PERIODIC TABLE OF FOOD INITIATIVE

REQUEST FOR PROPOSALS OF INTEREST

Join the Periodic Table of Food Initiative (PTFI)

Apply to Onboard PTFI Standardized Multi-Omics Tools

Our Mission

The Periodic Table of Food Initiative (PTFI) is providing standardized tools, data, and training to map food quality of the world's edible biodiversity. We are mapping food quality based on biomolecular composition and associated food system metadata.

Vision

We envision a world where each stakeholder involved in food and health systems is empowered to lead data-driven solutions for enhanced human and planetary wellbeing.

Ecosystem

The PTFI ecosystem is composed of global collaborators that have onboarded PTFI multi-omics tools to map food quality of the world's edible biodiversity. Our current collaborators include nine Centers of Excellence, three National Lab Hubs, and six partner labs that are championing food quality research, training, and translation in their regions to solve food system challenges.

Learn more about the Periodic Table of Food Initiative at our website https://foodperiodictable.org

Join the Periodic Table of Food Initiative (PTFI)

Apply to Onboard PTFI Standardized Multi-Omics Tools

PTFI Standardized Multi-Omics Tools
For the past three years, the Periodic Table of Food Initiative has worked to develop **standardized multi-omics tools** to answer the question: **What is in our food?** These tools will enable us to map food quality by identifying the known and unknown components in food, including those that make up the "dark matter of nutrition." By identifying diverse food components, we will better understand their functions in ecosystems and human health.

PTFI's standardized multi-omics tools include:
- Glycomics for fibers
- Lipidomics for complex lipids
- FAMEs for fatty acids
- Ionomics for minerals and metals
- Metabolomics for specialized metabolites and small molecules

PTFIs standardization efforts represent a major step forward in mass spectrometry-based omics analysis, in particular for the analysis of specialized metabolites and small molecules. To date, the individualized nature of methods within labs inhibited the comparison of data. The PTFI has cracked the daunting standardization challenge through the development of novel internal standard reagents, protocols, and data processing tools. Coupled with a unified data repository, the PTFI approach enables the comparison of multi-omics data and the generation of a knowledge resource to inform food systems solutions at a scale larger than ever before.

Learn more about PTFI's standardized multi-omics tools at the PTFI Research Hub.

PTFI's food composition data is made available through two customized open-access data interfaces for non-commercial use, including:

Verso Biosciences MarkerLab®
MarkerLab is a web-based visualization platform that makes multi-omics data accessible, interpretable and valuable for researchers.

American Heart Association's Precision Medicine Platform (PMP)
The PMP is a cloud-based system that allows researchers to collaborate and analyze datasets using the power of machine learning. Researchers can also upload their own data and integrate with PTFI data to better understand the role of food in medicine. Learn more about exploring PTFI data with PMP @ https://precision.heart.org/ptfi-data-resource.

Taking an integrative approach to link food and health, the PTFI has further standardized multi-omics tools for **human serum analysis** in clinical interventions. This knowledge will help to unlock the biomolecular pathways of food as medicine.

Apply to Onboard PTFI's Standardized Multi-omics Tools
Profiling food quality based on the comprehensive biomolecular composition of the planet's edible biodiversity is a bold undertaking, one that is too large for any one institution and country. In recognition of the scale of this challenge, and the benefits of collaboration, we look forward to expanding our ecosystem of institutions equipped to carry out PTFI's multi-omics tools.

Benefits and Support
This Request for Proposals of Interest is an invitation to apply to join the PTFI ecosystem to onboard PTFI standardized multi-omics tools and contribute to our collaborative efforts. Selected teams will be provided with PTFI's package to onboard our standardized multi-omics tools at your institution which includes: (a) customized reagents; (b) access to protocols ; (c) honorarium to support personnel time for onboarding activities; (d) training resources and expertise training consultations and; (e) ability to contribute to the PTFI open-access database and associated data interfaces through the generation of harmonized data as well as ability to compare your sample data to other reference foods profiled with PTFI standardized tools. In certain circumstances, the PTFI will consider providing funding for supporting sample analysis for institutions in low-income countries and those with tribal affiliations and that are minority-serving in middle- and high- income countries.

We are interested in building our ecosystem with collaborators in diverse geographic regions with diverse expertise and capacities that are currently leading food composition efforts and multi-omics analysis to identify solutions for human and planetary health

Application Process

1. Register your PTFI Research Hub account (or log in) @ **https://ptfi.versobio.com**
2. Complete the Onboarding Application Form @ **https://ptfi.versobio.com/lab-onboarding-application**
   Please note, to complete the online application you will be required to upload a single PDF that includes:
   a. *Description of Rationale for Onboarding PTFI Tools (up to 2-pages, 11pt font). This description should address why you want to join the PTFI ecosystem and onboard our standardized multi-omics tools.*
   b. *CV of Principal Investigator (Optional: include CV and/or description of expertise for other lab personnel.)*
   c. *Optional: list of current grant support*

Additional Eligibility Requirements
Applicants must have access to one or more of the following instruments, and must further have previous experience in food composition and / or multi-omics analysis.

+ GC-FID for FAMES
+ Selexion 6500 or 5500 DMS QQQ instrument for Lipidomics
+ ICP-MS for Ionomics
+ High resolution LC-MS instrument for Nontargeted Metabolomics
+ LC-MS instrument for Targeted Metabolomics

Applicants may include, but are not limited to, national labs that provide food composition analysis, research labs, and fee-for-service labs that offer multi-omics analysis.

Onboarding Timeline
The PTFI onboarding process typically occur over a 3-9 month engagement period from receipt of your onboarding package to validating PTFI tools in your lab, depending on the specific tools, scheduling, and capacities of a lab.

Onboarding Process
The PTFI onboarding process focuses on activities to standardize protocols in laboratories for carrying out food composition analysis including: food sampling, Access and Benefit sharing, metadata modules, food processing, running PTFI standardized multi-omics tools, data processing, and data evaluation and management. Labs undergo training in PTFI's standardized practices from sample collection to analytical techniques.

Inquiries
Please send questions via email to:

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