Genomic DNA Extraction Kit

Catalog No. MDE101 **100 preparations**

Description

Using the latest DNA purification method, Betaperp provides you a highly effective method for isolating genomic DNA from Blood, animal and plant tissues.

In order to extract DNA from blood, genomic DNA can be extracted from up to 200 µl of a blood sample like whole blood, plasma, serum, buffy coat, and body fluids. The kit is even suitable to use with whole blood treated with either citrate or EDTA.

In order to extract DNA from tissue, the kit is designed for isolation of the genomic DNA from mammalian cells, mouse tail, hair root, variable tissues, and Gram-negative bacteria cells.

In case of extraction from the plant material, the kit is designed for isolating genomic DNA from plant tissue like leaf, fruits and root, and processed food for GMO detection.

Content

Solution & Material	Size	Usable Solution & Material		
		Blood	Tissue	Plant
Spin column	100 ea	●	●	●
Lysis	30 ml		●	●
Precipitation	20 ml			●
Binding	25 ml	●	●	●
Washing 1	30 ml (Add Ethanol 22.5 ml)	●	●	●
Washing 2	12 ml (Add Ethanol 48 ml)	●	●	●
Elution	25 ml	●	●	●
Proteinase K (20 mg/ml)	1.2 ml X 2 tubes	●	●	●

Storage and Stability

The Kit is stable for 1.5 years when stored in a constant temperature 15 ~ 35℃.

Before You Begin

1. Add ethanol to Washing 1 and Washing 2 Solution before use.
2. Check Lysis, Binding and Washing 1 Solution for any precipitation, and any precipitant can be dissolved by warming at 50℃.

Extraction Protocol for Blood

1. Add 20 µl of Proteinase K solution (20 mg/ml) to a 1.5 ml micro-centrifuge tube (Not provided).

2. Transfer 200 µl of sample (whole blood, plasma, serum, buffy coat and body fluids) to the 1.5 ml micro-centrifuge tube with Proteinase K solution: If the sample volume is less than 200 µl, add the appropriate volume of PBS.

3. (Optional RNase A treatment): If RNA-free genomic DNA is required, add the 20 µl of RNase A Solution(10 mg/ml, Not provided).

4. Add 200 µl of Binding Solution to the sample tube, and mix well by pulse-vortexing for 15 sec.

5. Incubate at 56℃ for 10 min: Longer incubation times have no effect on yield or quality of the purified DNA.

6. Add 200 µl of absolute ethanol and mix well by pulse-vortexing for 15 sec: After this step, briefly spin down to get the drops clinging under the lid.

7. Carefully transfer the lysate into the upper reservoir of the spin column with 2.0ml collection tube without wetting the rim.

8. Centrifuge at 13,000 rpm for 1 min: Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

9. Add 500 µl of Washing 1 Solution to the spin column with collection tube and centrifuge at 13,000 rpm for 1 min: Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

10. Add 500 µl of Washing 2 Solution to the spin column with collection tube and centrifuge at 13,000 rpm for 1 min: Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

11. Dry the spin column by additional centrifugation at 13,000 rpm for 1 min to remove the residual ethanol in spin column.

12. Transfer the spin column to the new 1.5 ml micro-centrifuge tube (Not provided).

13. **Add 100 ~ 200 µl of Elution Solution to the spin column with micro-centrifuge tube, and let stand for at least 1 min.**

14. **Elute the genomic DNA by centrifugation at 13,000 rpm for 1 min.**

Extraction Protocol for Tissue

1-1. (For Tissue) Cut up to 20 mg of tissue and transfers into a 1.5 ml micro-centrifuge tube (not provided) and add 200 µl of Lysis Solution: If used tissue has a higher number of cell (e.g., spleen or liver), reduce the starting material to 10 mg.
1-2. (For Gram-negative Bacterial Cell) Harvest the overnight cultured cell 100 ~ 200 µl by centrifuge at 13,000 rpm for 30 sec. and discard the supernatant, and add 200 µl of Lysis Solution, and resuspend the cell pellet by pipetting.

