



[PITCH VIDEO](#) [INVESTOR PANEL](#)

INVEST IN LIFE MAGNETICS, INC.

An at-home medical testing platform funded by the National Science Foundation

LEAD INVESTOR



Moses Gonzales

In 2020, I invested in Life Magnetics, driven by my conviction that RNA and mRNA are pivotal to the future of medicine and testing. I'm now pleased to not only represent the investors in this community round but also add to my initial investment.

Kevin Hagedorn and his team are at the forefront of technology with the profound potential to transform lives. Their innovations enhance our ability to detect diseases and contaminants in both our food supply chain and the broader environment. Such precise and cost-efficient testing is paramount in safeguarding our food sources and mitigating risks for producers.

Life Magnetics' achievements thus far position them favorably for both profitability and significant growth. Beyond their current accomplishments in testing, what truly excites me is the potential evolution of RNA technology. This could usher in a new era of pharmaceuticals —drugs that remain stable at room temperature and offer controlled, gradual medication

...age that remain viable at room temperature and that, eventually, greater precision release. The implications for distributing future treatments and vaccines are vast, potentially reducing side effects and enhancing patient outcomes. While success in this domain isn't assured, the transformative potential of such technology cannot be overstated.

Ultimately, I believe Kevin and his team will make a difference.

Invested \$5,000 this round & \$204 previously

[magnetics.life](#)

Detroit MI

B2B

Biotech

Featured Investors



Moses Gonzales ✓

Syndicate Lead

Invested in [My Dead Friend Zoe](#),
[Airthium \(YC S17\)](#) and 50 others

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1 follower

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Hiighlights

- 1 RNA is the future of medicine. The mRNA COVID-19 vaccines are just the beginning
- 2 RNA sequencing will revolutionize diagnostic testing giving data sets 20x larger than DNA sequencing
- 3 Our transport solution is a quantum mechanical mechanism that's novel and vetted by top scientist
- 4 Manufacturing capacity for \$2M a year in sales built out and ready to go
- 5 Licensing deals and larger supply agreements in discussion
- 6 Development supported with over \$600k in grants from federal agencies

Our Team



Kevin Hagedorn President

Performed physics simulations establishing a theoretical basis for the product, developed a manufacturing process, and was awarded two grants from the National Science Foundation to develop a commercial prototype for the product.

I'm a materials scientist Ph. D. and was making some cool things with a laser which could not be made any other way. After discussing with a friend, he saw this as a potential application. We started working on it and it seemed to work!



Rishabh Kala Board member, CTO

Performed research on aging at the University of Michigan. Transformed the raw material and idea into a working product with excellent reviews from the local



universities. Discovered a new COVID-19 variant and set up a COVID-19 testing lab.

Pitch



Life Magnetics

The Challenge at Hand

Isolation and transport of RNA for medical testing, research, and drug delivery is historically very difficult. Compared to DNA's half life of 531 years, RNA has a half life of just 28 minutes.

COVID-19 has shown that this esoteric laboratory challenge is a huge business opportunity. Early on, we saw constant shortages of viral transport media needed to ship samples for diagnostic testing. More recently, the RNA-based vaccines are often in the news because of the challenges associated with keeping them refrigerated.





Life Magnetics

About The RNA Market

2016

• Nobel Prize, RNA Inference Research

2018

• Sequencing cell-by-cell, *Science Magazine's* breakthrough of the year, showed RNA NGS is a powerful diagnostic tool

2019

• Moderna IPO (largest ever for bioscience company)
• Alnylam Onpattro RNAi drug approved

2020

• RNA testing for COVID-19 is a national priority
• mRNA vaccines for COVID-19 have cold storage issues

2021

• COVID-19 opens the floodgates to RNA therapeutics and RNA-based drugs will be common going forward



Life Magnetics

The Problem

For the last decade RNA research has been one of the most important fields in life sciences. Soon, these discoveries will have a profound impact on human health with 80% of drugs predicted to be RNA-based drugs by 2040 and next-generation sequencing with RNA poised to be one of the most powerful diagnostic tools.

Simpler RNA isolation, storage, and transport is a critical challenge which will broadly impact how quickly these breakthroughs are brought to market.



