

Preparation and Shipping Procedures

Ship samples packed in 8-12 kg of dry ice* to:

Metabolon Sample Acceptance
617 Davis Drive, Suite 400
Morrisville, NC 27560

Phone: +1-919-572-1711

Ship domestic overnight Monday - Wednesday.
Ship international via World Courier, Monday or Tuesday

Shipment Details

A completed digital manifest is required for each shipment, and a template will be provided by your Metabolon representative. Please include a hard copy of the completed manifest inside your sample shipment but outside of the Styrofoam container.

Prior to shipping samples, email an electronic copy of the completed sample manifest in Excel format to: samplemanager@metabolon.com. Please include your assigned project code in the subject line. Do not ship samples until your project code has been assigned.

Remember to include a hard copy of the completed manifest with your sample shipment!

Completing Your Digital Manifest:

- ▶ **Must** include the project code on the cover page and in the subject line of all email correspondence.
- ▶ **Must** include all available sample information for each sample shipped, including any preservatives used in the collection/storage process.
- ▶ **Must NOT** include personally identifying information for human samples.

Planning

- ▶ Complying with required sample amounts and consistent handling is critical to study quality (e.g. collection technique, time of sampling, time to freezer, freeze/thaw, time of aliquoting).
- ▶ Please notify your Metabolon Study Director of any preservatives that have been used in the collection process.
- ▶ Unless otherwise requested prior to project start, all remaining samples will be destroyed 90 days post project completion.

Aliquot and Freeze

- ▶ Minimize or eliminate the time samples are in a non-frozen state.
- ▶ Transfer required volume or mass of sample into pre-labeled and pre-chilled tubes, then freeze.
- ▶ Flash-freeze the sample vials in liquid nitrogen or immediately store them in a -80°C freezer.

Acceptable Sample Tubes

- ▶ The Metabolon Study Success Sample Handling Kit will provide you with Metabolon Standard Preferred 2D barcoded sample collection tubes specifically intended for your study.
- ▶ For information on other barcoded tubes that may be acceptable, please contact your Metabolon Project Coordinator.
- ▶ Non-standard sample tubes may be labeled with barcodes, but please also include a human-readable identifier on the tube in the event that a barcode is unreadable or non-existent.
- ▶ Record the sample barcode into the supplied digital manifest and provide additional requested metadata.

* 8 kg is the recommended minimum amount of dry ice for domestic shipping.
12 kg is the recommended minimum amount of dry ice for international shipping.

Collection Guidelines

Blood Samples

Acceptable sample types:

Plasma:

- ▶ Collect whole blood in anti-coagulant tubes following the manufacturer's processing instructions.

Plasma Anticoagulant Guidelines:

- ▶ **Best results:** EDTA (K2, K3, Na; avoid Li).
- ▶ For global metabolomics studies, avoid citrate.
- ▶ For all studies, never include multiple anticoagulant sample types in the same experiment.

Serum:

- ▶ Collect whole blood in serum separator tubes and follow the tube manufacturer's processing instructions.

Whole blood:

- ▶ Coagulation must be prevented, preferably by the addition of EDTA.

Fecal Samples

Frozen:

- ▶ Do not lyophilize samples unless instructed to by Metabolon.

OMNImet-GUT™ Fecal Samples:

- ▶ Gather all individual donor samples at your facility before shipping to Metabolon. We will not accept samples direct from individual donors.
- ▶ Store samples at -80°C as soon as possible.
 - ▶ Room temperature stability is validated for 4 days (Global Metabolomics Platform) or 7 days (Short-Chain Fatty Acid Assay).
 - ▶ Store at -20°C for up to 1 week if -80°C is unavailable.
- ▶ Avoid exposure to temperatures above 30°C (86°F). Provide donors with ice packs if such exposure is likely prior to arrival at your facility.
- ▶ Ship OMNImet-GUT tubes to Metabolon in their entirety. If you must aliquot samples, please consult with your Project Coordinator first.
- ▶ Follow standard shipping procedures (page 1) once all donor samples are gathered.

Tissue Samples

- ▶ For solid tissues (e.g., biopsymaterial), the amount of tissue per sample can vary depending upon study objectives and tissue type. 50 mg of sample is the minimum requirement.
- ▶ Cell Samples (Eukaryotic and Bacterial)
- ▶ Pellet cells and remove supernatant.
- ▶ Provide an accurate cell count for each sample.

Plant Material

- ▶ Preferably, grind fresh plant material to a powder with a mortar and pestle under liquid nitrogen. The powdered material should be lyophilized, if possible.

Dried Blood Spot Cards

- ▶ Submit dried Whatman™ 903 Protein Saver DBS cards, including 2 blank cards per study in separate zip-top bags (Whatman# 10548232, VWR# 89027-022) containing silica gel desiccant pack.
- ▶ Store bags together in a secondary vessel containing a humidity indicator card.
- ▶ For maximum stability, we recommend -80°C storage.
- ▶ Samples should be shipped on dry ice with a humidity indicator card and silica gel desiccant included with the shipment.

Biohazardous Materials

- ▶ BSL2 **biofluids** are acceptable. Notify Metabolon of the pathogen involved.
- ▶ BSL2 **biosolids** may be acceptable depending on the material and design of the study. Please contact your Metabolon to consult with our Study Directors to determine the best course of action for your study.

Liquid Sampling Procedure

(Blood, Urine, cell culture media, or CSF)

1. Pipet required volume per sample type as defined in the Table.
2. Immediately dispense pipetted liquid into the chilled polypropylene tube and flash-freeze.
3. Store samples at -80°C until shipment.

Solid Sampling Procedure

(Feces, Tissue, or Plant)

1. Weigh required mass per sample as defined in the Table.
2. Transfer weighed sample into the chilled polypropylene tube and flash-freeze.
3. Store samples at -80°C until shipment.

Specimen Type	Min. Amount
Blood	150 to 300 µL
Urine	150 to 300 µL
Cerebrospinal Fluid (CSF)	150 to 300 µL
Cell Culture Media	150 to 300 µL
Cells (Packed cell volume)	≥100 µL
Fecal	100 mg
Tissue	50 mg
Plant Material (Dry Weight)	50 to 100 mg
Dried Blood Spots (diameter)	8-12 mm (x2)
Sebutape or D-Squame	See Matrix Specific Guidelines

Sample Amount Requirements

- Sample amounts per assay are defined in the above table. Lower sample amounts may impact results. Please discuss with your Metabolon Client Success Project Coordinator.
- Additional volume or mass may be required for a longitudinal bridging matrix. Please discuss with your Metabolon Client Success Project Coordinator.

Unique Sample Types Guidance

- Sample types not listed in the above table may require specific instructions. Please discuss with your Metabolon Client Success Project Coordinator

Assay-Specific Considerations

Targeted Assays and Metal Ions Panel

Sample amounts for these specific assays may vary. Please discuss with your specific Metabolon Project Coordinator.