# Apostle MiniGenomics® Whole Blood Genomic DNA Isolation Kit, Automation Protocol

Isolation of genomic DNA from Whole Blood (350 µL) with MagTouch 2000, 96-well

**Revision** A.1

## Product Description

The Apostle MiniGenomics® Whole Blood Genomic DNA Isolation Kit is designed for rapid isolation of high-quality, ready-to-use genomic DNA from fresh or frozen whole blood containing Citrate, EDTA. The kit uses proprietary Apostle MiniGenomics® technology and offers highly efficient, reproducible recovery of high-quality DNA with high yield. This kit is designed for input volumes ranging from 50 µL to 350 µL of whole blood. The isolated DNA samples are suitable for a broad range of subsequent applications, including sequencing, PCR, etc. The protocol is designed for 96-well plate automated on Apostle MagTouch 2000 Automation Platform.

## Required materials

Apostle MiniGenomics® Whole Blood Genomic DNA Isolation Kit (Cat# A230814-50 or A230814-200)

Apostle MagTouch 2000 (Cat# A201126-96)

Apostle 96-well deep well plates and tip comb

DNase/RNase-free tubes (1.5 mL and 15 mL)

Adjustable single and multi-channel micropipettes and tips (1000 µL, 200 µL, and 20 µL)

Vortex or shaker

Tabletop centrifuge

Heater (for sample lysis)

Ethanol, 200 proof

80% ethanol

Nuclease-free water

## Procedure for isolation of gDNA

## A. Sample lysis

### Manual

1. Add 35 µL Proteinase K, vortex briefly and centrifuge briefly.
2. Add 350 µL of whole blood sample to the tube, vortex for 1 to 3 mins, and centrifuge briefly.
3. Add 20 µL Lysis Enhancer solution to the tube.
4. Add 170 µL of Lysis Binding solution, vortex and centrifuge briefly.
5. Incubate the tube at 60°C for 10 mins.

### Automated

1. Set up the 96-well plates according to the table below, outside the instrument
2. Select the [WBLy350] program. Open the cabin door, and place the plates into the MagTouch 2000 as indicated on the instrument display. Press the position button to turn the rotary table and place all the plates in turn.
3. After placing all the plates, press the [Run] icon on the interface to start the program.

| Plate Position | Plate Type | Name | Content | Reagent volume for each well |
|---|---|---|---|---|
| 1 | 96 well plate with comb | -Load- | Comb | - |
| 2 | 96 well plate | Lysis | Proteinase K | 35 µL |
| | | | Whole blood sample | 350 µL |
| | | | Lysis Enhancer Solution | 20 µL |
| | | | Lysis/Binding Solution | 170 µL |

## B. DNA extraction (automated)

1. (**Optional**) Mix Magnetic Nanoparticles in ethanol, 200 proof with a 1:76 ratio before use. The amount of binding mixture required is 385 µL per sample.
2. Set up the 96-well plates according to the table below, outside the instrument

| Plate Position | Plate Type | Name | Content | Reagent volume for each well |
|---|---|---|---|---|
| 1 | 96 well plate with comb | -Load- | Comb (same as in previous step) | - |
| 3 | 96 well plate | Bind | Lysed sample from step A | 575 µL |
| | | | Ethanol, 200 proof | 380 µL |
| | | | Magnetic Nanoparticles | 5 µL |
| | | | Binding Enhancer | 4 µL |
| 4 | 96 well plate | Wash1a | Wash Solution | 1000 µL |
| 5 | 96 well plate | Wash1b | Wash Solution | 1000 µL |
| 6 | 96 well plate | Wash2a | 80% Ethanol, molecular biology grade | 1000 µL |
| 7 | 96 well plate | Wash2b | 80% Ethanol, molecular biology grade | 1000 µL |
| 8 | 96 well plate | Elu | Elution Solution | 100 µL |

3. Select the [WBEx350] program. Open the cabin door, and place the plates into the MagTouch 2000 as indicated on the instrument display. Press the position button to turn the rotary table and place all the plates in turn.
4. After placing all the plates, press the [Run] icon on the interface to start the program.
5. When the program is complete, collect the supernatant that contains gDNA from the elution plate.
6. Store the gDNA sample at 4°C for short-term storage (up to 24 hours), or at -20 or -80°C for long-term storage.