

A decorative background featuring a blue and red molecular structure, possibly a DNA double helix, with various atoms represented by spheres of different colors and sizes, set against a light blue gradient.

SERVICE GUIDE

Microbiome DNA Extraction Service

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SVGMBE2206

Service Guide:

Microbiome DNA Extraction Service



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1.0 Overview

AGRF's Microbiome DNA Extraction Service provides genomic DNA for entry into our Microbial Profiling Service to ultimately explore the composition and diversity of mixed microbial communities. All Microbiome DNA Extractions are currently performed using the DNeasy PowerSoil Pro Kit from Qiagen. This method includes a bead-beating step for mechanical lysis of bacterial and fungal cells. The resulting DNA is not suitable for all downstream applications, but it is specifically intended for Microbial Profiling.

List of sample types for this service:

- Human (e.g. faeces, rectal swabs, saliva, buccal swabs, tissue biopsies, skin)
- Animal faecal (includes rectal swabs)
- Environmental (e.g. soil, water, sludge, sediment, microbial cultures, plant roots, animal tissue)

We request that you retain a working aliquot of all samples to mitigate the unlikely risk of sample loss during transport or processing. In the event of accidental sample loss during processing, AGRF's liability will be limited to a full discount of the price of sample processing.

2.0 Sample Submission Requirements

Please consider your sample collection and storage methodologies and ensure that they remain consistent throughout your experiment to minimise the introduction of variability. Different sample storage conditions can have an impact on microbial community studies.

We recommend freezing your samples to -80°C upon collection and keeping your samples frozen until processing. This will require shipping your samples to us on dry ice.

If freezing your samples is not feasible, there are a range of commercially available kits for the collection and stabilisation of microbiome samples, for example the [OMNIGene line of products](#).

Our Microbiome DNA Extraction protocol requires **250mg** of starting material per sample (**200mg for faecal samples**). You can send an excess of sample material for us to sub-sample, or you can pre-weigh the exact amount of sample required directly into a collection tube if you do not have enough spare material to send.

If you are using a commercial collection kit, simply follow the kit instructions.

Special considerations

- **Soil:** to allow for potential re-extraction and sampling waste, please send at least 1g of soil.
- **Water/liquid samples:**
 - » We require enough volume to obtain a ~250mg pellet. Please provide 50ml for liquid samples with a high microbial biomass. Liquid samples with a low microbial biomass (e.g. clear water) will require larger volumes (200-250ml). Please send your water samples in 50ml falcon tubes. Up to five 50ml tubes may be required per sample. If your samples have a high salt/mineral content (e.g. from a saline lake) please let us know in your sample submission and provide 250ml per sample. Water samples should be sent to us cold or frozen via overnight courier.
 - » If you have filtered your water/liquid samples and you are sending us your filters, please cut them into strips and place them in a tube. Filters sent uncut will incur an extra fee. Filters should be sent to us frozen via overnight courier.
- **Fungal culture:** please be aware we do not accept fungal colonies growing on agar plates. If you have a fungal solid culture, please scrape the outer areas of the colony into a 2ml tube and send us the tube. This can be sent to us at room temperature via Express Post or overnight courier.
- **Bacterial culture:** please send us at least 2ml of saturated liquid bacterial culture. **Do not centrifuge the liquid culture before sending it.** This should be sent to us at room temperature via Express Post or overnight courier. **Do not freeze your bacterial cultures.**

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3.0 Turnaround Time

For 1-96 samples, DNA extractions will be completed in five working days. Every additional 24 samples after the initial 96 samples will add one extra day to the turnaround time. For example, 192 samples will take a maximum of 10 working days to extract.

Turnaround times for extraction services may be affected by service demand at the time of sample receipt.

4.0 Sample Storage

The DNA will not be stored at the AGRF Adelaide Site - all DNA will be sent for downstream processing to the Microbial Profiling Team. If you require your samples to be returned to you post-processing, please let your Account Manager know at the time of quoting. Please note that a fee will be charged for return of samples.

Raw sample material will also not be stored at the AGRF Adelaide Site - all raw sample material will be used in the extraction process or it will be discarded after we have performed Microbial Profiling Quality Control.

5.0 Shipping your Samples for Extraction

In general, the best practice to preserve microbial composition is to freeze your samples immediately upon sample collection (-80°C) and keep them frozen until processing. Therefore, we recommend that samples that have been stored in the freezer be sent to us on dry ice for Microbiome DNA Extraction.

If you used a commercially available kit for sample collection and preservation, please follow the manufacturer's instructions to send us your samples.

The responsibility for ensuring samples reach AGRF in good condition remains with the client. If samples arrive in poor condition, we will notify you as soon as the samples arrive.

Our AGRF Adelaide Site is a **Biosecurity SA CA12 Accredited Laboratory**.

If you are sending soil or plant material into South Australia from interstate, **a completed and signed CA12 Diagnostic Sample Declaration form must accompany your samples**. Your account manager will provide you with the CA12 Declaration form upon quoting, which contains **important information on how to label and package your samples**.

If you are sending **grapevine material** or **vineyard soil** into South Australia from interstate, please let your account manager know and they will provide you with information on additional import requirements.

Please post/send/deliver your samples with a printed submission sheet and additional import documentation required (if applicable) to the address below:

Physical and Postal Address:

AGRF Ltd
PLANT GENOMICS CENTRE
WAITE CAMPUS
HARTLEY GROVE
URRBRAE SA 5064

6.0 Online Sample Submission

Online Submission:

- Submit your sample details online.
- Select: "Extraction and Microbial Profiling – gDNA" as the Service Type.
- Please complete and upload the "Template File" Excel template.
- Post/send/deliver samples to the address above.