Life Magnetics

Our Solution

The world's first carbon-based RNA extraction methods

- Allows RNA to be extracted, processed, shipped, and stored much more easily for diagnostic testing applications
- Isolates single-stranded nucleic acids with perfect yield and purity from even the most complicated biological matrices, which greatly simplifies RNA drug manufacturing (e.g. the COVID-19 vaccines)

Currently providing kits for isolating RNA from biological materials including blood, saliva, tissues, and plant matter.



Life Magnetics

Our Solution's Advantages



INTEGRATED SHIPPING
RNA complexes with carbon for stable shipping at room temperature, eliminating the need for cold freezers.



SIMPLIFIED STORAGE
Carbon surfaces eliminate the need for viral transport media.



ULTRA PURE
Carbon surfaces have no carryover of DNA, protein, or organic solvents.



SIMPLE AUTOMATION
Compatible with liquid and bead handling automated systems.



QUICK AND ROBUST
Isolate RNA in under 10 minutes.

These advantages significantly improve RNA use for at-home testing, synthetic mRNA manufacturing, and laboratory diagnostics and testing.



Life Magnetics

The Team Making it Happen



- Ph. D. in Materials Chemistry from the University of Michigan
- Solved optical engineering and laser cutting/welding problems for numerous companies in the Detroit area
- 6 publications and 6 issued patents
- Two small business innovation awards from the National Science Foundation

- Ph. D. in molecular biology from University of Alabama, Birmingham
- Post doc at Richard Miller's lab at the University of Michigan studying aging, which many scientists now believe is caused by changes in RNA expression
- Experience in molecular testing labs



Traction Since Founding

2015: Founding

**\$178,500
NATIONAL SCIENCE
FOUNDATION**

**2018: Product enters
beta testing at University
of Michigan and Wayne
State University**

**\$450,000
BLUE WATER ANGELS**

**2020: C-Prep full
commercial release**

Product used in CLIA lab
for COVID-19 testing

**\$140,000
BIRMINGHAM ANGELS**

**2017: National Science
Foundation funding used
to develop product**

**\$250,000
NATIONAL SCIENCE
FOUNDATION**

**2019: Patents issued on
technology**



Anticipated Milestones

[Anticipating license
deal generating
\$500k up front and
\$1-3m per year in
revenue for at-home
urine testing]

[Collaborating with
DxTerity Diagnostics
for at-home saliva
testing]

[Marketing to sell
C-Prep kits online to
university labs]

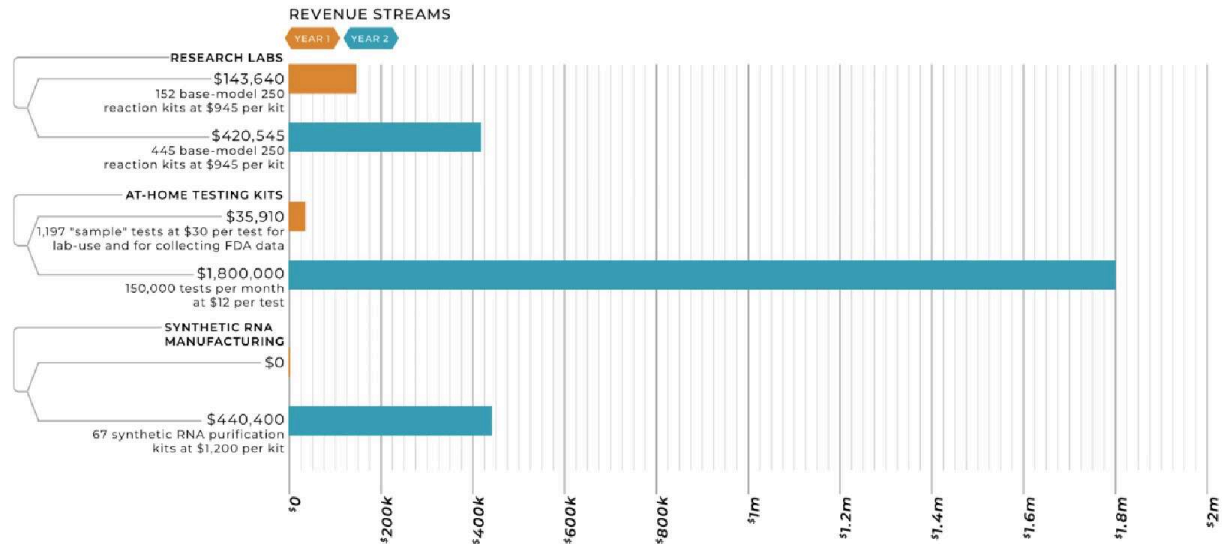
[COVID-19 testing lab
using product.
Interfering substances
report required for
broader distribution.]

