Sample Submission Guideline for Standard/ PCR Grade Nucleic Acid Extraction : MBS-6000 series

Sample Type	Standard/ PCR Grade DNA extraction	Standard/ PCR Grade RNA extraction
Tissue/ Cell pellet from Animal, Insect, Bacteria, Fungus, Yeast, Microalgae	• Amount: 50 - 100 mg • No. of replicates: 3 • Shipping condition: Dry ice	• Amount: 50 - 100 mg • No. of replicates: 3 • Shipping condition: Dry ice
Plant/ Macroalgae (Seaweed)	• Amount: 150 - 500 mg wet weight or liquid nitrogen ground powder. • Snap freeze fresh plant sample in liquid nitrogen • No. of replicates: 3 • Shipping condition: Dry ice	• Amount: 150 - 500 mg wet weight or liquid nitrogen ground powder. • Snap freeze fresh plant sample in liquid nitrogen • No. of replicates: 3 • Shipping condition: Dry ice
Blood	**Option 1: Whole Blood, *Malaysia Customer only** • Volume: up to 3 ml freshly collected blood in EDTA Tube • Blood samples to be submitted immediately after withdrawal. • Results will not be guaranteed for blood samples that are more than 3 days old • No. of replicates: 3 • Shipping condition: i) 4°C or Blue ice (reach Apical Scientific within 3 days) ii) Dry ice (reach Apical Scientific > 3 days) **Option 2: Buffy Coat** • Collect up to 3 ml blood in EDTA tube, centrifuge the blood with 2,500 x *g* for 10 minutes using swing bucket centrifuge • Remove the plasma with 1 ml syringe, 21G needle • Collect the buffy coat in 1.5/2 ml tube • No. of replicates: 3 • Store buffy coat in -80 °C freezer • Shipping condition: Dry ice **Option 3: White Blood Cell Pellet** • Volume: up to 3 ml freshly collected blood in EDTA Tube • Pretreat the whole blood sample with RBC lysis buffer (1st BASE, K.BUF-9101-100ml), follow Appendix Protocol below for pretreatment. • No. of replicates: 3 • Store the treated dry WBC pellet in -80 °C freezer. Alternatively, the WBC pellet can be stored in RNAlater solution. • Shipping condition: Dry ice **Appendix Protocol: Pretreatment of whole blood sample with RBC lysis buffer (1st BASE, K.BUF-9101-100ml)** i) Transfer **1 mL whole blood** into a new 2 mL microcentrifuge tube. ii) Add **1 mL RBC Lysis Buffer** (not provided). Invert the tube 10 times. Centrifuge at 700 x *g* for 5 minutes at room temperature. iii) Carefully remove 1 mL top layer of the supernatant by pipetting. ***Note**: Do not remove the middle and bottom layer which is the white blood cells and red blood cells respectively.* iv) Add **1 mL RBC Lysis Buffer** (not provided). Resuspend the pellet by pipetting 4 – 5 times. Centrifuge at 700 x *g* for 5 minutes. v) Carefully remove 1 mL supernatant by aspirate from top via pipetting. Leave the remaining supernatant and cell pellet in the tube. vi) Repeat Step iv. Remove supernatant **completely**. [For preservation] Resuspend cell pellet in 1 mL RNALater Solution (not provided).	**White Blood Cell Pellet** • Collect up to 3 ml blood in EDTA tube • Must preprocess the blood sample within the same day of sample collection. • Pretreat the whole blood sample with RBC lysis buffer (1st BASE, K.BUF-9101-100ml), follow Appendix Protocol below for pretreatment. • No. of replicates: 3 • Store the treated dry WBC pellet in -80 °C freezer. Alternatively, the WBC pellet can be stored in RNAlater solution. • Shipping condition: Dry ice **Appendix Protocol: Pretreatment of whole blood sample with RBC lysis buffer (1st BASE, K.BUF-9101-100ml)** i) Transfer **3 mL whole blood** into a 15 mL centrifuge tube. ii) Add **3 mL RBC Lysis Buffer** (not provided). Invert the tube 10 times. Centrifuge at 700 x *g* for 5 minutes at room temperature. iii) Carefully remove 2 mL top layer of the supernatant by pipetting. ***Note**: Do not remove the middle and bottom layer which is the white blood cells and red blood cells respectively.* iv) Add **3 mL RBC Lysis Buffer** (not provided). Resuspend the pellet by pipetting 4 – 5 times. Centrifuge at 700 x *g* for 5 minutes. v) Carefully remove 3 mL supernatant by aspirate from top via pipetting. Leave the remaining supernatant and cell pellet in the tube. vi) Repeat Step iv. Remove supernatant **completely**. [For preservation] Resuspend cell pellet in 1 mL RNALater Solution (not provided).
Buccal swab sample	**Option 1:** • Collect sample using commercial swab sample collection kit • Follow collection kit guidelines to preserve the swab sample • No. of replicates: 2 • Storage condition: Follow the guidelines from the commercial kit • Shipping condition: Follow the guidelines from the commercial kit **Option 2:** • Collect sample using sterile swab • (Optional) Store swab in 1X PBS • No. of replicates: 3 • Storage condition: -80°C freezer • Shipping condition: Dry ice	• Collect sample using commercial swab sample collection kit (for RNA application) • Follow collection kit guidelines to preserve the swab sample • No. of replicates: 2 • Storage condition: Follow the guidelines from the commercial kit • Shipping condition: Follow the guidelines from the commercial kit
Saliva	**Option 1:** • Suggest to follow commercially available saliva collection kit guidelines for sample collection, preservation, storage and shipping. For example, DNA Genotek, OMNIgene, SALIVA DNA and RNA device. • No. of replicates: 2 • Storage/Shipping condition: Follow kit recommendation **Option 2:** • Collect 2 ml saliva in a new 50 ml centrifuge tube • Add 10 ml 1X PBS. • Shake vigorously to mix for at least 20 seconds. • Immediately centrifuge at 2,000 x g for 5 minutes at room temperature to pellet cells. • Decant the supernatant without delay. • No. of replicates: 2 • Store dry pellet in -80 °C freezer • Shipping condition: Dry ice	**Option 1:** • Suggest to follow commercially available saliva collection kit guidelines for sample collection, preservation, storage and shipping. For example, DNA Genotek, OMNIgene, SALIVA DNA and RNA device. • No. of replicates: 2 • Storage/Shipping condition: Follow kit recommendation **Option 2:** • Collect 2 ml fresh saliva in a 50 ml centrifuge tube • No. of replicates: 2 • Add 2 ml RNAlater solution. • Vortex vigorously to mix thoroughly. • Incubate sample at 4°C fridge for overnight. • Store in -80°C freezer the next day. • Shipping condition: Dry ice
Others	Please enquire.	