in higher income countries to access medicines directly by mail in a self-administrable format—a boon for those living in health care deserts or for those with limited time, limited mobility or difficulty reaching a medical setting. Micron's unique technology is designed to be painlessly administered by a non-clinical caregiver or self-administered, can be administered within seconds to minutes and produces no medical or sharps waste.

Micron's dissolvable microarray technology lends itself to many different applications including childhood vaccinations, COVID-19 and flu vaccines, contraceptives, treatments for obesity, and hormone replacement. Indeed, the technology is versatile and can be used to make dissolvable versions of many traditionally injected medicines. Given the thermostability and shelf-stability of Micron's products, they make ideal candidates for national security purposes in filling national stockpiles of medicines or for use in the event of future pandemics and epidemics.

Please provide appropriate references (PubMed, Abstract, Website):

<https://www.micronbiomedical.com/news/micron-biomedical-announces-the-lancet-publication-of-positive-phase-1-2-data-from-first-clinical-trial-of-needle-free-vaccines-in-children/>

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<https://www.micronbiomedical.com/news/newsweek-spotlights-micron-technology-as-part-of-bill-gates-plan-to-change-vaccines/>

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