[Partnership with Central Michigan
University's (CMU) College of Medicine
and Central Michigan University
Research Corporation (CMURC) to
further develop research, resources,
and shared talent (see ATCH. 1)]



Life Magnetics

Our Growth Trajectory

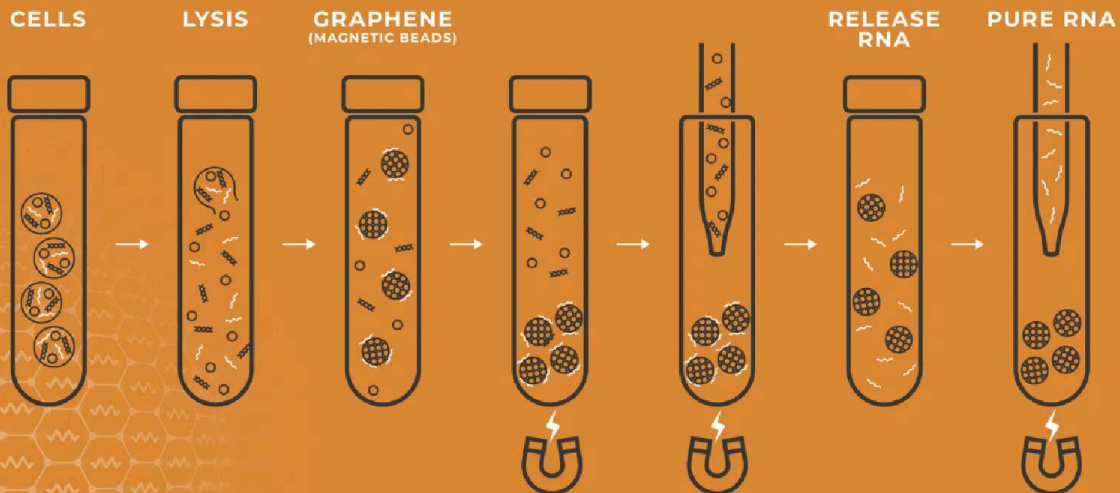


The above growth estimates are projections that cannot be guaranteed.



Life Magnetics

How Our Product Works



Life Magnetics

How Our Product Works

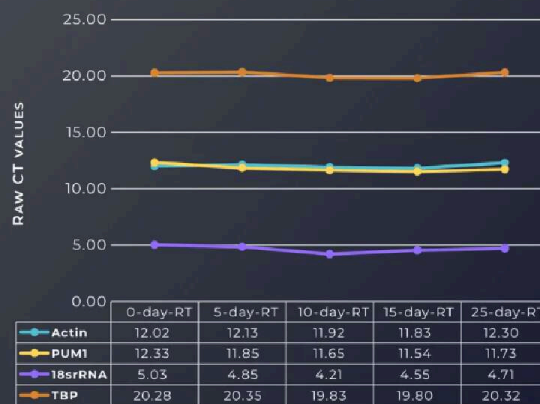
Data shows consistent stabilization times

2-STEP METHOD: RT SUPPLIES AND STORAGE

which demonstrates C-Prep's effectiveness as a diagnostic RNA testing solution.

- Record setting RNA stabilization times
- 7+ days of stability at room temperature with urine samples in a one-step collection
- Stabilization can be extended to 30+ days if a magnet is included and the user can do one pour step

2-STEP METHOD, RT SHIPPING AND STORAGE



How Our Product Works

"It worked really well! I obtained about **10-20x as much RNA as I typically do**, which was great to see. The 260/280 was 1.98 and the 260/230 was above 2 as well. It also was a very quick protocol, which was amazing too. When I was working with ~20 samples **using our old method, it would've taken about an entire day** just to get RNA what was DNase treated."

