TIANGEN®

Processed Food DNA Extraction Kit

For isolation of DNA from food

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For Research Use Only. Not for use in diagnostic procedures.

Processed Food DNA Extraction Kit

Cat.no. GDP326

Kit Contents

Contents	GDP326 100 preps
Buffer GMO1	50 ml
Buffer GMO2	20 ml
Proteinase K	2 × 1 ml
Buffer TE	15 ml
Handbook	1

Storage

Processed Food DNA Extraction Kit should be kept in dry place and can be stored at room temperature (15-30°C) without showing any reduction in performance and quality. If any precipitate forms in the buffers, it should be dissolved by warming the buffers at 37°C before use.

Introduction

Food ingredients are very complex including many additives such as salt, sugar, oil, food colorings, etc. In addition, the procedures including frying, cooking, toasting, etc. may do different damages to DNA in raw materials to some extent. The isolation of DNA from food is more difficult process than from raw materials.

The kit adopts unique buffer system and is suitable for purification of DNA from a variety of deep-processed food. The kit avoids the use of hazardous organic solvents such as phenol-chloroform for most samples and removes the vast majority of proteins, fat and other organic purities.

The DNA purified from deep-processed food can be used in a variety of experiments including PCR and real-time PCR.

Product Features

Simple and fast: High-quality DNA can be obtained in about 2 hours (excluding pre-treatment time).
High purity: The extracted DNA has high purity and can be directly used in molecular biology experiments such as PCR and quantitative real-time PCR (qPCR).
High yield: Sufficient DNA for PCR detection can be obtained from as little as 100 mg of sample.

Important notes **Please read the notes before using this kit.**

1. Some samples such as soy sauce and tomato ketchup have to be pretreated to acquire optimal results. Please inquire us directly for special samples before DNA extraction.
2. If precipitate have formed in Buffer GMO1, Incubate the buffer at 37°C to re-dissolve and mix by vortex before use.
3. All the steps should be performed on table centrifuge at room temperature (15-30°C).

Protocol

Soy sauce and tomato ketchup must be pretreated before starting extraction because much caramel pigment in soy sauce and too low pH value of tomato ketchup will result in low efficiency of DNA extraction.

Pretreatment of soy sauce:

a. Add 60 ml ethanol (96-100%) into 30 ml soy sauce and mix. Place the mixture in fridge (-20°C) for 10 min.
b. Centrifuge at 10,000 rpm for 10 min and discard the supernatant.
c. Add 30 ml 0.1 M Tris.Cl (pH 8.0) to the pellet and shake up by hand.
d. Transfer all the solution into a 100 ml beaker. Put the beaker on a magnetic stirrer and incubate for 2 hour.
e. Aliquot the solution into 1.5 ml centrifuge tubes and centrifuge at 12,000 rpm for 10 min, discard the supernatant.
f. Add 1.5 ml 0.1 M Tris.Cl buffer (pH 8.0), and vortex to disrupt the pellet. Centrifuge at 12,000 rpm for 10 min, discard the supernatant.
g. All the small molecule compounds such as caramel pigment, salt, etc. have been removed and the pellet is ready for DNA purification.

Pretreatment of tomato ketchup:

a. Add 1.5 ml liquid tomato ketchup into a 1.5 ml centrifuge tube, centrifuge at 10,000 rpm for 15 min and discard the supernatant.

b. Add 1 ml 0.1 M Tris.Cl buffer (pH 8.0) to wash for three times, vortex to mix, then centrifuge at 10,000 rpm for 15 min, discard the supernatant, the precipitate is ready to use.

1. Add 500 μl Buffer GMO1 and 20 μl Proteinase K (20 mg/ml) to 100 mg crushed deep-processed food or above pretreated samples, mix by vortex for 1 min.
2. Incubate at 56°C for 1 hour and shake up each 15 min during the time.
3. Add 200 μl Buffer GMO2 and vortex for 1 min and keep the sample at room temperature (15-30°C) for 10 min.
4. Centrifuge at 12,000 rpm (~13,400 × g) for 5 min, and transfer supernatant to a new centrifuge tube.
5. Optional step: Add 1 μl Carrier RNA to the supernatant (Carrier RNA is necessary for soy sauce and tomato ketchup), and then go to step 6.
6. Add 0.7 volume of isopropanol to the supernatant and mix by vortex (for example: add 350 μl of isopropanol to 500 μl supernatant), centrifuge at 12,000 rpm (~13,400 × g) for 3 min and discard the supernatant. Keep the precipitate for later use (The precipitate may not be visible).
   Note: Be careful to discard the supernatant in order not to throw off DNA.
7. Add 700 μl 70% ethanol, vortex for 5 sec, and centrifuge at 12,000 rpm (~13,400 × g) for 2 min, discard the supernatant.
8. Repeat step 7.
   Note: Be careful to discard the supernatant in order not to throw off DNA.
9. Open the lid and incubate at room temperature (15-30°C) in 5-10 min to remove the trace ethanol.
   Note: Residual ethanol may interfere with downstream reactions (PCR, real-time PCR, etc.).
10. Add 20-50 μl Buffer TE and vortex for 1 min. DNA could be dissolved finally in Buffer TE.