Buccal swab genomic DNA extraction kit

Project number: S666146

Storage conditions: room temperature.

Products

individual parts making up a compound	50T	200T
Buffer GR	25mL	120mL
Buffer GL	25mL	120mL
Buffer GW1 (concentrate)	13ml	52ml
Buffer GW2 (concentrate)	15mL	75ml
Buffer GE	15mL	60mL
Proteinase K	1.25mL	1.25 x 4mL
Spin Columns DS with Collection Tubes	50	200
Centrifuge Tubes (1.5 mL)	50	200

Products

This kit provides a simple and rapid method for the isolation and purification of total DNA from buccal swab samples. The kit adopts a silica matrix membrane that can specifically bind DNA and a unique buffer system to adsorb DNA efficiently and specifically, and 0.5-3.5 μg of genomic DNA can be obtained from each swab, and the extracted DNA fragments are large, pure and of stable and reliable quality. It is suitable for enzyme digestion, PCR, library construction, Southern hybridization and other experiments.

Self-contained reagent: anhydrous ethanol.

Pre-experiment Preparation and Important Notes

1. Anhydrous ethanol should be added to Buffer GW1 and Buffer GW2 according to the instructions on the label of the reagent bottle before first use.
2. If precipitation is found in Buffer GL before use, dissolve Buffer GL in a 56° C water bath.
3. All centrifugation steps can be performed at room temperature.

4. Sampling: Use a buccal swab to wipe the inside of the mouth 6 times, dry for 2 hours and store. To ensure that the sample is not contaminated by food or drink, do not eat or drink for 30 minutes before sampling.

Procedure

1. The swab of the buccal swab was cut from the rod with scissors and placed in a 2mL centrifuge tube (supplied) and 400μL Buffer GR was added.
Note: For genomic DNA without RNA contamination, add 4 μL of RNase A solution at a concentration of 100 mg/ml and shake to mix.
2. Add 20 μL of Proteinase K and 400 μL of Buffer GL, immediately vortex and shake for 15 seconds and mix thoroughly.
Note: Mix well immediately after adding Buffer GL; do not add Proteinase K directly to Buffer GL for use.
3.56° C for 10 minutes and centrifuge briefly so that the solution on the walls of the tube collects at the bottom.
4. Add 400 μL of anhydrous ethanol, vortex and shake to mix thoroughly, and centrifuge briefly so that the solution on the wall of the tube collects at the bottom of the tube.
Note: The addition of anhydrous ethanol may produce a white precipitate that will not affect subsequent experiments.
5. Add the solution and precipitate obtained in the previous step to the Spin Columns DS in two batches of up to 700 μL at a time into the collection tube. centrifuge the column at 12,000 rpm (~ 13,400 × g) for 1 minute, pour off the waste liquid from the collection tube, and return the column to the collection tube.
6. Add 500 μL of Buffer GW1 to the adsorbent column (check that anhydrous ethanol has been added before use), centrifuge at 12,000 rpm for 1 minute, pour off the waste liquid in the collection tube, and put the adsorbent column back into the collection tube.
7. Add 500 μL of Buffer GW2 to the adsorption column (check that anhydrous ethanol has been added before use), centrifuge the column at 12,000 rpm for 3 minutes, pour off the waste liquid in the collection tube, and put the column back into the collection tube.
Note: Step 7 can be repeated if further DNA purity is required.
8. Centrifuge at 12,000 rpm for 1 minute and pour off the waste liquid in the collection tube. Leave the adsorption column at room temperature for several minutes to dry thoroughly.
Note: The purpose of this step is to remove residual ethanol from the adsorption column, which can interfere with subsequent enzymatic reactions (digestion, PCR, etc.).
9. Place the adsorption column in a new 1.5 mL centrifuge tube, add 50 μL of Buffer GE or sterilized water to the middle of the adsorption column overhanging the column, let stand at room temperature for 2-5 minutes, centrifuge at 12,000 rpm for 1 minute, collect the DNA solution, and store at -20℃.
Attention:

(1) If the downstream experiment is sensitive to pH or EDTA, it can be eluted with sterilized water. The pH value of the eluent has a great influence on the elution efficiency. If the eluent is made of water, the pH value should be 7.0-8.5 (the pH value of water can be adjusted to this range by using NaOH), and the elution efficiency is not high when the pH value is lower than 7.0.

2) For long-term storage, it is recommended to elute with Buffer GE and store at -20° C.