

Sample Requirements

TISSUE



Sample preparation is a crucial early step in any study for further exploring life sciences and investigating genetic differences in an organism of interest. With tissue samples of exceptional quality and sufficient amount, your NGS projects could go more smoothly and yield more reliable data for downstream bioinformatics analysis.

The sample requirements listed below are the minimum volumes and concentrations required for analysis. We always recommend sending more if possible.

MICROBIOME SEQUENCING

Microbe

Species	Illumina	Pac-Bio	ONT
Bacteria	1 x 10 ⁷	≥ 3.5 x 10 ¹⁰	≥ 3.5 x 10 ¹⁰
Unicellular Fungus	1 x 10 ⁷	≥ 3.5 x 10 ¹⁰	≥ 3.5 x 10 ¹⁰
Macro Fungus	≥ 4.0 g	≥ 10.0 g	≥ 10.0 g

Enviromental samples

Type	Amplicon	NGS- Metagenome	ONT- Metagenome
Soil	2 g	3 g	5 g
Intestinal contents-Animal	2 g	2 g	3 g
Intestinal contents-Insect	0.25 g	2 g	3 g
Plant surface	Enriched sediment 0.5 g	Enriched sediment 1 g	3 g
Fermentation broth	Enriched sediment 0.5 g	Enriched sediment 0.5 g	-
Surface microorganism	Filter paper or swab	5-6 swabs	-
Waterbody/ Air/ Biofilm	Filter paper	1-2 filter paper	-
Skin/ Genital swab/ Saliva/ Oral soft tissue/ Pharyngeal swab/ Rectal swab	2-3 swabs	2-3 swabs	-
Feces (Large animals)	2 g	2 g	3 g

Scientific support

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DE NOVO GENOME ASSEMBLY

Species	Tissue	Illumina based survey	Pac-Bio	Hi-C
Animal	Visceral tissue	1 g	≥ 4 g	≥ 2.0 g
	Muscle tissue	1 g	≥ 5 g	≥ 2.0 g
	Mammalian blood*	1 g	≥ 5 ml	≥ 2 mL
	Poultry/Fish blood*	1 g	≥ 1 ml	≥ 2 mL
Plant	Fresh Leaf	2 g	≥ 5 g	≥ 4.0 g
	Petal/Stem	2 g	≥ 10 g	-
	Root/Seed	2 g	≥ 20 g	-
Cells	Cultured cell	-	≥ 1 x 10 ⁸	≥ 1 x 10 ⁷

POPULATION GENETICS

Species	Tissue	WGS - NGS	WGS - ONT	SLAF-seq
Animal	Visceral tissue	1 g	≥ 4 g	≥ 0.5 g
	Muscle tissue	1 g	≥ 5 g	≥ 0.5 g
	Mammalian blood*	1.5 ml	≥ 5 ml	1.5 ml
	Poultry/Fish blood*	1.5 ml	≥ 1 ml	1.5 ml
Plant	Fresh Leaf	2 g	≥ 5 g	1 g
	Petal/Stem	2 g	≥ 10 g	1 g
	Root/Seed	2 g	≥ 20 g	1 g
Cells	Cultured cell	-	≥ 1 x 10 ⁸	-

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TRANSCRIPTOME SEQUENCING

Species	Tissue	NGS- based	TGS - based	Lnc-RNA	small RNA
Animal	Heart/Intestine	350 mg	350 mg	500 mg	500 mg
	Viscera/Brain	250 mg	250 mg	250 mg	250 mg
	Muscle	500 mg	500 mg	600 mg	600 mg
	Bones/Hair/Skin	1 g	1 g	1.5 g	1.5 g
Plant	Root/Stem/Petal	500 mg	600 mg	600 mg	600 mg
	Leaf/Seed	350 mg	350 mg	350 mg	350 mg
	Fruit	1.5 g	1.5 g	1.5 g	1.5 g
Cells	Cultured cell	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶
Arthropod	Insect	6	6	9	9
	Crustacea	350 mg	350 mg	500 mg	500 mg
Whole blood *	Blood	1 tube	1 tube	2 tubes	2 tubes
Serum/Plasma	Serum	-	-	6 ml	6 ml
	Plasma	-	-	6 ml	6 ml

In exceptional situations, if the material in the project requires special requirements / other (e.g. lower concentration) than those provided above, it is possible to individually adjust them to the client's requirements after prior agreement with the Support Team.

Others

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* Instructions for handling whole blood samples

1. Whole blood samples should be collected in tubes with a medical anticoagulant (please use anticoagulants, i.e. sodium citrate or EDTA. **We do not recommend heparin**).
2. After collection, mix the sample with the anticoagulant 10 times by gentle inversion.
3. Transfer the blood to standard EP tubes (1.5 or 2.0 ml DNAase and RNAase free) and store at -20 or -80°C for transport or long-term storage (follow your blood collection tube instructions).

ATTENTION:

1. Please, avoid using blood collection tubes that require a special extraction kit, which could result in extraction delays due to the lack of an appropriate kit in the laboratory.
2. After collecting the blood, transfer it to EP 1.5 or 2.0 ml DNAase and RNAase free tube(s). Glass blood collection tubes are fragile when frozen and could break during shipping.

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