2. **Add 20 µl of Proteinase K solution (20 mg/ml) to the sample tube, mix by vortexing, and incubate at 56℃ until the tissue is completely lysed:** Vortex occasionally during incubation to disperse the sample, or place in a shaking water bath or on a rocking platform. Lysis time varies depending on the type of tissue processed. Overnight lysis dose not influence the preparation.

3. **Spin down the tube briefly to remove any drops form inside of sample tube lid.**

4. **(Optional RNase A treatment):** If RNA-free genomic DNA is required, add the 20 µl of RNase A Solution (10 mg/ml, Not provided).

5. **Add 200 µl of Binding Solution to the sample tube, and mix well by pulse-vortexing for 15 sec.**

6. **Incubate at 56℃ for 10 min:** Longer incubation times have no effect on yield or quality of the purified DNA.

7. **Add 200 µl of absolute ethanol and mix well by pulse-vortexing for 15 sec.:** After this step, briefly spin down to get the drops clinging under the lid.

8. **Carefully transfer the lysate into the upper reservoir of the spin column with 2.0ml collection tube without wetting the rim.**

9. **Centrifuge at 13,000 rpm for 1 min:** Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

10. **Add 500 µl of Washing 1 Solution to the spin column with collection tube and centrifuge at 13,000 rpm for 1 min:** Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

11. **Add 500 µl of Washing 2 Solution to the spin column with collection tube and centrifuge at 13,000 rpm for 1 min:** Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

12. **Dry the spin column by additional centrifugation at 13,000 rpm for 1 min to remove the residual ethanol in spin column.**

13. **Transfer the spin column to the new 1.5 ml micro-centrifuge tube (Not provided).**

14. **Add 100 ~ 200 µl of Elution Solution to the spin column with micro-centrifuge tube, and let stand for at least 1 min.**

15. **Elute the genomic DNA by centrifugation at 13,000 rpm for 1 min.**

Extraction Protocol for Plant

1. **Grind the sample material (50~100 mg wet weight or 10~20 mg lyophilized tissue) using a mortar and pestle or homogenizer.**

2. **Add 20 µl of Proteinase K solution (20 mg/ml), 200 µl of Lysis Solution and grinded sample to the 1.5 ml micro-centrifuge tube (not provided), mix by vortexing, and incubate at 65℃ for 30 min:** Invert the tube 2~3 times during the incubation for lysis. **(Optional RNase A treatment):** If RNA-free genomic DNA is required, add the 20 µl of RNase A Solution (10 mg/ml, Not provided).

3. **Add 100 µl of Precipitation Solution to the sample tube, mix well by inverting and incubate for 15 sec. at 4℃.**

4. **Centrifuge at 13,000 rpm for 5 min.**

5. **Transfer 200~300 µl of the clear lysate (supernatant) to a new 1.5 ml micro-centrifuge tube (not provided).**

6. **Add 200 µl of Binding Solution to the sample tube, and mix well by pulse-vortexing for 15 sec.**

7. **Add 200 µl of absolute ethanol and mix well by pulse-vortexing for 15 sec.:** After this step, briefly spin down to get the drops clinging under the lid.

8. **Carefully transfer the lysate into the upper reservoir of the spin column with 2.0ml collection tube without wetting the rim.**

9. **Centrifuge at 13,000 rpm for 1 min:** Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

10. **Add 500 µl of Washing 1 Solution to the spin column with collection tube and centrifuge at 13,000 rpm for 1 min:** Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

11. **Add 500 µl of Washing 2 Solution to the spin column with collection tube and centrifuge at 13,000 rpm for 1 min:** Pour off the flow-through and assemble the spin column with the 2.0 ml collection tube.

12. **Dry the spin column by additional centrifugation at 13,000 rpm for 1 min to remove the residual ethanol in spin column.**

13. **Transfer the spin column to the new 1.5 ml micro-centrifuge tube (Not provided).**

14. **Add 100 µl of Elution Solution to the spin column with micro-centrifuge tube, and let stand for at least 1 min.**

15. **Elute the genomic DNA by centrifugation at 13,000 rpm for 1 min.**