

The Microbiome Collection Core at the Harvard T.H. Chan School of Public Health (HCMCC) was established in response to a strong demand among the research community for validated microbiome sample collection kit configurations and easy usability for in-home sampling. Under the umbrella of the Harvard Chan Microbiome in Public Health Center (HCMPH), HCMCC aims to support population-scale microbiome sample collection and expand our understanding of the microbiome to improve population health. The HCMCC has developed a multi carrier-compatible home stool and oral sample collection kit that permits cost-effective multi-omic microbiome studies, leveraging the intellectual and infrastructure foundation laid by the HMP2 (the 2nd phase of the NIH Human Microbiome Project) and the MLSC (Massachusetts Life Sciences Center)-funded MICRO-N (Microbiome Among Nurses) collection. By providing this customizable microbiome collection kit, we enable researchers to perform multiple different molecular assays and tailor collection plan to study-specific needs.

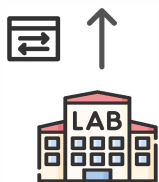
HCMCC services



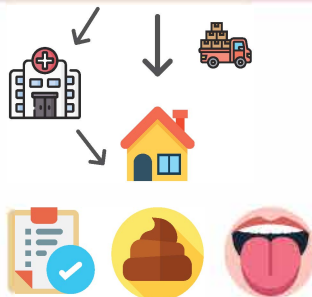
Microbiome sample collection plan development - Collection kit configuration - Kit distribution & logistics - Sample transport plan - Sample handling & storage plan



Kit ordering & shipment - Kit customization & implementation - Ambient temperature shipping - to selected clinical sites - direct to participants



Streamlined post-collection assistance - Automated aliquoting - Barcode tracking - -80°C storage in the BIOS Freezer - Fast sample retrieval - Sample shipment to sequencing labs for meta-omics & metabolomic profiling

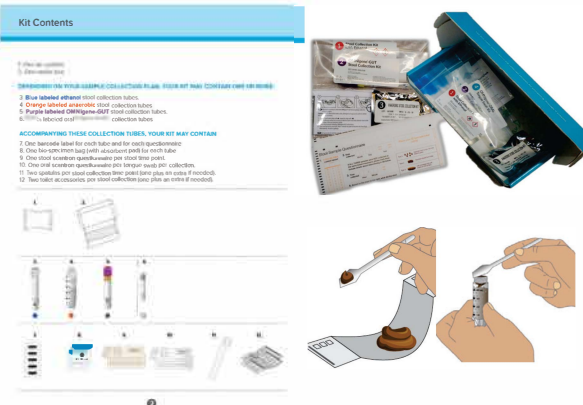


At-home sample collection

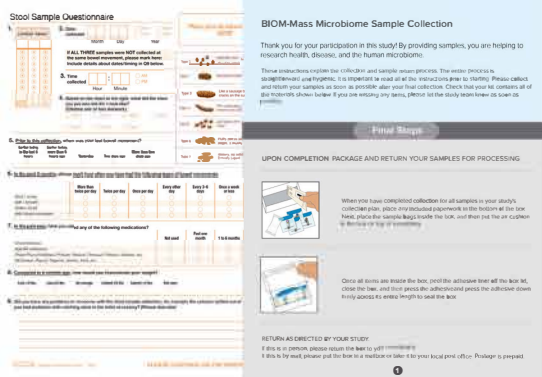


Pre-paid return shipment

A scalable gut and oral microbiome sample collection platform

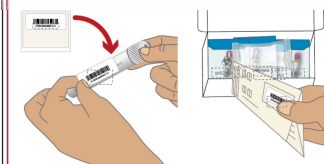


This customizable microbiome sample collection kit avoids the need for expensive, bulky, and inconvenient ice packs by providing several different room temperature storage media that are also compatible with multiple different molecular assays including **any combination of amplicon (16S), metagenomic, metatranscriptomic sequencing, metabolomics, and other molecular assays**. This kit further includes a collection method that uses anaerobic transport media that **yields live microbes for culture or gnotobiotic research**.

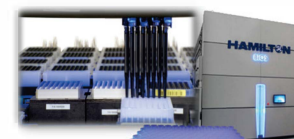


In addition to storage media, this sample collection kit includes **user-friendly instructions** and toilet accessories to maximally facilitate and smooth the in-home stool sample collection experience. **Standardized questionnaires**, as companions to collected samples, are included to capture **recent medications, diet, anthropometric measurements, and gastrointestinal health status measured by the Bristol Stool Scale**. The modularity of this kit allows researchers to tailor kit components to study-specific needs and conduct cost-effective microbiome research ranging from **pilot studies to large-scale studies involving 10,000s of participants**.

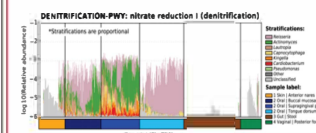
HCMCC-supported study activities within the BIOM-Mass platform



Pre-collection - Participant enrollment - Kit ordering - Kit distribution



Collection - Self-collection - Sample return through pre paid shipment



Post-collection - Sample aliquoting via Hamilton STAR automated liquid handler - Long-term -80°C storage via the BIOS Freezer Core - Data generation - Data analysis via the Microbiome Analysis Core

Microbiome population health research opportunities

- Accessible microbiome population studies' data on the BIOM-Mass Data Portal <https://biom-mass.org>
- Integrative microbiome informatics and analysis via the Harvard Chan Microbiome Analysis Core <https://hcmph.sph.harvard.edu/hcmac/>
- Long-term sample storage via the Harvard Chan BIOS Freezer Core
- Gnotobiotic mice experiments via the Harvard Chan Gnotobiotic Center for Mechanistic Microbiome Studies
- Course offerings on microbial communities and human microbiome research via the Harvard Chan Microbiome in Public Health Center

Special thanks to the Massachusetts Life Sciences Center (MLSC), the Harvard Chan Microbiome Platform Steering Committee, the Harvard Chan Freezer Core Director John Obyrck, and the BWH/Harvard Cohorts Biorepository Laboratory Manager Christine Everett.

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<https://hcmph.sph.harvard.edu/hcmcc> (i)

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The Microbiome Collection Core is a part of the Harvard Chan Microbiome in Public Health Center (HCMPH). Want to learn more? Visit <https://hcmph.sph.harvard.edu>

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