



Private Company

Minimally invasive detection of micronutrient levels in humans

Food & nutrition

Background

We are a global consumer health company, delivering over-the-counter products that empower individuals to take control of their health and well-being.

Millions worldwide are unable to fully meet their nutritional needs, leading to fatigue, weakened immunity, cognitive impairments, and long-term health risks. Many individuals remain unaware of their deficiencies until symptoms manifest, underscoring the need for proactive monitoring.

Current methods to identify vitamin levels typically involve blood tests, which are invasive, inconvenient, and can be costly. This often discourages individuals from routine assessment and inhibits widescale adoption. Emerging minimally invasive technologies, including biofluids testing (urine, saliva, etc.), digital biomarkers, imaging or spectroscopic techniques promise greater accessibility but face challenges with accuracy, scope, reliability, and the need for specialized equipment or clinic visits.

Home testing kits and consumer-grade devices provide convenience but may lack the accuracy needed to deliver reliable insights, offering data that may not reflect the user's current condition effectively. For instance, some urine tests fail to reliably indicate real-time nutritional status due to variations in hydration and metabolism.

These limitations highlight the need for a reliable, affordable, and user-friendly solution for assessing micronutrient levels. Such a tool would enable timely interventions and support proactive health management, aligning with our mission to deliver innovative, sustainable, and accessible health solutions.

What we're looking for

We are looking for a cost-effective, minimally invasive solution to detect micronutrient levels in humans. Ideally, this would be an accurate, disposable, at-home test, such as a lateral flow test, or a consumer-grade device suitable for retail sale, designed for easy

use at home or on-site testing, providing instant results. We are also interested in painless blood sampling or validated dietary questionnaires.

A quick test-to-result time is essential, with on-site testing results (within minutes) strongly preferred over send-away tests (requiring days). Low costs and low user complexity are critical, with tests priced for mass-market accessibility and any required hardware at a disposable price point.

Solutions detecting diverse nutritional markers are encouraged, including those using combined sampling methods to address nutrients unavailable in specific mediums like saliva. These solutions may measure one or more of the following vitamins, minerals or their metabolites:

<u>Priority</u>	<u>Micronutrient</u>
1	Vitamin D
2	Zinc
3	Vitamin B6
4	Vitamin B12
5	Calcium
6	Selenium
7	Iron
8	Vitamin C
9	Vitamin E
10	Magnesium
11	Vitamin A
12	Vitamin B1 (Thiamine)
13	Vitamin B2 (Riboflavin)
14	Vitamin B5 (Pantothenic Acid)
15	Vitamin B7 (Biotin)
16	Vitamin K

Solutions of interest include:

- Saliva-based assays
- Low volume blood tests
- Lateral flow assays
- Spectroscopy-based tools
- Validated nutritional questionnaires
- Multi-analyte testing kits
- On-site testing devices for retail distribution
- Wearable nutrient monitoring systems leveraging biosensors
- Urine biomarkers with enhanced accuracy
- Enhanced test strips with advanced accuracy
- Imaging technologies coupled with mobile devices

Our must-have requirements are:

- Provides minimally invasive and user-friendly testing capabilities
- Delivers reliable results for nutrient level assessment
- Low-cost and low user complexity
- Rapid turnaround time for delivery of results
- Utilises advanced or innovative methods to achieve high accuracy

Our nice-to-have's are:

- Non-invasive technologies
- Compatible with smartphone integration
- Provides multi-nutrient assessments in a single test
- Scalable for consumer use, including at-home or retail applications
- Conformity to regulatory requirements in the US (FDA) or EU (CE Mark) for the intended testing ([FDA Guidance](#) | [EU Guidance IVD](#))

What's out of scope:

- Solutions requiring invasive sample collection, such as blood draws
- Diagnostics limited to clinical or laboratory settings
- Devices requiring specialized training or expertise to operate
- High-complexity/high-cost technologies

Acceptable technology readiness levels (TRL): Levels 2-9

1. Basic principles observed
2. Concept development
3. Experimental proof of concept
4. Validated in lab conditions
5. Validated in relevant environment
6. Demonstrated in relevant environment
7. Regulatory approval
8. Product in production
9. Product in market

What we can offer you

Eligible partnership models:

Sponsored research
Co-development
Equity investment
Supply/purchase
Licensing
Material transfer

Benefits:

Sponsored Research

Funding is proposal-dependent, starting with a proof-of-concept project that has the potential for expansion based on results and opportunities. The funding range is from \$25,000 to \$100,000 for a six-month project.

Expertise

We also offer the expertise of our team of scientists for collaboration and guidance during the project's development. Possible partnerships with us include, but are not limited to, sponsored research, joint development, supply, consulting, and licensing.

Please contact the University of South Florida Technology Transfer office representative for submission – Karla Schramm at kschramm@usf.edu