— CHRISTOPHER MATACZYNSKI
Wayne State University, Detroit, MI

"We had positive news for your kit in the isolation of RNA from cell lines (good quality RNA with an overall RNA yield similar to Qiagen). Your carbon based beads also **bound RNA more efficiently** in the low molecular weight range compared to Qiagen (RNeasy kit)."

— RNA DIAGNOSTICS, INC.
Toronto, Ontario, Canada



Anticipated Investments (Use of Funds)

\$200,022

- Advertising and sales support to generate revenue at university labs, which was the majority of our revenue pre-COVID (e.g. Google ad words, how-to video, sales staff) - 31.5%
- Application of the product to manufacturing RNA drugs such as the COVID-19 vaccine to address specific manufacturing issues. (Separating double stranded RNA from single stranded RNA) - 31%
- Additional sales and technical support

\$600,015

- Seminars at universities around the US to develop collaborations for RNA based at-home testing. - 30%
- Add genomic testing equipment to support application development. - 62.5%
- Wefunder fee - 7.5%

\$1,000,008

- Build out facility for at-home testing in collaboration with CMU to deploy a test which will demonstrate our unique capabilities. Opportunities are being evaluated but likely options are a urine-based at-home prostate cancer test or a saliva-based at-home COVID-19 test - 92.5%
- Wefunder fee - 7.5%

Additional sales and technical support for labs using or seeking to use our product in COVID-19 testing which is currently the majority of revenue - 30%

- Wefunder Fee - 7.5%

Note: only a portion of the \$1M will be raised through Wefunder.



Life Magnetics

Recent Exits

- 200+ transactions in space since 2016 (Pitchbook)
- Biotechne acquired Advanced Cell Diagnostics, maker of RNAscope probes, reagent kits, hybridization systems. \$325mm.
- Qiagen acquisitions of MO BIO Labs and Exiqon . Nucleic acid research tools. Terms undisclosed.
- Arcis Biotechnology has raised \$17.5mm. Fast and convenient nucleic acid sample prep products. Last round 2018.
- LCG acquired Lucigen. Products for nucleic acid extraction and purification. Terms undisclosed. 2018
- Exact Sciences acquisition of Biomatrix . \$40mm 2018. Nucleic acid extraction and stabilization
- GNA Biosolutions raised \$35mm 2019. Products to capture and amplify nucleic acids.
- Tecan acquisition of NuGen . \$54mm 2018. Nucleic acid sample prep products.
- Dropworks raised \$12mm in 2018, investors incl Arboretum Ventures. Tools for nucleic acid quantification.
- Swift Biosciences has raised \$35mm. Products to improve NGS sample prep. Last round 2018.

Exits supported by Life Magnetics board members and/or advisory members:

- Armune biosciences acquired by Cologuard for an undisclosed amount 2018.
- Transplant Genomics, Inc. acquired by Eurofins for \$100M.
- Takara Bio acquisitions in instruments and consumables for genetic research. Rubicon Genomics (\$75mm 2017), WaferGen (\$50mm 2017).
- Maravai /GTCR building portfolio of life science lab consumables. Acquired TriLink (estimate \$35mm 2016) and Solulink.

These exits are not predictive and cannot be guaranteed for Life Magnetics.



Life Magnetics

Attachment 1: CMU Partnership

We are excited by Life Magnetics' technology whereby it has developed the world's first carbon-based RNA extraction methods which allows RNA to be extracted, processed, shipped, and stored much more easily than with existing silica-based methods. Therefore, the College of Medicine and CMURC are prepared to explore further opportunities for collaboration with Life Magnetics. We commit to working with your company to discover opportunities that will enhance and strengthen all parties. Potential opportunities include, but are not limited to, the following:

- Shared talent, resources, and space
- Future applied learning for students
- Collaboration on scholarly publications and presentations
- Research partnerships

In short, we are committed to fostering the development of the relationship between the CMU College of Medicine, CMURC, and Life Magnetics for the benefits of both CMU and the company.

Signed,

George E. Kikano, MD
Vice President for Health Affairs,
Central Michigan University
Dean, CMU College of Medicine

David C. Weindorf, PhD, PG
Vice President for Research and Innovation
Central Michigan University

Erin Strang
President + CEO
Central Michigan University
Research Corporation



Life
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